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SCHOOL AND HEALTH FOR THE 21ST CENTURY

CONTENT

INTRODUCTION

Six years of work on a research project handled by the Masaryk University's Faculty of Education under the name *SCHOOL AND HEALTH FOR THE 21ˢᵗ CENTURY* have yielded a variety of results and experiences which have been substantially reported to the interested parties in various publications associated with the project, except for the conceptual and popularization activities. This is another such volume of studies and discussion materials generated in the course of the project, mostly in connection with the fifth traditional *SCHOOL AND HEALTH 21* conference that was held in Brno on August 24–26, 2009.

The main objective of the project is to assess the potential for a mutual positive reinforcement in the areas of schooling and healthcare within the modern concept of education and health awareness as envisioned by contemporary social and political documents, primarily the program of World Health Organization called **HEALTH 21**, whose objectives were adopted also by the Czech Republic, and the principles of General Educational Programs which impose a relatively new obligation on our school system: to embrace heath education.

Health education is a multi-disciplinary endeavor that offers numerous forms and possibilities for its pedagogical and didactic implementation. Our investigations show, among other things, that the subject of health education is very extensive and has an untold number of connotations, especially in light of the modern perception of health as "the state of complete physical, psychic and social well-being, not merely the absence of a defect or a disorder", as stated in the World Health Organization text. The questions of health often come up in the least expected contexts and a closer examination may uncover new facts and relationships. In dealing with our own set of problems, we encountered some studies and essays that focused on little known aspects of health, yet attracted considerable attention. We have therefore attempted to assemble such articles in this volume entitled *Health education: contexts and inspiration*.

The individual papers were authored either by key members of the *SCHOOL AND HEALTH* research team, or scientists who often develop a long-term interest in the subject and collaborate with us. To prepare this collection for publishing, we did only technical and organizational editing leaving the articles in their original form, which is the authors' responsibility. The authors and their contact information are listed at the end of this book. We trust that the studies contained herein will bring new information, open new topics and discussions, and provide inspiration for future work in the field of health education.

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July 2010 Evžen Řehulka
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"SCHOOL AND HEALTH FOR THE 21ST CENTURY"

NOT THE BODY IS PRIMARILY ENDANGERED BY CONTEMPORANEITY OR, CONCERNING MANY A SHORTAGE OF PSYCHICAL HYGIENE FIRST OF ALL

Miloš DOKULIL

Abstract: We are mostly endangered by the lack of morality (K. Lorenz). We have been moving in a duality of life values. At the same time a contradiction between the ethics of shame (finality) and sin (causality) is projected here. We cannot rely on a natural equipment of man. Honour is not qualified by oneself, but by one's social neighbourhood. Biosociology clips the wings of "spirituality". The risk of disintegration of values, including personal integrity (by clearing out of oneself), is rising. Apart from the expected changes of the climate neither the contemporary constellation of economic and political forces of our world can persist. Along with it life of each man, by its unrepreatableness, is an innumerable value. Man cannot remain without a "natural" moral thirst. The role of a teacher has not been given only by his/her teaching. S/he is constantly one of the immediate and mightily influencing examples. It seems that school is to blame for infesting the culture of communication. It is highest time to also contribute to improving the climate in the public life, especially by a more urging education to "citizenship". Instead of a dogmatic transfer of the curriculum it is necessary to steadily point out to the difficulties of a gradual penetration into more adequate knowledge. We should not lead our wards to a dogmatic picture of the world, life and values in it.

Keywords: mental hygiene; ethics; morals; morality; dualism of life values; evil; shame; sin; guilt; shari´a; virtue (honour); social role; celebrity; values; globalization; soul; mafia activities; spirituality; hegemony; sustainable life; consume society; miracle of life; toleration; role of a teacher; information age; communication; workshop of humanity; third culture; dogmatism; scepticism; crisis; rhetoric; therapy

The Nobel Prize holder and one of the founders of modern ethology Konrad Lorenz sometime said that we as humans are mostly endangered by the **lack of morality**. It does not seem that the threat of the decline of our civilization, caused by these somewhat indirect and intangible reasons, has been adequately reflected both by the political "elites" and the "public". I intend to concisely illustrate it by showing some recent

examples. In summer 2009, the Czech legislators bothered their heads again with how to optimally settle the penal responsibility of youth when, simultaneously, it may be meddled with thus blessing their untimely sexual activity. There is a similarly delusive problem with smoking. As if to prohibit anybody to smoke in restaurants were a problematic incursion into the free rights of operating them (to say nothing of the secondary inhaling of such smoke by non-smokers). Already in spring 2009 fruitless debates were held about casinos and gambling as if, in such a case, the first priority were not the psychical health of the population and the risk of disintegration of thus affected families, regularly combined with criminal activities. At the same time we should not overlook the fact that riches and power create an unusually strange opportunity to unbinding extravagance. In Europe's political scenery, it is Italy's PM Berlusconi who is very famous in the field. — In the following text I intend to show a broader "mycelium" of the problems indicated in the title of this contribution. I will come back to some maladies which both connected vessels are exposed to, i.e., teachers and their pupils and students.

I would like to evade any academic "professionalism".[1] If we say "ethics" we immediately take an idea of something universal in the mind, be it a theory or, more often, some and somehow glorified life-sustaining practice, coupled with some community's norms of life and defining it also outside.

In our rather complicated contemporaneity **we do not dispose of both one generally recognized "ethics"** and one socially upheld practical "morality", to say nothing of any provided guarantees over the common denominator of personal moral practice. To immediately evade any useless terminological and factual confusion, it might be good to define some basic terms. I will proceed from the contemporary usage.[2]

Ethics = "theory of morals and morality".[3]

Morals = "socially imposed and outwardly evinced practice of interpersonal contact in declared attitudes and in dominant behaviour of community members".

Morality = "attitudes and behaviour exposed into the community through individual ethical principles".

Metaethics = "theory of ethics (if not a comparative metatheory of various ethics)".[4]

Science = "rational (analytic and systematic) elaboration of intersubjectively relevant problems (which as such need not be rational)".[5]

1. A starting hiccup at the "dualism" of life values

The way of how we act, or have the feeling that we should act, starts and ends with the inherited habits of the community which we were born into. The biological prerequisites to a reliable behaviour got started to be scientifically investigated only recently. We cannot limit ourselves to state that a certain, mostly minority type of behaviour has been genetically predisposed. It is one thing to find a different sexual orientation somehow "normal" though differing from the majority population (which is the case practically only in our contemporaneity), but one of the questions here can be the fact that homosexuals – not only themselves, of course! – do not biologically contribute to the conservation of life in the human society. I take it risky to legally define partnerships of the same sex as "families".[6] At the same time we should not be blind to the criminal

persecution of homosexuality in many a contemporary state in our world. It appears that **morals and morality are not automatically established by any "public education" based on scientific knowledge, but by might structures in our contemporary states and their "driving forces" used to conserve popularity and positions**.

At the first glance, morals/morality seems to be a "specifically human" phenomenon, but we can find similar features in animals, too.[7] However, considering some (and often from a religious viewpoint codified) principles, the crucial moral canons have been held as **historically and socially unconditional**. — In accord with some, not immediately to be expected, reactions of people to some inputs we even can assume that possibly several tens of thousands years ago – and in connection with the notion of a "soul" as a peculiar company of the bodily affected life – a rather strange, epistemologically formulated dualism led to an **articulated dualism of ethically perceivable and antagonistically given values**.[8] Similarly, we could be confronted with a rather surprising conception of a "right-sighted" and "left-sighted" soul,[9] or even with the antagonistic "heavens" and "hell", and their corresponding, among people acting forces ("angel", "devil").

We should not take it easy that there exists a "sub-conscious" shyness towards anything which might be impregnated by some "evil" transmitting contagion. Professor Bruce Hood prepared an interesting experiment: He asked his public in a lecture hall who would wear a presented woolen cardigan if given 20 pounds (then equal nearly to contemporary $50). A countless number of hands could be seen. Then the lecturer remarked that this cardigan had been worn by an infamous murderer. Afterwards he repeated his question. Now only a few hands turned up as if that cardigan were somehow physically infected. **As if some evil could be mediated in distance;** a material mediator will do... We need not immediately conclude that many contemporary people are shy when confronted with not well defined "negative energies"; there are many a human in their lives counting with equally vague "positive energies" through which they believe they can upgrade life and make it "more spiritual" (without any necessary indication of what it means).[10] There remains here a, not much optimism stimulating, **question if anything coming from the realm of science is sufficiently relevant for practical behaviour of humans, both individually and collectively (and interpersonally)**.

We must feel disconcerted over the fact that criminality grows so much, especially in form of internationally organized crime, and sometimes disguised as if by principles based in religion, if not "transcendentally". (Many a time, we may be puzzled by the fact that it is not so important what has been done, how and by whom, but how it has been mediated.) Various ideologies have been presented as a confrontation, be them called only "contest", or more directly "war" (possibly "war of civilizations" as famously written by S. Huntington).

Although we universally talk about "man", we as humans living in different cultural backgrounds have not got the same "common denominator" for our attitudes and behaviour, and especially not for their motivation. Therefore **we must necessarily ("in between of the time"?) do without "global" ethics** which could regulate our relationships both individually and locally, and between the states and globally. If there were not such hindrances, we would both better combat poverty and diseases, and find more respect towards "fair play" in interpersonal relations and the sizeable responsibility for life (at least one's own).

2. Contradictory guidepost of "shame" and "sin"

Not every time we understand that, from an initial state of affairs (that something "IS"), nothing binding follows for any future state (that, e.g., something "IS TO BE"). The less can we assert that something "has to be UNCONDITIONALLY", which means that the reflected *desideratum* "MUST BE" notwithstanding the circumstances of the given or future, or somehow longed-for or desirable, situation. In a classic way, this has already been formulated by David Hume.

When confronting such ethically (morally) fixed *desiderata* with a given state of affairs, we must simultaneously include both the free will and moral responsibility. We are not yet forced to consider a **future situation as an open exhortation full of alternatives**; it may also seem that we dispose of a linear chain of possible acts. In such a case we have at our disposal both **causality behind and finality in front of us**. — The old "Homeric" model comes out of finality. It is a moral model of **a possible "shame"** when a deed was somehow thwarted and was not, owing to various unforeseen circumstances, positively evaluated. A much later Christian (but also partly appended Muslim!) model is based on causality. It uncompromisingly counts with the **phenomenon of "guilt"**, as an effect of "sin" (n a sizeable measure "inherited"!). In such a case even if we could count with a peaceful outcome of an activity burdened by "sin", human acts, subjectively and dogmatically, remain "morally not reconciled", at least when we cannot immediately count with "God's compassion" in eternity.

Once more: A Greek (or a Roman) from the Antiquity was not interested so much in "cleanliness" of the means used as in the necessity to **guard the effects**. A Christian or Muslim access to a deed, **from the beginning and in a privileged way, takes care of the incentives** leading to a secondarily evaluated act, without measuring so much the quality and resonance of the goals reached by it. — Let us illustrate the "finality" conception first. Even when a Homeric hero succeeded to reach an end by ploy or fraud, he remained *agathos* ("good", "valiant", "generous", not to say "virtuous"), as he could stake such a claim not only among equals of his community, but as it was common in the society of that time, in the general public, too. In the *Illiad* we can read that Agamemnon intended to steal a slave woman called Briseis from Achilles. Even if such a behaviour was not in any way contrary to the quality of "being *agathos*" Nestor, in spite of it, wanted to ward him off it. He urged the king not to take the girl from Achilles even if he remains *agathos* both ways.[11]

The opposite paradigm, can have, and does have in our contemporaneity, several times a much cruel sequel. A Muslim girl can evade the dictates of her own family and get enamoured in a man who, in no way whatever, can enter the relationship of the family. The family then tips somebody of its circle as the "avenger" of its "virtue", sometimes even her brother to kill her, evidently to do it to wash away her "proven guilt", her "sin". In such a way "morals" has been treated even at the beginning of the 21st century (not exceptionally between Muslim immigrants in Europe)! — At the same time, I cannot omit one very rough pattern taken from the Old Testament showing the same morally "causal signpost". In editions of the Bible the text has been headed by the title "Dinah and the Shechemites" (Gn 34). Jacob's daughter Dinah was raped by Shechem, son of prince Hamor. Shechem immediately afterwards wanted to marry Dinah. Some

talks started between the two parties. Shechem's father and he himself are ready to offer "anything", including blood-related association, to reach a marriage. Jacob's sons set an incredible precondition – circumcision. All the men of the town, including the prince's family should be circumcised. Even this unusual condition was fulfilled. But the third day when they were still in pain, two of Dinah's brothers (Simeon and Levi) killed all men in the city, including Hamor and Shechem (Gn 34:25-26). They also looted the city taking as plunder everything in the houses, including women and children, and flocks and herds. Jacob does not reprove his sons for their perfidiousness, but only for the trouble caused by the bad reputation which can induce his family's doom (Gn 34:30)! The sons defend themselves hinting at Shechem's treating their sister Dinah like a prostitute (Gn 34:31)!! For the retaliating brothers of the honour of their sister the following Shechem's honest desire to marry Dinah represented nothing. In the patriarchally organized Hebrew society nothing can be expected to be written about Dinah's feelings preceding the wedding. (Unmarried girls were taken as father's "propriety"; we can only leaf through Deuteronomium, the 5th book of Moses.)[12] In similar cases at that time, in such a treacherous way could act nearly all the world. We are now reminded of it because we should conspicuously see that: a) the Muslim shari'a rules have their roots in another (if not lower) level of cultural development; b) a "causal morality model" is being very visibly applied, in a religious transformation, even in the 21st century, and that in the form of a "sin" expiable only by blood.[13]

 We, of course, can ask the question where from and where to, the moral signpost leads if we may be allowed to set a goal to a senseful and reliable manner of behaviour (be it a "paradigm"?). **We cannot rely on a "natural" – as if "inborn" – human moral equipment.** Any declaration of some "universal" norms of behaviour cannot be of efficient help without the corresponding sanctions. The fixing and enumeration of what "is to be", is based on the experiences of what somehow "is" and what is to go on in a similar way, or "is to change". It seems optimum if a community can unite some politically set *desiderata* ("telos") with religious "boards". Guarantors in a given society can easily fix both a respect towards the fixed norms and a penalty in case of non-fulfilment. In both alternatives, it is well shielded by a reliable causal pattern ("if — then"). Men easily listen to a possible (possibly not immediate) reward and punishment (many a time drastically immediate!).[14]

 When we intend to reflect on ethical boards, we often take it for granted that there is "something" inside us, already "in a natural way" set, and in a "specifically irresistible human" form settled. In the middle of 1960s, Stanley Milgram started to realize refined experiments on macaques. The ape was trained to connect the release of a handle with a day's food. Then, another macaque was placed in a neighbouring cage which, after the release of the handle by a trained macaque got a painful electrical shock. An unexpected surprise followed. The trained ape preferred to be hungry, as it thus eliminated the pain of the other animal![15] — There is a problem here, of course. What exactly the trained macaque feels when it wavers to use the handle being hungry, cannot be objectively verified. It is evident that it evaluates its own situation confronting it with its "instinct" needs. It weighs preferences of the particular "payments". For us, it need not be automatically decisive whether the macaque in question, by being "sparing", wants to prevent the pain of the other macaque, or "only" its shriek, as it irritates itself. These

experiments by Milgram were, 20 years afterwards, described in his book *Obedience to Authority* (1983). If, in a similar experiment, a trial person got an authoritative instruction to pull down the handle (similarly as it was the case in macaques), such a person did not waver to mediate a shock to another individual beside him (even when he did not know that such a shock was feigned); and he was ready to repeat the pulling without any wavering. And then there is an obtrusive question here: Humans are often – probably not every time?! – indifferent when their possible "neighbours" are painful. I think we need not rack our brains over the question of whether the bigger role here has been played by a sometimes rather "crusty" relation towards other people ("yours is not mine", me being out of risk), or if we are to perceive such experiments as an illustration of human respect to authority ("cost what it may?"). On the other hand we all know many cases of altruism which may serve as a polemical antipole of Milgram's results. We also know situations when a soldier covered the loophole of the enemy to enable his comrades to occupy an elevation point without further losses; or when a priest in a concentration camp chose to die in place of some other prisoner who was father of a family. Not only once a mother in a disaster covered her child to save it, although she herself did not survive a fire or collapse of the ceiling. In such a case we must moreover calculate with additional prerequisites of ideology or blood (or "genetics"?), as if the primary role here was not played by self-preservation instinct, but by "unwritten" principles of "virtue" or "love" (of children, neighbours, "fatherland").

3. A perplexed intermezzo about "virtue", or: Are we well "deep-rooted"?

By way of introduction it may be useful to remind us of an experience by Zimbardo. It has been a classic and shocking experiment. Professor Zimbardo prepared it as a game with his students, simulating prison conditions. "Jailers" put themselves in their new shoes in such a way that they actively began to degrade, humiliate and physically torment their colleagues, now classed as "prisoners". In the interest of the participants, the scheme had to be untimely cancelled. (It was abundantly commented.[16]) — It seems that if an acting human personally misses the motivation connecting the deed with its possible "sin", it will then act without any feeling of "guilt". And if a person feels to be "only" a vehicle of a prescribed part, s/he seems as if automatically taken out of a coordinate system of written and unwritten principles and habits till now shared and bound by. And then s/he will feel to be personally without any "guilt" and, moreover, a similar notion of "guilt" in front of the public has to be missing, too. Under such circumstances, questions concerning evaluation of anything as "lawless" or "immoral", cannot come to the acting subject's mind. **"Honour" is not fixed by the individual; his or her own personal feelings of "guilt" may be ignored. Their potential degree has been fixed by the social environment.** It is not necessarily a regional or generally established authority which determines it. **Any group serves the purpose**, be it a crowd, gang, mob (also a class, or a social ghetto). It suffices here when there is a – not necessarily large – vehicle which somehow "naturally" absolves from "guilt" and makes the actors "innocent", if not – over and above – useful and beneficial, and within such groups,

praised as "heroes". So, paradoxically, when there is a certain script here with **roles connected with a possible coming forward** (as a "star"), their fulfillment is a coveted goal and a source of acclaim. And it has also been the case both in the academically directed Zimbardo's "prison game" and the old sinister and murderous Hitler's "game of cleansing the German race (from Jews and "inferior beings")". Similar situations came to exist, and originate continuously, in wars or armed fightings of separate groups within a society. As if it were only a convenient metaphor: somebody "cleans" the terrain from the enemy or "sinners" (or however "undesirable" men). We can meet such behaviour in the army where the older guard torments and maltreats conscripts, or in schools by bullying the younger ones or physically somehow disabled classmates. It is an expression of force and, subsequently, a manifestation of respect towards such a force both among the accomplices and the sufferers. **It substitutes other forms of excellence, especially when positive values are not sufficiently cultivated in communities, beginning in families and ending in state institutions.**

Although we, all of us in our lives, can get – commencing in our early youth – many binding rules, instructions, orders and prohibitions having to do with our collectively (if not socially) sanctioned behaviour, we may, notwithstanding (and owing to a certain outward background), be landed in a moral "vacuum" where **no inherited or "stabilized" and personally binding moral values exist**. In such situations it can be shown how misleading it is to rely on "sanctity" of any declared or felt "norms for life". At the same time and not rarely, we may be confronted by some "morally" conceived rules, valid for all, but reserving "dignity" (and pride) for the proper "elite" which then is situated as **an "embodiment of the law outside any law"**. As if such a member of a given "elite" (Zimbardo's „gaoler", member of the SS-forces in a Nazi concentration camp, „body" of the NKVD or GPU in a Stalinist gulag), but also men at arms in various "guerrillas" and extreme movements (from Neonazists to Al Qaedá), all of them were an instrument of a "higher will"; but simultaneously, fed – and impregnated – by an intoxicating self-consciousness exhibiting the strength of one's own unrestrainedness which, as an **instrument of a higher might, does not know any responsibility or apology, and the less so any feeling of a possible guilt**. In this form, we can somehow be presented with an – arguable, nihilist and degraded – analogy of the "honour" (or "virtue") from the Antiquity...

In Europe of old, life could be outwardly measured by the level at which it was taken as "honourable". In this way it was as if thus the powerful ones deserved recognized merit also after death, remaining in the memory not only of their own contemporaries. In Old Greece, the well known alternative of "with the shield, or on the shield" had the meaning of being commemorated with no end also after a heroic death for one's proper *polis*. The grateful city knew that such an unselfish self-sacrifice in the name of one's proper community had been a maximal (in an extreme case also "optimal") evidence of what it to be understood as "virtue". Romans called it "virtū"; as if it derived its meaning directly from a, not nearer defined, "virility" (from Latin "vir", i.e., "man"). Historically taken, it could also mean not only personal bravery, but also reliability in words ("truthfulness" as against the city), generosity ("sponsoring" of public distraction), responsible access towards subordinates (surely "legionnaires"); but necessarily not a caring (if not anxious) and affectionate relationship towards one's proper progeny

and other common people. In our own contemporaneity, it seems that the **expression "virtue" (or "honour") has totally lost its meaning;** with an interesting exception when a politician feels to be dishonested by some – mostly verbal – presentation in media (and for a law court evaluated in millions of Czech crowns).

Currently, **it is not the case among men and women to judge "virtue" equally**. Exceptionally, virtue can be **compensated by the cult of celebrity**, also in the form of pragmatic shyness, or also by the need to preserve illusions concerning the meaning of some deeds or importance of their actors; or, potentially, by the displayed piety when confronted with the death of a renown individual. — When we remember the memory of the tragically diseased Lady Diana, originally Miss Spencer, then after the dissolution of the marriage with Prince Charles, when she led – owing to her position as mother of two royal princes – a rather problematic private life, it could not be simultaneously overlooked how informally and non-pompously she treated people in pain or threatened by death (including the sick and terminally ill people with AIDS, or living in areas with landmines). It cannot be overlooked how the whole world reacted when confronted with the news of her tragic death. Not ignoring Lady Diana's problematic private life both during her marriage and after that time, "Lady Di" remains a renown person and glorified nearly as a saint. Not only once was she compared with Mother Teresa, Nobel Prize winner and already beatified nun by the Church. — In such cases, it would not be easy to try and put such lives under a simple and unifying, and "morally" qualifying, attribute. There are always things which do not fit an ideal picture. So, shall we be content with what somehow prevails? Or, with what can be valid from a later perspective? Or also, with what predominates from the viewpoint of a broader community? — Should we not be surprised that a famous general (and later an important politician) Powell did not count with "virtue" when he evaluated their qualities? And he had a list of such positive qualities numbering almost twenty of them.[17]

Montesquieu once said that three items can never be in accord, laws, virtue, religion. (In Islam, in a strange way, we can find the opposite; actions have been many a time performed as if in the interest of honour of the family, nation, and faith. Within such a scheme of values we are also to include – as íf "naturally" – the law of shari'a.)

4. In the globalization period, are we not presented with "impersonality" as an unwanted gift?

Biosociology has already clipped the wings of our "spirituality"[18] when it referred to **social insects** as an example of how to "unselfishly" work in the interest of the whole. In another aspect and till the middle of 20th century (and in areas of Marxist influence, nearly till the end of that century), a notion characterizing animals as reflex automata prevailed. Such an idea was strengthened among believers by the imagination that, **to realize "spiritual" experiences, we absolutely need to have a "soul"**. By means of a miraculous act of creation, only humans dispose of a soul, so to speak. To have a hard boundary between man and other creation (animals), Marxists used a dogma that it was work (and instruments) which created humans, as animals, after all, do not work![19]

I will start these reflections with a rather fresh experience from anthills. Young ants mostly stay in the anthill, for the performing of less risky tasks. The older ones, on the contrary, have already a shorter lifespan and do not represent such a loss when they die during some risky operation outside the anthill. An anthill as a macrounit has its means of how to functionally assure this division of labour.[20)]

As far as a human community is concerned, from the time of the first states, a specific – though, with the time, changeable and variable – structure could be created to assure the survival of that political organism. Slaves and serfs were not considered to be more than a certain type of "zeroes" which of themselves did not signify anything.[21)] The lower layers of town population participated in such an "evaluation" with the countryside till the end of 19th century (though a larger measure of individual "liberty" for some mass protests was to be registered, especially in towns, sooner than that). From the beginning of 20th century – and more so after WWI – a certain "democratization" took place in many states, even when something so "natural" in 21st century as **equality of the sexes** was not considered to be urgently needed and fully legalized, e.g., in culturally and economically developed Switzerland; Swiss men as the only authorized voters were not sure women should be authorized to have voting rights.[22)]

In a world disposing of only limited communications and a relatively dispersed and mostly illiterate population, it was rather easy to conserve certain traditions of both how to exercise control over the population and preserve primitive notions about the status of the world and its possible "norms". If we admit that grinding and an unimaginably low level of living conditions do not allow such enslaved people (moreover struck by diseases or high risk of losing life) to **concentrate their minds and comprehensively think**, then we can figure out what the situation was like in medieval Europe with the consoling imagination that life on this Earth only serves as a temporary transfer station to reach eternal bliss. From the middle of 19th century, Marxism offered the working class a revolutionary road to overcome the subhuman enslavement under the "bourgeois" establishment.[23)] In 20th century, different totalitarian projects appeared promising a "change of order in the society", and that under the guidance of an "ingenious leader" (in communism, fascism, nazism).

In that continuous life degradation of broad masses it has been dramatically shown that, again, common man – even in the so-called culturally developed countries – becomes **only a "small wheel" in an impersonal machinery, as he had already been during several thousands of years when settled on the ground**; which began to slowly change for something better between both the world wars (at least in the happier lands) and took this course for some years after 1945. At the end of 20th century, various illusions concerning a "post-modern truth" about subjective notions of the functioning of this world, and the possibility of controlling it in a directive manner, in accord with similarly subjective "resolutions" of some party leaderships, have been among us again. Among plain people came back **existential insecurity which cannot be reliably cured**. Neither the "free hand of the market" is without any stain; **in a free and open system for the future we cannot create models which could anticipate reality with such a measure of exactness as we would - for any scientifically relevant analysis – wish**. From a contemporary perspective it is hardly possible to see all the requirements which the new, and already global, organization of the world must fulfill, if it comes to it, not

only economically and politically, but also culturally, and... "morally". And let us cultivate a "conscious personality of a citizen" when s/he – not of one's own fault – looses her or his work! Or, what to do if s/he lives from the early childhood, with no perspectives at all, on a rubbish dump.

5. The contemporary „Alice" in a strange ethical and moral wonderland

There is a question here if, and to what a degree, humans may be, in their life values, influenced by culture which need not serve only for pastime, but as, at least partially, a secondarily transposed message about personal and group morality. It is no wonder responsible public servants – in the state, town or village, church, or an interest community – often express their insecurity over what is, or already is not, situated within the presupposed limits of what might yet be tolerated or benevolently overlooked.

The scale of problematic features is rather broad and, owing to the intensity of influences and "social harmfulness", very differentiated. It can be probably seen that I try to hint at the negative sides of life. Thereby, and with no larger commentary being necessary, we can clearly understand that when reflecting about morality there is **no big problem with what has been "generally" conceived as positive**. And then declaring morality is similar to declaring law: **behaviour reflecting conserved moral habits (and customs) of a given neighbourhood and time is, as if it were something obvious ad normal**. Journalism lives from anomalies in a similar way as laws must be declared for such people who are supposed not to observe them. Once upon a time, a law had to be prepared for some "three percent" of those who had to be averted from crime. Today's commercial activities where the "game" runs in billions of dollars, make possible to patiently calculate millions and tens of millions as "expenses", to bribe those responsible, as "the end justifies the means", and a heightened calculation including some bribes may be easily calculated in the budget (such means will not be covered from one's proper hand, all the same). I am hinting not only at the so-called "business ethics" and a not corresponding morality in its practice.[24] Profits in millions or even billions of dollars are being brought yearly by faking trade-marked goods, traficking and selling drugs, and also a shocking manipulation of people, either when organizing illegal passages of immigrants or on the market with girls sent to brothels (not to speak about marketing body organs for transplantations).[25] At the end of the first half of 20th century (not to count some "Maffian" exceptions), criminality in general was an individual activity. **At the beginning of 21st century, we probably cannot find such a country where there would not operate any international gangs**, moreover mutually competing and liquidating rivals by murders. Internationally organized nets of illegal business get exceptional financial means and, till now, have access to laundering "dirty money" through various channels nearly everywhere. Their profits may be greater than a budget of an average state. We cannot wonder that sometimes official representatives (ministers of interior, if not premiers) speak about the prospects of recourse of such gangs very cautiously. It has already been said that some big gangs – owing to their financial background – technically are, at least, one step in front of the repressive organs

of the state. We can add to this as a fact that in certain suitable geographical regions (with tricky access and easily defensible highland) gangs, with the use of their military force, control parts of the state where they "economically" operate. In such a situation, no morality can serve as a "medicine", be it anyhow insistent, but – I am afraid – only a hard and repressive security and military force of the state (or international units). **Risks grow that financially big gangs could, at last, possess atomic weapons and thus hold the remaining world in check, not respecting the interests of the majority of mankind and its "eventual", and not uniform, morality...**

Only when we do not bother our heads with the greatest risks, we can probably reflect on not so globally imperative themes as, e.g., when a Christian promises "eternal" faithfulness and divorces, or when a priest promising celibacy thinks that a homosexual relation (sometimes verifiably to boys protected by law against such a abuse!) has nothing to do with "fornication" (and therefore with "sin"!). In such correlations we should otherwise measure to a common man and differently to a potential model for a greater community (i.e., a central dignitary of the state or corporation), considering a possible "bad example"; **especially when the formerly intensely perceived "bonds" ("shackles"?) of traditional and personally binding "moral" values have been – not for the first time - uncontrollably loosened, particularly in relationship to a growing proportion of population living more and more in the anonymity of steadily growing towns** which can be distinctively shown in states not yet fully economically developed but already drawn in such a process.

Without regard to the growing "secularization" of economically rather stable societies, even there **we cannot mishear the call of duty demanding "spirituality"** and gaining strength and "articulation" (even when it is not always clear enough what is meant thereby).[26] There is an excellent probability that, evidently, some clever people introduced here a "game of the human soul (if there is one)" and, simultaneously, this feature enunciates the need to reflect moral viewpoints in life where, for many people, it becomes commonplace characterized mostly in form of a biological struggle for existence.

When reflecting on values we should not forget that there is a **certain relativity in all evaluative judgments**. Many a factor influences them, mostly unwittingly and vicariously. In this respect, we cannot omit personal experiences of life and the way of how we collectively spend time which makes the so-called "big history". In our modern and more and more **"information" society** internet, television, broadcast and print, continuously present – though in a special, and sometimes biased and distortional, "selection" – various news from anywhere in such a way that anybody can automatically be nearly their witness, if not addressee, as we all can participate in their knowledge without reference to the position in society, or possible risks for the place. Too many people on our planet know almost "everything", though it be not structured and ordered in priorities. It is a **cocktail in which we easily loose the material and evaluating (if not "central") thread**, or connection. And the head is crammed with a mental confusion instead of a definite feeling and profiled emotion.

We spoke above (in the 4. part) about the return to a **consumerist (if not also driftless) life** in which – again, from Antiquity to, at least, Enlightenment – an individual need not possess any name, and s/he would not have to be neither a number if not having

somewhere near her or his back a "cell" (mobile phone). As if the only "specific difference" of contemporaneity as against the past were a relative abundance of all manner of goods. **This indirection is more of a catastrophe where, in our "so vertiginously modern age", it is the personal existence which is endangered, as a necessary basis for any important human values.**

This "moral" devaluation of human life may sometimes be outbalanced by visits of mass celebrations, or also demonstrations of extreme movements where, as if of a sudden, this felt inferiority and despondency may end because now "we are a highly visible force" (to be feared by the police!). In form of a substitution of partnership feeling, serves public supporting of some sport or club, or a popular singer or musical band. Photographs of stars on the covers of journals make them better marketable, including demand for T-shirts with their portraits. "Fan clubs" of popular singers induce a cultic relationship towards a popular personality and are another illustration of the same type of **emptying oneself** as if members of such clubs wanted to exist only as an accompanying shadow of their deified idol, without any proper "authenticity".[27]

At the beginning of the 4th part of this contribution we mentioned biosociology. For some decennia we are sure that, apart from some popular animals, it is cetaceans or dolphins who dispose of a special "intelligence". The way of how the Japanese kill dolphins – for putative "scientific research" – is hardly justifiable. There are filmed spots where you can see live dolphins in a heap on a ship and men cutting their bodies in such a way that the sea around is red of blood, as if it were "only" a nest of field mice which must be liquidated. — The public is more and more interested in the manners of how butchery is being carried out and whether there are cases of mistreating horses, dogs or cats during their breeding. **An objectionable relationship towards an animal reveals some anomaly in a relationship towards humans, too.** Animals have been recently perceived as "things" only, which should not be treated in an unhuman manner. We should not fail to notice that critical voices may be heard more often disapproving experiments with animals not only in cosmetics, but also in human medicine, as if man, in this way, mistreated his arguable power over nature.[28]

6. Looking at our social reality, are we allowed to declare anything "ethically" in an efficient way?

Evidently, we have to find some "new ethics" to treat the problem areas directly connected both with the Earth (as a planet which is to be taken care of by us humans in the struggle of existence) and, **specifically, with its biosphere** (including, newly, the necessity to perceive the value of animal life as a morally and legally similar to our own), and thirdly – as if in a "mystical triad" – we must include here **the whole (and much non-homogenous!) sphere of culture and civilization**, from the general and abstract theoretical-informational cornerstones, via prerequisites for a **continuous and patient "humanisation" of man by science and education, until the contribution of technical means for such a "*hominisation*"**.

Looking at what we already can anticipate (in the middle of 2009), or what we may reasonably expect for the time near in front of us, **the world of tomorrow (consid-**

ering the escalating technical and social evolution, at least in some 25 years) may await many a, mostly dramatic, shock. If in between of the time, China is not confronted with hardly now estimable social unrest, it should, **in about 2030s, reach such an economical and military potential for a viable pressure diplomacy as to strive to achieve hegemony over the world**. Till now this position was enforced by USA and, after WWII and till the 1980s, challenged by the USSR and, from the beginning of 21st century by Russia again. It is not easy to judge the extent of possible power of India in the same economical and military boundaries, when compared with USA and China.[29)]

In every respect, **the existing predominance of the so-called "white race" and its culture is to be soon over.** Until now both OUN and its much politically "archaic" Security Council does not count with it. If the struggle for sources of energy (or water, or quotas in fishery) is to intensify – which is to be expected – it will be, within the range of our globe, a **hardly knightly fight not only for the markets or the so-called "sustainable" life on this planet, but also an uneven competition in a combat to introduce the rationally most acceptable and humanly tolerable solutions and decisions about how to globally live and let live** (not only humans, but animals and plants, too, to say nothing about national resources).

Supranational political, financial, economic and cultural organizations have constantly given us **a shade of the twenty years after 1940s**. The braking influence of the existing atomic bombs during the years of the so-called cold war (as if a "3rd WW") **cannot serve as an automatic and reliable deterrent forever** (especially when a "human error" can cause a nuclear catastrophe by some bad luck or nerve failure). Supranational gangs may enter the scene, too. To narrow it down to a "war on terror", and **count only with military means for their liquidation, would not be adequate**.

At this time, **climate change – already proclaimed – may happen to be an incalculable problem**. It is not "only" a "somewhat" technical problem and really "somehow" outside of limited human qualification. The human civilization in the last few centuries contaminates the air more than ever (not to be compared with the time 50 years ago) and produces incomparably more rubbish (also partly liquidated by burning it!). The so-called "Protocol of Kyoto" should have been a starting point in the endeavour to more systematically solve the negative influences on the human environment by, at least, limiting them within possible measures. There is a problem. First, the greatest polluter – USA with fully 25 % share in the pollution – did not participate in the agreement and, secondly, since 2007 China has balanced its score with US (both these states together "contribute" with one half of the total, and so horrible, pollution in the world).[30)]

Some influences (e.g., astrophysical) are outside human intervention which, of course, is no automatic excuse for leading politicians of the big powers to hesitate with, or delay, their contribution to a viable solution by showing to the autonomy of the climate. Do we not hear, moreover, their indications that there are also the traditional "national interests" to be observed (e.g., in US)? And as far as China is concerned, it may with partial right only refer to the exhalations of the West in the past two centuries (which, of course, is responsible for them!). In a similar way argue the representatives of such states where they get financial means by devastations of tropical forests; as if such present and local income were not a source for **much bigger problems for the whole world tomorrow**. It does not fall, primarily, into the semantics of economy to reflect

today of the risks for the population and homes of those whose perspectives and life may be inevitably endangered if the level of world seas is to go up a foot or so. In this context, **only a small group of people has got moral responsibility** to find a – possibly "partial" – solution which it cannot avoid by some excuse or burying the head in the sand, under the pretext that nature is capricious which we cannot unteach it...

It would be humanly desirable to perceive the problems of our contemporary world as a complex. In such a case we would dispose of globally conceived measures to confront poverty, child mortality, malaria, shortage of water, etc., **including – on a larger scale – a morally binding plan to culturally uplift the whole population**.[31)]

7. Driving force of morality in a given state of danger for the Earth, life and culture

The proportion of population living in the anonymity of towns is growing; most conspicuously in countries not yet economically developed, but drawn into such a process, with further risks of pauperization and criminality, together with the erosion of traditional moral values, be they respected much or less. On the one hand, many developing countries are dictatorial states. On the other hand, crowds of unarmed people can sometimes exert not a small pressure to change government. There is a problem here: to create functional and credible, and democratically shielded state organs, as there is always somebody "craving for unlimited power" there. The role of media, including internet, is growing, too. We can see much more of elaborately arrayed picture information, accompanied by pseudo-realist and cleverly styled verbal clichés, to create a **mental lullaby without reflecting about any of the more exacting life values**. In such a climate, populist moods can be propagated rather easily. A perspective of a more decent civic life may be endangered by authoritative and vain politicians. When there are not legal guarantees available everywhere, property and moral affairs lower public interest in the proper country (if the situation has not reached the proverbial last "drop"). In Europe, the age structure of the population changes quickly, in such a way, that the proportion of the younger generation is insufficient when compared with the pensioners. The number of illegally immigrants is growing, too. Possibilities to employ unqualified people decrease steadily.

Morally devalued institutions and ideas, as well as morally worn down citizen, can sometimes find a temporary solution in **new forms of religiosity, in not exacting music, as spectators and TV-watchers, if not also as participants in demonstrations of extreme groups,** for it may present some good occasion for an "evaluation" of oneself through someone else, sometimes even through a crowd of similarly thinking people, thus endorsing one's own self-conscience. The possibility to kill time by watching TV or playing computer games, contributes to the **atomization of life and its "averaging" into an alleged and "typical" net of inter-human relationships**. We can transpose ourselves, by means of a TV-series, somewhere on a town square or a village square, or also, and in a similar manner, on the outskirts of some town, in a small house, in hospital or school or office, or some other work, and with many a cliché, surely showing naked skin, variously shuffling partners into changing triangles, if it is not an

effective thriller with a pool of blood and much bold violence, and totally being outside all possible patterns of "life" or inspiration towards it.

This is the case, e.g., in the Czech Republic.[32] We cannot immediately show anything commensurate from the countries with rapid economic development where also the population grows and the "scissors" between the rich and the poor open more and more up, which does not foreshadow anything about a further harmonious development (China, India).[33] Outwardly Muslim states can partly rely on their oil, without having to raise literacy and principles of legality, as religion is not a private affair of each citizen there. From the north in contemporary Africa, we can detect a growing pressure of self-confident Islam; whereas from the south to the north, the same holds of Christian evangelization, often in territories economically, politically and socially not very stabilized. It is unimaginable today how, in a couple of years, not only the contest for markets, but especially for raw materials and energy would look. The competitiveness of China – shown in many ways already – will be in the 2030s in some important parameters comparable with US and the outwardly economically united European Union (with a strong euro!)[34] would not like to play the role of the "third behind" (moreover with millions of immigrant Muslims within its borders)...

I do not want to meditate on the possibility of democracy at that time being worn out, though it is not an ideal system. Supranational structures are financially very exacting, but they might be a functional inter-link in between of particular regions (and traditional "states") and a global world. **The adopted economic and political (and morally only little perceived) heritage from the time after WWII needs, for a long time already, an efficient – though painful, but mostly necessitated – revision.**

Let us now interrupt to speak about these economic and political – and sometimes rather gloomy or, at least, risky – contemporary conditions for a calm and not complicated life to find some ideas for an outlook for morality in the future.

8. An intermezzo before closing down

Morally profiled problems, if present, or predictable in the future, cannot be solved by any "ethical theory". If believing in a dispassionate reflection of values, we cannot shut our eyes before reality where we can very often see triumphs of a greedy craving to get rich or the will to govern ("will of power"), and that without any remorse that it takes place at the expense of other people, or directly, at the price of their personal destruction... as if life of each human being were not, **through its unrepeatedness, a non-quantifiable value**.

It seems that we do not live in a **miraculous world**. But, indubitably, the greatest marvel in our Universe started with the so-called Big Bang. And, last not least, shortly afterwards this process went on with the "era of matter".[35]

Much later originated our Solar system. In its structure was created the Earth, moreover with a Moon as its satellite. On the Earth, and very early, were created conditions for the emergence of life when, in combination with metabolism, also the conditions for life's reproduction were created. Also many-cellular organisms sprang up. Afterwards (and after a catastrophe 65 million years ago) and in a freed niche after various saurs, an unprecedented development of mammals followed. And after some

other millions of years and in a geologically rather recent time, evolved the necessary conditions for different animal lines of creatures which started to regularly move on the hind (and now "lower") extremities. And then – from the perspective of the preceding time surely unexpectedly – appeared here, on the Earth, a human, anatomically and with his mind similar to us, *Homo sapiens*. The genome of his organism – although there is a manifold and rich reserve of elements – is mostly composed of only three elements (carbon, hydrogen, oxygen).[36]

This creature discovered in himself the gift of speech. And some tens of thousands years ago man also discovered in himself a sooner not felt timidity in front of the puzzle of life and death. Approximately 30 000 thousand years ago man began to be urged by the idea of influencing the pace of events in his neighbourhood by evidently cultic creations. He, at last, started to settle on the ground and was not, any more, content with what nature gave him. He, afterwards, felt the necessity to conserve somehow his memory and, at last, created various types of script. He also discovered in himself the need of solving problems and, moreover, of looking for, and finding, beauty in his neighbourhood. He then began to seek the meaning of the being and his life. And he now – though not generally – is conscious of various pitfalls connected with the human life. In a "teleological" projection, he is aware of the need to overcome limitations of individual life by trying to surpass them. (No important function has been played by the thought whether we are, or are not, here in this Universe alone.)

For the sake of these miracles, here shortly exhibited, we must not remain, on our life road, without an outer moral framework and without a natural internal moral thirst.[37]

Many a time and mostly totally, we do not consider and understand how a preschool child assimilates the code to decipher this **uniquely marvellous fairy tale of life**, without always naturally in its background grasping the **necessary initial prerequisites for its – now only preliminarily suspected – need to be inquisitive and longing for general education**; to say nothing of the responsibility for one's own proper behaviour. (Not only as an exception here can be found a precondition for later problems which cannot be solved easily, starting with smoking and sometimes finishing with drugs. Here we can also find the roots of the following violence and extremism.)

9. What, so far, this time (especially in schools) is not ripe yet for?

If we do not want to stay only "with ourselves" – and with our "computer" – and **if we intend to live with our neighbours (not only "beside them")**, then we may also discover the arguable relativity of different professed values (not only the "ethical" ones). And, in this way, we may be coming nearer to **toleration, which is so necessary even globally**. Nothing was said about it till now although it is a moral value "in short supply". But, it is also evident that not all can be left to take its free course.

Here is the beginning of our – not only pedagogical – problem. We can hear that "Man cannot live by bread alone". Without a multilateral material arrangement all may be amiss (if not worse!). Since past autumn (2008) in the Czech school system there have been many talks especially about money. We cannot leave aside the fact that the oldest generation is, among us, in only scarce numbers, having lived in incompa-

rable living conditions when drawing a comparison with the middle generation, not to speak about youth. After WWII, **women stayed in the working process for good** which, especially in the industrial countries, was a social revolution also in the sphere of family relations. Simultaneously, too many women started their career as teachers which caused feminization in schools. Women less often than men take this activity as a calling (not to mention a lower financial evaluation of this work). And the **role of a teacher has not been given only by her or his teaching**. S/he is, at the same time (and not only "moreover"), to serve as a possible and very immediate model, and that not only through outward appearance or knowledge. There are not too many personalities, apart from the parents, who may remain in memory for many decennia, or forever – as just the teacher is.

It is surely not necessary to elaborate the fact that other cognitive requirements are needed for working on the elementary level and that the teaching staff on higher levels has a more exacting task in front of itself. In both these settings, we can find something common (though not always watched and seen!): the "schoolmaster" must know **how to evoke interest in her or his subject** among pupils or students, and it has, naturally and unaffectedly, to be presented how s/he knows it, not taking it only as a "work load". Now, I intend to mention several ideas, sometimes in triplets, which are not to be conceived as declarations and should be understood in their complexity.

So, first of all: During the last twenty years, our world has been especially smaller and made nearly contemporaneous (without reference to distance). It has happened, to say nothing of TV-news, mostly owing to the internet, electronic mail, mobile phones ("cells"), twitter, or facebook communications. In these nearly 65 years after WWII, we may record such a stormy – and constantly swifter – development of sciences and technical applications that, visibly, **all the living generations are mutually divided by their experience** with technical appliances and qualification to understand professional information.[38]

In the last semicentennial time, the teaching staff has been very dramatically confronted with a situation where pupils or students sitting in front of the teachers had been attuned to life on an incomparably higher level than it was the case with themselves. And – "Therein lies the rub!" Pupils and students could, in the given course of studies, know much more than their teacher.[39]

The teacher cannot hide her, or his, authority behind some strict rigidness or frustrating raids of repeated written tests. Is it not the case that s/he in to burn with the admirable knowledge of her, or his, subject (which s/he, of course, has reasonably mastered), to be able to, at least, induce the atmosphere of "smouldering" for its appeal and mysteries, mathematics being included?[40]

If we surpass the hindrances of the preceding paragraph, we should not, in a parallel, miss three more things in the classroom, be the subject of whatever difficulty: admiration of life in general, the same towards the stage of the world, and specifically a similar attitude to culture.

In each of these three areas, we can register some important questions which should find their manifestation in the **scenery of mutual communication**. Before I go on, I feel some responsibility to stress once more again that the **teaching process cannot be a "one-way only" stream of knowledge** passing through a strangely insulated

(and dictated) "pipeline", but has to have its various feedback connections, "resting places", if not commentaries of nearly anything what, as imperative, was brought by the current day.

A lesson should have the charm of a thrilling communication, similar to a simulated "discussion" **tempting the listeners to admire such features of knowledge and following up with a striving for its assimilation**. — So now let us hint at only "three" spheres deserving our consideration. First of all: the human society stays, or falls, disposing of a certain status of family, notwithstanding its form. It should not be "patriarchal". [41] Although it need not always be simple and individually viable, the importance of the family should be naturally mediated by the relationship of the teacher to her, or his, younger members of the "team", and her (or his) membership in it as a senior, more experienced, and considerate component. Not only as if speaking for "somebody else", I would like to emphasize that, in a broad sense, education is needed not only for the ones who are to be educated (or the educator), but also for the whole society**. The importance of education is growing steeply.**[42] And let us add a rather controversial requirement: culture and civilization as a complex should not take a back seat in our minds, somewhere "behind" (or "outside") the material and consumerist aspects of life, and distraction.[43]

Is there not any brake in the way of our intentions? What is there here not only among our wards, but also among us teachers? If we remain within the Central-European space and its rather impaired form of democracy, full of various illusive performances (including corruption) from above, and a lowered interest in being politically engaged from the bottom, then it is now highest time to introduce a **new type of civic education**, deserving the name, and preparing the young for making things better (and not continuously looking for a life-saving "third way"). Only then could we count on some prophylaxis against the contemporary exhibitionism of politicians, media argumentations in form of ads and TV-spots, and little perceptiveness to more general needs of society (if not of the whole planet).

We cannot cover all the necessary "curative" items. School could serve as a "filter" where the recovery of public life could find one of its reliable sources. School potentially is a **"workshop of humanity", realizable as a never-to-be-finished thriller of continuously discovering something new and unknown before**.

There is one serious, though disguised, problem: Traditionally, the **teaching process exposes all as unproblematic and stabilized, and not open to doubt**. When our subject is not language and its rules (also with various exceptions of them), it would always be preferable to point out at the difficult process of gradual, sometimes very uneasy, penetration into more adequate knowledge. **We should never lead our wards into a dogmatic picture of the world, life and values in it.**

If it is possible, we should, in suitable contexts, show or illustratively indicate that our world, till the middle of 19th century, was outwardly static, relatively small, and – at least in our reflections – remarkably young. We should also not forget to mention the excess of optimism of the Enlightenment (from the preceding – 18th – century) counting with the possibility of edifying the human society by applying rational reasons more and more, governments not excluded. We should also remind our students of the sufferings of both the world wars of 20th century, not forgetting to explain the reasons of

genocides or economic depression or crises. We should continuously bear in mind that not all in our human world can be algorithmically solved (as if all were so solved). There are processes which are random, or there is such a number of uncontrollable factors that we should abstain from categorical conclusions and be very vigilant when arguing. **We should not hammer into the heads of our "wards" both any dogmas and, on the other hand, equally dogmatic scepticism.**

One more remark, rather "formal", but also showing one blemish, and more than 60 years being among us, is the following: the **culture of our speech**. The users of Czech (but not only them) have infested the display of their speech acts by various inarticulate sounds (or alien tones?), repetition of some already pronounced words and inserting different verbal paddings. All that could already be acquired at school during the examining "at the blackboard", when words did not come easy and we did not know how to continue at the moment. Some "hallmarked speakers" of various institutions and, what is more, broadcast or TV-redactors speak in such a way as if they came running from somewhere, probably persecuted, and then they groan (as if in pain), lace the message with "ehm" or "you know" (or "you see"?), and nearly every word accompany with nodding, in a similar way as a horse does with its mane. (Was it picked up from us, the elders? I do not dare to mention the standard language level which could be shown as an evidence of some respect towards those addressed by the speaker. [44])

So, we know, at least some, symptoms of this decline of our "spirit". If being led to a certain diagnosis, can we thus be led towards a desirable therapy?

Comment

1) I want to utilize here some material I prepared for a seminar organized by the Philosophical Institute of the Academy of Sciences of the Czech Republic and taking place at the end of 2007. It could be added probably that I, nearly ten years ago, collaborated with V. Gluchman on *Ethics*, in three volumes (Prešov 1998), where I also published a study called "Moral values in contemporaray ethics and morality" (pp. 61-84).

2) It is clear to me that some languages could be helpful in elaborating a more complicated structure (which I find counterproductive).

3) No definition is an automatic protection. "Theory", e.g., should be understood as being a "verified hypothesis", something **testable** (and withstanding falsification). If "ethics", as a humanistic subject, is to be a "theory", there is a rather big problem here immediately: **We do not have at our disposal any binding criteria for its generally respected cornerstones, cultivation, and possible development; to say nothing of its "testability".** — Currently, we understand "ethics" as being an attempt at rationally reflecting about possible "norms" of what "is to be", and the corresponding practice – on the basis of such "norms" – where, in dynamically developed human relationships, we cannot find **any aprioristically reliable and continuously binding norms of human behaviour**, without regard to their partially legal fixation in our contemporaneity. The notion of transcendentally binding and "eternal" rules of God's will must be irrelevant for atheists. And if we count with a certain – and changeable – dynamism in the way of life of *Homo sapiens*, we will be confronted with somehow "absolutely" conceived principles of behaviour in a similar way as religious people are. It may be illustrated as a, not only "academic", question from the second half of 20th century, when new efforts emerged to give new interpretation to homosexuality and new status in society to homosexuals; or also the need to look for an admissible compromise to regulate conception (or protect against AIDS), to say nothing about euthanasia.

4) Thus we can conceive both the endeavour to present an analytical, socially based and semantic interpretation of the conceptual apparatus in this field, and – in form of a synthesis – the search after contact surfaces between different types of ethics.

5) It might be better to illustrate it by an example: In the world of arts we know the prestigious "Turner Prize", each year awarded for an original creation in London. Sometimes it sets the fur flying. Fine art, as a realization, is an activity outside science. Its review (critique) comes out of a certain tradition which is conforming to the personal imaginations of its critics and is a product of its time (institutions and authorities). With a reasonable bird's eye look, it is possible to create a "theory" of such criticism, if not something more problematic

which has been – not adequately – called "laws of creation". Such an effort would bear signs of what has been currently called "science" (though here a "soft" one).

6) Half a century ago, it would be unthinkable that a worldly renowned author (a concrete case: in October 2007, J. K. Rowling) could fully, before an audience in Carnegie Hall in New York, declare that one of her crucial protagonists in her novel epopee "for youth" (!) about Harry Potter is a gay (Albus Dumbledore) which declaration would then even be – after a moment's shocking silence – followed by stormy applause!

7) We can evidently be surprised by promiscuity between apes (e.g., chimps), or – what humans call – fidelity of swans. Also something called murder among us, has already been observed in apes. (See also the text preceding the end of 2nd part, paragraph containing note 15.)

8) Let us not forget an ancient Christian tradition of bodily discipline, partially inspired bycustoms practised in some Jewish sects. The "body" (together with sexuality and material needs) as if were a hindrance to find a sublimed relationship towards God (and the cure of "soul", the "transcendental", the "spiritual").

9) Robert H. Lowie [*Primitive Religion*, Peter Owen, London 1960, p. 103] quotes that the tribe of Bagoboes (isle of Mindanao) professes faith in a "right-hand" and "left-hand" soul, where its right-hand part is a faithful guide of the body granting the bearer health and joy of life. When leaving the body its effect is death. The "left-hand soul" is a source of risks; it can become a prey of demons during life already and, after death, changes into a demonic existence. — As if – not only linguistically – what when being at the "right" side were also "right", if not "veritable" (and genuine), whereas what is "left" should be somehow "crooked". Not long ago, left-handers were considered "unnatural" and were ruthlessly re-trained to be right-handed.

10) Only rarely will it be acknowledged that "spirituality" is a totally vague word, if it were not another expression for directly meaning "religion" (as a "spiritual" value). It has often been accompanied by the concept of "soul" and the meaning of this life after death. Sometimes it is only a commercial lure for those who pretend to be in contact with transcendental forces (shamans, many a healer, practitioners of various cults).

11) I would not like to quote cases of clever "entrepreneurs" (not only in the Czech Republic) who rely on the fact that **what is not directly prohibited is, as if automatically, allowed**. Such behaviour may be contrary to "good manners", but if not unlawful then it is as if wholly "O. K.". — If such a "traficker" has not been condemned to imprisonment, he (or she) goes on to appear proudly in media as s/he surely and indubitably is – and has always been – "honest"! Unlike Antiquity, the difference here might consist in the fact that the professional community may evaluate it in another way now: to "be caught with his trousers down" is nothing to be proud of; and if served to the public by the media, such "cleverness" is denounced. — In the Czech Republic after 1989 some clever "trafickers" made much money by annihilating the expected positive results of the so-called coupon privatization among small "investors". Mr Kozeny, glorified in his native country, did not bog down sooner than in connection with his big international financial transactions whereby he "was out of luck". It could be interesting and mostly enlightening if we disposed of materials showing the ways through which the "poor boys happened to be famous" (together with who and how helped them and was "helped" by them). These siphoning-off activities, in various forms, are going on even today in the Czech Republic (and not only there) which, of course, makes the psyche of its citizens lame...

12) It would not be good to judge the "character" of God in accord with this episode. The Lord only exhorts Jacob to swiftly settle down in another country (which was understood by Jacob as an instruction to cleanse the family clan of idolatry). — The text was not primarily written for the eyes of a modern reader. The story, by its anthropomorphic composition of God as its actor, evidently shows whether humans had, first, God's will "among themselves", or a harsh clan habit, closely near the merciless spirit of the norms of Hamurappi's legal code ("eye for eye, tooth for tooth").

13) If ever in some Muslim countries are such actions registered as potentially not appropriate, then their right of recovery does not qualify them as murders but – if ever subject to punishment – as am undue middle to defend family honour (sometimes punishable with one year of prison). — So it is sometimes that there is a universally, and for individual "usefulness", declared goal ("*telos*") which may be simultaneously connected with a causal presentation. — We humans know well that causes have their effects. The inevitability of understandable horrible effects may be evaded by the fatal imagination of miracle. Then there is an attempt to **confront two lines of causality**: one, somehow "natural", and another one, not enjoyable which might be averted by a deity from which the praying human expects a "supernatural" intervention. — The Lord of the Old Testament taught his people to respect their mutual "contract". A severe example of this theme may be illustrated by Ex 32:27-29. When Moses came back from the top of the Mount Sinai, the Jewish people sacrificed to the Golden Calf. Moses then assembles those ones "whoever was for the Lord". And he says: This is what the Lord, the God of Israel, says: ´Each man strap a sword to his side. Go back and forth through the camp from one end to the other, each killing his brother and friend and neighbour.´" On that day, in accord with a "Mosesian" record, three thousand died. And so, what is to be done is being sometimes enforced by the shed blood of relatives, too. Or else there might originate doubts having to do with the credibility of a possible obligation and necessity to comply with an instruction which cannot be conceived only as a "recommendation". (We would be led too far if trying to pursue it further.)

14) It is evidently useless to comment here the cruel medieval forms in which "legality" has been enforced in many a Muslim country, registering public whipping or executions, including stoning to death!

15) A trained macaque evinced its wavering to press the handle less when it saw an animal of another sort in the neighbouring cage, and a much greater reluctance when it knew the ape in the neighbourhood, or when being already familiar with the conditioned role of electroshock. (See note 7.)

16) Much information about this experiment is easily accessible on the internet.

17) Powell's words: „They're clean, smart, dedicated, trained, motivated, responsible, reliable, self-confident, selfless, patriotic, loyal, drug-free, respectful, tolerant, and ...caring." (Adapted from J. Bowman; the expression "honorable" is missing here as shown.)

18) See note 10.

19) Already among Darwin's famous finches one of them took a straw in its beak and strove to spike its possible catch deep in the trunk of the tree. — Recent experiments with the admirable parrot called Alex and performed for 30 years by Dr. Pepperberg, are worth to be mentioned here, too.

20) Among Inuits there is a memory conserved that in remote past, when the community was befallen by hunger, it set out to seek new sources of food in such a way that – owing to the scarce food for all – it left its old members behind to die on place.

21) Not only at Troy or in the Old Testament, but also with a generous exaggeration of the numbers, the plain fighters in *Mahabharatam* died in the battlefield called Kurukshetra anonymously as if only the stories of noblemen were important.

22) Swiss men – in good memory of the "old patriarchal traditions" – thought that they could manage the voting process themselves representing their wives, too, not considering that not every woman had eventually to marry, or that not each wife needed to share her husband's political ideas.

23) After WWII some Italian communists were sure that after the potential social revolution they themselves would emerge as "bosses", whereas all subordinate work would then be performed by the preceding superiors.

24) A very detailed description see at: Arnold S. Luknič, *Štvrtý rozmer podnikania – etika*, Slovak Academic Press, 1994.

25) It is a sensitive theme. On account of killed lives may live those who would do anything for some money. We could be familiarized with cases outside any imagination in Western culture. They have various connotations which cannot be seen immediately. Owing to the regulation of natality in China and preferences of male progeny there, tens of millions young Chinese have got no chance to marry. In one province, it is customary to "equip" the grave of a dead unmarried man with the body of a dead woman for the "otherworldly time". Women's bodies were stolen not only from morgues, but also from fresh graves; and not only that. For not small sums of money were murdered young women and girls to supply, on "exactly directed" order, the required "parameters of a common-law wife" to a rather strange funeral.

26) Shall I, for the third time, remind my reader that this is a very sensitive, if not also a highly vague, term? (See texts accompanying notes 10 and 18.)

27) In the Czech Republic the highest esteemed singer of the light muse Karel Gott has happened to be a sublimed "lover" for thousands of his girl-fans. (An added note: In January 2008 he, being 68 years old, married his latest and more stable partner which, of course, is not a sociological subject. It may be a decoy for a psychologist. And it is a good morsel for a biographer.)

28) By means of different expressions we run away from reality: we can see a cow on a meadow but, on a plate, there is only "beef".

29) Ten years ago, who heard about the contemporary steel magnate Mittal from India? He also owns the Czech Steel works of Vítkovice.

30) There was a world meeting on the isle of Bali where there were to be prepared the "final" conditions for a more efficient approach about the directives of Kyoto. Some limited hopes could be created, but without any cooperation with US or China which is not only a political, economical and, directly, climatic problem but, **primarily, it is an evidence of a clear inability to responsibly and reliably face the problem from a moral viewpoint**.

31) In the Czech Republic we should, more reliably and efficiently, solve the so-called Roma problem. To teach Roma children Czech when they are seven years old, is not an effective optimum. Already before a child has been born, **its family should have been, socially and morally, ready for its arrival in this world**. Who else should dedicate his efforts to take part in such a difficult task?! It is not a task for only one generation if it were already – naturally from the "bottom" and from "within" – started. The core of a successful solution can be found in a consolidated family. — Such features as is the situation of displaced, or also murdered, families, e.g., in Darfur, or people affected by floods as it is repeatedly the case in Bangladesh, China or South Mexico, cannot end as headlines only for the media.

32) Some facts: A rather long time we are to know that dirty money is not dirty. From time to time, general interest got its new food in the news about the newly loosened partner relationship of some leading politi-

cian. In a broadcast from January 2008, Professor Josef Koutecký remarked that some changes of attitude are inaugurated by inconspicuous terminological innovations: patients of the past have been changed to "clients"! (All this, of course, is not a specific sign of only the Czech public scene!)

33) China already occupies the first place in importing luxury autos (ignoring the contemporary economic depression). India has spectacularly realized its program of a really "popular" (or "plebeian"?) auto, for an incredible price of 2 500 dollars (till now the folk choice was a motorcycle). It is impossible now to proceed in an analysis here (not only for home market; and including the hunt for raw materials or pollution).

34) Not many people know the real economic power of Germany within the EU and the world. When considering the export of goods in 2007, the first place in the world was occupied by Germany (with 9,5 % of its share). The second place belonged to China (with 8,8 %); and the US was in the third place (8,4 %). These three states together participated in a quarter of world export. (The 4th place was occupied by Japan which was the last country reaching more than 5 %. See *The Economist*, April 26, 2008, p. 104.) The biggest world importer was US. The greatest financial reserves can be found in China (in trillions of dollars). The price of a barrel of oil has again reached more than $100 (which could, for the oil states, mean that the so-called petrodollars would not be a desirable source of financial reserves any more again).

35) The three preceding "eras" being the hadron and lepton eras and the third, the era of radiation. Especially the first two eras have nothing in common with our perception of time and processes in it. The origin of our Universe provokes a somewhat absurd question of what could precede our Big Bang, and how. The so-called superstring theory has continuously, or so far, been a physically untestable "hypothesis", even when it may be a viable way to a "theory of all" for mathematicians (to say nothing of the "technical" abyss of 35 orders on the number line to test this mathematically elegant and physically uneasily imaginable hypothesis).

36) Much less represented, in the basic code of cell life, are following three elements: nitrogen, phosphorus, and sulphur. (Other elements are present in the makeup of organisms, too, importantly calcium or iron.)

37) Ethical "codices" can have some value only in such a case when the society (or interest group for which it might be valid) intends to keep them and knows how to implement them. It also means to begin with their observance from the beginning of human life, to achieve a natural respect for their "conservation".

38) The contemporary septuagenarian could see, even in towns after WWII, much more of horse droppings on the pavement than feel the exhalations from the cars. Slide rules were slowly replaced by calculators from the beginning of the 1970s.

39) T. G. Masaryk more than 100 years ago reminded the teachers of his time not to forget that the pupils might be better equipped with knowledge than themselves having various new sources at their disposal which the teacher does not think about. See Czech articles about it in: http://www.blisty.cz/art/17558.html, and http://www.blisty.cz/art/17241.html; or http://www.blisty.cz/art/17586.html.

40) There is a certain anachronism in the Czech school system – as if we were not yet in the "information century" (the 21st!). Subjects like mathematics are artfully suppressed in favour of language training. (Not always qualified teachers then find their way out of personal problems in examining "vocables" and in written tests.)

41) Such is, through its traditional roots, a Muslim or Jewish family.

42) We have to count with the so-called know-how which is to be paid for, notwithstanding its relatively small expenditures, in accord with its quality. A small land like the Czech Republic (without raw resources) should show more effort in this direction.

43) The "third culture" by C. P. Snow did not prevent the larger and larger gaping between the humanistic and natural subjects, or between the so-called "high" and "popular" culture.

44) One hundred years ago the Russian language counted with its three layers then existing. The highest one was the language of tzarist and Church edicts, the second was the current language of literature and various proceedings, and the lowest the spoken (and colloquial) language. — In Czechoslovakia after WWII, very early took hold a rather "plebeian" talk of the majority of communist politicians. It nearly immediately prevailed in the public performances, as if that "informality" were "sincere", and not "affected" (or "artificial"). Now, in the Czech Republic, it is as if a somewhat strange speech style of a pub or kitchen were due and proper when speaking about culture, or addressing thousands of people in public. Standard level of Czech is disappearing, as if no one cared...

NIKOLI PŘEDEVŠÍM TĚLO JE DNEŠKEM OHROŽENO ANEB O NEDOSTATCÍCH PŘEDEVŠÍM DUŠEVNÍ HYGIENY

Abstrakt: Nejvíc nás lidi ohrožuje nedostatek morálky (K. Lorenz). Pohybujeme se v dualismu životních hodnot. Zároveň se zde promítá protiklad etiky hanby (finálně)

a hříchu (kauzálně). Nelze se spoléhat na přirozenou výbavu člověka. O cti nerozhoduje jedinec, ale jeho sociální okolí. Biosociologie přistříhává křídla „spiritualitě". Rostou rizika rozkladu hodnot, včetně osobní integrity (vyprázdněním sebe sama). Kromě oče-kávaných změn klimatu neudrží se ani stávající konstelace ekonomicko-politických sil současného světa. Přitom život každého člověka je svou neopakovatelností nevyčís-litelnou hodnotou. Člověk nemůže zůstat bez „přirozené" mravní žízně. Role učitele není dána jen tím, že vyučuje. Je průběžně jedním z bezprostředních a silně působících vzorů. Zdá se, že především vinou školy došlo k zaplevelení kultury komunikace. Také je zřejmě nejvyšší čas přispět k zlepšení klimatu ve veřejném životě nutkavější výcho-vou k „občanství". Místo dogmatického přenosu učiva je nezbytné stále upozorňovat na nesnadný proces postupného pronikání k adekvátnějšímu poznání. Abychom nevedli své svěřence jen k dogmatickému obrazu světa, života a hodnot v něm.

Klíčová slova: duševní hygiena; etika; morálka; mravnost; dualismus životních hodnot; zlo; hanba; hřích; vina; šarí'a; čest; gloriola; sociální role; celebrita; hodnoty; globalizace; duše; mafiánství; spiritualita; hegemonie; udržitelný život; konzumní společnost; zázrak života; tolerance; role učitele; informační věk; komunikace; dílna lidskosti; třetí kultura; dogmatismus; skepse; krize; rétorika; terapie

THE CONCEPTION OF SCHOOL-HEALTH RELATIONSHIP IN THE SCHOOLS OF THE FIRST REPUBLIC

František ČAPKA, Jaroslav VACULÍK

Abstract: The paper portrays positive changes in the sphere of health measures in Czech schools of the First Republic. School physicians in concert with educators created a system of basic rules for the 'school and pupils' health' relationship. This relationship was reflected in the principles of the image of the school adopted as a priority including the school's interior design and organizational structure. And after this the organizational structure of the learning process was considered. Another area of interest was that of the increased interest in the actual state of pupils' health. The paper depicts specific information from the education of the so-called deficient (defective) pupils and the picture of the care for them. Another important aspect was considered as well: the outline of the social, moral, protective and out-of-school educational care for school children, including the role of parent associations at schools.

Keywords: school physician; school attendance; school rules and regulations; special schools; special classes; parents association.

In the course of the formation of the school system in the Czech lands the view of school by state authorities was gradually changing: from the perception of the school being a solely educational institution, to the perception where school was an establishment providing the young generation with the information on fundamental health principles and norms. Broader application of health measures in schools was mainly prevented by the lack of funds, and often also by persistent stereotypes of times past. Considerable positive changes in this respect occurred mainly in the years of the first Czechoslovak Republic. The pressure of civil communities in the last decades of the Habsburg monarchy went in the direction of improving the whole school system. This process eventually resulted in the establishment of a quality democratic school system in the new Republic. It was necessary to do away with the frequent accusation which stated that the school caused "many harmful effects on pupils' health". The school had been generally accused of spreading infectious diseases and marked as "the breeding ground and hotbed of infectious diseases". The most frequent illnesses reported as being spread by mutual contacts of pupils at school were, for example, scabies, lice, eczema,

or contagious diseases, such as measles, chicken pox, mumps, scarlet fever, diphtheria, and tuberculosis.

From the very beginning of the period of the First Republic, both school physicians and educators agreed on the necessity of developing a system of basic rules for the 'school - pupils' health' relationship; they could rely on some experiences from the pre-war years. Some principles were adopted then regarding the desired design of the school, its interior equipment and organizational structure. In terms of the school building, the requirements of sufficient light, air and general conditions for maintaining cleanliness on the school premises were promoted as first and foremost. These principles were considered even at the stage of defining tendering conditions for architectural designs of new schools. The interiors of school buildings were supposed to have "large and airy classrooms with appropriate, suitable and sufficient airing and heating systems". There was a requirement for high and wide windows in the classrooms because "the daylight was the most appropriate lighting of the classrooms, and if possible, very little artificial light should be used during school lessons". Another requirement was the requirement concerning classroom furniture: it was supposed to be friendly to pupils' health. This mainly applied to school desks the overall form and shape of which were paid particular attention to. One of the descriptions of that period stated: "As a rule, pupils should be able to sit well and comfortably on the chairs by their desks; they should be able to step out effortlessly, the contact between the teacher and the pupils should be easy and the cleanliness of the floors under the desks should be easy to maintain; the writing board should be in the height of the sitting child's elbow, slightly inclined towards the child's body…". Great attention was also paid to the paint used for school blackboards, issue of pupils' writing accessories, print size in textbooks as well as other things. The attention of public health officers was also focused on the condition of books in school libraries as the considerably high frequency of book lending was reflected in the look of the books: the majority of them were noticeably dirty and torn by frequent lending.

Considerations of the organizational arrangement of lessons became a widely discussed topic; it included the issue of the determination of an optimum everyday start of the lessons and the way of school attendance, the question of proper time schedule, the setting of the amount and scope of homework, and eventually the determination of an ideal number of pupils in the class. Opinions of different educators concerning these topics differed a lot; it was necessary to consider significantly different social statuses of individual pupils, often difficult ways of their travelling to school as well as the number of other varied conditions (such as, for example, inconsistent conditions of pupils living in village locations as opposed to pupils in urban, highly populated areas). These were the reasons for a rather liberal view of the said issues since the determination of the time of the everyday start of school lessons could have been discussed only "when considering local conditions … whether the lessons are to be held only in morning hours or both in the morning and in the afternoon". The issue of determining the correct time schedule and the scope of homework had been discussed already from the eighties of the 19th century in the scientific as well as lay community. The significant Czech physician, Prof. Josef Thomayer, got also involved in this discussion; he disputed the opinion that the school work had harmful effects on pupils, such as mental fatigue or mental over-

strain, and perceived these phenomena not as pathological ones, but as a physiological reaction to any ultimate physical or mental work; he perceived them as a safeguard which prevented overstrain caused by physical or mental activities. At the same time he distinguished the differences between school workload for different categories of pupils according to their health, physical and mental maturity.

Another sphere of interest was that of the health condition of pupils. The statistics of the period immediately before World War I were used as a basis; they showed that 25-30% of pupils of elementary and middle schools were included in the category of "deficient children"; of them there were a higher percentage of girls than boys. We have at our disposal, for example, quite detailed data from the reports of Prague school physicians which show that from 1908 to 1912, 37.4% of boys and 40.8% of girls were found "deficient" in first classes of local elementary schools. In higher classes these percentages were slightly decreasing. In this relation school physicians recommended that the school attendance of six-year old children who were not quite mature in terms of their health should be postponed by one year. Already at that time particular attention was paid to children with serious health disorders, such as mentally deficient, blind, or deaf and dumb children the education of whom should be taken care of in special schools and medical facilities.

In the years just before the war the care for these pupils was gradually acquiring an official framework; the *Educational School Regulations* of 1905 (in Section 212) emphasized that also "school authorities and educators should take into consideration mental and physical good of school children and undertake steps to remove the deficiencies found; they should eagerly undertake activities for institutes to be established for the protection and out-of-school employing of children". In this period we could witness first "special" classes and even the whole "special" schools. The Moravian School Council issued the instructions for their establishment in 1907 following the recommendation of Gustav Marchet, who was then the Minister of Culture and Education. However, because all the costs connected with their operation must have been paid by the municipality itself (including the salaries of teachers), only individual classes were being opened within individual schools (the first independent "special" school with two classes was established in Pardubice). According to the latest pre-war statistics of 1913, in the whole of Austria there were 97 classes of this type, catering for 1,759 pupils; of them there were 23 classes in Bohemia (16 Czech and 7 German schools) and 7 in Moravia.

In the whole of Austria there were 27 institutes for mentally deficient in 1912; at that time they were called the institutes "for idiots". They housed the total of about 3 thousand pupils of whom 1142 were capable of being educated; the Czech Land Commission for the care for young people supported the institutes in Praha-Hradčany (the so-called Ernestinum), in Hradec Králové, in Jilemnice, in Kostelec nad Orlicí and in Dobřichovice; the German Land Commission established a similar institute in Vrchlabí. At the instigation of the Association for the Treatment and Education of Physically Crippled Children, the first so-called nursing institute for the physically crippled started its operation in Prague VI in 1913. The development of this institute was considerably supported (also financially) by famous surgeon MUDr. Rudolf Jedlička. The number of institutions for the blind was growing very slowly in spite of the fact that the oldest one

of them had been established already in 1804 in Vienna, and three years later (1807) also in Prague. There was a school for blind people - both for children and adults - in Prague (in Hradčany and in Klárov) in the first decade of the 20th century. In Brno a three-class school for the education of blind children was added in 1911 to the Moravian-Silesian Institute. First institutes for deaf and dumb children had been established already in the period of Emperor Joseph's ruling in Austria - in Vienna in 1779, and in Prague in 1786; approximately one hundred years later (around 1874) there were already sixteen such institutes in Austria; in 1908 there were twenty-seven - with 1600 inmates. In Bohemia there were four institutes (in the seats of catholic bishoprics), and in Moravia also four (Czech ones in Ivančice and Lipník, German ones in Brno and Olomouc); just before the war another Czech Land Institute in Valašské Meziříčí was added to them. There was no similar institute in Silesia. In the years of the First World War, a two-class school for the deaf and dumb in Prague was opened; the same applied to Pilsen. At about the same time as the institutes for the deaf and dumb, first orphanages were being established in our country. At the beginning of the 20th century, there were seventy-seven of them only in Bohemia (district ones, municipal ones as well as private ones). The number of youth custody centres and similar institutions had never been very high: in Bohemia there were only twenty-one of them in 1914 approximately for 800 children (particularly in Prague-Libeň and Vinohrady, in Říčany, Kostomlaty, Opatovice and Králíky).

The number of the so-called youth custody centres for morally defective young people was gradually growing; the majority of them had a land or private status. In the years of the First Republic there were eight institutes for "idiots". For the physically handicapped youth (then called "deficient") further institutes were opened in 1919 in Brno-Královo Pole and in Bory u Plzně on top of the already-mentioned Jedlička's Institute in Prague (in Slovakia in Štiavnica and in Carpathian Ruthenia in Mukačevo). There were seventeen institutes for the blind in the First Republic, of which there were only five for school-age children and two for pre-school children. There were nineteen institutes for the deaf and dumb with 125 classes (93 for the Czechoslovak nation, 23 for the German nation, 5 for the Carpatian-Ruthenian nation and 4 for the Hungarian nation).

During the First Republic, all these institutes (or institutions taking care for the youth with disorders) further developed on the foundations laid in the Austrian-Hungarian period; also the problems from Austria-Hungary remained, such as the issue of financing the operation, special professional education of teachers, provision of specific learning facilities, etc. Apart from this, competence disputes persisted concerning the functioning of these institutes between the Ministry of Education and National Culture on the one side and the Ministry of Social Care on the other side. Gradually decrees were issued regulating the regime in such establishments. The first law on "special" schools was issued in 1929, when special courses started to be organized for teachers of "special" schools; specialized literature was being published on this topic, and the Association of Special School Teachers was formed. Health education at schools was considerably supported by the production of new books, magazines with special focuses and promotional materials (leaflets, posters, stickers, etc.). The new radio broadcasting got also involved in educational activities by its educational programmes. Public lectures for educators as well as parents became frequently attended; they were given by important personalities from the educational as well as medical environment. Health

education at schools was strongly supported by the Red Cross. It was also contributed to by other unions, which particularly focused on the physical education; they organized stays of school children in the nature and various competitions on different sports grounds (playgrounds, stadiums and gyms).

An unsubstitutable role was also played by parent associations at schools the objective of which was to compile and implement the working program of social, medical, moral, protective and out-of-school educational care for all young people in individual villages or municipal districts. Since there was an unfortunate hangover of child labour from the past decades, the first laws of the new state included the law of 17 July 1919, No. 420 of the Collection of laws, which strictly ordered the protection of children at the time of their school attendance and enabled their parents (or foster parents) to "employ" the children for the maximum of two hours a day; the law forbade the work of children before morning lessons, and after the lessons parents were ordered to enable their schoolchildren to have at least one hour's rest. On the days when no lessons were given parents were not able to employ their schoolchildren for more than four hours a day (for farmer families it was six hours). It is natural that these provisions were not being complied with since the law did not deal with the issue of control and possible sanctions. According to this law, schoolchildren were supposed to have at least ten hours of night rest - from 8 pm to 6 am. The above work programme was only of a framework nature, and it was supposed to be supplemented (further specified) for each individual school by a local school medical service plan.

In the care for pupils' health, mutual cooperation of parents and schools with school physicians was increasingly coming to the forefront. Up to then, they had been those who had been more or less responsible for full enforcement of the principle of appointing school physicians. The fulfilment of this task was supported by different legal regulations, such as law no. 226 of 1922 and governmental degree no. 64 of 1925, by which school physicians were requested to become permanent school health authorities taking care of pupils' health. Decree no. 4 208 of the Ministry of Health of 25 July 1922 could be added to these two legal patterns: it ordered permanent school health authorities (i.e. school physicians) to monitor the health conditions of pupils and at the same time to pay attention to the sanitary conditions of the school building and supervise the performance of corrective measures to remove the defects found. School physicians were also asked to "examine the housing conditions, nourishment and health conditions of the families of our schoolchildren".

CHÁPÁNÍ VZTAHU ŠKOLA A ZDRAVÍ NA ŠKOLÁCH PRVNÍ REPUBLIKY

Abstrakt: Příspěvek přibližuje pozitivní změny v oblasti zdravotnických opatření na českých školách první republiky. Školní lékaři ve shodě s pedagogy vytvářeli systém základních pravidel ve vztahu: škola a zdraví žáků. Ten se odrážel od prioritně přijatých zásad obrazu školy včetně jejího vnitřního vybavení a organizační struktury. K nim přistupovaly úvahy o organizačním uspořádání výukového procesu. Další oblastí zájmu byl zvýšený zájem o samotný zdravotní stav žáků. V příspěvku jsou uváděny konkrétní úda-

je z oblasti vzdělávání tzv. vadných (defektních) žáků a obraz péče o ně. Stranou pozornosti nezůstal nástin programu sociální, mravně ochranné a mimoškolně výchovné péče o školní mládež, včetně role rodičovského sdružení na škole.

Klíčová slova: školní lékař, školní docházka, školní řád, pomocné školy, pomocné třídy, rodičovské sdružení.

LEARNING FROM EXPERIENCE AND KNOWLEDGE BASE OF TEACHING

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Student Pedagogical Project in Educating Primary School Teachers

Action Research and Testing of Teaching Models

Abstract: *The case study presents a part of our research dealing with the implementation of learning from experience as a basis of teachers´ knowledge base in an integrated didactical (natural) science course in study programme Pedagogism for primary education. It is a part of the project "Biology for Life and Health", which enables to acquire experience, enables personal development of students and pedagogues at partnership schools and also research aimed at the European dimension in education. New models oriented to improving the quality of the education for the 21ˢᵗ century according to the White and Green Books of the European Commission – emphasising the professionalization of teachers´ training – have been verified by action researches at European universities over the last years. It has proved that the teacher´s professionality for primary school must rely on a range of competences, primarily on the ability of reflection and critical thinking.*

Keywords: *action research, learning from experience, pre-concepts, critical thinking, reflection, personal development, pedagogical skills, reflection skill, longitudinal research*

Motto:
*...**Teaching as a professional role faces decisive change in the coming decades: <u>teachers and trainers become guides, mentors and mediators</u>. Their role – and it is a crucially important one – is to help and support learners, who as far as possible, take charge of their own learning. The capacity and the confidence to develop and practise open and participatory teaching and learning methods should therefore become an essential professional skill for educators and trainers, in both formal and non-formal settings. Active learning presupposes the motivation to learn, the capacity to exercise critical judgement and the skill of knowing how to learn. The irreplaceable heart of the teaching role lies in nurturing precisely these human capacities to create and use knowledge…***
(A Memorandum on Lifelong Learning, Commission Staff Working Paper, 2000.)

The world is becoming increasingly complicated. Scientific knowledge appears to be vital to the health of nature, society and an individual. This is why many educationally advanced countries are still more intensively concentrating on (natural) science curriculum, on basic knowledge (skills, values), on the so called ***scientific literacy***. Environmental literacy (formerly ecological literacy), eventually valeological ("health") literacy are considered to be the most important parts of scientific literacy.

New holistic view on nature and society, education and school leads to changes in the ***conception of learning and teaching***, to the integration of basic curricula, to changes of used forms and methods. Not only the professional approach, but also achievements in the sphere of transforming education for the 21st century are expected from teachers. Therefore the integrated teaching about nature and society in primary education – as a presupposition of scientific literacy, is becoming an important subject of interests and researches. If a teacher is to be a vehicle of changes in education, then the research subject must be the ***teacher´s conception of teaching***.

In this report we attempt to present and explain innovations in the training of student-teachers for environmental education, which have been verified for several years in the project ***"Biology for Life and Health"*** at the Faculty of Education at Masaryk University at Brno.

Constructivist didactics accents that a human learns only what he/she considers to be personally meaningful, what fits to the project of his/her own identity.

Quot.: *"Provided a pupil (student) perceives a certain theme as a part of his/her world, as a means of strengthening his/her personality, he/she is able to devote himself/herself to it very intensively, even for his/her whole life"* (KALHOUST, OBST and col., p. 73, 2002).

Therefore the key words: *health, nature, pupil-student-teacher, integration, pedagogical constructivism, active learning from experience and autoregulation of learning, knowledge as experience from activities* … have become a nucleus of curricula changes in student-teachers´ training and a theoretical starting point of innovations. The project "Biology for Life and Health" has been developed in long term by action research. The core idea of the project is ***learning from experience***:

If a teacher is to be an expert on learning and teaching, he/she must have his/her knowledge base in experience!

In the project "Biology for Life and Health", the model of transmisive teaching at lectures is balanced by heuristic teaching at practicals and learning from experience in terrain. The integration of psycho-didactics and so called alternative pedagogical practice in educational environment specific to the specialisation of a course is used in compulsory scientific practicals. Supplementing intermediary approach to a subject matter with friendly approach seems to be a successful strategy for motivating student-teachers to acquire knowledge base of teaching (experience) in their training.

It means that apart from the classical pedagogical work experience at schools, student-teachers acquire also in scientific courses pedagogical experience in the form of group seminar theses. They verify their results by the help of alternative practice with pupils and their pedagogues in educational terrain. It is the ***"Dynamic Model of***

Learning from Experience", which is a part of the **programme *"Biology for Life and Health"*** of the same name project (see JEDLIČKOVÁ, 2007).

We attempt to explain in what we see the principle and significance of integrated learning from experience as the environment for formation of ***environmental teacher's conception of teaching*** on the base of case study about open teaching, ***"Student Pedagogical Project of Integrated Learning on the Topic Soil"***, which was realised in the study programme Pedagogism for Primary Education in 2007. It is one model of friendly approach to subject matter in the *"Dynamic Model of Learning from Experience"*.

The report is divided into three parts according to the chronology of longitudinal research of the project. The first part describes fundamental problems in short, raises fundamental questions, outlines theoretical starting points and depicts in the form of key words the state of problems being solved. Because it has shown that the situation is so complicated that it cannot be solved without the co-operation of a team of specialists, the second part describes development and contribution of the cooperation. The third part describes a particular Student Pedagogical Project on the Topic Soil, as a part of the programme "Biology for Life and Health" and the "Dynamic Model of Learning from Experience", including the results of a questionnaire, which is used for the self-reflection of students and the self-reflection of the authors of the project as well.

What are the theoretical starting points of innovations in the student-teachers´ training for the 21st century?

Key words, key questions of the project "Biology for Life and Health":
Various alternatives and innovations based on long-time experience abroad are permeating into our education (*White Book of the European Commission*, 1995, DELORS, 1996, *Recommendation on key competences for lifelong learning*, 2006, etc. see NEZVALOVÁ, 2006). They inspired the law-makers in creating new education law. The status of school as an institution is changing; the inner life of school should change (White Book, 2001, RVP ZV, 2004….).

A teacher-professional is defined in Europe as an expert on learning and teaching whose *"professional knowledge"* forms the base of his/her practical activities – decision making processes, action and its reflection (SPILKOVÁ and col., 2004).

The realisation of curriculum by the intermediary approach to subject matter appears to be already little effective for healthy life of an individual in 21st century society. ***Open teaching*** is necessary for the requirements of lifelong learning (*Memorandum*, 2006).

Teachers face the task of changing their view on pupils (student-teachers).
It should be the aim of teacher's effort to help learners reconstruct contents of scientific knowledge on the base of creation of relationship between the knowledge of a relevant scientific field, interdisciplinary knowledge and the world of an individual´s daily experience (JELEMENSKÁ, SANDER, KATTMANN, 2003). A change in the ***conception of teaching*** výuky-classwork is necessary.

What is the role of social constructivism in the new conception of teaching?

Quot.: *"Social constructivism is a way of thinking or deliberation about cognition on the principle of __critical thinking__, which can be helpful in creating models of learning, teaching and curricila materials for the new conception of education* (KALHOUST, OBST and col., p. 73, 2002). Pedagogical constructuvism has become the nucleus of innovations in teaching. Student-teacher cognizes, acquire and judge pieces of knowledge as social constructs on the base of his/her experience.

A learner is not the one who does not know anything and comes to schooll in order to learn everythink from teachers any longer. A pupil (student-teacher) is an inteligent being with certain knowledge. These do not necessarily need to coorespond to scientific knowledge – __naïve theories__ – __pre-concepts or mis-concepts__. And these should be verified, amended or re-constructed by activities at school with the help of a teacher and a group of schoolmates. The conception of learning and teaching is changing.

What do we understand under the term __contemporary conception of teaching__?

It is generally understood under the contemporary term __teaching and learning__, as Kurelová and col. do (2007):

Classwork is a complex process, which consists of the unity of **teaching** as a managing activity of a teacher (lecturer, tutor etc.) and **learning** as an active action of a pupil (student, learner, participant of studies, further see pupil). A teacher´s function is to manage and a pupil´s is to be lead, managed in this process. A teacher is able to manage only when he/she controls continuously whether and how pupils learn. Such control is enabled by a sufficient flow of so called feedback infromation from a learner. Classwork according to Byčkovský means a mutual interaction of educating subjects (teachers) and subjects who are educated (pupils, students) within the frame of organized education. Mutual interaction is realised by the activity of a teacher – **teaching** and activities of pupils – **learning**. Changes in __personality of a pupil__ are the results of classwork.

The process of teaching (classwork) can be understood as __special dynamic human contact__ between a teacher and a pupil that occurs in class and in the time of school attendance. Mutual relationships between a teacher and pupils produce certain kinds of activities. Mutual working and __joint action__ lead to the fact that their actors begin to **be aware of other people** and of themselves; mutual relationships begin to be clearer. Mutual working and joint action enable a teacher and pupils to get to know one another better, to **get to know themselves**, to discover mutual relationships, to form one another.

If we want to prefere in social contact the very humah relationship of a teacher and pupils under the conditions of claswork, than we must regard **elements of didactic system**, i.e. __aims, content (subject matter), methods, organizing forms and material didactic means__ as a spectrum through which this human relationship is realised.

It shows that there is a need to build classwork on the creation of good relationships towards pupils, which would bear ever-present **teacher's respect** for each pupil as a unique human being. Such relationships would stimulate balanced individual and

social development. Development balanced from the perspective of rational, emotional and volitional stimuli in the environment of independent and free action of pupils, which must also lead to *individual responsibility*.

A teacher should be prepared for lifelong, continually open *reflection from pupils* and for permanent *self-reflection* in teacher's role, which he/she practise inwardly so as the relationships between a teacher and pupils would not go into extremes. *A pupil-student-teacher should gradually become a subject of his/her own self-development under such professional guidence*. This is the way of assuring scientific literacy.

During the innovation of environmental education – the creation of curricula for integrated teaching about nature and society, we raise these questions in the study programme of student-teachers:

How should we cultivate professional knowledge (SHULMAN, 1986) *as knowledge base of teaching, as an instrument for deeper understanding, consideration and solving of practical problems and real situations, as a starting point for own presentation and argumantation of environmental teacher's conception of teaching for education in the 21ˢᵗ century?*

In the project "Biology for life and Health" constructivist didactics has been establishing itself besides the traditional conception of didactics, which proposes construction or more precisely re-construction of student-teacher's conception of teaching. That is the development of active action learning and also teaching. It is the aim of the project to acquire explicit and implicit knowledge by the help of learning from experience, to cultivate the ability of self-reflection up to the autoregulation of learning, later of teaching.

Quot.: *"The best outer management of pupil´s learning is the one that gradually eliminates itself to the benefit of autoregulation"* (Kulič 1992 in ČÁP, MAREŠ, p. 519, 2001). It is the teaching supporting *autoregulation* - that is the capacity of self-reflective practice in learning and teaching.

What could be the role of having the knowledge of *pre-concepts* in teaching and learning?

Construstivist theories of learning (e.g. ČÁP, MAREŠ, 2001 etc.) mention these situations:

1. Teacher ignores pre-concepts of pupils (students) in teaching:

Older layers of knowledge are covered by new ones in the mind of a learner and knowledge is piled up in separate layers, under which the original core of concepts (naïve theories) remains. A pupil (student-teacher) can verbally reproduce new information for certain time, but if they do not actively (in action) interfere wih the original structure of concept, everlasting understanding – formation of experinece, hardly occurs. After some time the information is forgotten and it does not lead to desirable process of learning. Interconnected knowledge – acquaintance with something in action – experience - is not constructed. It is the problem of superficial approach to learning.

2. Teacher uses pre-concepts of pupils (students) in teaching:

Teachers lead pupils (student-teachers) to actively reconstruct, preferably in

interaction with other learners, their original concepts. So conceived teaching strives to evoke certain unbalance between what a pupil (student-teacher) knows and what he/she cognizes; to invoke a **problem** between existing concept and new information. In order to solve the discrepancy, the pupil (student) constructs new solution. Thus the learning with understanding = ***learning from experience*** occurs through action.

Construstivist approach emphasises the **active role** of a pupil (student-teacher) who **constructs** meanings of concepts **by himself/herself through action** in accordance with already created mental structures = ***active learning***. Active learning is a base for an in-depth approach to learning; one of the project´s aims. According to Phillips (1995) basic **roles of a learner in construstivist teaching** are defined as follows:

A. *Active role*: **knowledge and understanding require learner´s activity instead of pasive role of a receiver of pieces of knowledge.**

B. *Social role*: **pieces of knowledge are not built individually, but in a dialogue with others.**

C. *Creative role*: **knowledge and understanding is created and re-created through action.**

What do we understand under the term integration?

Quot. *"Integrated teaching corresponds to schematic cognition of the world, therefore facilitates the process of learning. Tuition can concentrate on relatively small number of basic aims and pieces of knowledge"* (LEPIL, p. 61, 2006).

Dissacord between rapidly increasing volume of new pieces of knowledge, their practical applications and limited possibilities of school teaching is one of other current basic problems of education (especially in the sphere of (natural) scientific fields). That is why didactics of (natural) science courses and also school practice search the ways to bridge the discrepancy. Various approaches to the selection of subject matter, its organization into didactic scheme and to the choice of methods of transferring new knowledge in teaching are exercised. More and more frequently innovations exceed the framework of particular courses and head to the widely conceived teaching of (natural) science. In so happening, further relations to dominant branches, mainly in the sphere of scince/technical fields, e.g. modern technologies and other fields, adherent to contemporary level of society cannot be precluded.

Ideas of integration and also first projects of integrated education in natural sciences, which were based on the works of psychologist *R. Gagné*, originated in the sixties of the 20th century and were appreciated in supranational world organizations. ICSU (*International Council of Scientific Unions*) established unitary commission for the teaching of natural sciences and similar department rised with UNESCO.

ICSU with the support of UNESCO held several conferences at which pivotal conceptions of perspective integrated didactic systems were formulated. According to the level of integration, the *integration of science curricula* can be classified as follows:

1. *coordinated* teaching
2. *combined* teaching
3. *amalgamated*, *united* teaching.

With the ***amalgamated, united teaching***, which is promoted chiefly in primary education, the border between courses disappears and the teaching starts with some general problem (e.g. the topic "Soil"). The topic is solved by all the natural sciences and eventually other sciences together. This extreme case (sometimes termed **»integration«** in the narrow sense of the word) comes from the tradition of Anglo-Saxon school.

As Bílek (2006) mentions: Integrated teaching could be conceived in various modes. Process, thematic, applied science, environmental and patterns approaches are distinguished.

A) ***Process Approach*** (*approach from the perspective of scientific work processes*) is based on the teaching of basic scientific work processes, beginning with observation and classification and ending with experimentation, designing of experiments and data analysis. During these activities an individual gets to know the basic information through his/her own exploration (about nature and society) ***actively in action***. He/she acquires new knowledge independently or with the help of a teacher or colleges = ***individual or group (binate, peer….) learning***. An important part of this approach is always the analysis of results and procedures, reflection and confronation with an acknowledged scientific process. Learner compares his/her processes with scientific processes while using autoregulation or reflection with the help of a specialist or a group. We talk about ***learning from mistake*** in the ***integrated learning from experience***. The stress is laied on the means and methods of acquiring new knowledge.

B) ***Thematic Approach*** *is often applied in the form of* **project teaching** *the effectiveness of which is assessed by the analysis of project´s outputs.*

C) ***Applied Science Approach*** *accentuates mainly (natural) scientific knowledge in connection with human work. It classifies the knowledge according to manufacturing processes of industry in the area of the school, as a rule.*

D) ***Environmental Approach*** *assesses and classifies knowledge about nature form the perspectives of human relationship towards the environment.*

E) **Patterns Approach** combines the perspective of scientific work processes and the perspective of conceptual structure. The constitutive starting point is to understand scientific concepts and the concepts of pupils (pre-concepts) as equivalent sources for the reconstruction of content structure. Pre-concepts are never perceived as deceptive (mis-concepts) with respect to scientific concepts, but they are understood as equivalent sources in construction of teaching. Didactic re-construction of these pre-concepts comes from the effort to create meaningful teaching and a research into learning.

The ***patterns approach*** in combination with other approaches according to particular year-classes is a base of integrated teaching at the Faculty of Education at Masaryk University in the programme "Biology for Life and Health". During first and second years the patterns approach is supported by the environmental approach. It is further extended by applied science approach in the third year. So created approach is then combined with the thematic approach in the fourth year.

What is the role of _integrated (thematic) teaching_ (below ITT) in the new conception of teaching?

It is a teaching strategy, which is based on the teaching of one topic from views of several scientific disciplines. Integrated teaching units form in theory and also in practice a contradiction to fractionalized teaching in isolated courses (SKALKOVÁ, 1999).

INTEGRATED TEACHING is sometimes mistaken for PROJECT TEACHING and vice versa by pedagogical public. It differs in some substantial points: with project teaching the motivation should be inner, the topic should appear from the needs of pupils, elected methods and forms could be changed in the course of the work on the project. Attributes of integrated teaching:

- **the choice of topic** is determined **by a teacher** according to the continuation of curricula
- **region** and **its specialities** should be used for teaching the topic
- **motivation** is **outer**, elected by a teacher according to the age a interests of learners
- the choice of the **forms from social perspective** is upon a teacher; **group** and **collective teaching** with frequent **individual work** is used most often
- used **methods** should be of **action character** as much as possible and should use various information sources (observation, manipulation with objects/products of nature, work with a textbook/encyclopedy/map/atlas/field guides/internet, experiment)
- the choice of teaching tasks) is **upon a teacher** and connected to educational targets of teaching; representation of **various scientific disciplines** (e.g. physics, chemistry, biology, geography, history) is imporatnt
- **summery of acquired knowledge accenting mutual connexions** and the **application of learned knowledge and skills** for everyday life should occur at the **conclusion**

Nevertheless, as is stated by Nezvalová and col. (2006), researches have showed that practically the approach to integrated teaching in (natural) sciences in the Czech Republic is mostly purely instructive – characterised by dominant position of a teacher and receptive pasivity of pupils (students). It is reflected in current worldwide comparative researches on pupils´ (students´) knowledge.

Until 1995 (TIMSS 1995) the otputs of researches oriented to basic knowledge had placed the results of (natural) scientific education of pupils (students) in the Czech Republic highly above an average. While the pillars of education in Europe (DELACROS, 1996) and also the conception of teaching have changed, the results of countries having incorporated critical thinking, integrated scientific appproach and construstivist view at learning into their educational systems prove to be better than ours at present. Researches are presently aimed, in spirit of the accepted reform of education (White Book of the European Commisssion, 1995), at investigating abilities to use knowledge practically, integrate it and use it correctly in decision making process (TIMSS 1999,

PISA 2003). The worsened results of Czech pupils (students) express that scientific knowledge is acquired in teaching in a form that precludes its further application and usage. Thus, in the comparison of scientific literacies (TIMSS 1995-1999) the Czech pupils (students) have worsened in all parameters on an international scale. It showed that they cannot use their knowledge in concrete situations, because they are not able to recognize its relation to reality. They are not able to transpose their abstract knowledge into a real situation (TIMSS, 2001). The second funadamental question of our project emerges from that fact:

__Are the student-teachers able to understand changes in the conception of education, to develop active learning and teaching, to use activising methods, if they are educated mostly transmissively for their whole lives?__

__Field integrated teaching__ is one way (which current instructive pedagogical practice uses) how to acquire active knowledge in integrated teaching by construstuvist appproach. Classical teaching is in nature supplemented with teaching about selected (natural) scientific problems. A pupil (student-teacher) realises integrated teaching in concrete situations. He/she learns with an expert in groups on the principle of self-reflection and social constructivism in a terrain. We talk about *__situated__* and also *__authentic learning__* and *__model of open teaching__*. About a *__friendly, participative approach to subject matter__* that helps to solve problems, results from a pupil´s (student-teacher´s) developmental needs and target capacities that should be cultivated. At first a pupil (student-teacher) connects new knowledge with his/her experiences, with his/her view on the world. Art of a teacher-professional lies in anticipating a sequence of connections between pupil´s (student-teacher´s) original construction of reality and scientific knowledge, which a student conceives as a state of expected disaccrord. He/she solves and overcomes it by the way of trials and mistakes. We talk about an *__experiment – action learning from experience and from mistake__*.

A pupil (student-teacher) should not feel endangered in new environment. Mistake is not considered to be a reason for worse assessment, but as a source of new, re-constructed experience. It is not the achievement of pupils (student-teachers), but the change of their attitude leading to target competency what is assessed.

What is the state of quoted problems?

The longterm project "Biology for Life and Health", aimed at innovations in the education of teachers for scientific literacy, was prepared at specialised centre "Kejbaly" at the Faculty of Education at Masaryk University at Brno in 1995 – 2000. Research instruments were verified in 2000 – 2002. The programme "Biology for Life and Health" has been developing by action research since 2002. First students of the longitudionally monitored programme succesfully terminated their studies in 2006/2007.

The department "Kejbaly", which is today conceived as an educational centre of integrated field teaching for sustainable development (below SD) and life (below SL), is situated at the premises of new campus of Masaryk University. It is a part of the Department of Biology of the Faculty of Education at Masaryk University at Brno (http://www.ped.muni.cz/wbio/). This is where innovations based on pedago-

gical constructivism, integration and learning from experience started to be tested in study programmes preparing teachers in terrain in 2002. Tasks of the project "Biology for Life and Health" correspond with the outputs of research intent of the Faculty of Education at Masaryk University – "School and Health For the 21st Century". Pedagogical workers of the "Kejbaly"centre – authors of the project, are its researcher (http://www.ped.muni.cz/z21/).

It shows that if we are to adjust educational system to the requirements of the 21st century global society on a worldwide scale as soon as possible, than the close cooperation of specialists at least at European level is necessary in order to meet the *"Recommendation of the European Commission on Lifelong Learning"* (2006). It is a type of teaching realised through "communication of pedagogical network": participants – students and pedagogues (departments of biology, physics, chemistry, geography, history, pedagogy and psychology, didactists of the disciplines, lecturers from domestic faculties and experts from abroad) solve together concrete educational situations and various theoretical and practical problems during several semesters. Students are actively engaged in the research.

If the teaching according to the new conception of education is to be realised mainly by activising methods, than their training with student-teachers is necessary for scientific literacy.

Activising teaching cannot be only studied, it must be experienced!

That is why development of such experience is a part of the project; also in integrated way, through a system of group seminar works. They are concentrated on using activising methods, forms and strategies in teaching. They comprise the simplest examples of situational learning when training practical activities at a garden up to a student project of integrated teaching in educational terrain. The entire system was named ***"Dynamic Model of Learning from Experience"*** (JEDLIČKOVÁ, 2007).

Is the training of teachers for education in the 21st century changing?

We suppose that student-teachers and also teachers (even in institutions educating teachers) accustomed mostly to ***transmissive teaching*** /transmission of a sum of pieces of knowledge and skills/ lack ***condition*** for acting in changed circumstances; they lack the needed ***experience for teaching!*** This supposition is verified by above mentioned researches (TIMSS, PISA) and also by results of our research on basic knowledge in the project from years 2005 and 2006 (JEDLIČKOVÁ, TYMRÁKOVÁ, 2006).

As is mentioned by Bílek (2006): researches into the integration in (natural) scientific fields are almost exclusively concentrated on cognitive element of students´ conceptions of phenomena – mainly on uncovering mis-concepts, that is wrong interpretations, conceptions or notions and on the possibilities of their change in desirable direction. Therefore individual steps in constructing the entire project "Biology for Life and Health", its "Dynymic Model of Learning from Experience" and "Student Pedagogical Project" have been gradually presented and discussed with experts at a number of conferences in the Czech Republic as well as abroad. (See JEDLIČKOVÁ, HRADILOVÁ, TYMRÁKOVÁ, 2000 - 2006).

A primary school teacher greatly influences individual´s scientific literacy. The integration of (natural) scientific subjects is an obvious task of a teacher at this stage of education and learning from experience is a condition for development of child´s cognition. Grounding for active learnig is formed. Therefore the first phase of our research in the project "Biolgy for Life and Health" is targeted at study programme for teachers for primary education, ***at the programme "Biology for Life and Health"***:

Innovations in study programme Pedagogism for Elementary Schools, study field Pedagogism for the First Stage of Elementary School, have been developed and tested in an action research for five years at the Faculty of Education at Masaryk University. The basic subject matter about nature and society is integrated in the newly accredited programme.

In the course of the five years studies integrated lectures (integrated scientific base = ISB) is supplemented with a training of active learning and heuristic teaching in connected practicals. Knowledge (pices of knowledge, skills, values) marked as basic by particular integrated fields is developed relatively separately at seminars in the bachelor´s stage of studies. According to the needs of practice the preparation of a teacher for education continues in an "integrated" mode in the master´s stage. That means as a united teaching prepared in co-operation of five departments. Practicals culminate in a "Student Pedagogical Project" and in a week integrated teaching in Moravský kras. At field centre of the Faculty of Education of Masaryk University in Jedovnice group teaching with experts in terrain is interconnected with peer learning as a model.

Majority of "biological" practicals (title from the content of subject matter) take place in nature, where biology cannot be separated from physics, chemistry, geology, geography and even from history. Therefore the biological part of subject matter at practicals, predominantly at the specialised centre of environmental education "Kejbaly", is realised in "integrated" way and with didactics of particaped disciplines since the first semester. Group seminar theses verified in terrain = ***learning from experience between student-teachers and pupils***, and ended by self-reflection – professional group analysis of results are the outputs of courses. We talk about the *"Dynamic model of learning from experience"* in th eprogramme *"Biology for Life and Health"* of the same name project (JEDLIČKOVÁ, HRADILOVÁ, 2004).

ISB practicals in the programme, conceived on constructivist principles, run in ***mastery learning system*** adapted to higher education. Action teaching at practicals is supported by ***e-learning*** on the principle of self-reflection. Nevertheless, the resulting acquiring of didactic knowledge from concerned disciplines (often implicit) in seminar theses through students´ activities with pupils is percieved as ***learning from mistake*** and ***training of self-reflection***, usage of ***action research*** in pedagogical process and ***self-perfection***. Research and international co-operation in the project "Biology for Life and Health" has been developing abroad as well, in Slovenia and Slovakia (JEDLIČKOVÁ, HRADILOVÁ, 2007).

Akční teorie studenta o učení v přírodě is gradually developed in compulsory and optional practicals of the programme "Biology for Life and Health".

- First year is started with the simplest model in which students process information – "Use of ICT for teaching". They get to know with terrain with the help of activising methods. They elaborate and assess theoretical preparations for their e-learnig of ISB in the role of an observer and teacher´s assistant to be. At the end of the year they present their own drafts of didactic instruments.
- In the second year, already as teachers´ assistants, students realise microoutputs in various roles at exhibition "Colourful autumn" and in a "Hra na školství education" at a garden. Teaching is oriented to knowledge in terrain and trained practical activities and run as so called alternative practice with pupils and their pedagogues. In groups with pupils they test another seminar work "Tutorial" in connection with courses of common basics, ISB and technical practicals, at conclusion of the fourth semester. They test integrated thematic teaching together with experts in this model of learning from experience (designed by students of combined studies) in activising environment by the help of their own or adjusted didactic instruments. Autoregulation is realised by videorecording and lecturer´s help.
- In the third year, in the role of teacher´s assistant-manager, students prepare exhibition "Colourful autumn"of their seminar works. It is attended by more than 1.500 visitors every year. This is where learning from experience is in progress again through alternative practice (group work with pupils and their pedagogues). Ve specializaci skupiny realizují a analyzují vlastní výukový program.
- In the fourth year, again in the form of group work (15-20 students in roles of workers participating in education and of beginning researchers), they manage demanding group integrated thematic or project teaching – "Student pedagogical project" at schools. They undergo a regional practical with peer learning at the end of semester.
- Students engage in solving research project of the centre or realise so called "clinical semester" at a partnership university abroad in the fifth year. The mentioned outputs are verified in longitudinal research since 2002; by an international team at present (See works of JEDLIČKOVÁ, HRADILOVÁ, TYMRÁKOVÁ, 2000 – 2006).

What are present conditions of research of the presented student project?

In the fourth year in winter semester students get to know, in connection with a sphere Human and the World of Work and interdisciplinary themes, specificity of educational area Human and his/her world in Framework educational programmes and methods used when teaching this educational area in courses Didactics for ISB and Practical of didactics for ISB 1. Above mentioned departmenst participate in the teaching in an integrated way. Students elaborate individually three preparations for

classical teaching in their seminar theses one of which is realised during their pedagogical practice at primary school.

Spring semester is then devoted to "Student Pedagogical Project" within the frame of compulsory course Practical for integrated scientific base 2. This where students try to answer the question: ***How should we teach a given topic to pupils of different ages at various types of schools environmentally with the help of integrated (thematic) teaching in primary education?***

Students of tull-time study mode prepare and realise an elected topic (Water 2006, Soil 2007), proposed to them by particular departments, at various types of primary schools in the course of entire semester. Then they analyse the teaching and present the results of the group seminar thesis at student conferences and in Information System of Masaryk University.

Students of combined study mode prepare integrated teaching for pupils of different ages, based on themes offered to them by particular departments, in smaller groups because of time reasons; preparations are presented and analysed at concluding meeting. Verification of the integrated thematic teaching (below ITT) in their own practice is optional.

"Student Pedagogical Project" was experimentally realised at the Faculty of Education at Masaryk University at Brno for the first time as a part of the "Dynamic Model of Learnig from Experience" in 2006 (JEDLIČKOVÁ, TYMRÁKOVÁ, 2007). It is the output of the integration of teaching about nature and society in all the dimensions of the term ***integration***. It represents the realisation of theoretic integrated technical part of student-teachers´ preparation (see integrated scientific base – ISB) in teaching at various types of schools.

Student-teachers use strategy of ITT on a given topic in the form of group seminar theses while teaching at schools with the integration of pupils. Students work in large groups while preparing and realising the teaching. Each pair of students performs a certain role in the group – methodists (prepare introduction and conclusion of teaching, including research of pre-concepts and effectiveness of teaching), specialists of study fields, managers, documentarists and inspectors. The following types of schools were selected for acquiring experience in the project: middle-sized city school (community school at housing estate), small-sized village school, sport schooll with programme Healthy school, international school (teaching in English), school with majority of pupils of Romany origin, classical school, but with an integrated teaching at first grade, waldorf school.

In groups all students of a year-class (cca 100) and all departments engaged in integrated teaching about nature and society participate in one student project on activising integrated teaching at various types of schools with integrated pupils in the course of a semester. Therefore it can be said that a year-class student pedagogical project represents also the integration of higher education (ITT on a given topic), students´ seminar theses and an alternative form of pedagogical pactice (ITT at schools).

What are students´ opinions on the new conception of integrated teaching at the Faculty of Education of Masaryk University at Brno?

Questionnaire: *Answers of students if the fourth year NŠ – study mode: full-time: combined:*

1) I MET integrated conception of teaching (one topic viewed from perspectives of different disciplines):

a) for the first time................................... **14 students**   **20,9 %** **8 students**   **12,3, %**
b) have only heard of it .... **38 students**   **56,7 %** **21 students** **32,2 %**
c) have tried it practically .... **15 students**   **22,4 %** **35 students** **54,0 %**
d) include it regularly in my teaching..... **0 student**   **0 %**   **1 student**   **1,5 %**

2) I consider INTEGRATED TEACHING ON A GIVEN TOPIC TO BE …

a) suitable .... **67 students**   **100 %** **65 students**   **100 %**
b) unsuitable... **0 student**   **0 %** **0 student**   **0 %**

because... – it connects pieces of knowledge of particular subjects, pupils become aware of integrity and connexions, interconnection of the world, – it enables pupils to gain moreinformation about a topic, they work with interesting aids, – it is better in motivating pupils, all pupils are active, they co-operate in groups, – it is more effective, pupils understand a topic in a better way, they assume a topic in a better way – it creates a positive relation to nature,

3) I would … the INCLUSION of ITT into the courses of educational area Human and his/her world.

a) recommend.. **67 students**   **100 %** **65 students**   **100 %**
b) not recommned .... **0 student**   **0 %** **0 student**   **0 %**

because... – teaching is more interesting, motivatite, – interconnects pieces of knowledge, – does not develop encyclopedical knowledge, but develops understanding and connexions,– teaches to work with different sources of information, – develops co-operation among pupils – complex development of knowledge and skills, – develops the entire personality of a pupil – develops key competences

4) Topic "SOIL" is for integrated teaching in my opinion …

a) suitable .... **66 students** **98,5 %** **65 students**   **100 %**

because... – soil is close to pupils all around us, – it touches all disciplines, pupils are not aware of its importance, – topic is neglected, – it is a fundamental condition of life, – possibility to research, experiment

b) unsuitable... **1 student**   **1,5 %** **0 student**   **0 %**

because... – it is difficult to find activitie for it

5) Own PREPARATION of integrated teaching on a given topic is in my opinion…

a) too demanding.................................... **1 studen**   **1,5 %**   **1 student**   **1,5 %**
because... - it is too demanding
b) demanding, but feasible...................... **64 students**   **95,5 %** **62 students** **95,5 %**
because... – time consuming preparation, aims of teaching must be pracisely clarified,
        it must be well prepared to make sense, – organizational aspects are nee-
        ded to be well thought out, all aids need not be available, – demanding on
        technical knowledge, – I must choose from lots of information, - it reqires
        co-operation with collegues,
c) feasible.. **2 students**   **3 %**   **2 students**   **3 %**
because... – but time consuming
d) facile .... **0 student**   **0 %**   **0 student**   **0 %**

6) Own REALISATION of integrated teaching on a given topic is in my opinion…

a) too demanding.................................... **1 student**   **1,5 %**   **0 student**   **0 %**
b) demanding, but feasible...................... **42 students** **62,7 %** **36 students** **55,4 %**
because... – it needs to be prepared, then it works, - pupils must get accustomed to new
        appoach at first, – we struggle against the lack of time, space and equip-
        ment, – other teachers get involved in realisation, – pupils´parents and sib-
        lings can get involved
c) Feasible .... **23 students** **34,3 %** **28 students** **43,1 %**
because... – I can involve other teachers in realisation, eventually pupils, – it involves
        all pupils, – it is prepared precisely for the needs of my pupils, – activities
        are attractive for pupils, – it is grounded by good preparation, – it is less
        demanding than the preparation,
d) facile .... **1 student**   **1,5 %**   **2 students**   **3 %**
because... – provided it is properly thought out and prepared

7) I would … in integrated teaching in my own pedagogical practice (<u>more than one question possible!!!!</u>).

a) never embark...................................... **0 student**   **0 %**   **0 student**   **0 %**
b) embark by myself .... **40 student** **59,7 %** **22 students** **33,8 %**
c) embark with the help of my collegues
   teaching the same year-class............... **56 students** **83,6 %** **42 students** **64,6 %**
d) embark with the help of my collegues
   teaching at the first stage..................... **37 students** **55,2 %** **40 students** **61,5 %**
e) embark with the help of collegues
   from the whole schoo.......................... **27 students** **40,3 %** **41 students** **63,1 %**

8) I consider it suitable to… integrated teaching on a given topic (<u>more than one answer possible!!!!</u>).

Answered only by students of combined study mode
a) conceive and prepare by myself precisely

according to the needs of my pupils ....**23 students 35,4 %**
b) adjust in accordance with appropriate methodical materials according to the needs of
my pupils ....**60 students 92,3 %**
c) teach precisely according to appropriate
methodical materials .... **2 students   3 %**
d) to invite specialists in school who would prepare and teach programme according to
the needs of pupils ....**15 students 23,1 %**
e) to visit an alterantive educational institution with my pupils, where a standard pro-
gramme on a given topic would be taught to my pupils............**37 students 56,9 %**

Conclusion

We see the source of new conception of teaching for assuring scientific literacy in the system of active integrated situational learning about nature and society; in nature and through activating methods in study programme of student-teachers. We try to create space for individualized teaching by friendly approach to subject matter. With the support of team co-operation of specialists form integrated departments, including foreign partners, by the way of learning from experience and peer learning experience base of teaching should be generated. We suppose on the base of new understanding of the concept of teaching that by means of especially lead situational peer learning, realised in cooperation with a didactist, the development of experience occurs. These are conceived as a ground for creation of competences for lifelong education and pedagogical competences important for development of a teacher-professional. We perceived the process as a presupposition, a first grade, for the professionalisation of teachers required by society. The Programme "Biology for Life and Health", of which the "Dynamic Model of Learning from Experience" is a part, aims by the help of learning from experience to improve the quality of teaching, increase professional skills of student-teachers, change students´ attitudes to the profession of a teacher and mainly develope positively the attitudes to the protection of nature and to human health as well as to health of society.

ZKUŠENOSTNÍ UČENÍ A ZNALOSTNÍ ZÁKLAD VYUČOVÁNÍ

Studentský pedagogický projekt ve vzdělávání učitelů primární školy
Akční výzkum a testování výukových modelů

Abstrakt: Případová studie prezentuje část výzkumu, zabývající se implementací zkušenostního učení jako základu znalostní báze učitelů v integrovaném didaktickém přírodovědném kurzu ve studijním programu Učitelství pro primární vzdělávani. Je součástí projektu „Biologie pro život a zdraví", který umožňuje získávání zkušeností a osobnostní rozvoj studentů i pedagogů na partnerských školách, ale také výzkum, zaměřený na evropskou dimenzi ve vzdělávání. V průběhu posledních let jsou akčními výzkumy na univerzitách v Evropě ověřovány nové modely, orientované na zkvalitnění vzdělávání pro 21. století dle Bílé a Zelené knihy, kde se klade důraz na profesionalizaci

přípravy učitelů. Ukazuje se, že profesionalita učitele pro primární školu se musí opírat o řadu kompetencí, zejména o schopnost reflexe a kritického myšlení.

Klíčová slova: akční výzkum, zkušenostní učení, prekoncepty, kritické myšlení, reflexe, osobnostní rozvoj, učitelské dovednosti, dovednost reflexe, longitudinální výzkum

EUROPEAN DIMENSION IN EDUCATION OF PRIMARY SCHOOL TEACHERS

Helena JEDLIČKOVÁ, Barbara BAJD, Lenka OGOREVC HRADILOVÁ

Learning from Experience and Reflection as Starting Point of Teachers Work

Action Research and Testing of Teaching Models

Abstract: *Europe as a space without economical borders presupposes also a union without barriers in culture and education. Apart from enabling to acquire experience and personal development of students and teachers at partner schools, the programs, witch support academic mobility, e.g. CEPUS and SOCRATES-ERASMUS, enable secondarily research orientated to European dimension in education, as well. During recent years, new models of improving of education for the 21st century according to the White Book and the Green Books of the European Commission, witch emphasise the professionalization of teachers' training, are being verified at universities in Europe. It proves that professionality of primary school teachers should be based on several competences, especially on the ability of reflection and critical thinking. These problems are also topics of the collective research realised at the Department of Chemistry, Biology and Home Economy and at the Department of Primary Teacher Training of the Faculty of Education at the University of Ljubljana, Slovenia and at the Department of Biology at the Faculty of Education at the Masaryk University in Brno, the Czech Republic. Students and lecturers at both departments participate in the programme „Biology for life and health".*

Keywords: *project "Biology for life and health", meaningful teaching, action research, pedagogical constructivism, pre-concept, critical thinking, contemporary conception of reflection and self-reflection, learning from experience, pedagogical skills and experience, longitudinal research.*

Motto:
„Research and innovations is the core of improvement of teaching and learning. The role of teachers is central in this process. Because of that, they need to master professional practise based on creating, conveying and using of new information regarding their work. Their selection, training and professional development of teachers play a crucial role…" in education for the 21st century   (OECD, 2001).

In a connection with an increasing number of global problems it can be heard about the crisis of Euroamerican society and the crisis of education. In a reaction the White Book of the European Commission defining the requirement for necessary change in a conception of education was published by the European Union in 1995. "**THE TEACHER**" is specified as the fundamental element of the paradigmatical change (DELORS, 1996).

At present we are asking many questions without answers, too. National empirical experience from teaching at universities has been insufficient. Because of that, we really appreciate international co-operation, research and study programs. In the full extent we have also begun taking advance of possibilities of international contacts in the EU. With the help of action research and on the base of foreign experience we have been improving education in the way of the ***project "Biology for life and health".***

The aim of this case study is to contribute to the discussion by the form of questions and answers. We are trying to outline some ways of the project innovations – ways concentrated on ensuring teachers' (students') natural science literacy and also training of teachers-expert for environmental education at primary schools. Our article is divided into three parts, based on time line of our ***longitudinal research***. The first part describes in short essential problems, asks fundamental questions, outlines theoretical background and describes, by the form of key words, contemporary situation in the analysed field. As it became evident that our tasks were so serious and complex that it was impossible to complete them without assistance with the foreign partners, the second part describes way of the development and contributions of international co-operation.

In the third part we introduce partial results and conclusions of our international research. We present the self-constructed survey, which has been tested at foreign didactical conferences and in practice. This survey has been used for finding out students' perception of basic curricula for the longitudinal research in the project "Biology for life and health". A didactical test is the part of the survey, as well. Results of the test from the beginning of studies (the beginning of the bachelors programmes) have been getting compared as the ***pre-concepts*** of students of secondary schools interdisciplinary and since 2006 at the international level, too. A special questionnaire has been used as a control instrument for observing the changes. The mentioned results have been compared with results from the beginning of the fourth year of studies (the beginning of the masters programmes), when the students are meant to repeat the test. The questionnaire should serve as an autoregulation test simultaneously. It is used as an instrument for the training of ***active meaningful teaching*** of respondents at the beginning of university studies and also for self-reflection in the didactics of their discipline, as the verifying test of the absolute performance. Lectors in the project "Biology for life and health" have been using the results and the conclusions for preparation of flexible-open conception of teaching in ***the action research***, as well.

What changes in the conception of education for the 21ˢᵗ century should the teachers' university training react to?

(Keywords of the project "Biology for life and health")
Global problems of the world and crisis in education call for the change of attitudes of the whole society as soon as possible (the White Book and the Green Books of

the European Commission), because: ...*"a human is becoming the victim of his own illusory successfulness, doing so among the society of performance and prosperity, which he created. Problems of humankind stands against goal-directed 'material wellness'..."* (HORKÁ, p 9, 2000).

Education for the sustainable development of the society, the sustainable life and health has become the fundamental philosophy for the 21st century and of the new curricular documents. Thus, it should be a basis for the changes in particular pedagogical practice.

The multidimensional development of personality is still the aim of education (see the Universal Declaration of Human Rights). But the preference of attitudes, values and development of independent ***critical thinking*** and ***fundamental competences*** (leading to optimal decision-making about behaviour in life situations) has been emphasised explicitly, instead of acquiring a sum of pieces of knowledge and simple information (HORKÁ, 2000).

Innovations and new alternatives based on aged and deep experience from abroad have enriched the education system. They also inspired lawmakers in the preparation of the new Education Act. See the White Book of the European Commission, 1995, DELORS, 1996, *the Common European Framework – Key Competences for Lifelong Learning*, 2006, NEZVALOVÁ, 2006…etc.

The position of school as institution is changing so the inner life of school should be changed as well. Supporters of situated learning even speak about the second pedagogical revolution.

„*The first revolution in education meant the beginning of the formal school education: Children were taken from their natural environment and placed into institution – school. The second pedagogical revolution should mean that the formal institution – school – will overcome its enclosed culture and open itself to complicated **situational learning**, which the human brain is accommodated to, and will respect social and distributive character of cognition…*"

School should co-operate with the closest „general community (family and neighbourhood) and also with corporations which a young person should be introduced to – ***open education***. Simultaneously, „ **School inside should be community, which lives what it lectures and explains what it lives.**" (KALHOUST, OBST and col., p.169, 2002).

The conception of learning and teaching is changing; the pupils' (students') conception of subject matter is being searched. Beside the traditional conception of didactics, the constructivist didactics based on construction, or more precisely reconstruction of pupils' (students') knowledge is being promoted (MAREŠ, OUHRABKA, 1992). What it is new is the definition of the content of education, using of forms and modification of teaching methods. Society is demanding the professionalization of the teacher's profession, i.e. the shift from a model of "*minimal competence*" to a ***model of "wide open professionality***" (SPILKOVÁ and col. p. 24, 2004).

It is necessary to view the program of transformation systemically – holistically, because the program is the consequence of the processes in progress not only in the Czech Republic and in Europe but also all over the world.

What is the contemporary situation in the analysed field?

At the beginning of 21st century we conceptualise education as a system.(DE-LORS,1996). We know "WHY", so we are asking other questions: "Whom, what, when, where, with what aim" should we learn or teach to achieve an advancement of pupils' natural sciences literacy in primary education? What do we understand under the term "*the natural sciences literacy*" in Europe? What should be the ideal abilities of a teacher who cultivates environmental (formerly ecological) literacy at primary school? *How should we integrate curriculum, learning and teaching about nature and society for the natural sciences literacy in the training of teachers?* How should we interconnect the processes of creating of knowledge, skills and values of students-teachers from an integrated field with the processes of pedagogical knowledge cultivation to comply with the European concept of the teacher as the reflective practitioner? And therefore, *how should we integrally cultivate professional knowledge* (SHULMAN, 1986) *as the knowledge base of teaching, as an instrument for the deeper understanding, comprehension and solution to practical problems and real situations, as a base for self-presentation and for argumentation of teachers' conception of teaching?*

The theory that *professional knowledge* creating the base for practical activities (decision processes, action and its reflection) of a teacher has been accepted as the basic character of *the teacher-professional (an expert for learning and teaching)* in Europe (SPILKOVÁ and col., 2004). Because of that, it is necessary to ask alternate questions, due to the creation of the new curriculum of integrated teaching: What are the sources of teachers' pedagogical activity? What relationship is between teachers' explicit (external) and implicit (internal) actions? What is the base of these both activities?

What are the pre-concepts of field-based basic knowledge (integrated for learning about nature and society) of secondary schools graduates? And therefore, *is it possible to take advantage of secondary schools graduates' knowledge base or is it necessary to transform it to new logical system, needed for pupils' teaching in primary education*? *Are the students-teachers able to use basic scientific methods, experiments and arguments from scientific debates in their decision making*? *What are the typical teaching styles and the teaching conceptions of students-teachers?*

We suppose that the way to the natural sciences literacy (including the environmental literacy) is in improving of critical thinking ability, cultivating of action situation-based learning with comprehension, learning in nature, responsible using of info-communication technology by pupils (students), professionality of a teacher and teachers' determination to humanise the teaching. By the help of the project "Biology for life and health", in a way of the action research, by means of learning from experience and in co-operation with foreign colleagues, we have been trying to answer these questions.

The conclusions of the United Nations Conference on Environment and Development (UNCED) in Rio de Janeiro, 1992 provided us with many inspirations to our project. Further the researches about function of brain in the process of learning; the evolution biology, the systemic approach and the theory of pedagogical constructivism were useful. But it was the Model of the Integrated Thematic Teaching (below ITT) that has become the primary example for the innovations (KOVALIKOVÁ, 1995).

At the beginning of the 21ˢᵗ century new university centres have been created in European countries. New programmes of students' and teachers' mobility have been presented; European states have created the common framework for education and research (DELORS, 1996, TEMPUS….). At Masaryk University in Brno, where 40 000 students should be studying in 2008, we have been building field centres for research and integrated education beside a new campus. In 1994 ***"Kejbaly"*** centre became one of the centres. It was later conceived as "Field Centre for Training and Education for Sustainable Development and Life (below SDL)" called **"Educational centre for SDL"**. This is where the project "Biology for life and health" began to be realised (JEDLIČKOVÁ, 2004). Material conditions for integrated field teaching together with a draft programme were built there in 1998 - 2000 with the help of development grants. A multimedial classroom with a computer network functioning simultaneously as a reading room, study room for scientifically working students and the centre's staff and sanitary facility was built for studying and necessary using of information and communications technology (below ICT) in the environment of a model botanical "biotope garden" (JEDLIČKOVÁ, 2000).

In the project "Biology for life and health" the programme "Biology for life" was drafted and experimentally realised by a collective team at the "Kejbaly", which was extended to further dimensions under the auspices of the research intent *"School and health 21"* of the Faculty of Education at Masaryk University and called "Biology for life and health" (JEDLIČKOVÁ, HRADILOVÁ, 2004). The research instruments were tested in the years 2001 and 2002.

When do we speak about co-operation in education for the integrated Europe?

The Department of Biology, the "Kejbaly" centre and the Department of Chemistry, Biology and Home Economy have been participating in solving a range of research and grant tasks in co-operation with departments of other universities in the Czech Republic and abroad. Very progressive relationships have been established in a number of countries in connection with academic mobility supported by EU programmes, e.g. CEPUS and SOCRATES. Doc. Matyášek from the Department of Biology at the Faculty of Education, Masaryk University in Brno is a co-ordinator of more than ten universities. The programme ERASMUS, which the Department of Biology has been participating in from its very beginning, has enabled acquirement of experience and personal development of students and pedagogues at partner schools in a number of European Union countries. It has secondarily enabled preparation of the above-mentioned research aimed at European dimension in education in connection with student and academic staff mobility.

A close co-operation with a Prof. Verčkovnik´s team was established in 2002 through the CEPUS programme at the Department of Didactics of Biology at the Faculty of Biotechnology (below FBT), University of Ljubljana, Slovenia. The co-operation with Prof. Verčkovnik has substantially influenced the development of the project by the method of action research. The lecturing visit of her at the "Kejbaly" centre and consequential exchange visits and interships of the authors have enabled to incorporate a range of methods, techniques and strategies of active student's learning in the phases

of evocation – realisation of the meaning of one's learning and reflection. ***Critical and creative thinking*** and ***autoreflective learning*** became the base for active student's learning at he "Kejbaly" centre. Since 2003 a team under the leadership of Dr. Jelka Strgar from the Department of Didactics of Biology has been participating in the project. It is particularly orientated to learning from experience, field practices preparation, optional practices aimed at zoophobias and study visits of foreign students in Slovenia. This close co-operation has already begun a necessary part of the tested project "Biology for life and health" – members of the Department of Didactics of Biology FBT have been conducting lecturers and practices at Brno. Mgr. Ogorvec-Hradilová became a co-ordinator and student's counsellor in Slovenia and the Czech Republic.

In 2004 Members of the Department of Primary Teacher Training at the Faculty of Education under the leadership of Doc. Darja Skribe-Dimec showed interest in the project in connection with our regular teaching at the FBT at University of Ljubljana. Thanks to the co-operation, annual exchange visits and personal concern for the project we have been recently solving together mainly questions of curricula didactic analysis for interdisciplinary integration. Doc. Maja Umek and Doc. Darja Skribe-Dimec are engaged in these problems in primary education. Apart from other things both departments participate in assessing results of introduction of new activating methods and didactical instruments into teaching and in providing assistance for students abroad.

With support of ERASMUS programme co-operation with Prof. Gaper´s (the Department of Biology) and Doc. Vencálková´s (the Department of Ecology and Environmental Education) teams was established in 2005. Both are from the Faculty of Natural Sciences at Matej Bel University in Banska Bystrica, Slovakia. Slovak students realise annual field practices in environmental science at the "Kejbaly" centre. The co-operation has been further developing chiefly in the sphere of open education – the use of field centres, museums, environmental centres of ecological education and zoological gardens in primary education.

In 2001 a close co-operation was established with "Group for Environmental and Science Education" under the leadership of Dr. Majda Naji – the National Education Institute EU, Regional Unit Maribor, Slovenia. The authors of the project *"Biology for life and health* became environmental education lecturers.

Annual interships of specialists are realised in ERASMUS programme. They enable not only to study and lecture at partner universities in the European Union but also to discuss the curricula of partner branches. Thus the above-mentioned partners have been actively participating so far in innovations of curricula according to the European dimension in education.

Since 2005 a common research has been prepared at the above-mentioned departments. It is aimed at the development of primary environmental education with help of constructivist approach to learning and teaching. Results and experience from the project "Biology for life and health", which have been discussed at a number of international conferences (JEDLIČKOVÁ, HRADILOVÁ, TYMRÁKOVÁ, 2000 – 2006), have been accepted as basic groundwork for a research being prepared and they have been verified for particular countries.

Valuable consultation to the project, study of materials and methodics for occasions of their institutes were realised at the "Kejbaly" centre at the Faculty of Education MU in Brno by:

- Dr. Jelka Strgar a col., the Biotechnical Faculty of University of Ljubljana, Slovenia (2004, 2005, 2006)
- Doc. Darja Skribe-Dimec and Doc. Maja Umec, the Faculty of Education at the University of Ljubljana, Slovenia (2005, 2006) and Dr. Marjanca Kos (the same institution, 2006)
- Prof. Jan Gaper a col., the Faculty of Natural Sciences at the Matej Bel University in Banska Bystrica, Slovakia (2005)
- Dr. Eva Uhliarová (2005, 2006) and Dr. Elena Martincová (2006) (the same institution)

The workshops with Prof. Barbara Bajd, which were proceeded at the "Kejbaly"centre (2007) and in Slovenia in 2005, 2006 and 2007, were also important for the development of the project. The first part of the research is concentrated on the study programme Pedagogism for primary education. Because of that, it was decided to realise the verification study abroad, at the Department of Chemistry, Biology and Home Economy of Faculty of Education at University of Ljubljana, Slovenia.

Has the teacher's preparation for education in the 21st century been improving?

With the help of several higher education institutions' development grants a working group engaged in the integration of basic curricula was created. A new integrated learning model about nature and society called ***"Integrated scientific base"*** (below ISB) was conceived by interconnecting biology, physics, chemistry, geography, history and pedagogy. The basic curricula were exchanged by the strategy of multidimensional view on the development of interaction between nature and society. The method of lectures and discussions was used by a means of branch experts. It is not the task of ISB to offer a certain sum of knowledge to be possessed by a student-teacher but to develop the ability of thinking specific to particular branches. The aim is a teacher being able to think about natural phenomena in deeper even global context. It has proved that secondary school graduates in the Czech Republic have not been able to accept such demanding type of higher education for the time being. The problem of the curricula integration has not been solved so far. The less time a study programme limits to the integrated scientific base, the more complicated the problem is. The original draft syllabus and the content of curricula of the ISB model is being revised by a collective team of specialists at present.

As we believe that style of thinking cannot be transmitted, the ISB model in the project "Biology for life and health" at the "Kejbaly" centre is balanced by heuristic and research education in nature. The programme "Biology for life and health" is then conceived as a ***model of learning from experience and open integrated teaching***.

Students are lead to the ***autoreflecting learning*** based on the principle ***of Bloom's mastery learning system***. The basic curriculum is either mastered by a student or not. The education is supported by ***self-reflective e-learning*** through the information

system of Masaryk University and ***alternate practice of students with pupils in educational terrain***.

The e-learning offers the students not only study materials but also tests ***"Test yourself"*** so as to be prepared for compulsory seminars. This is where in the form of group work it is possible for a student to learn according his/her individual needs. For reaching their goals the students may use the possibility of choosing optional courses or self-study leading up to the environmental specialisation at the centre. We are pleased that at the present time up to 60% of the students has been taking advantage of the possibility, especially those from combined mode of studies. The teaching was assessed as demanding but meaningful in a Masaryk University's questionnaire. The required targets were achieved by students in various time intervals (98%), which correspond to the principles of mastery learning. According to our informal observation, it is possible to find superficial approach to the subject matter (may be a habitude from secondary schools?) with a large proportion of full-time students in all our combinations at the beginning of their studies. It is difficult for them to view nature and society holistically, mostly because of their shortage of internalised concepts. Self-reflective active learning is surprisingly new for them. These problems surely deserve our attention, yet it is not systematically researched at the present time. Research is nowadays concentrated on testing the environment and teaching for the development of the programme in co-ordination with finding out pre-concepts from the branch and with students' pedagogical experience.

According to answers from an entry questionnaire the large majority of full-time students state no experience for the work with children - not even in the form of camps or other after-school activities. If we use the theory of implicit experience then we can by the help of research (analysis of a drawing of a natural sciences teacher) find very naive theories – deformed by school even to mis-concepts – in the student's self-conception as a teacher.

Basic the **1ˢᵗ thesis** of the programme **"*Biology for life and health*":**

You cannot teach about nature without nature and about children without children!

If the change of a student-teacher's conception of teaching (i.e. personal development of a teacher) is the aim of teaching for the needs of education in the 21ˢᵗ century, than highly specialised and often long-time intervention is necessary for the re-formulation of the content of the term "conception of teaching" per se, if a student-teacher is to understand the subject matter and profession. From their first year at university, students are motivated for a role of environmentally thinking teacher. There is psychodidactic subject matter analysis being used at the centre. We believe that conceptions and skill training from the sphere of didactic must be kept improving since the first semester together with the learning about nature and society and in balance with social sciences curricula. This approach has been greatly appreciated by students (especially by students of combined mode of studies – survey, essay analysis 2003-2006). This is why a system of group seminar thesis, learning from experience named *"**Dynamic model of learning from experience**"* (JEDLIČKOVÁ, 2007), which is realised by students in 1ˢᵗ – 8ᵗʰ semester, set in the entire program "*Biology for life and health*".

Except for the 1ˢᵗ semester, when students are getting accustomed to educational atmosphere, subject matter, work with technology, methodics of learning and work, verifying of seminar theses is realised in the form of alternative pedagogic field practice with pupils in the rest of semesters. Students work in an assistant's position in the bachelor's part of the programme while in the master's part already in the position of a specialised teacher. Group seminar theses are based on the principle of ***learning with mistake,*** i.e. ***self-improvement with a help of group discussion and audio-visual record analysis with a specialist***. The technique of teaching is the same: preparation of a seminar thesis in a group, presentation of the preparation – discussions in seminar lessons, consultations with a lecturer, realisation with students in educational field practise, group autoreflection and audio-visual record analysis with lecturer, correction of the preparation in writing and assessment of experiment – graphical form, credit.

2ⁿᵈ thesis of the programme: **If teachers are to humanise teaching and realise with help of activating methods they must have personal experience with such kind of teaching**.

This is why the "Dynamic model of learning from experience" is targeted on this aspect. Each seminar thesis is oriented on the realisation of one activating method afterwards on the combination of more methods. Student will work up from simple microoutputs with pupils during a training of practical activities in a game about educational system at the centre, to the demanding "Student Pedagogic Project ITV" (approximately 100 students co-operate at universities). The output of this project is student conferences on alternatives in teaching and SWOT analyses of schools. Especially motivating for students are commentaries of teachers from practise and feed back-reflection from pupils and co-operation with lecturers at department.

3ʳᵈ thesis of the programme: **The mediate approach to subject matter is amended with the friendly approach.**

Five departments directly participate in the integration of subject matter and teaching in the course of eight semesters: physics, biology, chemistry, geography, history and pedagogy, further on ecological centres and clinical schools.

The project has been developing in international co-operation since 2001. Since the year 2002 a longitudinal research of the proposed integrated didactic model has been carrying out in the Czech Republic. Acreditory committees approved innovations in study plan, of which the model is a part, in 2006. In the same year a pilot study for the verification of the methodics and tools of testing knowledge was realised for the use abroad, under the guidance of Prof. Barbara Bajd and in the presence of the authors, at the Department of Chemistry, Biology and Home Economy of the Faculty of Education at the University of Ljubljana, Slovenia.

The same pilot study is being prepared for students with the collective of Dr. Jelka Strgar at the Department of Didactics of Biology at Biotechnical Faculty at University of Ljubljana, Slovenia and Prof. Gaper at the Department of Biology at the Faculty of Natural Sciences at Matej Bel University in Banska Bystrica, Slovakia.

It is becoming apparent that the questions of specialists preparing teachers as well as those of auxiliary professions are similar. (ŠVEC, 2005, NEZVALOVÁ, 2006…).

The European Parliament and the Council of the European Union issued in December 2006 *"Recommendation on Key Competences for Lifelong Learning"* (2006/962/ES) http://ww.rvp.cz/soubor/01140.pdf. The thesis is fully accepted that the goal of preparation of students-teachers is not only handing of a sum of knowledge and skill training but also creating a condition for acting in various situations.

Does the teacher's conception of teaching have to be changed?

Theoretical background of the project "Biology for life and health".

The aim of the teachers' effort should be then to help learning individuals to re-construct contents of scientific knowledge on the base of creating relationship between the knowledge of respective scientific branch, interdisciplinary knowledge and the world of individual everyday experience (JELEMENSKÁ, SANDER, KATTMANN, 2003).

The learning individual is not any longer the one who does not know anything and comes to school so as to learn everything from teachers. A pupil (a student) is an intelligent being with certain pieces of knowledge (which not necessarily must correspond to scientific pieces of knowledge – ***naive theories, pre-conceptions***), which should be with help of a teacher and a group of schoolmates verified, and completed if needed by activities at the school. ***Pedagogical constructivism*** is therefore often determined as an effort to overcome transmisive teaching. The constructivist approach emphasise ***an active role of a pupil (a student), who constructs his/her meaning by him/her self*** according to his/her already created mental structures = ***active learning***. We talk about the problem of pupil's (student's) conception of subject matter and learning.

Phillips (1995) deals with three basic roles of learning individual in a constructivist class:

1) ***Active role****: knowledge and understanding require an activity of a learner, instead of a passive role of a recipient of pieces of knowledge.*
2) ***Societal role****: we do not build pieces of knowledge only individually, but in a dialogue with the others*
3) ***Creative role****: knowledge and understanding is formed and transformed.*

Pupils (students) come to lessons with various ideas that they created on the base of their own experience. According to Piaget they begin to understand only if new information "commixes" with these ideas. The initial ideas form a kind of "filters" trough that they accept or refuse new information. Teachers lead pupils (students) to active reconstructing their initial ideas in the interaction with the others. Lessons conceived as such strive to evoke certain unbalance between what a pupil (a student) knows and what he/she is getting to know. This approach strives to raise a problem between an initial idea and a new place of information. So as this discordance the pupil (the student) is constructing a new ***solution.***

*"Knowledge is a result of a process of cognition, especially in the form of pieces of knowledge. Because a piece of knowledge rises from subject mind, that constructs it trough series of operations a thus adopt it, we designate this result of cognition by the term „****acquirement****"... According to Piaget the base of cognition is so called* **scheme***. This scheme describes how a child think about functioning of world around him/her"* (ŠVEC, p. 30, 2006).

In a new conception of school a teacher even strive to deliberately raise a cognitive conflict among pupils (students). An individual attempts to tackle the cognitive conflict - not being always successful, though. It depends on his/her previous experience, abilities, inner motivation and will. Help of the others - parents, a teacher or schoolmates - is often needed. Such help does not consist in telling the individual how to advance onwards, though, but in providing him/her with key positions for overcoming the cognitive conflict, where by on the change of schemes and acquiring of new pieces of knowledge. We speak about ***learning from experience.***

What happens if a teacher ignores pre-concept in teaching?

Older layers of knowledge are covered by new ones in mind and knowing is piling in separated layers under which original core of idea remains. A pupil (a student) is able to reproduce this information for certain time. If it does not interfere with the original structure, it hardly comes to understanding. Information is often forgotten and does not lead to the needed process of learning (the interconnected cognition is not created).

If a teacher diagnoses pupils` (students`) pre-concepts and regard them as a significant factor determining learning, than the subject matter becomes the part of a pupil's cognition. Thus we encounter different understanding of a pupil's (student's) role in a traditional and constructivist lessons. (HRABÁČKOVÁ, 2006).

4ᵗʰ thesis of the programme:**Teachers are confronted with the task of changing their views on pupils (students).**

At the beginning of the 21st century such change is conceived as the base for professionalization of teacher's profession, on which is necessary to look systematically – holistically. Knirk and Gustafson (1986) remind that is not sufficient to make isolated innovations in a single lesson - just to use different methods. Systemic conception does not separate questions of WHAT TO TEACH from the questions of HOW TO TEACH, WHY TO TEACH and HOW TO ASSESS!

What role does the current conception of reflection and self-reflection play in personal development in the project "Biology for life and health"?

Constructivist didactics emphasise that a human learns only things, which he/she considers to be personally meaningful, which fits to the project of his/her own identity.

5ᵗʰ thesis of the programme: „**Providing a pupil (a student) perceives a certain theme as a part of his/her world, as a means of consolidation his/her personality, he/she is able to be engaged in it very intensively, even for the whole life**" (KALHOUST, OBST and col., p. 73, 2002).

We speak about explicit and implicit (tacit) knowledge according to the level of awareness of the knowledge by a subject as mentions ŠVEC (2005). It is formed on the base of experience while a subject is placed in situations and acts in them. It is ***active learning to experience – learning from practice***.

According to the kind of information that knowledge carries in itself *conceptual, sociocultural* and *metacognitive knowledge* is distinguished. ***Metacognitive knowledge*** is ***subject's knowledge about his/her own cognition and learning***. It is stressed nowadays that it is very important kind of knowledge, for it enables a subject to **regulate** his/her learning and action. The ability of ***self-regulating reflection*** as the base for lifelong learning is currently becoming a subject of intensive research all over the world (ŠVEC, 2006). ***Educational autoregulation*** is specified by HELUS (1992 p. 201 in ČÁP, MAREŠ, 2001)): *"As a modus of behaviour of an individual towards himself/herself (self-strengthening, self-monitoring, self-assessment, self-instructing etc.)"*.

6<u>th</u> <u>thesis</u> of the programme**: A teacher should strength pupils' (students') *<u>self-esteem</u>* over reflection as well in his/her classwork.**

Experience leading to self-esteem – to the knowledge of their being able to achieve a positive result in learning activities – often shows itself in their enjoyment to plunge into new learning activities. So that inner-motivating incentives may lead up to the inner level of cognitive needs, which are the bases of the need of ***lifelong learning***. Stimuli of didactic interaction and mutual positive relationships between a teacher and a pupil (a student) in classwork interfere also the emotionally motivating and decision-conative sphere of educational ***autoregulation of a learner and a teacher***.

7<u>th</u> <u>thesis</u> of the programme**: The sharing is based on common learning (e.g. the co-operation in s group) when common experience is established.**

It is known that the cognition of the world in contact with one's peers but also with older schoolmates facilitates the construction of knowledge and teaches also how to co-operate (***couple, group, peer … learning***). The sharing of knowledge occurs. The sharing of knowledge in a social group represents a recent sociocultural perspective in the construction of knowledge. Yet, the experience may be shared by subjects also when they acquire the knowledge in similar learning situations.

We speak about experience when knowledge is used in action. **If *<u>experience</u> is generally a means and the aim of cognition of the world*** (PRŮCHA and col. 2003), ***which is based on senses, experience, social contact, mental and practical activity, than <u>learning from experience</u> may significantly influence <u>student's conception of teaching</u> providing the systematic use of socioconstructivist approaches and techniques of the development of reflection and self-reflection*** (JEDLIČKOVÁ, 2007).

The longitudinal research of the project "Biology for life and health"

In 2006 the verification of methodics and the entrance test were guided under command of Prof. Barbara Bajd and supervision of authors of the project (Jedličková, Hradilová) for occasions of research in Slovenia. The selection of items was properly reconsidered in all tree countries to maximize validity and reliability of the entrance

test. The common way of evaluation of the results was consulted several times. The Prof. Bajd's team pointed out some specifics in terminology, which are different in the Czech and Slovene education system. During the lecture intership of Prof. Bajd at the Department of Biology in Brno (March 2007) the last discussion were held to evaluate results of the first phase of pilot study in Slovenia. Below we present partial results of the unfolding international research.

The verification of innovations in teaching, aimed at application of contemporary psychodidactic theories in the field of environmental education to provide natural science literacy in Europe in the 21st century.

Questionnaire n. 1 (test n. 1 Student's conception of curriculum)

The questionnaire has two parts: the informative part (p. 1,4) and the test of student's conception of basic curriculum (p. 2,3).

The informative part (p. 1) contains open items: contact, functional (functional psychologic, control) and contentual. Items on the page 4 are semi-closed, centred on meaning. The didactical test (p. 2,3) is the two-level test. Formally it looks like test based on selection of answers, but student-teacher choose his answer in two steps. First he/she names a product of nature (or uses the numeric label if he/she does not know the name). In second step he/she choose from set of arguments to give reasons for his/her previous choice. Apart from frequency of right answers the character of students' mistakes is inspected through evaluation, as well. Thus it is possible to motivate further analyse of particular misconceptions.

Through structuration of the test the classical technique has been used (ČÁP, MAREŠ, 2001).

Selection of items to testing basic curriculum has been done on the base of analyse of Czech school books and consultations with specialists from various faculties. Items that have all three participating states in common were finally kept in the questionnaire.

For use abroad the questionairre had been translated into Slovenian language. The original Czech version is attached to the article in Czech and the slovenian version is attached to the article in English.

Summary:

K. Gergen (1994 in ŠVEC, 2006) accented: *"Knowledge is constructed by means of interplay between individual knowledge, attitudes and values of a subject and his/her social interactions in sociocultural context. There is a need of the interaction between cognitive an emotional aspects of cognition to be taken into consideration at the same time, though"*.

Particular effort to humanise schools and education has been resulting gradually in understanding the results of teaching as overall *__educational autoregulation of a pupil's (student's) personality__*.

V P R A Š A L N I K št. 1

Namen vprašalnika sta zbiranje informacij za delavce središča
in avtorefleksija študentov na začetku pouka

Vprašalnik bi naj služil kot osebni test in hkrati kot ponovitev učne snovi, ki bi jo naj
študenti poznali za svoje delo z otroki.

Opozorilo: Ta vprašalnik ne bo del ocenjevanja študijskih rezultatov, ampak bo upo-
rabljen le za statistično ocenjevanje začetnih informacij o študentih.

1

Informativni del

**1. Premislite in podčrtajte izrek, s katerim sami ocenjujete svoje znanje biologije
   s srednje šole.**

nadstandardno - odlično - prav dobro - dobro - zadostno - nezadostno - ne znam se
odločiti

2. Premislite in dopolnite izrek (podčrtajte izbrano besedo).

...... SEM RAD V NARAVI

Vedno   Zelo pogosto   Pogosto   Včasih   Nikoli

3. Premislite, podčrtajte izbrano besedo in dopolnite izrek.

zelo priljubljen - priljubljen - niti priljubljen niti nepriljubljen - nepriljubljen - zelo ne-
priljubljen

NA OSNOVNI ŠOLI JE BILA BIOLOGIJA ZAME . . . . . PREDMET, KER

(navedite pet ključnih besed)

4. Premislite, podčrtajte izbrano besedo in dopolnite izrek.

zelo priljubljen - priljubljen - niti priljubljen niti nepriljubljen - nepriljubljen - zelo ne-
priljubljen

NA STREDNJI ŠOLI JE BILA BIOLOGIJA ZAME . . . . .PREDMET, KER

(navedite pet ključnih besed)

5. Premislite, podčrtajte izbrano besedo in dopolnite izrek.

V NARAVO HODIM . . . .

dnevno   vsak drug dan   več kot 1x na teden   manj kot 1x na teden
manj kot enkrat na dva tedna   manj kot 1x na mesec

Prepoznavanje
1. K vsakemu številu napišite NAZIV (vsaj rod) predstavljenega objekta

1. NAVADNA PŠENICA (*TRITICUM AESTIVUM)*	**2. Deževnik (Lumbricus terrestris)**
3. NAVADNI BRIN *(JUNIPERUS COMMUNIS)*	**4. KUNA ZLATICA *(MARTES MARTES)***
5. MAJSKI HROŠČ (*MELOLONTHA MELOLONTHA)*	**6. POR (ALLIUM PORRUM)**
7. RJAVI PREMOG	**8. JABLANA (MALUS DOMESTICA)**
9. (EVROPSKA) ŠČUKA *(ESOX LUCIUS)*	**10. TRNASTOČELA RAKOVICA *(CARCINUS MAENAS)***
11. RŽ *(SECALE CEREALE)*	**12. NAVADNI KLOP *(IXODES RICINUS)***
13. NAVADNI OREH *(JUGLANS REGIA)*	**14. NAVADNA BODIKA *(ILEX AQUIFOLIUM)***
15. KAMENA SOL	**16. BRADAVIČASTA MORSKA ZVEZDA *(MARTHASTERIAS GLACIALIS)***
17. NAVADNA LISIČKA (*CANTHARELLUS CIBARIUS*)	**18. VELIKI DETEL *(DENDROCOPOS MAJOR)***
19. NAVADNI PUPEK *(TRITURUS VULGARIS)*	**20. NAVADNA BUKEV *(FAGUS SILVATICA)***
21. PELARGONIJA (*PELARGONIUM ZONALE)*	**22. BELOUŠKA *(NATRIX NATRIX)***
23. MALI KOPRIVAR *(AGLAIS URTICAE)*	**24. NAVADNA SMREKA *(PICEA ABIES)***
25. PIRIT	**26. VRAŽJI ZOBAN *(BOLETUS SATANUS)***
27. OSTROLISTNI JAVOR (*ACER PLATANOIDES)*	**28. ZELENA (APIUM GRAVEOLENS)**
29. ŠČINKAVEC *(FRINGILLA COELEBS*)	**30. NAVADNI LAN *(LINUM USITATISSIMUM)***
31. RJAVI UHATI NETOPIR (*PLECOTUS AURITUS)*	**32. PARADIŽNIK *(SOLANUM LYCOPERSICUM)***
33. VELIKI VRTNI POLŽ *(HELIX POMATIA)*	**34. APNENEC**
35. VRTNI OGNJIČ (*CALENDULA OFFICINALIS)*	**36. MARTINČEK (*LACERTA AGILIS*)**
37. JEZERSKA BREZZOBKA (*ANODONTA CYGNEA)*	**38. PANTERJEVA MUŠNICA (*AMANITA PANTHERINA)***
39. DIVJI KOSTANJ (*AESCULUS HIPPOCASTANNUM)*	**40. NAVADNA KRASTAČA *(BUFO BUFO)***

2. Ob vsakem pojmu naštejte najmanj tri primere
PROIZVAJALEC 1, 3, 6, 8, 11, 13, 14, 20, 21, 24, 27, 28, 30, 32, 35, 39
PORABNIK 4, 5, 9, 10, 12, 16, 18, 19, 22, 23, 29, 31, 33, 36, 37, 40
RAZKROJEVALEC 2, 17, 26, 38

3. Uvrstite objekte v pravilno skupino
Minerali 15, 25   Kamnine 7, 34

4. Uvrstite objekte v skupine

ZELENJAVA 6, 32,	SADJE 8, 13
POLJŠČINE 1, 11, 30	ENOLETNE RASTLINE 35
OKRASNO GRMOVJE 3, 14	KONIFERE 3, 24
STRUPENE RASTLINE 3, 14, 32	RASTLINE, NEVARNE ZA OTROKE (BODICE,TRNI,ALERGENI) 3, 21, 14

5. Uvrstite objekte v pravilne družine

BOROVKE 24	RAZHUDNIKOVKE 32
NEBINOVKE 35	KOBULNICE 28
ROŽNICE 8	LILIJEVKE 6

6. Uvrstite objekte v pravo skupino

UŽITNE GOBE	NEUŽITNE GOBE	STRUPENE GOBE
17	26	26, 38

7. Razporedite objekte glede na prehranjevalno specializacijo

MESOJEDEC ALI PREDVSEM MESOJEDEC	VSEJEDEC	RASTLINOJEDEC ALI PREDVSEM RASTLINOJEDEC
9, 19, 31, 4, 10, 12, 16, 22, 36, 40	29, 37, 18	5, 23, 33, 2

8. Razporedite številke v skupine.

KOLOBARNIKI 2	RIBE 9
POLŽI 33	DVOŽIVKE 19, 40
ŠKOLJKE 37	PLAZILCI 22, 36
PAJKOVCI 12	PTICE 29, 18
RAKI 10	SESALCI 4, 31
ŽUŽELKE 5, 23	DRUGA SKUPINA 16

7/06: **VÝZKUMNÝ PROJEKT PdF MU pro rok 2006** *(kategorie Ab)* **Vý-zkumná a odborná činnost akademických pracovníků a magisterských studentů** *Transformace zkušeností ze zahraničních pobytů v zemích EU (ERASMUS aj.) do programu „Biologie pro život a zdraví" na PdF MU v r. 2006*

EVROPSKÁ DIMENZE VE VZDĚLÁVÁNÍ UČITELŮ PRIMÁRNÍ ŠKOLY

Zkušenostní učení a reflexe jako východisko práce učitele
Akční výzkum a testování výukových modelů

Abstrakt: Evropa, jako prostor bez ekonomických bariér, předpokládá rovněž unii bez hranic kulturních a vzdělávacích. Akademickou mobilitu podporují programy, jako např. CEEPUS a SOCRATES-ERASMUS, umožňující nejen získávání zkušeností a osobnostní rozvoj studentů a pedagogů na partnerských školách, ale také sekundárně výzkum zaměřený na evropskou dimenzi ve vzdělávání. V průběhu posledních let jsou akčními výzkumy na univerzitách v Evropě ověřovány nové modely orientované na zkvalitnění vzdělávání pro 21. století dle Bílé a Zelené knihy EU. Klade se v nich důraz na profesionalizaci přípravy učitelů. Ukazuje se, že profesionalita učitele pro primární školu se musí opírat o řadu kompetencí, zejména o schopnost reflexe a kritického myšlení. Danou problematikou se zabývá i společný výzkum realizovaný na katedře biologie a katedře pro přípravu učitelů primárním vzdělávání PdF Univerzity v Lublani (Slovinsko) a na katedře biologie PdF MU v Brně, mezi nimiž dochází pravidelně k mobilitě studentů i pedagogů v projektu „Biologie pro život a zdraví".

Klíčová slova: projekt „Biologie pro život a zdraví", smysluplné učení, akční výzkum, pedagogický konstruktivismus, prekoncept, kritické myšlení, současná koncepce reflexe a sebereflexe, zkušenostní učení, pedagogické dovednosti a zkušenosti, longitudinální výzkum

THE NEED OF THE HEALTH LITERACY DEVELOPMENT

Jan HOLČÍK

Abstract: The message consists of two parts. In the first part, the monograph „Health literacy in health care", initiated by the main researcher in the research task „School and health in the 21ˢᵗ century", doc. PhDr. Evžen Řehulka, CSc, is reminded. Its objective is to provide basic information about health literacy and methods contributing to its advancement. The second part is dedicated to a serious health issue consisting in the rising number of the chronically ill and potential methods of dealing with such a problem. It shows that the advancement and increasing the general level of health literacy should become a priority in the field of health care.

Keywords: health literacy, health care, health, health services, health policy, health education, health programmes.

The objective of this message is to briefly introduce a new monograph (Holčík, 2009) written on the initiative of the main researcher in the research task „School and health in the 21ˢᵗ century", doc. PhDr. Evžena Řehulky, CSc. The principal terms and methods of the health care system are explained in the text in relation to the urgent need of developing health literacy in all groups of population.

The initial idea of the monograph is the conviction that people are the basic determinant of health and that it is necessary to facilitate to them the understanding of the value of health, and the respect for it when making decisions in normal everyday life.

The second part is dedicated to a serious health problem, which consists in the rising number of the chronically ill and possible methods of dealing with such a problem.

1. Health literacy and its role in health care

Chapter 1 of the monograph (Holčík, 2009) introduces the health literacy as an integral part of the 21ˢᵗ century health culture and lists the main reasons that should motivate its systematic development. The definition of health literary is presented in chapter 2. Health literacy is able to take proper decisions related to health in the context of everyday life – at home, in the society, at work, in health care institutions, business as well as policy. It is an important method increasing the influence of people over their

health and strengthening their ability to obtain and use information and assume and bear one's personal share of responsibility.

Chapter 3 presents a health literacy model distinguishing between functional health literacy (informing the public about health risks and the need of healthy lifestyle), interactive (development of human ability to actively co-create our own health fate) and critical (active and creative share in the health care and the establishment and implementation of health policy). Valuable experience from applying the health literacy in Canada achieved so far is presented in chapter 4.

Health education (educating the patients, warning again health risks and education on towards health), which is one of the basic methods of developing the health literacy, is explained in chapter 5. Improving the health literacy is an important part of the so-called „*empowerment*" *of people* (chapter 6), consisting in strengthening the ability of people to influence their life's fate, meaning also their health fate. Another important method of developing the health literacy is the support of health, the structure and possibilities of which are explained in chapter 7.

It is unquestionably important that the health literacy should be developed in relation to the priorities set by the European health policy (chapter 8). The European health policy is characterised by a systematic interest in the health of people and assuming co-responsibility for influencing all circumstances that influence health. Chapter 9 explains types, methods and possibilities of developing health systems. Given the fact that human health is to a great extent influenced by social determinants of health, attention is paid to these in chapter 10. Health literacy is set within the wide European context in chapter 12. Chapter 13 contains an invitation to the common journey towards health.

The monograph includes 8 attachments, the first seven of which containing the fundamental documents of the World Health Organisation indicating the development of health care in the 21st century. Attachment 8 provides a glossary of basic terms used in the monograph.

The monograph does not provide any detailed instructions on how to develop health literacy. It is not its objective, either. In the ideal case, the initial information about the health literacy should become a motive for independent activities of everyone who understands the meaning of health literacy and further chapters on health literacy should be written at schools, families and at work, everywhere where people live. The best possible health is an important condition for a full, useful and joyful human life.

2. Increase in the number of the chronically ill as an important health problem.

Given the fact the sickness rate is dominated by chronic non-infectious diseases and many of them are curable or their course can be slowed down, the mortality rate drops (the life of the sick prolongs). Although the number of some of the newly diseases does not change too much, the greater number of preventive medical examinations and more perfect diagnostics determine a higher number of these. This results in the rise in the number of the treated ill and ever rising expenses. This is schematically presented in Fig. 1.
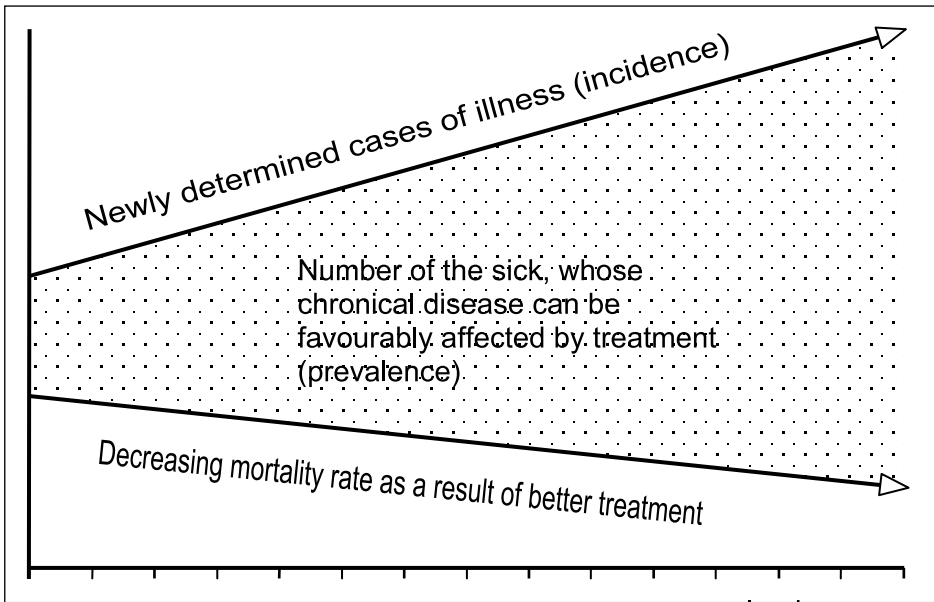
Fig. 1. Rise in the number of treated people give increasing incidence and dropping mortality rate

The aforementioned trends may also be considered for the future. Thanks to the research in the field of clinical medicine, the potential of medicine is on the rise, new procedures, medications and instruments are available, but at rapidly increasing prices that are often justified by the need for further costly research work. The production of medications and health care instruments is also exposed to competitive pressures and their sale is closely related to the standard marketing and market mechanisms, which undoubtedly results in the efforts of the producers and businesses to earn as much as possible.

The aforesaid problem can be reacted to in four basic ways.

a. **Investing more money in the health care system** – this will make it possible to provide more health care services. Experience show that the costs of health care system are on the rise in most countries. It is apparent that the amount of money allocated to the health care system cannot be increasing for ever. Such a growth has its limits which are set both by the economic efficiency and the urgency of expenditures in other fields. It cannot be considered that the lack of funds in the field of health care becomes a permanent characteristic of all health care systems and it cannot be expected that the mere increase in the funds appropriated to the health services will resolve the aforesaid problems.
When the money is missing, it may seem at first sight that it is an economic problem. Although it can be permitted that economic knowledge and method play an important role in the field of health care, economy is far from enough to handle this problem.

b. **Increasing the economic efficiency of health services** could contribute to a better use of these funds that are available. In essence, these are two tasks. First, it is an effort to reduce the prices or substantially restrict (or not to pay) those health care services that are provided and to carefully consider what other health care services can be taken into account.

This field also concerns the consideration of priorities in the field of health services, i.e. what should be given priority in view of the restricted funds , what could bring a greater benefit to human health. Great hopes rest on these efforts and in many cases partial success is achieved.

If the efforts to increase the economic efficiency are restricted to one medical facility only, the results are usually worse than expected. The issue is not that all health care services provided by a hospital should be provided in an economically efficient manner. What matters is that useless health services should not be provided at all. If, for example, money is spent in a hospital to handle a health care problem that could be handled by a general practitioner or an ambulatory specialist, then it is a case of waste. Therefore it is so important that the medical facilities are combined within an functional system without being „independent" and „competing" entities.

c. **Restricting the accessibility of health services** is an unpopular step and it is not usually declared in the political parties' election programmes. However, this happens in all countries and various methods are applied. For example, economic limits are set, the exceeding of which is accompanied by sanctions, justification and „remedial" measures. Methods of controlled provision of health services are developed and widely applied (*rationing*), and their essence is to achieve economical distribution of means in case of emergency (e.g. rationing ticket system).

The so-called „implicit rationing" consists in the fact that health care staff postpone health care services, draw attention to potential risks and in some cases discourage the patients from the required surgery. Its drawback is that the public is not informed about the scope of such behaviour. Implicit rationing is often influenced by external economic pressures (e.g. on the part of managers). However, the potential negative consequences are the responsibility of physicians. The physicians accept the implicit rationing begrudgingly taking it as an inadequate intervention into their own decision-making and face up to it while referring to their ethical commitment to strive after the best possible treatment of their patients.

Explicit rationing is usually based on decisions on what services will be provided as a standard (e.g. paid by health insurance companies) and what services will be associated with certain restrictions (e.g. they will be paid by the patient, they will only be provided in a few health care facilities or their provision will be suspended, even if temporarily).

Explicit rationing is the responsibility of the person drawing up and approving the list restricting the provision of some health services. Such a list is not well received by the public and therefore the political parties avoid this method although they are invited to do so by the medical public every now and then.

The well-know method is to increase the involvement of the patients in the form of fees charged for treatment. Nevertheless, such restrictions should be exceedable and should not be applied generically; it is a mistake to restrict children or people who could not pay such a fee or for whom this would represent a serious economic problem.

d. **General improving of public health** would certainly be a perfect solution. It would mean that less people would require health care services as a result of chronic diseases. Health care system would focus prevailingly on acute health problems. Such an intention is closely related to the health determinants; however, many of these are outside the traditional scope of health services. If, for example, the consumption of alcohol and cigarettes is twice as high as in Sweden, than it should be reminded that there is no medical technology that could compensate for such a big difference.

   People themselves can influence their own health to a great extent. Therefore it is sometimes properly reminded that everyone should take care of his/her own health. What is somewhat ignored is the fact that every organisation and institution and every level of public administration take decisions that have a smaller or greater effect on public health. Although it cannot be doubted that health services face important tasks in this respect (research, motivation and education, coordination, control and evaluation), it is obvious that the focus of the implementing work shifts towards the widely perceived social practice.

   No matter how important the individual activities of the inhabitants taking care of their health are, healthy society needs democratic mechanism of public policy that should respect health as one of the essential humane values and health care should be recognised as one of the undeniable human rights.

   The increase in the general health literacy of children, all inhabitants and, in particular, representatives of public policy is a principal priority in this respect. Alhtough instructions applicable to all situations cannot be provided, it is important that health impacts should be considered in all decision-making.

The aforesaid basic methods of reacting to the turbulent rise in chronic diseases are not isolated methods. Of course, the greatest effect can be expected in combinations. The wide range of measures that must be considered in such a case is sometimes called a health care programme, in the general sense as *health policy*. The measures are schematically presented in Fig. 2.

The presented scheme indicates that this is naturally a simplification of the whole situation and the effort to capture dominant circumstances that may influence the relevant problem. It is sometimes objected that it is little efficient to strive after improving the health literacy, because a healthy style of living is costly and becomes a privilege of wealthy classes rather than a recommendation generally accepted by the public.

In relation to this it may be reminded that a healthy style of living does not call for excessive financial costs. It suffices to respect the well known recommendations with credible justification of their favourable effects on health.
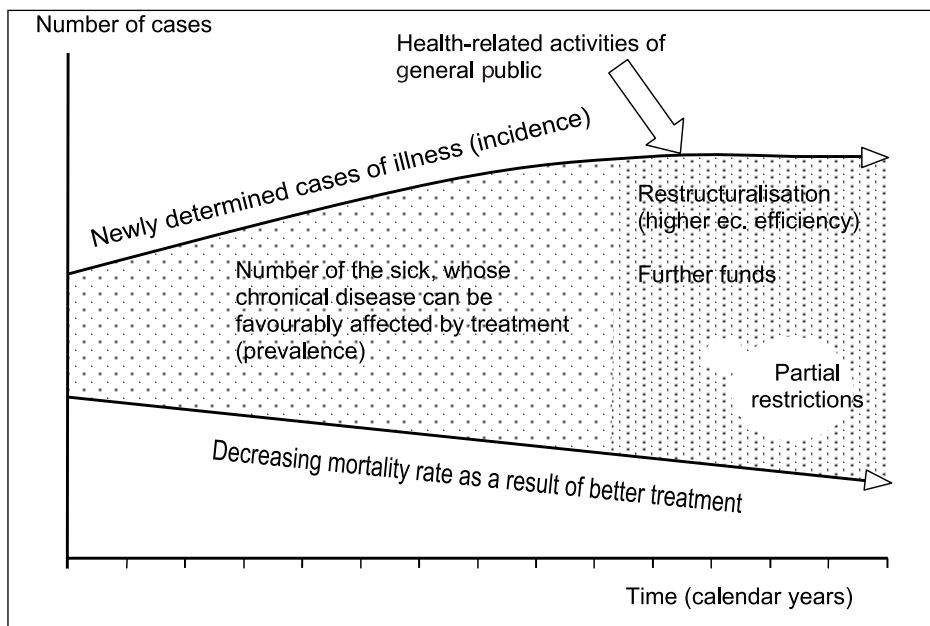
Fig. 2. Possibility of managing the rising number of treated people at rising incidence and decreasing mortality rate

a. **Do not smoke** – this is not costly. Compared to a smoker, a non-smoker naturally saves money.
b. **Eat abstemiously and avoid being obese** – this means buying fewer foodstuffs .
c. **Do not drink high doses of alcohol** – this is not associated with high costs, either.
d. **Walk more** and if possible avoid excessive use of cars.
e. **Eat fruit and vegetables daily** – this can bring about higher costs but it should be from local sources and seasonal fruit (it does not have to be pears from Italy and strawberries from Spain.

Certain costs may be related to maintaining cleanliness, living in a relatively good environment and developing good social relationships. In summary, the healthy style of living is not difficult or costly. The most important thing is to decide for health and take the health care seriously. This is not by far restricted to mastering the aforementioned health problem. It is about health, our lives and fates of people who come after us.

POTŘEBA ROZVOJE ZDRAVOTNÍ GRAMOTNOSTI

Abstrakt: Sdělení má dvě části. V první části je připomenuta monografie „Zdravotní gramotnost v péči o zdraví“, jejímž iniciátorem byl hlavní řešitel výzkumného

úkolu „Škola a zdraví v 21. století", doc. PhDr. Evžen Řehulka, CSc. Jejím účelem bylo poskytnout, základní informaci o zdravotní gramotnosti i o metodách, které přispívají k jejímu rozvoji. Druhá část je věnována závažnému zdravotnímu problému, který spočívá v růstu počtu chronicky nemocných, a možným metodám, jak takový problém zvládnout. Ukazuje se, že rozvoj a zvyšování všeobecné úrovně zdravotní gramotnosti by se mělo stát prioritou v oblasti péče o zdraví.

Klíčová slova: zdravotní gramotnost, péče o zdraví, zdraví, zdravotnictví, zdravotní politika, zdravotní výchova, zdravotní programy.

ON THE FORMING OF SOCIAL AND EDUCATIVE FUNCTION OF PRESCHOOL INSTITUTIONS

Marie MAREČKOVÁ

Abstract: *An organised child care for children in their early childhood outside their families was originally focused on the poorest social groups, and it was not evoked by the progressive professionalisation of women – mothers. The first nursery for preschool-age children in the Austrian monarchy was founded in 1828 in Buda (today's Budapest). The imperial school law from the year 1869 (so-called Hasner's reform) covered also preschool establishments the attendance of which was not obligatory, and it implemented the institute of kindergartens as training schools by girl's teacher-training institutes. Before 1869 in Prague, four Czech nurseries were founded; however, a modern preschool institute with qualified teachers was founded 19th January 1869 at the initiative of Marie Riegrová, daughter of František Palacký. Besides Karolína Světlá and Eliška Krásnohorská, Riegrová supported the social approach towards so-called woman question.*

Keywords: *preschool institution; children nurseries; social and educative function; Marie Riegrová; principles of J. A. Comenius; kindergarten; education towards health.*

The childhood period is being reduced in the contemporary society, which is a problem that has been becoming quite topical recently; children, looked upon as little adults, are understood mainly as consumers, whose specific world is adapted to the world of their parents. Exaggerating a little, it is possible to say that in the history of childhood, this is a certain parallel to the period before the society modernisation.

In the middle-ages social environment, the childhood was also a transitory "grey zone" of the human life before the incorporation in the world of the adults. Such a model of social behaviour changed in the 16th and 17th centuries in the aristocratic and burgher environments, and such a mentality was gradually applied also at lower society levels. The social transformation of childhood as a specific phase of human life began to profile as late as during 18th and especially 19th centuries, being influenced by the modernisation of the demographic regime much more than by the democratisation of education and instruction.[1]

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[1] Lenderová, Milena, Rýdl, Karel. Radostné dětství? Dítě v Čechách devatenáctého století. Praha –Litomyšl: Paseka 2006, p. 87 ff

However, contrary to such an approach towards the "nascence of childhood", the research of the history of mentalities proved even earlier tendencies towards the deepening of the emotional relations within so-called closer core family, and especially of emotional relations between the mother and her child.[2] Education of children started immediately after the delivery, which traditionally took place in home environment under the presence of a midwife and women relatives. Due to the threat of infant mortality, the child was baptized as soon as possible in order to assure Paradise for the child's soul. Weaning usually took place in the first year of the child's life; it ate common solid food with the adults and it had to get used to darkness, noise, cold, discomfort, etc. Warnings, examples and creation of habits were parts of the upbringing already in such a phase.[3]

In the Middle Ages, the education was based upon the acquiring of the basics of the Christian religion in compliance with the Bible and writings of the Church fathers. In the Renaissance period, both educational practice and theory were influenced by the Classical times. Education in humanities was neither reserved only for men, nor there were social limitations; however, without any doubt, the generalisation of education influenced the modernisation of the lifestyle of the upper social groups.

The contemporary value of education was specified by John Amos Comenius. His work is, in fact, philosophical culmination of national traditions, Reformation and Humanism closely linked to the prospective European thinking and culture. The proposition of Christian education, which takes into consideration different phases of childhood, can be seen in the whole Comenius´ educational and pansophic work. He wrote his famous educational works, such as *Information on Mother Schools (Informatorium školy mateřské)*; *Didactics or the Art of Artificial Teaching (Didaktika neboli umění umělého vyučování)* and a descriptive Latin textbook *The Gate of Languages Unlocked (Janua linguarum reserata)* in Leszno, where he worked as the headmaster of a Latin school after his emigration in 1628 (or 1627). In order to enhance the principle of visualisation and the connection of foreign language teaching with the subject teaching, Comenius created his world-famous illustrated encyclopaedia for children *Orbis pictus (The Visible World in Pictures)* with German and Latin texts. Comenius wrote this work in Sarospatak, where he had been invited in 1650 in order to reform local schools by Prince Sigmund Rákóczi of Transylvania, as he expected the Prince to resume his anti-Habsburk resistance movement.[4] In 1632, he finished his *Didactic or the Art of Artificial Teaching* adding an annex to it titled *Restauration of Schools in the Czech Lands (Obnovení škol v Čechách)*; several years later, he reworked it thoroughly in Latin, and as late as in 1657, he published it in Amsterdam under a title *The Great Didactic* (*Didactica magna*).

Comenius tried to find new educative methods and organisation of schools which would be in compliance with the practical requirements of the world economy development and voyages of discovery and application of natural science knowledge. He claimed a general reform of education with a uniform school instruction, compulsory school attendance for boys and girls from six to twelve years of age of all the social

[2] Delimata, Malgorzata. Dziecko w Polsce średniowiecznej. Poznań: Wydawnictwo Poznańskie 2004, p. 12 ff..
[3] Weiss, Sabine. Die Österreicherin. Die Rolle der Frau in 1000 Jahren Geschichte. Graz: U Verlag 1996, p. 10-36.
[4] Marečková, Marie. Materiály k vývoji české historiografie (do počátku 18. století). Brno: Masaryk University 2001, p. 165. Kudrna, Jaroslav, Petráň, Josef. Čítanka k dějinám dějepisectví II. Praha: Charles´ University 1983, p. 128-129.

groups. Basic education was supposed to be common for all the pupils and the mother tongue would be used for instruction. Further higher education would follow. Practically-oriented children would be trained in a certain trade. Diligent and gifted students should be enabled to continue their studies at higher Latin schools, and between 18-24 years of age, they should continue their education at universities, as according to their capabilities everybody should have the right to achieve the highest positions.[5]

The educational democracy of Comenius was based in his rationalistic optimism: human mind has no frontiers. His objective was the practical application of knowledge for the benefit of mankind and especially for the rectification of mankind and re-education towards a better and peaceful world arrangement. Comenius believed that man was good by nature and that he might be ennobled by means of a correct education. That was why he called school the workshop of humanity.

Since 16th century, Protestant education was developed which, besides a general education in humanities, spread ideas of religious reformation. The conviction that the faith was a gift of God and that everybody had a right to adopt it according to her/his free will enriched the early Modern-Times society with an important element of democratisation.

Jesuitical education was developed taking into account such an approach and focused on the development of the aristocratic pupils´ personalities. Such an exclusive approach continued till the Age of Enlightenment reform period; however, it was not taken into account in the state-driven modifications of school education and enhancement of the elementary education quality.[6]

The importance of school as a milestone between the childhood and adult age was growing. Due to Age-of-Enlightenment ideas, the state care of citizens´ education was enforced. In the Czech and Austrian lands, the Imperial Education Law from 1774 liberalised to a great degree the availability of education, making education more systematic. The structure of literacy profiled itself also during the 19th century.[7]

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[5] John Amos Comenius – The Great Didactic. Chapter XXVII. Of the Fourfold Division of Schools, Based on Age and Requirements.
The process should begin in infancy and should continue until the age of manhood is reached; and this space of twenty-four years should be divided into well-defined periods. In this we must follow the lead of nature. …
The whole period, therefore, must be divided into four distinct grades: infancy, childhood, boyhood, and youth, and to each grade six years and a special school should be assigned
I. For infancy the school should be the mother's knee
II. For childhood the school should be the Vernacular - School
III. For boyhood the school should be the Latin School or Gymnasium
IV. For youth the school should be the University and travel.
A Mother-School should exist in every house, a Vernacular School in every hamlet and village, a Gymnasium in every city, and a University in every kingdom or in every province.
These different schools are not to deal with different subjects, but should treat the same subject in different ways, giving instruction in all that can produce true men, true Christians, and true scholars, throughout graduating the instruction to the age of the pupil and the knowledge that he already possesses, …. just as the various parts of a tree increase together at every period of its growth. … (Translation: M. W. Keatinge, M.A. New York: Russell & Russell, 1967)
By Soul and Sword (edited by: Heřmanský, František. Prague 1958, p. 626-627.
[6] Čornejová, Ivana. Tovaryšstvo Ježíšovo. Jezuité v Čechách. Praha: Mladá fronta 1995, p. 145 ff.
Čornejová, Ivana. Jezuitské období univerzit v zemích Koruny české. In: Historická Olomouc a její problémy IX. Olomouc: Univerzita Palackého 1998, p. 9-14.
[7] Marečková, Marie. Concept of state Schools and Healthcare in Civic Society. Pojetí problematiky státní školní a zdravotní péče v systému občanské společnosti. In: Řehulka, Evžen et al. Scholl and Health 21. 2. Brno, MU 2007, p. 17-43.

An organised care for preschool-age children outside the family focused originally on the poorest social groups and it was not evoked by the progressive professionalisation of women – mothers. The first preschool-age children nursery in the Austrian monarchy was founded according to the West-European ideal in Buda (today Budapest) in 1828. Such a "Garden of Angels" (Angyalkert) was created due to an initiative of countess Theresa Brunszvik of Korompa, who was the founder of a similar nursery in Vienna. In compliance with the decree of the court commission and the provincial order from 1832, such institutions were meant for children till five years of age, they were subject to the supervision of the Episcopal consistory and they had to be financed from charitable sources.[8]

In 1835, supreme burgrave Karel Chotek invited regional governors and Episcopal consistories to create similar humanitarian institutions, so-called child nurseries, in the Czech lands. Nurseries "for children whose parents had to earn their living by daily work" had been created even earlier in Prague and Pilsen. Till 1848, twenty of such institutions were founded in Bohemia. In such institutions, the trivial educational plan was applied and the specifics of the preschool age were not taken into consideration. The majority of educators in such establishments were men. Only exceptionally, in the country or in provincial towns, unqualified elderly women were teachers in such nurseries.[9]

Although the specifics of children's age and school by play was successfully enforced especially by Prussian educator Friedrich Fröbel, the founder of "children gardens" (Kindergarten); the modern educational system as such was implemented by means of the Imperial School Law from 14.5.1869 (so-called Hasner´s reform), which entered into force in the school year 1870/1871. From such a school year, trivial, principal and normal schools were replaced with elementary and town schools. Curriculum was unified, making no differences between boys and girls. School did not depend on the Catholic Church. The school law applied also to preschool institutions, in which case, however, the school attendance was not compulsory, and the law implemented nurseries as training schools of girls´ educational institutes.

Although before 1869, there were four Czech nurseries in Prague in which only men were employed as educators, a modern preschool institution according to a French example with qualified women teachers was created due to the initiative of Marie Riegrová, daughter of František Palacký. In the Prague Old Town, 19th January 1869, a new Czech nursery was consecrated by Cardinal Friedrich Schwarzenberg. As direct reference to J. A. Comenius´s heritage, such nursery was called mother school. Besides its social function, which was caring for children of employed mothers from poor social classes, its objective was to assure modern national education of Czech children in the competition of German children's gardens which had existed in Prague from 1864. Financing of nurseries was provided by a committee of ladies, later on called "The

[8] Cach, Josef. Výchova a vzdělání v českých dějinách II. K problematice podílu školských institucí a názorů na výchovu a vzdělání na stavu kultury a vzdělanosti: Feudální společnost 1620-1848 (počínaje životem a dílem J. Á. Komenského). Prague: SPN 1989. This work is also a source of other data.
[9] Jan Vlastimil Svoboda taught in a Prague nursery in Hrádek; his work "Nursery or the first, practical, descriptive, versatile education of young children in order to practically develop thinking and ennoble the heart with guidance towards reading, counting and drawing for teachers, foster-parents and parents" was published in 1839, and the second edition was published in 1874. In 1857, Svoboda´s Prague nursery was handed over to teaching nurses. Lenderová, Milena et al. Dějiny každodennosti „dlouhého" 19. století II. Život všední i sváteční. Pardubice: University of Pardubice 2005, p. 37.

Committee of Ladies for Town Schools and Nurseries", the chairwoman of which was Marie Riegrová. The operation of nurseries was financed from public collections; it was supported by the Prague municipal council, contributions were provided by institutions, companies and individuals.[10]

By the year 1883, besides one private Czech nursery, the Prague municipal council registered 11 Czech nurseries under its patronage. Also outside Prague, the number of Czech nurseries was growing fast, so that in 1888, in Bohemia, Moravia, Silesia and Lower Austria, there were 172 Czech nurseries registered. Besides nursing fathers, 322 qualified nursing mothers and auxiliary nurses worked in such nurseries. At those times, there were 18 Czech nurseries in Prague with 65 nursing mothers. By 1914, there were 23 Czech nurseries in Prague.[11]

Nurseries laid the basis of modern preschool education. Their function was mainly social and they focused on children from poor families. Such institutions did not just care for children of working mothers, but on behalf of mothers, due to a creative application of the principles of Comenius´s *Information on Mother School* together with contemporary educational knowledge, such institutions strengthened physical, mental and moral education of children, systematically cultivating education towards health. In order to deepen the personal responsibility of children for their health, their activity was systematically utilised, as well as discipline, play, example and practical development of habits related to the correct lifestyle, diet, toughness, stay in countryside, regular sleep, physical cleanliness, home hygiene and care for the environment.

Already in nurseries, knowledge was systematically developed of nature and society, love for the mother land, national pride, respect for national history and appurtenance to the nation. The mother tongue played a very important role in such an education. Nursery had a better possibility than primary school to influence in the parents due to a daily contact with them. However, education in nursery and the family had to be necessarily closely related, focusing on the strengthening of positive physical, mental and moral aspects and characteristics, and on the enforcement of health hygienic habits in everyday life.[12]

Besides nurseries used mainly by working women from poor social classes, similar institutions appeared focused on children up to three years of age – baby nurseries. Baby nurseries financed through activities of different societies, existed in Prague from the year 1854. The Czech baby nurseries were inspired by the French example. At the initiative of Marie Riegrová, a foundation for the support of poor newborn children and their mothers was created, and in March 1884, the first Czech baby nursery was opened for toddlers up to three years of age. Soon, Czech baby nursery for infants was opened.

Preschool education which took shape in 19th century was not compulsory for children; it kept an optional character. It was not directly connected to the employment of women with demanding or lucrative professions. Care for children outside the family originated as a philanthropic activity and it was not directly connected to the employment of women-mothers outside their homes. Its objective was to provide clothing,

[10] Lenderová, Milena et al. Dějiny každodennosti „dlouhého 19. století II. Život všední i sváteční. Pardubice: University of Pardubice 2005, p. 38.
[11] Lenderová, Milena et al. Dějiny každodennosti „dlouhého 19. století II. Život všední i sváteční. Pardubice: University of Pardubice 2005, p. 38.
[12] Monatová, Lily. Jak dítě poznává svět. Prague: SPN 1963.

warm food and basic hygiene for children from the poorest social classes. Therefore it was not in compliance with the traditional authority of family and the role of the mother; it was a sign of poverty and a certain social immorality.

Besides the preference of the educative function, preschool institutions were social establishments, attended mainly by children from poor families on whom such institutions focused. At the same time, they provided an option of education in the mother tongue. They were to prevent the danger of germanisation of Czech children in German preschool institutions which began to appear.

The enforcement of social approaches and progressive educational trends at the forming of Czech preschool institutions from the seventies of 19th century was strongly influenced by the focus of Czech women movement for the support of poor abandoned women (often widows of soldiers of the Prussian – Austrian war in 1866), assuring food and day-care of their little children. The merit for the social approach towards so-called woman question may be attributed, besides to Karolina Světlá and Eliška Krásnohorská, also to Marie Riegrová.

K PROBLEMATICE FORMOVÁNÍ SOCIÁLNÍ A VÝCHOVNÉ FUNKCE PŘEDŠKOLNÍCH ZAŘÍZENÍ

Abstrakt: Organizovaná péče o děti předškolního věku mimo rodinu se původně orientovala na nejchudší společenské vrstvy a nebyla evokována postupující profesionalizací žen – matek. Prvá opatrovna pro děti předškolního věku v rakouské monarchii byla založena roku 1828 v Budíně (dnešní Budapešti). Říšský školský zákon z roku 1869 (tzv. Hasnerova reforma) se vztahoval i na předškolní zařízení, kde však nebyla docházka dětí povinná, a zaváděl institut mateřských škol jako cvičných škol při dívčích pedagogických ústavech. Před rokem 1869 v Praze sice vznikly čtyři české opatrovny, avšak moderní předškolní instituce s kvalifikovanými učitelkami byla zřízena 19. ledna 1869 z iniciativy Marie Riegrové, dcery Františka Palackého. Jí patří zásluhy o sociální přístup k tzv. ženské otázce vedle Karoliny Světlé a Elišky Krásnohorské.

Klíčová slova: předškolní zařízení, dětské opatrovny, sociální a výchovná funkce, Marie Riegrová, zásady J. Á. Komenského, mateřské školy, výchova ke zdraví

SOCIAL NETWORKS AND THEIR INFLUENCE UPON CHANGES IN USE OF THE INTERNET AT SCHOOLS

Jiří STRACH

Abstract: *The focus of use of the Internet has changed in recent times, particularly among children and young people. The previous core concept for employment of the Internet in schools, which is to say as a medium enabling the acquisition of the most up-to-date information in a wide variety of disciplines and fields, has been supplanted by a tendency toward the creation of teaching programmes and distant learning options and this evolution continues. For younger people it is more and more frequent that the primary purpose of the Internet is the use of social sites and search engines, which make it possible for them to dive into a whole new world of virtual relationships and special interest groups, rather than the focus being on broadening their educational horizons. This simple fact is, in my opinion, a potential issue in the social and emotional growth of young people, as it can lead to dissociative tendencies with regard to their physical fellow students around them, and the replacement of real relationships with the ephemera of e-friendship, the parameters and risks of which are frequently less than clear. The school, which is to say teachers and parents in this particular scenario, is often inadequately prepared for this change. The concurrent dissolution of social bonds within the class may well lead to a generally deteriorated atmosphere therein. This presentation endeavours to address in detail a number of issues arising from this situation.*

Keywords: social networks, Internet, school atmosphere

The sea change laid out above in the employment of the Internet by younger people, away from the use of the system as a tool and informational source, and the simultaneous growth of interactive computer games, which envelop the user in a virtual world and draw them into a cyber community, has led to the rapid growth of semi-permanent social groupings among players. Today we can likewise see the almost exponential expansion of such social networking sites as Facebook, ICQ, Twitter, and Skype, with young people clearly in the vanguard among users. In today´s world, the time consuming, or arguably wasting, capabilities of particularly Facebook and Twitter are practically unparalleled. The chasm of comprehension as regards the capabilities and use of such programs between children and the majority of parents and teachers means

that, in practical terms, the students have an interwoven online life, accessible equally at home or at school, of which the adults around them are largely unaware. Specialists and school network administrators have struggled with the implications of these new phenomena, thus far without any guaranteed positive outcome. It seems Facebook and Twitter are resculpting our social landscape. Facebook users, having created a profile and attached photographs and provided telephone number and e-mail address in order to "hook up", with likeminded friends, are precluded from thereafter reclaiming their data, or even transferring it to another server. Facebook has begun to collaborate with those who advocate open standards. The new Facebook Connect service enables users to sign in and work on more than 10 000 webservers worldwide. Social networks, it may reasonably be assumed, will form an integral and inseparable cornerstone of the Internet, owned by no one company. This demonstrates the clear necessity for schools to reassess its use and, as far as possible, eliminate the more extreme risks inherent in such social networking.

What is a social network?

From a technical standpoint, the core components of a social network are simply a combination of specialised webhosting services and search engines. A user completes a standard profile and immediately is added to the catalogue of profiles held, able to search and be found. Simple and elegant. The result is something beyond the wildest dreams of a 20th century researcher, the instant creation of a comprehensive profile, structured from data which can be individually or collectively recombined at will and expressed in its base form as a collection of precise numbers. If one is looking for former classmates in order to arrange a reunion and both time and space pressures apply, the social networks are the clearly optimal solution. Likewise when searching for a fellow air-model specialist or a potential eponymous party in New York, this would be a most logical first stop. Friends or acquaintances, old hands or new faces, any combination can be rapidly put together and collectively addressed. As the number of e-mail addresses and phone numbers we need grows with abandon, the system adapts ever more rapidly, expanding its capabilities to meet and exceed this need. For those who require this world forever at their fingertips, the service supplier offers the glittering "premium membership", obviously at a price.

These networks grow constantly in numbers and popularity due to their perceived reliability and ever-expanding customer base. Today social networks form a vital part of Internet content and are thus creating a kind of more organised social space. E-workshop, the organisation of which the author is a key member, has predicted this along with other specific developments.

School and social networking

The appropriate response for schools to this phenomenon is our next concern. Whilst the services cannot be ignored, it must be emphasized to students that, from the educational standpoint, the computer is essentially a working tool, providing us with the capability to address tasks and obtain educational information which would other-

wise be impractical or impossible. The existing skills and creativity of the students can perhaps be employed in enabling the teachers to "raise their game" on a technical front, showing them the opportunities and capacities for education of these systems. However, an absolute prerequisite, on the part of the teachers and parents both, is to make students fully aware of the potential risks entailed in interaction with and involvement in these social networks.

When considering the use of social networking in schools the following subdivisions would seem appropriate:

1. As a means, in the context of lessons, to facilitates the exploration of political, economic, and cultural scenarios.
1. At home for supplementary and consultation use by teachers and students and among groups of students.
3. With careful application as a tool in social context to improve relationships between the various students.
4. As a means of communication between parents and the schools and similarly amongst parents.

Using social networking in tuition.

Twitter is arguably the best medium through which to acquire the most up-to-date information on events around the globe. It boasts that it is faster than CNN, and recently proved its prowess by enabling an astronaut in orbit to send a message home. Claims are being made that Twitter saves firms both time and money. Its coolness is testified to by Pepsi, who have its logo on their cans. The whole world is suddenly tweeting, at least according to Newsweek magazine, which now has Twitter on its pages.

And a tweet is all it takes... Last year when Egyptian police arrested James Buck, an American student, it was enough for him to send his 48 followers the single word "arrested" whilst on his way to jail, and they immediately informed his university (Berkeley), the American Embassy in Cairo and many other organisations, so that the next day he was free.

The upside of this system, which limits the informational content to the maximum of 140 characters per tweet, is that in an extremely concentrated form it is possible to simultaneously appraise an entire group of the purpose or sources of a given project. Moreover, due to the fact that the information is usually in English, Twitter can be used in language learning.

Facebook, as opposed to Twitter, permits the creation of non-public groups of users, who can collectively create projects involving text and pictures. Other social networks such as "Spolužáci" (i.e. Classmates in English) and the like make communal project work via a social network a distinct possibility. The advantage of employing this new technology in teaching is the probability of engaging the students´ interest and directing it towards expanding didactic methods.

The blending of new technology and older approaches allows us to use versions of various didactic games, which we believe may rouse the interest of students in matters of history, politics, and culture. Using modern technology may help the teacher to earn the respect of students for their capabilities, since the current situation generally en-

dorses young people´s perception that the older generation "does not get it". The teacher should endeavour in their work to involve the students and their interests where possible and allow them to creatively generate new methods of communication, a statement predicated on the concept that the teacher will be able to employ the technology adequately to guide the outcome toward their didactic aims.

Using social networks in study preparation at home

For the teachers so inclined, never in history has there been such a ready tool for individual interaction on a regular and repeated basis as is offered by the various Internet and Internet- related social services. The aforementioned social networks, when employed in distance learning, allow the creation of student groups, with a variety of potential parameters, and a possibility of direct communication between the teacher and specific groups or individuals, as well as within the said groups. It similarly permits the teacher to support those parents who seek to assist their children with homework by providing advice or further details where necessary. In general, it is to be recommended that the teacher explore the possibilities of such social groups and establish clear guidelines for work within them. Ideally, the objective is to employ students´ creativity and Internet experience in forging an equal partnership in learning. An advantageous combination of distant study materials and compatible programmes may well enhance the effectiveness of teaching and bring a more active dynamic to on-site learning, in which the fact that students have done the majority of preparatory work at home will speed the process. The optimised outcome would be that learning in school would focus more on discussion and similar exploratory methods such as excursions, developmental projects, cross-curricular studies, educational films, etc. It is conceivable that social networking groups may undermine bullying, as those students who in the physical classroom might be inclined to perpetrate such activity are, in general, not the group leaders in cyber space and their influence can, hopefully, be suppressed to some degree by the teacher, particularly in combination with appropriate grouping, wherein the teacher aids in the creation of mutual support groups for the more capable students and seeks to remove the stimuli to aggression in potential bullies. In this way, and as a positive consequence, the atmosphere in the classroom can be improved in a non-violent manner.

Using social networking as a tool for improving relationship among classmates.

The contemporary atmosphere of schools, particularly in larger cities, is not necessarily conducive to creative and enduring friendship between students, both in any given class and between classes. While the bedrock of society is individualised relationships, young people today are less inclined to sport than they were a couple of generations ago and tend to spend considerable time seated in front of a screen or monitor. This time can, maybe, be turned to advantage by employing social networks to strengthen the links between students of various years, and might lead to a greater sense of community within a given school. It has been shown that social networks can

serve as the trigger for social activities, e.g. the protest against the state standardised school leaving exams, and precipitates gatherings not only in cyber-space but also in the real world. In the hands of an educator it may be hoped that advice and appropriate incentives for recreational and sportive activities, or suitable substitutes, would be found. In the context of a school, social networks might be employed to spark discussion on a variety of vital topics, such as drugs, racism, unfocused aggression and the like. Given the existence of certain student groups and the opportunity to analyze them, it would follow that we might track the growth of given dynamics within the said community. From this it would follow that appropriate input in the real world would likewise lead to improvement in the given areas. One technique to garner considerable attention has been the analysis of negative social relations within certain groups by school psychologists in conjunction with behavioural therapists and class teachers, which has led to improved configuration of work groups within classes and in home study. The specialists have recommended that, particularly in basic schools, work groups in social networking should be composed of heterogeneous blend of both sexes, and be of diverse academic ability. The objective of such groups needs to be so chosen that each member can, based on individual strengths, contribute something vital to the outcome.

Using social networking for communication between parents and the school and among parents

A key issue in modern schooling is communication between the school and the parents. The interaction between the teacher and parent has swung from the earlier extreme of the dominant pedagogue, the qualified educator, through a balanced input of two contributors with the communal aim of raising the given individual, to the current unhealthy perspective of service provider and client.

Social networking sites such as Facebook can be tools for the creation of a community through which the aforementioned client-provider relationship is restored to the balance of equal partnership, a state which allows teachers and parents to improve their partnership in the interests of the student. The downside of current relations between the teachers and the communities of parents, is that the parents often create groups only in opposition to school practises. The kernel of such a group is often made up of the parents of children with behavioural or learning issues, who seek to lay the entire blame for any difficulties firmly on the shoulders of the teacher, rather than endeavouring any sort of cooperative solution. In such circumstances it is advisable to attempt to create mixed groups of students, parents, and teachers in the pursuit of an improved class and school atmosphere. In such extreme cases it might be necessary for the teacher to elicit descriptions of the situation from students who are somewhat more objective in order to provide a balanced picture and seek a collaborative solution. Such use of the social network may reduce negative feedback between the school and parents. A program like Twitter might prove useful in gathering a community to share life in the classroom. In this way it would be possible to provide parents with concise up-to-date information on current events in the school.

Dangers inherent in participation in inappropriate groups on social networks.

Appropriate use of social networks in the school context can reduce the risks inherent in the unrestrained participation of young people in social networks. Parents and students alike should be aware of the potential dangers to which involvement in social networking might expose them, to help them develop into informed users. It may be viewed as the teacher´s responsibility to draw students´ attention to certain core characteristics of reliable social networks:

The classic definition of socioware today [3] declares that it (socioware) links people by the means of seven basic mechanisms:

- Identity
- Reputation
- Presence
- Relationships
- Conversations
- Groups
- Sharing

What are the respective qualities of these mechanisms?

Identity

Identity encompasses your screen name, nickname, icon – anything, which represents you within the network on a constant basis and is used for sharing and activities as a point of recognition, whether that is of the physical or virtual persona. The constancy of this identity is extremely important; the question of identity theft and similar is frequently addressed all over the net.

Reputation

Each identity has an attendant reputation and it is, therefore, important that the socioware can work with the reputation in an appropriate manner, represent it and clarify its function. Reputation is something of a synonym for trustworthiness, that is to say, the extent to which this identity can be relied upon as the source. In the cases of certain socioware systems, reputation is an extremely complex chain of relationships, in which who trusts and is trusted by whom plays a very significant role and so such trust may be "inherited" in a manner similar to real life – if you are dealing with someone who is trusted by someone whom you trust, then, in all probability, said third party can be trusted by you.

The matter of reputation can clearly be abused; there is the danger of a whispering campaign or the like. There is a risk, for example, of someone creating negative reputation deliberately and putting it into other virtual identities. In such a case it may be hoped that monitoring software, recognising the unprecedented deterioration of reputation, would seek out the source.

Presence

Reputation depends on the presence and identity. The presence is the movement and staying of an identity within the context of a given virtual reality and, generally speaking, the movement of identity in cyber space should be reflected in the reputation. The presence can be also summarised as the simple fact that the identity is active in the virtual reality or community (online).

Relationships

The interaction of the identity with the other like identities creates relationships which, clearly, maybe positive, negative, or essentially neutral. Significant impression is made upon these relationships by the fact that there are real people behind them who, for reasons of their own, have a variety of preferences and prejudices. It is therefore necessary to assess, on a personal basis, whose advice is worth taking.

Conversations

Conversations take a vast variety of forms from posting on chat boards, where anyone can contact anyone, through to real time conference calls. Socioware systems frequently include specific discussion forums, where one can seek a partner for a conversation on an agreed topic. These differ from open discussion forums in that the majority of conversations are open sending and can be read by anyone. Conversations differ from discussions and message systems, e.g. e-mail, by the manner in the way in which users approach it. Such a conversation is, for example, to be found in an ICQ window, where participants in the conversation can scroll earlier comments, the participants address each other (the identities of those involved are clearly defined) and it is surprising how difficult it is to wind things up. Posting on a discussion board, on the other hand, is a shot in the dark, an opening gambit to which one hopes to receive a response. Email can be similar; it is specifically addressed, but can go astray or be left unattended.

Sharing

At present the most commonly used function of the Internet as a whole and the socioware is sharing. The underlying logic, that friends and people with shared interests can easily send one another items of interest, means that this is much used for music, films, books, etc.

Reservations about socioware

The aforementioned mechanisms are the clear core of any socioware and its implementation.. For example, a reputation which is not monitored and does not manifest in the system, seems pointless. And, conversely, an identity´s reputation has to be protected against wilful and malicious damage by third parties.

There are, of course, many initiatives which attempt to assess the processes and phenomena emergent from socioware. More significantly, they endeavour to render these phenomena and processes in pure mathematical terms, thus disconnecting them from standard sociology and reassociating them with programming and artificial intelligence. One such initiative is The Augmented Social Network.

Another point of interest is the reserve with which socioware today is greeted. A number of "veterans" of the Internet condemn such initiatives as something which endeavours to mathematically express such simple processes as interpersonal relationships, which every human being naturally comprehends. However, it is not that straightforward; apart from anything else, interpersonal relationships are not remotely simple and to attempt to render them in pure mathematics is, in the view of many psychologists and sociologists, an endeavour akin to heresy. We could draw a comparison to the attempted appraisal of grammatical language – why evaluate and analyse something so natural and self-evident? On the other hand, without a detailed blueprint of grammar, how is it possible to train a computer to comprehend human language? And likewise, lacking a detailed description of the functions of human interaction, how might a computer begin to aid people in mutual understanding?

Computers deal with more and more communication as well as saving more data. They are capable of saving enormous quantities of information and also retrieving the data, if given the right command; however, it is difficult for them to sort out the information and help us with it, e.g. tell us if the provider of a particular piece of data is trustworthy or if another piece of information could help us.

For example, how trustworthy is information that product X provides the same services (use value) as product Y, however, for half the price? Even today´s Internet finds verifying such a piece of information difficult and reserved only to advanced users with enough time to go through adequate forums, results in Google and then assess them themselves to discover if that was a marketing statement by the producer of X, or an invaluable recommendation of an enthusiastic user, which will genuinely save your money.

Today´s socioware can deal with the above described situation only within very specific parameters – in fact, only in the case when the individual users state their opinion regarding the said problem. Future systems will be probably able to evaluate the trustworthiness of a given piece of information themselves on the basis of the behaviour of individual identities, frequently also according to what is not said. It will not be necessary for a user to put their negative opinion, it will be enough if a user with certain reputation fails to respond to a problem, having encountered it (irrespective of how it might be visualised on the Internet).

Socioware in its current form comes down to essentially a slightly more intelligent version of a discussion forum, the difference from which evades many users.

Although such information regarding the dangers of socioware have been widely publicised, it is essential to ensure that any students or parents planning to use it are fully aware of the risks.

Selecting an appropriate profile photograph

Not recommended: Do not insert into your profile a photograph, which is "too sexy, a caricature, or which could easily offend a visitor." Also avoid quick self portraits with inadequate facial expressions or in costume.

Short bio

Elements to consider: The biography section varies from site to site. Facebook, for example, offers its users a column with wide range of interest headings. Some data can be provided only to a closed circuit of users. Describe yourself briefly and avoid untruths.

Not recommended: Due to the fact that currently information has the value of gold, do not reveal everything about yourself as you could pay for it later (note: when filling in your date of birth, do not fill in the year).

Inserting content, links, and news

Elements to consider: Insert content expressing your personal interests and the field of study qualification. You can also include a slideshow with your personal photos, though only under safe circumstances.

Not recommended: Be aware of spamming. Do not automatically expect that every tiny detail of your life would be of interest to every acquaintance. Your loves and losses you should keep to more secure channels. And above all, do not broadcast the various doings of family, schoolmates, and friends!

Talking to one, talking to many

Elements to consider: To ask something of a whole network of schoolmates and friends is suitable only for questions of a general nature (e. g. which of two telephones to choose). Responding to such a message should be done directly, i.e. specifically addressed.

Not recommended: Do not post on any wall messages of the order of "tomorrow at the park at five." Your friend´s friends are not interested in such spam. Better to send them a private message.

Considering the tone of expression

Elements to consider: Politeness is paramount. Share only things which would not lead to problems in real life. In-jokes should be kept within your circle of friends.

Not recommended: Avoid making remarks in public forums which contain sarcastic humour or in-jokes. If that is your idea of fun, it is better to set up a group of like-minded souls.

Keep in mind the constant risks inherent in Internet use, such as Identity Theft, Phishing, Cyperbullying and the various viral strains etc. often encountered on pornographic pages and the like.

SOCIÁLNÍ SÍTĚ A JEJICH VLIV NA ZMĚNY POUŽITÍ INTERNETU VE ŠKOLE

Abstrakt: V poslední době se mění zaměření použití internetu zejména u dětí a mládeže. Původní myšlenka použít ve škole internet jako prostředek umožňující získat nejnovější informace z nejrůznějších oborů lidské činnosti, vytvořit výukové programy a dokonce celé výukové servery poskytující distanční opory pro celé ročníky základní školy se vytrácí. Stále častěji se stává, že mladí lidé začínají používat služeb specializovaných vyhledavačů umožňujících vytvářet sociální sítě a vstupují tak do zvláštních virtuálních vztahů a skupin, místo aby využívali internet pro své vzdělávání. Tato skutečnost je podle mého názoru zejména pro mladé lidi problematická, vede k odcizení skutečné reálné skupině spolužáků, u některých jedinců, nahrazuje skutečná přátelství (e-přátelství) s nejistým, a někdy i nebezpečným partnerem. Škola, učitelé ani rodiče nejsou na tuto změnu dostatečně připraveni. Rozpad soudržnosti třídy může vést ke zhoršení klimatu třídy.

Klíčová slova: sociální sítě, internet, školní klima

HEALTH EDUCATION BY MEANS OF FICTIONAL STORIES

Jana KRÁTKÁ

Abstract: Today's US and Western Europe TV series and film features are getting increasingly crammed with health-driven sub-plots and narratives. A number of studies indicate that some TV series' attention is almost equally divided between describing fictional heroes' lives and their medical experience, the latter being a clear educational vehicle. In our contribution we are going to discuss the case study of one of the most appreciated examples of such an approach, the ever growingly popular TV series Grey's Anatomy that - when usually attributed as a romantic/medical drama with small and specific comedy inserts - became a popular culture phenomenon and a regular prime-time broadcast since its 2005 premiere. This media product can be considered a striking example of spontaneous social and emotional learning right in the front of a TV-screen and the series is even more interesting because of a simple fact it favours the visualization of professional physicians' experience instead of focusing on more traditional patients' sub-plots.

Keywords: health, fictional character, stories, experiential learning

Today's US and Western Europe TV series and film features are getting increasingly crammed with health-driven plots. They are specific by their definite orientation to the health education. By means of the stories of the fictional characters the viewer gains experience with the topic of health. This TV entertaining series brings about a great potential to communicate various educating messages to its viewers without them realizing that they have been actually formed and that they learn new information. This is the way how to prevent their possible refusal or any similar educational influences. The TV series with medical plots usually evenly focus on the life of the main characters and on medical situations. The TV series Grey's Anatomy will serve as the example for explaining the course of the socio-emotional learning. *Grey's Anatomy* ranks among romantic dramas with elements of comedy where the topic of life of main characters – doctors is given preference as compared with episodic characters of the patients. This rather non-traditional TV series from the medical environment with elements of peculiar humour has become a cultural phenomenon since its first show in 2005 and it keeps its ratings in the United States around 20 million of viewers per each episode. Also, it has a reserved place in the prime time.

The educational messages associated with the topic of health have become a common part of popular series – according to the research of the Kaiser Family Foundation from 09/2008 (Murphy et al., 2008) it is approximately 1.5 of the plot per each episode that is somehow related to the topic of health[1]), and the biggest amount of such educational content is naturally offered by the medical TV series. According to the findings of the Kaiser Family Foundation, about a half of all stories related to the topic of health takes place in medical institutions, which offers a more complex view of the health topic to the viewer. Most of the shown medical care is considered reasonable in those stories. What predominates is the positive depiction of the interaction between the patient and the doctor. Only 1 % of the stories with health topics showed purely negative depiction of the interaction and provided health care (Murphy et al., 2008, pg. 13). The organizations like Kaiser Family Foundation focus on methods of mediating the health enlightenment to the viewers by means of the media. In such case it is not unusual that authors of the TV series often consult the educational messages and their incorporation in the episodes with such specialists.

The interiorization of the situation that is pedagogically important is supported by the following combination of influences: strong emotional captivation by the story that mediates the information; the viewers consider the story real or find some similarities with another concrete situation; the information is mediated by their favourite or important character; the moment of conveying of the information has a fundamental significance for further development of the conveying character; the conveyed information is mediated by a famous actor (compare Rideout, 2008, pg. 9).

Educational Messages and the Topic of Health in Grey's Anatomy

According to the findings of the Kaiser Family Foundation (Rideout, 2008, pg. 5), 45 % of regular viewers of the *Grey's Anatomy* say that thanks to the show they learned something new about the health care and 17 % of the viewers look up the information of the concrete health issue on grounds of the stories. 30 % of the viewers often discuss the episodes with their friends or family and even more viewers do it on the internet as part of the blogs, special web sites or discussion forums where various medical issues from previous episodes are discussed (compare Rideout, 2008, pg. 8). A correct educational message and correct popular show may be powerful communication channels (2008, s. 9). Another interpretation of the condition of shown topics related with health may be variously understood. For instance, 33 % of the analyzed episodes contained alcohol consumption, 6 % the problem of alcohol abuse, which may be considered insufficient or adequate in relation to the ratio between common occasional consumers and alcoholics in the society (Murphy et al., 2008, pg. 13).

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[1] The top 10 programmes broadcasted in the prime time from 2004 – 2006 were analyzed, including Friends, ER, CSI, Will & Grace, CSI: Miami, Without a Trace, Law & Order, The Simpsons, 24, House, Desperate Housewives, Grey's Anatomy, All of Us, Lost, Bones etc. In total, 515 episodes of those shows were analyzed in which 792 health-related stories were identified (socially pathologic topics as the suicide, rape etc were not included among the health-related topics), i.e. 1.5 of health-related stories per an episode of some of the most popular shows that were on in the prime time. See http://www.kff.org/entmedia/upload/7764.pdf

The TV series from medical environment usually divide their focus evenly between the life of their main characters and the medical situations. *Grey's Anatomy* ranks among romantic dramas with elements of comedy where the topic of life of main characters – doctors is given preference as compared with episodic characters of the patients. This rather non-traditional TV series from the medical environment with elements of peculiar humour has become a cultural phenomenon since its first show in 2005 and it keeps its ratings in the United States around 20 million of viewers per each episode. Also, it has a reserved place in the prime time. It is similarly popular in the whole western world. In the Czech environment it enjoys a bit lower popularity (in2006 – 2008 it was about 423 – 562 thousand of viewers per an episode, whereas Dr. House shows the ratings of up to 1 million of viewers) as well as less attractive time but it in no way discourages its fans who in the USA almost immediately get the previous episodes so that they could discuss the plot, or purchase it on DVD as a whole series. Since 2005, the series has been regularly nominated or awarded the Golden Globe or EMMY awards in the category of best TV programmes. The number of characters offers many opportunities for viewer's self-identification with them since the plot is primarily focused on the characters' privacy. At the beginning it is the group of five residents who have just successfully finished their studies at the faculty of medicine and have entered the Seattle Grace hospital. Each of them represents a different type of man. They all however shave the dream of one of the legendary surgeons of whom they had read before. All of them spend most of their time in the hospital and offer a rather peculiar sense of humour just to hide their emotions provoked by various incentives.

Grey's Anatomy Reflections as Perceived by its Audience and Fans

When choosing the method, I started from the experience of authors of comparable studies and from the methodical trend in the sphere of fan studies. The traditional methods of social researches in forms of interviews of the target group are criticized for their inability to capture the experience of mediated lives (Alasuutari, 1999 In Harrington – Bielby, 2007), and within the context of the fan studies, current leading representatives of the subject field often mark them as incapable of giving the true picture of the certain obscurity of the fan's pleasures (Hills, 2002 In Harrington – Bielby, 2007). At present, the research in the sphere of fan studies inclines to the ethnographic studies that are considered the ideal method of studying the current reception of media.[2] The virtual ethnographic studies also allow for more effective combination of the methods: combination of observations (for instance fan fiction, fan websites, fan art), participating observations and interviews (discussion forums).

During the time of the research, I had known the respondents of this study for more than a year from the *Grey's Anatomy* discussion forum at the Czech-Slovak Film Database, which enabled long observation of the development of their identification

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[2] The standard anthropological model of long-term work in the field represents main challenge for the fan studies – instead of anthropology, it is ethnography that currently undergoes a crisis, as mentioned by Harrington – Bielby (2007)

with individual characters and their relation to the series. Five of them were long interested in the possibility of taking part in the study as the respondents. After previous experience I decided for individual interviews carried out namely electronically, instead of group discussions. The responses of the respondents thus show great amount of openness. None of the approached fans joined at some domestic fan websites of the TV series was interested in collaboration.

At the beginning of watching *Grey's Anatomy*, the viewers either turned on the TV randomly or were attracted by the trailers or articles, reviews or comments. In case of the trailer or reading the related texts, they were mostly intuitively interested by the stylization, actors, music or atmosphere of the series that other viewers probably passed by without a notice. I assume that this captivation works purely subjectively on grounds of personal aesthetic preferences and socio-emotional experience of the persons. In this case study we do not hear about any fatefulness, i.e. the exact moment of the first meeting with the series as it is common with the fans of popular audiovisual culture. Nevertheless, they are faithful viewers (compare Reeves, 1996) whom the absence of fan expressions (compare Jenkins, 1992) does not prevent from further self-identification, experiential learning or entertainment and pleasure from the reception.

The viewers in my study consider the series as means for showing emotions and interpersonal relations, and they realize that for the reception of the series works as the means of actually experiencing the situations they would never experience. At the same time, they are critical to showing the hospital situations and medical cases. They assume that their pleasure from the reception is based on emotional and social experience which additionally enables their social and emotional learning by means of the self-identifying reception of such situations (the process of learning does not happen in case of such critical approach that prevents from viewer's self-identification with the situation of the fictional).

Self-identification with a Fictional Character as the Source of Social and Emotional Learning

The narrative scheme of the episodes mingles with Meredith's voice-over as the independent narration above the story without the person being in camera viewfinder. This voice-over is in form of her ideas or questions and it also works as a feedback to the presented story. At the beginning or at the end of the episode, Meredith introduces us with certain facts, true or moral values of the characters, relationships, friends, life or death. Namely thanks to the introspection, Meredith becomes the most easily self-identifiable character.

The self-identification with a character and its situation is based on comparison of oneself and similar experience that could be transferred to completely different situations with comparable contexts. In the self-identifying stage the loyal viewers and fans naturally and very often also deeply analyze their own situation and assess their decisions in light of the decisions of the fictional characters that appear in similar situations.

The deep comparison of the fictional character and its situation with one self work as the key parts of the social and emotional learning (Hughes, 2007). This learning

then leads to strengthening of competences demonstrated namely in the social sphere. The empathy with a character allows the viewer to obtain new experience with emotions that he or she would never experience or has never experienced in such intensity or that he or she experienced long before. The experience obtained by means of this form of experiential learning becomes new part of the constantly shaping personality of the viewer (compare Hughes, 2007). And they are even more strengthened by the following discussion of the topic with fellow viewers and friends regardless the way of communication (i.e. within the virtual groups on the internet or in real life).

Viewer's Deliberation in Less Known Areas

The final stage is the application when the viewer strives to use the experience obtained in the course of the self-identified reflection, self-reflection and possible following discussions to solve his or her own problems in ordinary life. Regardless whether the story gives them a "key" to solve their situation, they are enriched by this "identified reception". In most of the cases they cannot simply imitate the behaviour of the character, but there is a certain shift and personal development when the viewer asks himself whether he would do the same or different, and analyzes the possibilities that he would not even take into account before.

Despite the viewers are capable of identified reception they still approach the series as the product of audiovisual culture that is fun to review critically. They can identify themselves with a character and at the same time see the script and author's intentions behind it. The critical point of view and understanding the world of fiction is part of their viewer's passion that the reception brings about. It is an ideal harmony of the critical point of view and identification with the fictional character when one part of the reception procedures does not disturb the other. The loyal fans of *Grey's Anatomy* mostly criticize what they do not know or what they cannot assess in their position (in this case it is the medical cases). On the other hand, they consider "real" those situations that they are capable of evaluating, in this case it is the nature of a character or their problems mostly consisting of interpersonal relations and communication.

Unfortunately, in case of the Czech and Slovak loyal viewers, we cannot confirm that Grey's Anatomy as a TV series from medical environment works as a sufficient enlightening tool in health questions despite the TV series attempts for it and its authors strive to present important health issues. The respondents take a too careful approach to the topic of health to fulfil the educative message of the TV series in terms of the health care. They more easily reach the experiential learning by self-identification with the character and define the competences in the personality, social, communication and emotional sphere. In this case the person feels safe because there are such aspects that he or she can evaluate and thus identify with them. From the point of view of the show it seems to be better not to attempt for simple educative lesson with which the viewer has problem to identify, but rather for presentation of truly working human characters. This finding cannot be considered a fundamental because the actual experiential learning by means of self-identification with a character is already a big enough contribution.

VÝCHOVA KE ZDRAVÍ PROSTŘEDNICTVÍM PŘÍBĚHŮ FIKČNÍCH POSTAV

Abstrakt: V současnosti se stále více setkáváme se zdravotními zápletkami v populárních filmech a seriálech západní produkce. Seriály z lékařského prostředí se obvykle zaměřují srovnatelnou měrou na život hlavních postav, jako na lékařské situace. Jedinec pak nabývá prostřednictvím těchto příběhů fikčních postav zkušenosti s tématem zdraví. Na příkladě fenoménu Grey´s Anatomy si vysvětlíme průběh sociálního a emocionálního učení. Grey´s Anatomy patří k romantickým dramatům s komediálními prvky, kde má téma života hlavních postav – lékařů přednost před epizodními postavami pacientů. Takto do jisté míry netradičně pojatý seriál se od počátku svého vysílání v roce 2005 stal kulturním fenoménem, který si ve Spojených státech udržuje sledovanost okolo 20 milionů diváků na každou epizodu a je vysílán v hlavním vysílacím čase. Televizní zábavní pořad v sobě nese velký potenciál přenášet na diváky výchovná poselství, aniž by si uvědomili, že jsou formováni, a že se učí novým poznatkům, čímž lze předejít jejich případnému odmítnutí jakýchkoli edukačních vlivů.

Klíčová slova: zdraví, fikční postava, příběhy, zkušenostní učení

AREAS ENABLING SELF-IDENTIFICATION WITH FICTIONAL CHARACTERS

Jana KRÁTKÁ

Abstract: *Identification with fictional character and its situation is a vital part of self-reflection as it comes out of a comparison being made between self and fictional character and, quite importantly, from an earlier and somehow similar experiences that can be transformed into a number of contexts. While conducting a survey based on the use of an on-line questionnaire, we have tried to describe the specifics of audiovisual fiction identification with contemporary Czech young people. The research sample is made up from 2,169 respondents who participated at the data collection within a one-week period in September 2008. The identification with audiovisual culture characters in the case of present viewers is manifested in different areas of real life.*

Keywords: self-reflection, identification, fictional character, questionnaire, research

This study attempts to describe the areas that provide space for self-identification of a young viewer with a fictional character of the audiovisual culture, i.e. what the viewer learns during the process of self-identification. By means of the stories of fictional characters the viewer gains experience with various topics. This experiential learning is based on the process of self-identification with the character that is part of the process of self-reflection (Pardeck, 1994; Sullivan – Strang, 2003; Hesley, 2001). In the today's (foreign) pedagogy, the new areas of the experiential learning rank among the quite developing areas that are – in their beginnings – based on Dewey, Piaget and Lewin, whereas the Czech pedagogy focuses above all on traditional Kolb, 1984) experiential pedagogy in its natural environment. The experiences that serve as sources of development of a personality, social and emotional learning, however also occur under the influence of experience as mediated by the fictional character and his or her story.

The objective of fiction is not to be considered real but – on the contrary – to create a world that can exists by itself and that we believe to be true despite the fact it has features that vary from our own world (Jost, 2006, pg 47). Thanks to those principles of existence of the fictional world, the viewer can easily identify himself with the fictional character. This identification is usually understood as finding similarities of oneself with the respective fictional character and at the same time the desire to resemble the charac-

ter. The concept of self-identification is complex and may be defined in various manners despite the self-identification is often considered a pure desire to resemble somebody or be someone else (Rydin, 2003, pg 91).

The identification with a fictional character and his or her situation is part of the process of self-reflection. It is based on comparison of the character with oneself as well as on a previous similar experience that might be transferred into various contexts. In the identification process we naturally and very often quite deeply analyze our own situation and valuate our qualities and decisions in the light of qualities and decisions of the fictional characters in similar situations. The reflection of actions and/or situations of a fictional character of an audiovisual work is further broadened by concurrent comparisons of oneself, i.e. the reflection of the characters changes into self-reflection.

The deep comparison of a fictional character and his or her situation with oneself acts as the key part of the social and emotional learning. This learning leads to strengthening of competences demonstrated namely in the social and emotional sphere. The experience obtained by means of this form of experiential learning becomes new part of the constantly shaping personality of the viewer. The final stage that may follow with a longer lapse of time and under the influence of other reflections is the application when we strive to use the experience obtained in the course of the self-identified reflection, self-reflection and possible following discussions to solve our own problems in ordinary life. Usually, we cannot simply imitate the behaviour of the character, but the personal development occurs already by means of the reflective questions.

For the purposes of this study, the identification is understood as captivation by the story when the recipient pouts himself in place of the hero, identifies himself with an individual or a group of people who either resemble him or who he would like to resemble. He puts himself in their time and in the settings (compare Rydin, 2003; Pardeck, 1994; Sullivan – Strang, 2003; Hesley, 2001; Vášová, 1995). He projects his desires into the fantasy world, achieves various accomplishments there that would be much harder for him to achieve in the real world. It is the moment when the recipients identify the similarities among themselves and the characters of the story. The choice of an object is utterly unique as the recipient who chooses it despite the fact certain similarities are found among the identified characters.

We shall not however confuse them with admired characters and situations that fascinate people but do not resemble them nor want to resemble them. We can for instance admire brilliantly played blockbuster villains but we usually do not with them who get regularly defeated. In the sense of this study the identification means: characters that have something in common with the viewers (regardless whether they are satisfied with the identified qualities); and characters they would like to be (having usually more impressive qualities). Those two aspects usually mingle.

The objective of the research was to find the areas where the viewer's self-identification with a character manifests most as the key part of the experiential learning, and what the viewer most often learns during the reflective process. The responses of respondents are divided in several categories that correspond with the areas of their mental and social health.

Study Sample, Method

Primarily we were interested in the specific type of the respondents. The one that could be – according to the arguments of researchers supporting the theory of the direct negative impact of the media (and specifically of the fiction) on the viewers (Strasburger & Wilson, 2002; Browne & Hamilton-Giachritsis, 2005; Steward & Follina, 2006) – most affected – young people who are regularly confronted with the fiction and who consider it integral part of their everyday life.

By means of a questionnaire we attempted to find out the specifics of self-identification of today's young people. The objective of the study was to learn how the people approach the self-identification with fictional characters, what they experience and obtain from the process and in what areas their identification manifests. Despite there were over two thousand of young people interested in the audiovisual culture in the Czech and Slovak Republic who provided their answers in our questionnaire, we do not intend to generalize the obtained information to the whole population of young people interested in the audiovisual culture (compare Soukup, Rabušic, 2007). On the other hand it is obvious that more than 120 thousand registered users of the csfd.cz portal (in the time of realization of the research) well represent a major part of young people with a deeper interest in films and TV series in the Czech and Slovak Republic.

The distribution of the questionnaire was provided by means of the most visited domestic website about films www.csfd.cz (in time of collection of responses there were 120,000 registered users), which ensured selection of respondents of various sex, education etc. (we assumed that the users of this portal would be predominantly young people whose reception, identification and communication specifics could be possibly compared with other age categories) from the whole Czech and Slovak Republic. The following characteristics will help to form an idea of a typical respondent from the groups of users of the Czech and Slovak Film Database (www.csfd.cz) whose responses served as the source for our research: the research group has 2,169 respondents who provided their answers in the course of almost two weeks in September 2008. Of this number, 74.2 % were men and 25.8 % were women. From the point of view of age the most represented group was the teenagers and young adults. See

The age
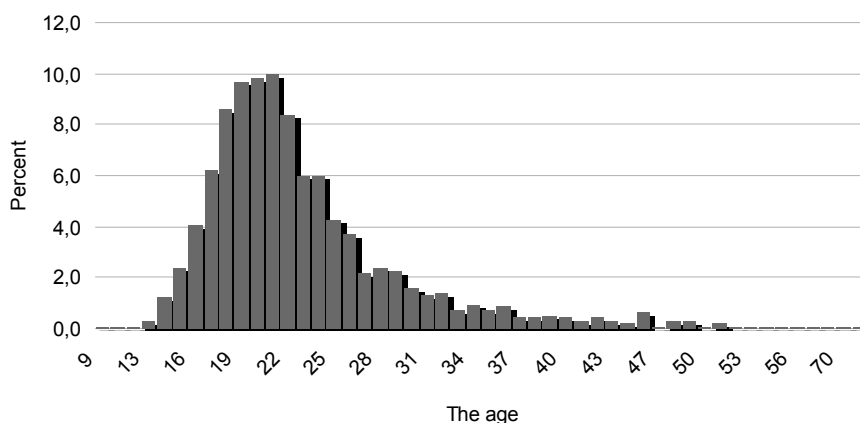
From the point of view of the highest achieved education, a significant group is formed by high-school graduates with graduate certificates (equivalent to A levels) (about 50.3 %). 15.9 % were the university graduates, 2.9 % college graduates and 4.5 % apprentice training school graduates. In time of completion of the questionnaire, 24.8 % had (so far) completed their primary education. 1.7 % of the respondents had not (yet) completed it. Another part of the research group (63.7 %) could be further described according the type of the current education: 25.7 % of the students were during the research attending a high school. Even more students (26.9 %) studied for the bachelor's degree at a university. 10.1 % were the students of master's study programmes and 1.7 % (which is a rather big number) were postgraduates. 2.1 % of the total number of respondents were currently attending a primary school, 1.7 % were attending a college, 1.4 % were attending a post-A-level language school and 0.6 % an apprentice training school. As regards the economic situation of the respondents, our research group consists of 63.7 % of students. 31.9 % of the respondents were already working. Other possibilities were represented only minimally (2.9 % unemployed, 1.1 % housewives / housemen and/or on maternity leave, and 0.4 % retired seniors). Typical marital status of the respondents is single (90.3 %). 8 % of the respondents were married and 1.8 % divorced or widowed. We have also learned that 91.2 % of the respondents were childless. 4.3 % had 1 child, 3.7 % had 2 children and 0.7 % of the respondents had 3 or more children.

Results and Discussions

The self-identification of the monitored viewers with fictional characters is manifested in various levels of their real lives. The most common is the enrichment of our lives in the area of our way of thinking of the world, life etc. (63 % of the respondents). Further, this self-identification with a character is manifested in the form of expressing oneself and communication (57 % of the respondents), in the area of behaviour and actions (53 % of the respondents) and in the view of oneself
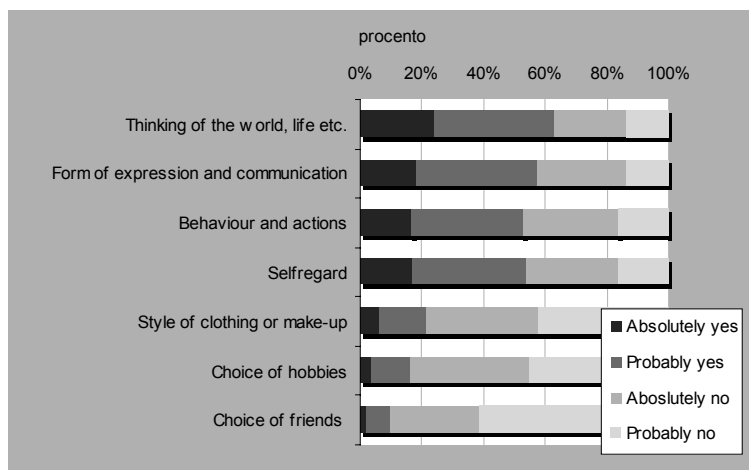
(54 %). Less it is manifested in the area of orienting their style of clothing and make-up (21 % of the respondents), in choice of their hobbies (17 %) and choice of friends (10 % of the respondents).

The respondents could also freely describe other areas where their identification with the respective fictional character manifests. 607 respondents made use of this opportunity and their responses could be divided into three categories (the number of responses is in the parentheses):

1) Opinion of people, world, philosophy of life, sense of hope, interpersonal relations, coping with problems (254)

   This category represents thinking processes that occurred under the influence of identification with a film or TV-series character and his or her story. It includes expressions regarding the opinion on concrete issues as well as general questions of life, as for instance coping with dissimilarities, with a loss of a beloved person, understanding of differences between the good and the bad, belief in hope, joy of life, possibility of coexistence with the nature etc. Often they described a change of opinion on a certain group of people, change o heir relationship to their family, friends or a partner. A sub-category included statements about the change of their sense of humour, efforts to show bigger optimism and generally also higher appreciation of the role of humour in a man's life.

2) Choice of profession, further studies, hobbies, health, nutrition, music etc. (310)

   This category represents the respondents' decision made on grounds of their identification with the respective film or TV-series and their situations. It is obvious that such "decisions" were in fact preceded by "contemplating and forming an opinion on the matter" as described in the previous group of statements. Quite surprising is according to the experts on professional orientation the fact that 68 respondents explicitly stated that on grounds of their identification with a fictional character hey decided for a specific occupation or studies. Another big group of respondents expressed their decision for a specific life style (frequently mentioned was the adjustment of boarding habits), for their future etc. Despite the fact that the choice of hobbies was mentioned in the list of activities in the questionnaire, many respondents mentioned another leisure-time activity that they chose thanks to their favourite fictional character (for instance the frequently mentioned sport, arts, reading, choice of music, author's self-realization). The marginal decisions for the life of respondents who stated that based on their favourite fictional characters they chose a concrete type of a car, hair-do, meal, rink etc., could be considered only rather interesting. What however occurred a few times was the choice of a partner on grounds of his or her similarity with the favourite fictional character.

3) Motivation, personality development, efforts, strength, determination (43)

In this area the respondents usually mentioned encouragement self-respect, self-esteem, and determination to be who they are.

Some respondents (their years of birth are in the parentheses) unknowingly mentioned features typical for reflective course of the process of self-identification with a fictional character as for instance: discovery of common characteristics with the fictional character (1988) – awareness of problems (1989) – self-evaluation (1988) – empathy and experience of the situation together with the character (1979) – an idea of how would I react in the given situation of the main character (1972) – the more films I see, the more experience I get from the life of the others (1990) – films motivate me to be a better person (1988) – self-refection (1981).

Conclusion

The stories provide both the benefit in the cognitive field and they are capable of inducing and "discuss" the affective and social type of information (Fiore, Metcalf and McDaniel, 2007, pg. 41). Generally we may say that sharing the experience with the fictional character creates opportunities for reflections of personal experience, and the identification with the fictional character creates an opportunity for self-reflection. Although the learning environments emerging by our discoveries of relations between the stories and us may seem to be rather chaotic, this process remains irreplaceable and elementary form of lifelong learning.

The areas were the process of identification o the viewer with the fictional character manifests most frequently usually correspond with the areas of social and mental health. Besides that we also see how the viewer is influenced in his or her boarding habits and lifestyle, and some respondents even mentioned that after watching the series they became more interested in the area of "health".

The article contains only selected findings from our research. We are aware of the fact that such partial research findings do not allow us to draw more general conclusions. In our data analysis we did not deal with the statistical significance of hypotheses, which is traditional and very often overestimated in the (Czech) social sciences, not that the above-specified sample would be less interesting but according to objective statistical points of view it is not representative enough. We however do not consider it an essential shortcoming that would exclude the possibility to obtain scientifically relevant information (compare Soukup – Rabušic, 2007).

OBLASTI, V NICHŽ SE PROJEVUJE ZTOTOŽŇOVÁNÍ SE S FIKČNÍMI POSTAVAMI

Abstrakt: Ztotožnění s fikční postavou a její situací je součástí procesu sebereflexe. V identifikačním procesu zcela přirozeně a přitom často do velké hloubky analyzujeme svoji vlastní situaci a hodnotíme své vlastnosti a svá rozhodnutí ve světle vlastností a rozhodnutí fikčních postav v obdobných situacích. Pomocí dotazníkové metody byla zjišťována specifika identifikace u současných mladých lidí. Výzkumný soubor tvoří 2 169 respondentů, kteří odpovídali v průběhu necelých dvou týdnů v září 2008.

Ztotožňování se s postavou audiovizuálního světa se u sledovaných diváků projevuje přesahem v nejrůznějších rovinách reálného života.

Klíčová slova: sebereflexe, identifikace, fikční postava, dotazník, výzkum

THE TEACHER AS A MODELLING FACTOR OF LITERARY POETICS AND GENRE STRUCTURE

Ivo POSPÍŠIL

Abstract: The author of the present study analyzes the role of the character of the teacher in literature as a modelling factor of literary poetics and genre structure. The theme of the teacher needs certain literary forms, certain morphology, usually a certain genre, literary kind based on different semantic levels (critical, satirical, humouristic, psychological, philosophical and existential); it is demonstrated on the material of the prose works by B. Němcová, Z. Winter, A. P. Chekhov, J. Drda, Ch. Aitmatov, J. Škvorecký, and G. Swift. Literature likes human characters who have special professions and can become symbols, emblems of human fates in general. Besides soldiers, national heroes, political leaders, doctors of medicine, solicitors etc., an important position is occupied by teachers. Though the social and power role of the teacher is still weaker, in literature there is quite a lot od arguments why it is so.

Keywords: the character of the teacher in literature, poetics, genre structure, critical, satirical, humouristic, psychological, philosophical and existential semantic levels (B. Němcová, Z. Winter, A. P. Chekhov, J. Drda, Ch. Aitmatov, J. Škvorecký, G. Swift)

In literary scholarship or criticism the problem of the subject or theme has always been solved in relation to poetics or poetology, i. e. to the morphology of the literary artefact. There has always been a clash of the two principles: theme/subject/story/plot (the terms are evidently often used in different meanings in connection with the methodology each school of literary criticism insists on) and poetics, i. e. literary morphology. The character of the very relation is two–sided: the subject/story/plot influences and forms the poetics of the artefact, on the other hand, the conventional genre structure determines – in a way and to a certain extent – the shaping of the story/plot. It is obvious that the depiction of the Napoleonic wars in Tolstoy's *War an Peace* needs a different genre structure than the description of a love affair or a passing amorous passion. This is the pathos Victor Shklovsky develops when he – of course, much later after his formalist period – speaks about the content form and the formative content. Obviously, the

problem does not consist in the priority of either form or content in the original meaning of the Russian formalism concept but in the dialectical bonds between the two poles of artistic creation.

The aim of this concise contribution is not the mechanical description of how the subject of the teacher or teachers has been realised in literary artefacts, but, on the contrary, the analysis of the pressure the subject/story/plot generates upon the form and genre structure of literature. Therefore, the subject of the teacher in literature does nor represent a mere collection or array of various examples or realisations, but the comparatively complicated processes of genre formation under the impact of content elements of the plot. The figure of the teacher is, consequently, not only an artistic reflection of the human character's reality, but through the intrinsic potentiality the very demiurge of a literary creation.

Thus the theme of the teacher might influence both the morphological and content structure of the literary artefact: we used the similar method several yaers ago when writing about the phenomenon of madness in the 19th- and 20th-century Russian literature.[1] The enclave character of Russia preserving the European Middle Ages against the Reformation and also contacting the Europe of Modern Times manifested the enclave character of Russian culture connecting the allochthonous and autochthonous impulses. The subject of madness appears on the following three levels: 1. As a destruction of rationality, rational and moral structure of the world under the impact of existential aspects leading to disintegration of human beings. 2. As a social and ethical substitution in which the category of madness can help the characters to overcome their social barriers. 3. As a compromising, imposed social role. For example, in Pushkin's poetic and dramatic works the presence of the motifs of madness leads to various genre transformations: from Shakespearean drama to the existential dramatic structures as a result of the generic modification of medieval exempla. The motifs of the disintegration of reason functions as a catalyzer of the restructuralization of the original genre which becomes another, new genre basis: the lyric-epic poem becomes the inverted narrative poem of historical character, the burlesque poem tends to psychological novella, the historical ode changes into the tragedy of the personality, the dramatic exempla into existential tragedies.

The theme of the teacher is determined by literary streams, by the aesthetics the streams imply (Romanticism, realism, modernism) and by their generic basis: on the other hand, the theme itself may lead to specific ideological and morphological levels: to didactic, exemplary contemplations, nostalgic memories of the past, to the idealisations of childhood, to the protest against normative history, against the passive role of men and women, to madness or to the category of the fool or foolishness[2], but also to humour and satire. The teacher is often depicted as a stranger, fool, naive and simple man, as somebody who has a very low social status, a humble servant of the urban or rural society, a good man who shares the interests of the community he/she lives in and those of his/her pupils/students; on the contrary, he may represent a repulsive type of man, traitor, crawler, a dunce, primitive who cannot understand the simplest and elementary human moral principles. In general, the teacher is very often manifested as an outcast, permanently degraded by the society who is forced to behave as extremely dependant

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[1] I. Pospíšil: *Fenomén šílenství v ruské literatuře 19. a 20. století*. Masarykova univerzita, Brno 1995.
[2] See D. Hodrová: *Hledání románu. Kapitoly z historie a typologie žánru*. Čs. spisovatel, Praha 1989.

and whose moral behaviour is being affected by the tendency to mechanical respect for social and professional hierarchies.

Speaking about literary genres the teacher theme leads to the philosophical contemplation, to moralizing and descriptive prose, to the university novel or to the novel of the fool, possibly the most profound level of the teacher theme. The thematic level of the main character forms and formulates its literary expression, searches for its adequate genre structure. To sum up, the teacher subject which is by no means an ordinary cluster of everyday motifs, but very often something specific, extraordinary, exclusive, not normal even if the main character does represent a disgusting example of human character. So to speak, paradoxically, the teacher who is usually regarded as a very conforming, loyal, cowardly type of man, reveals his/her non-conforming, protesting, non-loyal construction. Therefore his/her factual impact on the aesthetic and genre structure of literature is much stronger and stranger than that of other figures, characters and heroes. Vice versa: literature in general is probably the only field in which the teacher even nowadays might represent the real, consistent and strong human character: neither the didactic nor examplary one, nor the cowardly and disgusting.

From the historical point of view it is understandable that the perception of the teacher outside literature and arts in general developed due to his/her social position and moral status; he/she reaches his/her culmination in the Enlightenment period and mainly later in the 19th and 20th centuries when his/her role was exaggerated which was manifested more in his/her moral and ethical than economic position; in interwar Czechoslovakia even his/her economic position in connection with the other strata of society improved a great deal, but in literature the character of the teacher has always stood extremely high, and the words „extremely" or „extreme" have also other meanings in this context as he/she has always occupied an extreme position as a literary character, at least in the eyes of the reading public: too moralistic, sometimes extremely loyal or even humbled, another time cowardly, wicked, malicious, sometimes heroic, sometimes reflecting and profound, but never medium-sized, average, colourless. Probably it was the literature, the *belles-lettres* which provided the teacher with the spiritual qualities he/she has never or very seldom had in reality.

Let us have a look at a cluster of literary patterns in which the character of the teacher shine with brilliant intensity. We have chosen several literary prose artefacts from various national literatures which illustrate the intrinsic modifications of the character of the teacher in literature on the one hand and its role in the formation of poetological and generic structure of literature on the other.

The Czech „postromantic" writer **Božena Němcová**'s (1820? - 1862) *Pan učitel* (1860, *A Teacher*) shows „her" teacher as a modest, pleasant and humanist character, a typical representative of little Czech men who created the Czech national character at least in the country among the poor peasants. Her simple, transparent depictions reveal 19th-century Czech village social structure with the Catholic priest, teacher, peasants and poor people idealizing the character of the teacher with his sad fate, with his non-romantic behaviour, rather sentimental moods and simple, didactic, instructive, religious and moderately optimistic (that of the Enlightenment tradition) vision of the world. Němcová characterizes him as a bridge on which the child can easily get from the bank of the childhood to the opposite side of the adulthood, stressing the teacher's

ability to enable a simple socialization, adaptation to the prevalently inimical world. In her descriptions of the village school the authoress accentuates the sentimentalist/preromantic opposition of urban and rural environment. The short story or novella has a memoir character: it depicts the evolution of the relation of a small girl to her village teacher from the first years at school up to the teacher's death. The incipit of the short story manifests the people's hopes and understanding of the role of the school in the 19th century; at the same time, the short story manifests the authoress' own ethical and aesthetic conceptions, her preference of the village life, the idealization of simple people and the role of the social elite, taking into account the teacher's economic motivation: „Mysliť moji rodiče a nemýlili se, že k životnímu vzdělání mi lépe škola vesnická s řádným, svědomitým učitelem než škola městská poslouží. Znaliť bezpochyby, že nejen ve městě, ale sem a tam i v městečku hrává si učitel na pana profesora a dává si taktéž říkat od rodičů i od žáků a v té důmince že se nesníží, jak toho třeba, k žákům svým, ani v mluvení ani v obcování; pracuje obyčejně napřed se zámožnějšími, a poněvadž, jak desátá a čtvrtá hodina padne, od učení přestává, pro děti nuznějších rodičů času mu nezbývá; v hodince, v privátě, za něž zvláštně má placeno, odhaluje teprv tajnosti všelikera umění, dělá nejdůležitější úkoly, opravuje bedlivěji a mírněji všeliké poklesky dětské. Však nižší městské školy bývají velmi přeplněné a těžko jimi k vyšším, prázdnějším třídám probřednouti."[3]

    The teacher had no good reputation because of his/her poverty, weak hygiene and physical punishments he carries out: „Vždy mi doma u nás říkávaly děti, že je pan učitel ušňupaný, že má vestu a prsty samý tabák, že nosí pod paží rákosku, a když se rozzlobí, že zaskřípá zuby, že si položí dítě přes koleno a kam řeže tam řeže. Učitel byl pro mne tedy člověk hrozný, ošklivý a bála jsem se ho více než Mikuláše."[4] Her real teacher, on the contrary, demonstrated quite different qualities: kindness, love of nature, understanding, empathy, social feelings, love of books, culture and education; he has often become a natural tutor and spokesman of the interests of the people: „Byltě pan učitel učiněná dobrota a láska jak k nám, tak i k lidem. - Kdo jaké rady potřeboval, jakou stížnost měl, kdo prosbu jakou neb žádost napsanou míti chtěl, každý jen k panu učiteli, poradil a posloužil každému poctivě, nežádaje odměny."[5]

    If he was a friend of the priest or other powerful and influential people in the village, he could even more help their neighbours. Nature, music, culture, books – there are the spheres in which the teacher seemed to be unsubstitutable. Němcová also presents the teacher's life portrait, his intimate problems and tragic fate of his family when she is by chance present at his funeral. The old-world model of the teacher the reader can find in Němcová's *Pan učitel* represents the serious beginning of the Czech tradition of the literature on teachers: the natural continuation is manifested by the so-called university novel. It may seem paradoxical and even ridiculous, but the model is quite similar; the teacher no matter which type of school he/she comes from still fulfills the main tasks of his/her profession in changing social situations which reveal more intimate and complicated parts of his/her life due to his/her more complicated social functions.

    While Němcová constructs his image of the teacher due to the contemporary situation of the mid-19th century, the Czech historical novelist **Zikmund Winter** (1846-

[3] B. Němcová: *Pan učitel*. Praha 1958, p. 8.
[4] B. Němcová: *Pan učitel*. Praha 1958, p. 12.
[5] B. Němcová: *Pan učitel*. Praha 1958, p. 29.

1912) looks back to describe the life of a bachelor in the Central-Bohemian town of the period of the Renaissance in his novella *Nezbedný bakalář* (1883, *The Naughty Bachelor*). The teacher with university ideals directly taken from Charles University, with a relative freedom of the students' behaviour and morals has to be confronted with everyday routine and tension in social relations far from the ideals of free society: „Do města vjel bakalář na plesnivém valachu napřed, za ním fasuňk se studenty. Primáné a sekundáné jsouce nejstarší a nejrozumnější, zpytavě hleděli na obě strany nového svého vůkolí; terciáné a ostatní drobotina nepřestali se ani teď, když na ně rakovnická obec seběhla se podívat, trhati se za nosy a štěbetati jako housátka."[6]

Z. Winter – unlike B. Němcová – is a pure realist, depicting the everyday details including the bachelor's realist attitude to life: a touch of sadness and nostalgia pervades the tiring depictions of the life in a little town close to Prague especially when the novelist accentuates the didactic, the national and the revival role of the bachelor in the sense of the 19th-century Czech national revival programme: „Když neměl pan bakalář hlavu pitím obtíženu, byl učitelem i správcem školy výborným. Milá byla slova, když se ve škole mezi primány a sekundány, kteříž v jedné síni seděli pohromadě, bakalář rozhovořil se o tom, jak veliké věci předkové naši před celým světem dovozovali."[7]

Anton Pavlovich Chekhov (1860-1906) – besides humouristic short stories, world-famous dramas and the only novel called *Sakhalin* (1893) - wrote several novellas with striking melancholic and nostalgic atmosphere. One of the most expressive is the novella *Учитель словесности* (1894, *The Teacher of Literature*). The plot is based on the disillusionment of an ageing teacher who gets even with his life: „Мартовское солнце светило ярко, и сквозь оконные стекла падали на стол горячие лучи. Было еще только двадцатое число, но уже ездили на колесах, и в саду шумели скворцы. Позже было не то, что сейчас вот войдет Манюся, обнимет одною рукой за шею и скажет, что подали к крыльцу верховых лошадей или шарабан, и спросит, что ей надеть, чтобы не озябнуть […] Меня окружает пошлость и пошлость. Скучные, ничтожные люди, горшочки со сметаной, кувшины с молоком, тараканы, глупые женщины... Нет ничего страшнее, оскорбительнее, тоскливее пошлости. Бежать отсюда, бежать сегодня же, иначе я сойду с ума!"[8][9] The desire, longing for leaving the tedious life full of stereotypes reminds of Tolstoyan philosophy of „non resisting evil through violence".

The profound view of life is also represented by *The Centaur* (1962), a novel by **John Updike** (1932-2009) in which the teacher presents himself as a mythical being from ancient Greece tossed between the lofty ideals and banalities of everyday life.[10]

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[6] Z. Winter: *Nezbedný bakalář (Starobylý obrázek z Rakovnicka)*. Melantrich, Praha 1984, p. 44.

[7] Z. Winter: *Nezbedný bakalář (Starobylý obrázek z Rakovnicka)*. Melantrich, Praha 1984, p. 64.

[8] А. П. Чехов: Учитель словесности, in: А. П. Ч.: В человеке должно быть все прекрасно...Письма, рассказы, пьеса. „Молодая гвардия", Москва 1980, pp. 197-198.

[9] During John Updike's short stay in Brno in 1986 I met him and made a concise interview with him. It is characteristic that he knew and praised modern Russian Soviet prose (mainly the so-called village prose, specially V. Rasputin) and, of course, the Russian classical literature, including Tolstoy, Dostoevsky, and Chekhov. See our article and interview with Updike: *John Updike v Brně*. Rovnost 8. 4. 1986, p. 5. Some new comments see our remark: *Pozapomenutý rozhovor s Johnem Updikem v Brně*. Salon, Právo, 25. 9. 1997, s. 2.

[10] Jna Drda (1915-1970) was a writer of quite a complicated life and ideological position. He became famous as early as the 1940s in the framework of the phenomenon of „the Protectorate prose", the literature characterized by specific poetics based maily on pychological introspection and a more expressive style (*Městečko na dlani*, 1940; *Živá voda*, 1941; *Putování Petra Sedmilháře*, 1943; his colection of short stories from the Prague anti-Nazi uprising in May 1945 *Němá barikáda - The Dumb Barricade*, 1945 - the short story *Vyšší princip – The Higher Law* - is its part) was one of his last aesthetically valuable artefacts).

The informal heroic behaviour can be demonstrated by the Czech writer **Jan Drda**'s[11] short story *Vyšší princip* (*The Higher Law*); the title goes back to the frequent saying of the teacher of Latin at a Czech grammar school during the German Nazi occupation in the period of the so-called Heydrichiade, Nazi terror following after the assassination of the German Reichsprotektor Reinhard Heydrich in summer 1942. If the reader wants to understand this short story in 4 pages in its complexity, he should be informed about the details of the *Protektorat Böhmen und Mähren* including the closing of Czech universities and colleges after mass demonstrations in Autumn 1939 celebrating the anniversary of the foundation of the Czechoslovak Republic mainly the university students participated in. The teacher (in Czech he is labelled „professor" according to fashionable French titles) is not definitely a heroic character, rather just the opposite; he is interested only in Latin and the life in his ancient Graeco-Roman world. But the horrible situation which irreversibly touched his Latin class made him the man who not only risks his life, but expresses his great trust in his students; he completely fulfilled his human fate and his civic duty. In the very begining he is being represented more or less as a ridiculous oddity who is manifested also by his appearance: „V neohrabaných, špatně žehlených šatech venkovského střihu, obličej zdolíčkovatělý obrovskými jizvami po černých neštovicích, a aktovkou věčně zatěžkou klasiky, z nichž citovával dlouhé odstavce opojen krásou textu a zapomínaje na svůj krákoravý hlas, byl pro septimány figurkou krajně komickou."[12] In such words the author describes the cathartic moments of the plot: „Kolega Vyšší princip se vrátil do třídy za pár minut. Nohy se pod ním chvěly, že sotva došel ke katedře. Zhroutil se na židli, sevřel své obrovské vypouklé čelo kostnatými prsty, a dočista přejinačeným, dětsky naříkavým hlasem tiše bědoval: Neslýchané...Neslýchané! Pak se přece jenom vzmužil, a pohlédnuv do očí své třídy, zkamenělé zlou předtuchou, chraplavě koktal: Vaši...vaši...spolužáci..byli zatčeni... Jaké absurdní – nedorozumění ...moji...moji...žáci...[...] Také já...schvaluji atentát na Heydricha."[13] The situation stylized in concise, compressed manner (the homonymous Czech film, 1960 – director Jiří Krejčík – was too lengthy and therefore much less effective) needs the knowledge of some other typically Czech allusions linked with the specific period of the Nazi occupation and with the Czech historical emblems (confirmation of the assassination of Reichsprotektor R. Heydrich, the enforced approval with executions of political opponents in the 1950s, the so-called coping with the religious question in 1958, the disagreement with the Soviet occupation in 1968, etc.).

One of the few Soviet Kyrgyz world-famous writers **Chingiz Aitmatov** (1928-2008)[13] cultivated, above all, the topics of a creative man, either painter or writer as a main character or a narrator of the plots. One of his earliest short story written in both versions (Kyrgyz and Russan, later he wrote prevalently in Russian, e. g. his magical, mythological novels *The Day Lasts More Than a Hundred Years - И дольше века длится день*, 1980, *The Scaffold - Плаха*, 1986, *Cassandra's Brand - Тавро Кассандры*,

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[11] J. Drda: *Vyšší princip*, in: J. D.: Němá barikáda. Čs. spisovatel, Praha 1985, p. 24.

[12] J. Drda: *Vyšší princip*, in: J. D.: Němá barikáda. Čs. spisovatel, Praha 1985, pp. 26, 28.

[13] See R. Porter: *Four Contemporary Russian Writers*. Berg Publishers, Oxford - New York - Munich 1989. See our review: *Čtyři podobizny*. Čs. rusistika 1990, 5, pp. 288-291. See also our treatises on Aitmatov: *Trnitá cesta k zralému lidství*. Světová literatura 1981, 5. *Touha po románu: Ajtmatovo Popraviště*. Kmen 50, 17.12.1986. *Ajtmatovova cesta k románu: druhý pokus*. Světová literatura 1987, 4, pp. 233-235. See also our book *Spálená křídla. Malý průvodce po české recepci ruské prózy 70. a 80. let 20. století*. Masarykova univerzita, Brno 1998.

1996) is *The First Teacher* (*Первый учитель*, 1962) in which the author synthetizes his Romanticism, love of creativity, humanity, nature and human transformation of interpersonal relations manifesting the October Revolution in an idealised shape: „Но в том-то и дело, что в те дни люди по темноте своей не придавали значения учебе, а Дюйшена считали в лучшем случае чудаком, который возится с ребятишками от нечего делать. Охота тебе — учи, а нет — разгони всех по домам. Сами они ездили верхом и в переправах не нуждались. А все-таки следовало, конечно, нашему народу призадуматься: ради чего этот молодой парень, который ничем не хуже и не глупее других, ради чего он, терпя трудности и лишения, снося насмешки и оскорбления, учит их детей, да еще с таким необыкновенным упорством, с такой нечеловеческой настойчивостью?“[14]

The connection of the main character with nature and with the lives of simple village people is the thematic dominant and the source of his strength as well as the poetical passages of the narrator of the story: „Может быть, это и была первая весна моей юности. Во всяком случае, она казалась мне краше прежних весен. С бугра, где стояла наша школа, открывался глазам прекрасный мир весны. Земля, словно бы раскинув руки, сбегала с гор и неслась, не в силах остановитсья, в мерцающие серебряные дали степи, объятые солнцем и легкой, призрачной дымкой. Где-то за тридевять земель голубели талые озерца, где-то за тридевять земель ржали кони, где-то за тридевять земель пролетали в небе журавли, неся на крыльях белые облака. Откуда летели журавли и куда они звали сердце такими томительными, такими трубными голосами?“[15]

In connection with the contemporary tragic situation in Kyrgyzstan and other countries of the former Soviet Central Asia Aitmatov seems to have been a typical representative of the conviction that education, culture and arts are the main successful tools in the process of humanization of mankind in which the teacher plays the most important role - one of the Enlightenment illusions.

On the contrary, one of the most negative image of the teacher in world literature is represented by the novella *The Legend Emöke* (1963, *Legenda Emöke*) by the Czech prose writer and translator **Josef Škvorecký** (born 1924). The novel as a result of the liberalization wave in the Czechoslovakia of the 1960s contains nearly all important „cursed questions" of Czech and Czechoslovak history including the expulsion of Germans and Hungarians after 1945, cold war events and atmosphere and – above all – the type of a teacher as the most repulsive character – opposing a beautiful Hungarian lady named Emöke – who is not able to learn even a simple party game. The hatred and contempt of teachers is firmly confirmed in Czech social environment and represents the reverse side of Němcová's love of her teacher and his idealization in the sense of the Enlightenment ideals; the teacher here is rather a symbol of immoral adaptability, endless flexibility, animality, opportunism and cowardly behaviour. The teacher in the Czech environment never evokes neutral reactions, rather always the prejudiced ones, nowadays mostly only negatively („they have holidays, therefore their profession is not a real work where there is only a holiday; though everybody knows this is a disinformation, everybody likes to use it; famous a school cleaning woman's statement: „Everybody can make it:

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[14] Ч. Айтматов: Первый учитель. Москва 1978, p. 32.
[15] Ч. Айтматов: Первый учитель. Москва 1978, p. 41.

to dress nicely and stand before the class"; I have even the suspicion that at universities the bureaucracy often does not understand why – except the clerks – there are also professors and students). At the same time, the opposition of the poetical legend and a opportunist, unimaginative character of the teacher as part of „the legend", the narrated story and the constructed plot brings the nostalgia and weariness of life, and the art of narrating as a creative aspect of human activity; it is probably not accidental that the similar motifs of creativity are connected with both the negative and the positive character of the teacher who as if evoked these motifs and aspects: „Příběh se stává a zapadá a nikdo jej nevypráví. Potom někde žije člověk, odpoledne jsou horká a marná a přijdou vánoce a člověk umírá a na hřbitov přibude nová deska se jménem. Dva, tři, muž, bratr, matka nosí ještě několik roků to světlo, tu legendu v hlavě, a potom také umřou. Pro děti je to už jen starý film, nezaostřená aura rozlité tváře. Vnuci nevědí nic. A ostatní lidé zapomenou. Pro člověka není už ani jméno, ani vzpomínka, ani prázdno. Nic."[16]

The negative and contemptuous relation to teachers is only insufficiently sneaking feature of the contemporary Czech society, though outwards it is evaluated as prestigious. One of the striking examples may be one passage from the memoirs of the secretary of the former Czechoslovak Union of Writers (in the 1960s) Vlastimil Maršíček (1923-2000) quoting another Czech writer František Flos (1864-1961), a school inspector by profession, who even rejected to pay the teachers their daily allowance for their rare business trips: the teacher is not a mere profession, it is a mission, so they do not need any money.[17]

The British prose writer **Graham Swift** (born 1949)[18] in his novel *Waterland* (1983) presents the character of the teacher of history who revolts against the traditional concept of history as a process realized by great men and women only: „What is a history teacher? He's someone who teaches mistakes. While others say ‚Here's how to do it', he says, And here's what goes wrong.' While others tell you, This is the way, this is the path', he says, And here are a few bungles, botches, blunders and fiascos...' It does not work out; it's human to err..."[19]. He starts teaching quite a different history of little people not from above, but from below coming to the realistic, rather skeptical view of the world's evolution (About Empire-Building): „Once upon a time people believed in the end of the world. Look in the old books: see how many times and on how many pretexts the end of the world has been prophesied and foreseen, calculated and imagined. But that, of course, was superstition. The world grew up. It didn't end. People threw off superstition as they threw off their parents. Then said ‚Don't believe that old mumbojumbo. You can change the world, you can make it better. The heavens won't fall.' It was true. For a little while – it didn't start so long ago, only a few generations ago – the world went through its revolutionary, progressive phase; and the world believed it would never end, it would go on getting better. But then the end of the world came back again, not

[16] J. Škvorecký: Legenda Emöke. Čs. spisovatel, Praha 1963, p. 7.
[17] See V. Maršíček: Nezval, Seifert a ti druzí… Necenzurovaný slovník českých spisovatelů. HOST, Brno 1999. See also our review: Noblesa, upřímnost, kouzlo nechtěného a sami proti sobě. KAM-příloha 2000, 2 (únor), p. VI-VII.
[18] See his novels The Sweet-Shop Owner (1980), Shuttlecock (1982), Waterland (1983), Out of This World (1988) Ever After (1992), Last Order (1996), The Light of Day (2003), Tomorrow (2007), Making an Elephant: Writing from Within (2009).
[19] G. Swift: Waterland. Pan Books Ltd., The Picador Edition, London 1981, p. 203.

as an idea or a belief but as something the world had manufactured for itself all the time it was growing up. Which only goes to show that if the end of the world didn't exist it would be necessary to invent it. There's this thing called progress. But it doesn't progress. It doesn't go anywhere. Because as progress progresses the world can slip away. It's progress if you can stop the world slipping away. My humble model for progress is the reclamation of land. Which is repeatedly, never-endingly retrieving what is lost. A dogged and vigilant business. A dull yet valuable business. A hard, inglorious business. But you shouldn't go mistaking the reclamation of land for the building of empires."[20]

Thus the teacher in Swift's conception became a visionary and a prophet of new attitude to mankind's history and - more or less – to the core of human existence, and that is probably the most philosophical level the topics ever reached.

Literature likes human characters, who have special professions and can become symbols, emblems of human fates in general. Besides soldiers, national heroes, political leaders, doctors of medicine, solicitors etc., an important position is occupied by teachers. Though the social and power role of the teacher is still weaker, in literature there is quite a lot od arguments why it is so.

UČITEL JAKO MODELUJÍCÍ FAKTOR LITERÁRNÍ POETIKY A ŽÁNROVÉ STRUKTURY

Abstrakt: Autor přítomné stati analyzuje úlohu postavy učitele v literatuře jako modelující faktor literární poetiky a žánrové struktury. Téma učitele vyžaduje jisté literární tvary, určitou morfologii, obvykle jistý žánr, literární druh založený na různých sémantických rovinách (kritické, satirické, humoristické, psychologické, filozofické a existenciální); tu se předvádí na materiálu prozaických děl B. Němcové, Z. Wintera, A. P. Čechova, J. Drdy, Č. Ajtmatova, J. Škvoreckého a G. Swifta. Literatura má ráda lidské postavy, jež mají zvláštní profesi a mohou se stát symboly, emblémy lidských osudů obecně. Kromě vojáků, národních hrdinů, politických vůdců, lékařů, advokátů atd., mají tu významnou úlohu také učitelé. I když jejich společenská a mocenská role stále slábne, v literatuře je dost argumentů, proč tomu tak je.

Klíčová slova: postava učitele v literatuře, poetika, žánrová struktura, kritická, satirická, humoristická, psychologická, filozofická and existenciální sémantická rovina (B. Němcová, Z. Winter, A. P. Chekhov, J. Drda, Ch. Aitmatov, J. Škvorecký, G. Swift)

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[20] G. Swift: Waterland. Pan Books Ltd., The Picador Edition, London 1981, p. 291.

CHILDREN'S CONCEPTIONS OF HEALTH, ILLNESS, DEATH AND THE ANATOMY OF THE HUMAN BODY

Iva *ŽALOUDÍKOVÁ*

Abstract: This paper focuses on children's naïve, spontaneous conceptions and perceptions of the terms health, illness and death and their perceptions of the anatomy of the human body as important starting points for health education for children at the first level of primary school. It presents research on this issue conducted by authors in the Czech Republic and abroad, and the author's own investigation into conceptions of health and illness among children at the first level of primary schools in the Brno area. It also provides a comparison of scientific theories and children's perceptions and emphasises the necessity of understanding children's naïve conceptions in order for the teacher to induce conceptual change in the educational process.

Keywords: children's conceptions of health and illness, children's conceptions of death, anatomical conceptions, health education

Introduction

A number of fields, such as clinical psychology, social medicine, clinical branches of medicine, pedagogical psychology, developmental psychology, cognitive psychology, and specialist didactics, have taken an interest in the **subjective interpretation of phenomena such as health and illness, death, life, health support, disease prevention, parts of the body, the human organs, etc.** since the nineteen seventies and eighties.

The older current of research into the subjective conception of health and illness was generally performed by doctors and psychologists, and investigated the patient's perceptions and beliefs about illness, tending to place the emphasis on the **affective aspect**. **The younger current**, which has largely adopted the implicit theory of illness, has focused to a greater extent on the **cognitive aspect of the issue**. Research was initially devoted to explaining why patients do not co-operate with doctors and why they fail to observe their instructions during treatment. The reasons for this may have been the subjectively perceived seriousness of their medical state and the danger posed by it, and their subjective perception of the sensitivity and vulnerability of the organism.

The subject later began to interest educators, principally in terms of the search for an appropriate didactic approach to such phenomena as health, illness and death, and even photosynthesis, the air, galvanic cells, ecosystems and so on, i.e. issues falling largely within the natural sciences.

Why has the level of interest among specialists in people's subjective opinions increased in recent decades; why are they concerned with what we now refer to as preconceptions or conceptions of health and illness and the intellectual representation of health and illness? The answer is clear. They help doctors take an appropriate approach to the patient and to more effective treatment of the patient. They give teachers an insight into the pupil's interpretation of the concept, on the basis of which they can then act more effectively within the educational process.

It has been shown that the **subjective perception of health and illness** has a fundamental influence on the behaviour of the given person in respect of his or her own health. It would seem to act as a "filter", which lets only certain information through. It attributes an individual seriousness to this information, which in turn influences their personal approach to it. It supports the protective mechanisms of the individual in respect of external attempts to implement change, it admits only certain schemata, accepts only certain causes, sometimes rejecting the medically serious consequences of inappropriate behaviour that endangers the health, etc. (Mareš 1993). Similarly, it influences the acceptance of new information relating to health provided by the media or by school teaching, both in programmes of primary prevention and as part of the general curriculum.

Many foreign studies confirm the fact that the subjective understanding of the concepts of health and illness goes through certain phases or stages corresponding to Piaget's stages of cognitive development (the pre-logical, concrete and abstract stages). Conceptions of health differ according to age and the cultural and social framework of the society in which the child lives. E.g. Pridmore, Bendelow (1995) a study of 100 children in Botswana aged 9–10, and in the UK (100 children) Oakley, Bendelow (University of London) using the Draw-and-Write method. Also the study by Piko and Bak (2006) University of Szeged, determining the perceptions of children (aged 8–11) about health and illness in Hungary, David Schonfeld et al., New Haven, Yale University (2001) drew up and tested a curriculum of oncological education for K-6 children (elementary school = level 1 and nursery school). His study discovered an understanding of the causes of certain diseases and their subsequent comparison, these being the common cold, AIDS and cancer. Another study by Chin and Schonfeld (1998) considered developmental reasoning of the causes of cancer and its prevention.

Children's views about health (illness) form a complexly structured entity, the core of which is the child's internal representation of health. These are the individual views, ideas, perceptions and beliefs of non-specialists about what is health and illness. They are private, unscientific and naïve theories (Mareš 1993, p. 38). The terminology here is inconsistent (see table 1). Certain authors present information about the development of the child's perceptions of its own body, of life, death, illness and health, etc.

Table 1: Terms used for conceptions of health and illness (Mareš 1993, page 40)

English term	Czech equivalent
Mental representation of health and illness	Mentální reprezentace zdraví a nemoci
Conceptions of health and illness	Pojetí zdraví a nemoci
Individual thoughts about health and illness	Individuální názory na zdraví a nemoc
Illness cognition	Poznávání nemoci
Illness representation	Reprezentování nemoci
Implicit theory of illness	Implicitní teorie nemoci
Implicit models of illness	Implicitní modely nemoci
Illness schemata	Výkladová schémata
Understanding of illness	Porozumění nemoci
Patient's illness beliefs	Pacientova přesvědčení o nemoci
Patient's health beliefs	Pacientova přesvědčení o zdraví
People's health appraisals	Hodnocení zdraví (běžnými) lidmi

Children form personal views of health and various illnesses, and these views change as they develop. Adults, however, also reshape their perceptions over the course of time, throughout their entire lives indeed. People's personal views are not always set in stone or elaborated in a sophisticated manner. They may range from vague perceptions to idiosyncratic views, though these are always based on their own experience. These lay opinions may differ considerably, from the naïve perceptions of children and entirely erroneous views to a scientific knowledge of health and illness. Subjective conceptions (mental representations) are extraordinarily stable and resistant to change by health professionals or teachers.

Children's conceptions of illness

The authors Bibace and Walsh (1980) **investigated the development of children's conceptions of illness** in relation to the ontogenesis of causal relations. They found six developmental categories of explanations of illness. These are consistent with Piaget's principal stages in the cognitive development of children.
Piaget's stages:
1) the pre-operational /pre-logical stage: 2–6 years of age – causes of illness based on own experience, one aspect as the phenomenon
2) concrete operational: 7–10 years of age – sees the phenomenon from more than one viewpoint, understands more dimensions to a given situation, less egocentric, uses elementary logical operations to resolve problems
3) formal operational: from 11 years of age – uses abstract thought

This is extremely valuable to paediatricians in communication with child patients, and also for educators in strategies in health education. A child's perception and understanding of illness is closely associated with its cognitive development, based on the ontogenesis of causal deduction, the reasoning of causes.
● The authors Bibace and Walsh, (1980, page 914) describe three stages:
Stage 1 – pre-logical (pre-operational) thought (2–6 years): encompasses:

a) phenomenon – the child sees the causes of illness in a specific external phenomenon, and is unable to explain it (What causes a cold? The sun, but I don't know how).
b) infection – the cause of an illness is to be found in an object, in people, it is magical, unexplainable.

Stage 2 – concrete logical operations (7–10 years): differentiates "I and the world" more strongly, the child is able to differentiate between what is an internal cause and what is an external cause, differentiates between the cause of an illness and the way in which the illness manifests itself, and uses two characteristic explanations:

a) contamination – the child can differentiate between the cause and the illness. The cause is seen as lying in a person, object or external activity with the qualitative aspect "bad, dangerous, threatening". Sees the cause of the illness in physical contact or participation in a dangerous activity.
b) internalisation – older children place the illness inside the body, while the cause may be external. Children state that the illness is happening inside them. They confuse the internal organs.

Stage 3 – formal logical operations (from 11 years): differentiates between the internal and external world, places the cause of an illness in the body and differentiates causes:

a) physiological – the causes of illness lie in the internal structure of the body, one of the body's organs not functioning.
b) psychological – explanation of the causes and course of the illness, explains illness as an internal physiological process, may also find psychological causes. Understands that thinking and experiencing may also influence the functioning of the body. A change in the degree of personal control appears here, taking in emotional support. These phases correspond to Piaget's stages of cognitive development.

● According to D. Schonfeld (1999) children generally go through **a number of phases in the understanding of the causes of illness**. The explanations reached by **extremely young children** tend towards **egocentric and magical thinking**. They understand illness as a form of punishment for real or imaginary acts ("I didn't behave nicely to my brother, and he became ill and had to go to hospital."). Even adults often have a tendency to think in this way when a loved one becomes ill. Children offer causes of illness as **circular answers**, frequently **phenomenological explanations**. This means that they consider a certain aspect or phenomenon as the cause of the illness, for example "You've got a cold because your nose is running". They attribute the cause of various events to unrelated phenomena merely because they appear at the same time. "Our electricity was cut off yesterday, and I woke up this morning with a cold." **At a preschool or early school age**, children begin to develop a more precise understanding of physical illness. **They understand that diseases are caused by microbes, and that people can catch them from one another**. They still have a problem, however, in differentiating between infectious and non-infectious illnesses. Children gradually become able to give specific explanations for the causes of illnesses.

In the next phase, children understand illness in such a way **that microbes have to get inside the body and perform a particular activity**. They still do not have a clear

grasp of the causes of illnesses. **They often mix various causes up**, for example "You can get leukaemia if someone coughs on you". Children are capable of differentiating between a number of illnesses. **They are able to name the specific causes of illnesses**. "If the cells are damaged by excessive sunbathing or tobacco smoke, it can cause cancer". **In the final phase**, children (and adults) **prioritise reasoning of the causes and development of a disease**. "When the damaged cells form a tumour, they can affect the healthy cells and cause a disease."

Children's conceptions of health

Children's conceptions of health have been investigated by Mareš (2003). He states six aspects on which diagnostics should be based and which accentuate the cognitive approach. These are:

1) The identification of health – determining what children understand by this
2) Health consequences – determining short-term and long-term consequences
3) The temporal dimension – estimating the temporal aspect of health, the dynamics of change
4) Causal attribution – the subjective vision of causes
5) The strategy of action – individual action used
6) The meaning of health to children – children's arguments in favour of health

While there has been relatively little research relating to health, there has been more focusing on the conception of diseases such as the common cold, AIDS (Schonfeld 1999) and cancer (Chin et al. 1998, Oakley et al. 1995), and on death (Lonetto 1980) and life itself (Doulík 2003).

Mareš (2003) investigated children's conception of health. 120 school pupils took part, and the free written answers method was used. He created an original typology for conceptions of health:

Ignorance – I do not know what health is
Tautology – health is when someone is healthy
The absence of illness – the opposite of health
Something valuable or precious
Something natural, pleasant – biological, mental or social well-being
The result of endeavour – one should take care of oneself

The most frequent methods of determining the subjective conception of health and illness include a semi-structured interview, a questionnaire, the commenting of presented images, the verbal resolution of model situations, and real behaviour in a natural or laboratory situation and its substantiation.

● A conception of health according to Piko and Bak (2006)
The authors conducted a piece of research in which two primary schools in two small

Hungarian towns (Békés and Köröstarcsa) took part. The total sample was made up of 128 children, of which 57 % were boys and 43 % girls, with a target group of children aged 8–11, pupils in years 3, 4 and 5. The children were asked to draw and write what health and illness meant to them and how to prevent illness. Most of the children expressed a sophisticated definition of health, which can be divided into two basic groups – biomedical and holistic. These two definitions appeared at a comparable frequency, although many answers contained both types (biomedical 28 %, holistic 27 %, both types 20 %). This means that 20 % of the children who expressed a biomedical view of health also expressed a psychosocial and multidimensional viewpoint. There were no statistical differences in terms of gender or age in the answers given. This study shows that not merely adults, but also children of school age have a tendency to consider health as a complex biological, psychological, social and spiritual conception of this phenomenon. It is clear that, in addition to a biomedical conception, these pupils also tend to incline towards a holistic conception of health in a similar way to that defined by the World Health Organisation (WHO). They also emphasise the importance of a healthy environment, a healthy lifestyle, and the importance of an understanding of health to the life of the given person, which is particularly evident among older pupils. Biomedical viewpoints and the issue of smoking were stated more frequently by younger pupils.

Mareš (1993, page 43) states a number of aspects to the subjective conception of health and illness:

- The number of persons who hold a given conception
  - individual
  - group (e.g. by diagnosis, method of treatment, etc.)
  - population (large groups of people, representing an entire population)
- Developmental and age aspects
  (corresponding approximately to Piaget's developmental stages)
- Socio-cultural aspects
  (pronounced views of health and illness may be conditioned by cultural or religious beliefs)
  Younger children may be strongly influenced by families and contemporaries.

Diagnostics of the subjective conception of illness and health may help in looking into the patient's/pupil's way of thinking, into the child's reasoning about health and illness. They help explain peculiar behaviour on the part of the patient and the patient's response to illness and treatment. They also help the teacher in finding a way of acting on the pupil, choosing teaching methods, and explaining concepts to the pupil while taking advantage of his or her life experience to date.

Children's conceptions of death

Many teachers are afraid of discussing death with children because of the negative emotions this may arouse in the children. It is important for teachers who teach health education to be prepared for the various kinds of questions that children may ask, not merely about health and illness, but also about death and dying, since death is a natural part of life.

Children often have incorrect and confused information about death that is influenced by their own experience. They are often confronted by situations in which the leading protagonist on television, in films, videogames, fairytales and other stories for children dies and then comes back to life. Death appears to be magical and determined by fate. A brave and clever hero is capable of overcoming extraordinary obstacles, and even death, in spite of car crashes, bullets and various other dangers.

● According to D. Schonfeld (1999) it is important to provide children with the following information:
− Death is irreversible
− The vital functions cease when one dies
− There are clear causes of the death of living organisms
− Death is unavoidable

Initially, **in the early phases**, children's view of death is construed by their magical and egocentric thinking. Children often do not understand why people die, and do not understand the real reasons for death. They also often **think that death can be avoided and is reversible**. Children think that toys and dolls are living. **They do not understand all the physical differences between life and death**, and are often afraid that their dead relatives are hungry or in pain.

At the age of 5–7 they are capable of understanding death as something final and as the unavoidable end for everything living. Just like adults, however, their own death is a more problematic issue to comprehend. It is difficult to accept that one's experience of the physical world may come to an end. At this stage children are extremely interested in the physical details of death. At this age children also begin to take an interest in spiritual and religious matters: "What happens to the soul when the body dies?"

● Lonetto (1980) investigated the **child's representation of death** with the help of drawings, and states that the child's conception of death changes, develops and matures. The child's cognitive abilities mature, though social influences and, most importantly, its own experience of death also play a part here. He points out that the child's view of death develops in a similar way to speech, and is subject to similar processes. The development of a child's conception of death is part of its overall cognitive development, and not simply a function of age. Lonetto describes a number of stages:

Stage 1 – **Children aged 3–5** are confronted with the death of animals or death in the family. The preschool child sees death as **reversible, as sleep and awakening**. Its fear of death is the **fear of separation from its parents**. Fear and anxiety of death are derived from separation from their mother. Up to the age of 5, children perceive death as **life under different conditions**. They also see death as the consequence of time passing and of ageing.

Stage 2 – **Children aged 6–8 personify death**. Children often see death as a **male figure**, sometimes a female figure, but never as a child. They understand death as **separation and isolation**, and associate it with old age and illness. Gradually they understand

that everyone dies, though death still has no personal significance to them. They are more interested in ceremonies such as funerals and burials. People that die cannot move, talk, breath, see or eat – they are buried. It is the end of life on earth. People go to heaven after death – children form a spiritual understanding. The archetype of death is associated with the dark, with water, sleep, emptiness, shapelessness, personification – death is masculine to them. It is associated with sadness, fear, punishment and aggression.

Stage 3 – 9–12 is the age at which children slowly become separated from their parents and attached to their contemporaries. Piaget describes this period as a period of concrete operations, the beginning of abstract thought. The child understands time and space, understands the past. Death is externalised into the form of a skeleton or a ghost. **A cognitive turning point occurs at the age of 9, when death is understood as universal, final and unavoidable. Death is one of the laws of life.** Death becomes a personal matter. The child understands that it will also die one day, and death attains a personal and universal status. At the age of 11, death becomes more abstract and gradually loses its association with people, animals or a specific image. **Children accept the inevitability of death, the fact that it cannot be avoided. Old and young alike may die**. They are troubled by the pain caused by death. They find it hard to accept the death of their mother, though they will accept the death of a grandparent. They long for a pain-free death. A conviction in their own death appears, though it remains something distant for them, something that comes with old age.

A child's conception of death changes and finds its origin in magic power, in the cyclically repeating exchangeability of life and death. Younger children have a cyclical view of death. Birth changes into death and death into birth. This process forms a circle. **Adults and children from the age of around 9 see death in a linear manner as birth – beginning and death – end.**

the conception of death among younger children
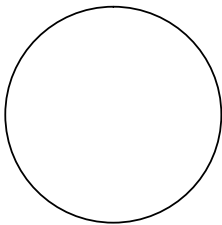
the conception of death among older children and adults

The projection of the circle is a straight line – the line of life. At the age of 9–12 children abandon animist-magical thought in favour of logical-causal thought. This shift in their thinking is accompanied by an understanding of the nature of external time. Their view of death approaches the view held by adults. When the child comes to the conclusion that death and ageing are unavoidable and universal, they approach the attitude taken by adults. It is essential to talk to children about death, since the reality is less forbidding than their fantasies. It is appropriate to talk to children openly about everything and to let them ask questions.

Children's conception of the anatomical organs

 How do children understand the arrangement of their bodies? Which internal organs do they know? How do they see them? These are questions that many researchers have tried to answer in their studies. Vyskočilová (2005) tries to explain how children's understanding of the individual organ systems changes over time in reference to studies by the authors Munari and Filippini et al. (1976), who conducted research with 635 children aged 5–13 from Switzerland and Italy. The children were given the task of drawing and describing **what their bodies look like inside**. An interview was then conducted with each child. Young children were found to have difficulty drawing their own body and the organs inside the body. The youngest children, of the age of 5, draw the internal organs scattered throughout the body, and even outside the body. They always depicted the heart and the navel. Internal and external parts of the body appear systematically in the same drawing. A specific gender was depicted in a small number of drawings. Boys depicted a specific gender more often than girls, and almost exclusively the male gender. Girls, in contrast, depicted both genders. Munari, Filippini et al. also state the organs drawn by children. Their investigation evaluated only those organs that were placed in the right place and correctly named (not necessarily in their precise anatomical position, but depiction of the location of one organ in respect of another as a sufficient indicator of comprehension).

1) The organ drawn most frequently was **the heart** (65.5 %). It is also the only organ drawn correctly by 5-year-old children. It is never drawn in the wrong place. This is perhaps because they can feel their heartbeat, which makes its localisation easier – children can feel it working for themselves. Children generally (though not always) consider the heart to be the most important organ in the body and associate it with life. If the heart does not work properly, then the person dies or "works badly" – the person is ill.
2) Children then drew **the brain**, one of the quietest organs – present in 49 % of cases. Its depiction increases with age. It is never placed anywhere else than in the head.
3) Another organ frequently depicted are **the lungs**, shown in a third of pictures.

The frequency with which the individual organs are depicted

Organ	relative frequency of depiction (%)
Heart	65.5
Brain	49.0
Lungs	28.0
Liver	26.9
Stomach	19.4
Oesophagus	15.9
Spleen	11.6
Bladder	7.9
Bronchial tubes	4.4

Children are not able to see the body as a system until the age of 10–11. Children place the various parts in relation to one another gradually, the synthesis of a certain quantity of different elements is difficult for them.
Drawn first:

1) The vascular system – tubes that are interconnected and drawn throughout the body.
2) The digestive system – appears most often at around the age of 9. Depictions including a mouth connected with an oesophagus, stomach, intestines, rectum and outlet are considered correct.
3) The respiratory system appears more prominently at around the age of 9.
4) The skeletal system is depicted least frequently, and at a later age.

The depiction of individual systems

The vascular system	13.1 %
The digestive system	9.5 %
The respiratory system	7.4 %
The skeletal system	6.5 %

We can say in conclusion that the principal organs most frequently represented are the heart and the brain. The bodily system most frequently drawn is the circulatory system, while the skeletal system is the system drawn least frequently and at a later age. Bodily systems are drawn in only a third of cases. This finding is important to didactics for elementary teaching and the natural sciences at the first level of primary school. Vyskočilová has drawn up a didactic treatment of a number of topics for textbooks for elementary teaching and natural sciences at the first level of primary school in the Czech Republic on the basis of this finding.

Conceptions of health and illness – an investigation among children aged 7–12

We also wanted to discover what is the conception of health and illness among children in the age range 7–12. Our research was conducted at 6 primary schools in the South Moravian Region. We asked ourselves what awareness children have of health and illness, what they do for their health, and how they understand the prevention of illness. Our research was inspired by the Hungarian study by Piko and Bak (2006), in which the authors used the Draw and Write method, which is, according to the available sources (Oakley 1995, Pridmore, Bendelow 1995) an effective method for pupils of this age, leading to determination of children's preconceptions of health and illness. The aim of the research was to determine children's preconceptions and conceptions about health and illness.

Methods used, research sample
Six entire primary schools in the South Moravian Region took part in the research investigation. The selection served for the purposes of this research only, and included

those schools that agreed to the research. A total of 243 respondents took part. The number of boys and girls was about the same – 49 % boys and 51 % girls aged 7–12.

A qualitative methodology was used in the research investigation in the collection and analysis of data. We used the **"Draw and Write" method and individual semi-structured interviews**. Qualitative research was used here to focus on details and explain the causes of illness and the conception of health. A number of foreign studies provided us with methodological inspiration, in particular: Bibace and Walsh (1980), Ellen, Perrin et al. (1981), Backett and Alexander (1991), Wetton and McWhirter (1995), Oakley, Bendelow et al (1995), Pridmore and Bendelow (1995), Newton, Collins et al (1997), Onyango-Ouma, Aagaard-Hansen, et al (2004), Piko and Bak (2006). The Czech and Slovak authors who inspired us were Pupala, Osuská (1997) and Korcová (2006), who studied conceptions about the human digestive system among children aged 5–14 using drawings and interviews.

We endeavoured to increase the validity of the research using the **triangulation method**:
1. drawing
2. writing
3. oral comments/explanation of the conception of the given phenomenon – semi-structured interview

Research design

Qualitative methodology

Sample	Data collection	Methods	Results
children aged 7–12 years 1–6 of primary school		drawing	preconceptions of the concept health and illness
		writing	health support and the prevention of illness
special sample group	March 2006 to June 2007	individual semi-structured interview with open entries	change to preconception of health, illness with age
entire primary school			

Results

Analysis was performed on the responses obtained from the drawing, writing and oral comments of each individual child. In processing qualitative data, we used content analysis with the help of the open coding technique with the structuring of data into category systems (Hendl 2005, p. 247). During analysis, we first attempted to create transcripts of responses that made a certain sense. While going through the data we assigned codes to individual responses. We then grouped codes assigned to similar meanings

into categories of a more abstract and universal nature, proceeding from the specific to the more general. We assigned codes to nouns, such as healthy nutrition, sufficient exercise, the absence of illness, etc., according to which we categorised the responses given. In creating these categories, we also strived to differentiate them clearly from one another.

A) The category health

We based our analysis on models of health as defined by the WHO. A biomedical approach to health is known to have appeared most frequently initially. It later began to be joined by social and ecological views of health. We used the WHO definition to create three categories of models of health: biomedical, psychosocial and holistic. Our aim was to determine whether children's perceptions correspond to this approach. Children, and younger children in particular, tend to describe health from the viewpoint of the negation of illness ("I am healthy when nothing hurts.") or from the viewpoint of mental well-being and behaviour aimed at promoting good health such as sport and exercise. In analysing their drawings and individual interviews we assigned the children's perceptions of health to one of three models.

The coding and **characterisation of categories of models of health:**

- **The biomedical model** – health as the absence of illness and pain, behaviour targeted towards promoting physical health (correct nutrition, exercise)
- **The psychosocial model** – health as mental and social well-being (I am cheerful, happy, with my family, friends, I can go to school)
- **The holistic model** – a combination of the biomedical and psychosocial models, a multidimensional model, an abstract view of health, health as a value (nothing hurts and I am cheerful, I play sport, I go out with my friends, to school)

The results of this analysis of the children's drawings and interviews with the individual children were recorded in tables and supplemented with diagrams and the children's own drawings.

Examples of responses characterising **the biomedical view of health:**

Answer to the question: What does health mean to you?

► *"For me, the word health means that I am not ill, when I don't have to blow my nose a lot, when I don't cough a lot, when I don't have a temperature, when I don't have any broken bones, when I don't have a sore throat." (a 10-year-old boy)*

► *"Being healthy means that my body temperature is less than 37.4 °C, when I feel fine, when nothing hurts." (a 12-year-old boy)*

The children explain the term health in the form of the negation of illness, which is extremely common among children. It is much simpler for a child to describe illness than health. It is more obvious to them, and is also a reflection of their own experience of illness.

► *"Being healthy is when you don't have any bacteria in your body and don't cough or have a cold. But sometimes you can cough even when you're not ill." (a 9-year-old boy)*

Here health is interpreted as the absence of micro-organisms.

► *"For me health means that I eat apples." (a 8-year-old boy)*

Children describe health in connection with proper nutrition, sport, not smoking, etc.
Examples of responses characterising **the psychosocial view of health:**
► *"I am cheerful and happy, I feel fine, I can do sport or go out with my friends, I can go to school or the cinema…" (a 12-year-old girl)*
► *"For me being healthy means playing catch with my friend." (an 8-year-old girl)*
► *"When I am healthy, I am happy and cheerful, and I am in a good mood." (a 12-year-old girl)*
Examples of responses characterising **the holistic** (multidimensional) **view of health:**
► *"It means being normal and doing all the things that a healthy person does. I can go out, go swimming, play volleyball, go to school and my hobby groups. I don't have to lie in bed. I'm not ill, nothing hurts and I can enjoy my freedom." (a 12-year-old girl)*
► *"Nothing hurts, I go out with my friends, go to school, go for a walk in the forest to get some fresh air, I can play sport and enjoy life." (a 12-year-old boy)*
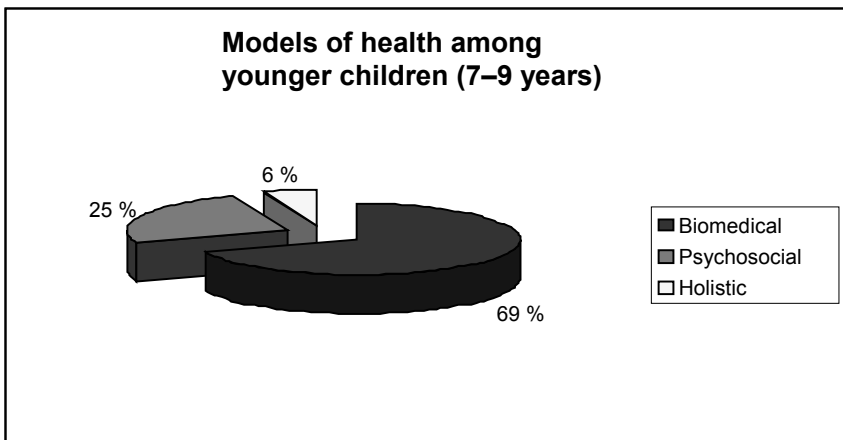
Diagram 1: Models of health among younger children (%)
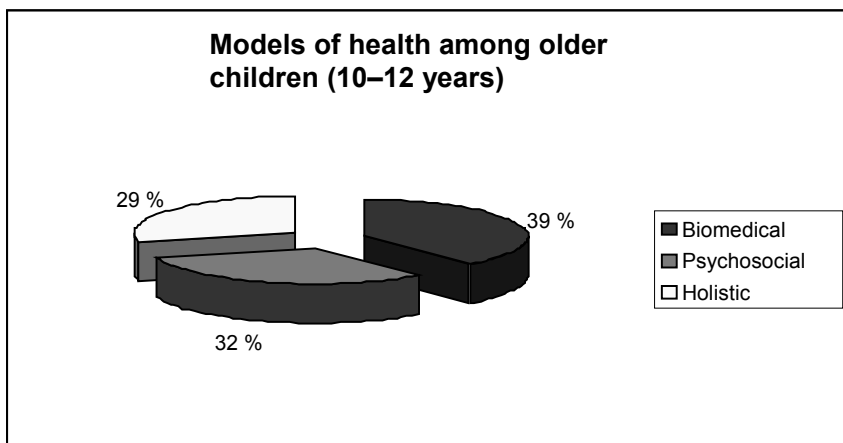
Diagram 2: Models of health among older children (%)

An overview and description of categories of health:

We found many various interpretations and subjective perceptions of the term health while processing the results of our research. We created further categories of health that expressed children's perceptions, interpretations and preconceptions of health by means of content analysis and coding. The aim was to refine the category system and penetrate deeper into the scope of children's perceptions of health. We sorted the children's viewpoints into ten categories in our subsequent analysis.

The responses given by each pupil could be included in more than one category, as an individual child may have characterised health as, for example, both the absence of micro-organisms and the negation of illness, and eating enough fruit and vegetables, etc. The children expressed their conceptions of health most frequently in their drawings in terms of **healthy nutrition** (around 30 % of children). People are healthy when they have a sufficient intake of vitamins, drink enough water, eat regularly, eat enough fruit and vegetables, etc. This was followed by the perception of health as the **possibility of and ability to exercise** and play sports (20–25 %). Another category frequently mentioned was health as **the absence of illness, the negation of illness** (20–25 %). Around a quarter of children gave a psychosocial substantiation – I am healthy **when I am happy, when I'm in a good mood.** Less frequent views were the expression of health as the **absence of limitation** (10 %) and health in the category of micro-organisms, personal hygiene, health as a value, the environment, not smoking and not drinking alcohol (less than 10 %).

Girls often expressed their own experience of doctors and illness in their drawings (see figure 8). They were more likely to draw an image of **healthy nutrition** (such as fruit, honey, vegetables), which is presented to them as beneficial to the health. They may be more interested in nutrition and diet as such, being influenced by the cultural stereotype (their mothers being responsible for the family diet). Some **boys** applied their **technical interest in machinery** in their drawings of both health and illness. When the topic of hospitals was raised, they described in greater detail the individual instruments that can help people be healthy. Motifs of fruit and vegetables also appeared in boys' drawings, though frequently in connection with mechanical equipment – a lorry taking fruit and vegetables to the shop, a tractor driving from the fields with healthy products. They applied their feeling for and interest in technology, and often forgot that they were drawing "health", and became immersed in drawing tractors and various other vehicles that, it's true, are carrying healthy products, though their lorries and tractors were frequently drawn extremely precisely to the tiniest detail. Sports matches and various other sports activities were also frequent topics.

B) The category illness

In the second part, we focused on the conception of illness among children. We asked the children what causes them to become ill, and what are the possible causes of illness. The children stated a great many various causes of illnesses. Their responses were coded and divided into a number of categories.

The children's most frequent responses to the question "What makes you ill?" were unsuitable clothing, cold drinks, ice cream, etc., which were assigned to the category **catching cold (48.1 %)**. Almost half of the children in the group described illness

and its cause in this way. This conception of illness is clearly linked to the children's own experience of illness. The category **smoking, drugs, alcohol (23.5 %)** was stated relatively frequently, being stated as a cause of illness by almost a quarter of the children, notably by older children (10–12 years), which also corresponds to their own experience, as this is the age at which children begin to experiment with drugs.

A fifth of the children in the group characterised illness and the causes of illness as the category the **presence of micro-organisms**, germs, bacteria and viruses (21.4 %). The category **transmission, infection** (19.8 %) is derived from the children's own experience of common diseases – flu, tonsillitis. They often understand germs to be the cause of the transmission of illness and infection. If these two categories (which may express the same view of the cause of illness) are combined, then this category was seen to be the largest.

The children also produced drawings of people in bed with a broken arm or leg or other injury, etc. in the category **ill people (15.6 %)**. Everyone has experienced their body being ill at some time in their life, and has had their own experience of being ill, so this was something the children could relate to. **Poor nutrition (11.5 %)**, along with the harmful effects of an **unhealthy environment (4.4 %)**, appeared less often. Causes linked to the external environment, such as atmospheric pollution and other environmental causes linked to the environment in which the children live (which is not significantly affected by exhaust fumes) appeared less often. The category **inadequate hygiene (3.7 %)** was not greatly represented, and was stated more often by younger children, while the category **insufficient exercise (1.6 %)** appeared only sporadically. These categories could be grouped together as the category "other".

A number of boys often incorporated motifs of war or fire-fighters at work, etc. in their drawings. They also portrayed the body's fight with germs in their representation of illness and the causes of illness. They drew illness as a limitation, i.e. being unable to play sports, being confined to bed. Boys put their technical interests into their drawings. When motifs of hospitals appeared, they often gave a detailed representation of individual instruments that can help people be healthy, and drew ambulances, emergency services at work, fire engines, etc.

Table 3: Causes of illness according to the groups younger and older children (%)

Causes of illness categories	younger children	older children
Catching cold	44	52
Smoking, alcohol, drugs	7.5	39
Micro-organisms	22	21
Infection, transmission	21	18.7

Older children stated the category **smoking, drugs and alcohol** and the category **catching cold** more often than younger children. They stated **inadequate hygiene** significantly less often, however, than younger children (see diagram 8, table 10). It must, however, be added that the absolute frequency was extremely small and applies only to our group. The category **micro-organisms and infection** appeared at approximately the same frequency in both groups, which indicates that the entire group of children aged

7–12 has a similar assessment of the causes of illness in the form of micro-organisms and transmission, which corresponds to the results of foreign studies (Bibace, Walsh 1980).
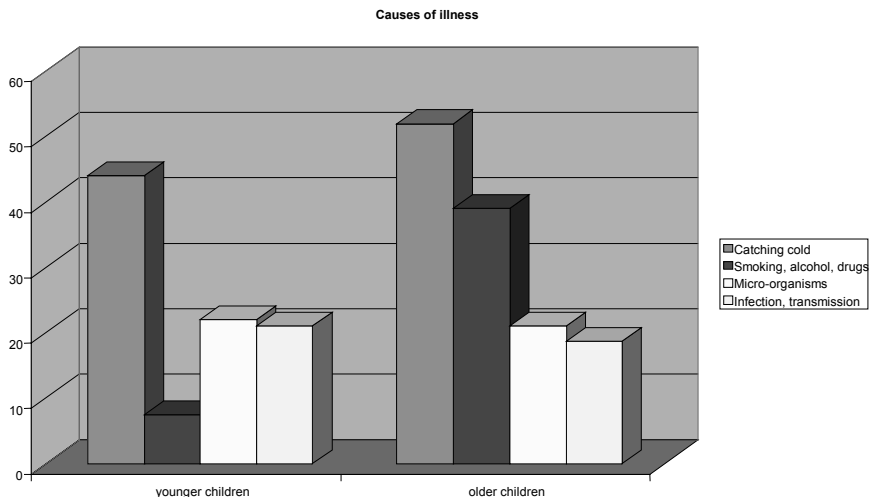
Diagram 3: The causes of illness in the groups younger and older children (%)

Younger children (the first and second years in our group) perceive illness as a physical state, and see the psychological aspect of health only with difficulty. This assessment could be made from the pictures in which the children depicted illness as germs in a form familiar to them from their surroundings. Subjects that were currently gaining media attention or were otherwise at the centre of their attention (bird flu, chickenpox affecting a number of children in their class, a flu epidemic) also appeared.

Their drawings of illness demonstrated that this topic is easier for them to explain. The children were seen to have a more accurate idea of illness, and were better able to express it both in their drawings and verbally. The reason for this is clearly their own past experience with illnesses such as colds, flu and tonsillitis. Illness has also been studied by larger numbers of specialists, in particular doctors, psychologists and educators, and there were larger numbers of studies to refer to.

Conclusion

We discovered a wide scope of comprehension and popular perceptions of health and illness among the children in our study. Our group of 243 children expressed a large number of entirely unique views of health and illness, many of which have been presented in our study.

The conception of health among children was expressed in an understanding and a characterisation of being healthy. People are healthy when nothing hurts them, when they aren't ill. Health means when we eat healthily, when people can do sport, when they are happy and are in a good mood, when they have enough rest and relaxation, when they

can go out with their friends, etc. A biomedical model predominated in the view of health expressed by the group as a whole. A holistic conception of health was expressed more often by older children. This is extremely similar to the definition of health as given by the WHO. An attempt at an ecological approach to health can also be seen, with certain children emphasising the importance of the environment. The beginnings of a spiritual understanding of health were also to be seen in the responses given by the children. Our results indicate that not merely adults have a tendency to perceive health as a complex of biological, social, psychological and spiritual well-being, but children as well.

The conception of illness seen was extremely wide-ranging. The children in the group are aware of the fact that illness may be caused by many factors. Catching cold was the cause of illness seen most often by the children. This conception is clearly linked to the children's own experience of illness. The categories smoking, drugs, alcohol, and other dangerous substances and habits were stated relatively frequently, being given as the cause of illness primarily by older children, which also corresponds to their own experience, as children often begin to experiment with drugs at this age. A fifth of the children in the group characterised illness and the causes of illness as the presence of micro-organisms, germs, bacteria and viruses. At this age, children associate illness with transmission and infection, as can be seen from their responses associated with their own experience of common diseases such as flu, tonsillitis and jaundice.

Differences between boys and girls appeared in the fact that boys' drawings of both health and illness often displayed their technical interest in machinery. When their drawings showed hospitals, they often depicted in great detail various instruments that help people be healthy. Girls, on the other hand, often projected their own experience with doctors and illnesses in their drawings. They more often drew healthy nutrition, which is presented to them as being beneficial to the health, such as fruit, honey and vegetables. They are perhaps more interested in nutrition and diet in general in line with the cultural model of mothers being responsible for the family's nutrition.

Differences in perceptions of health were seen in the more frequent use of the biomedical conception among young children and the holistic model among older children. This corresponds to the conception of health as defined by the WHO. Another change was seen in the understanding of health as a value, where a small increase in the number of older children who see health in this way can be seen. This evidently corresponds to cognitive development and the incipient development of abstract thought. A change was also seen in the slight reduction to the number of older children in the characterisation of health as the category healthy nutrition in comparison with younger children.

Differences in perceptions of illness could be seen most clearly in the category smoking, drugs and alcohol, with older children stating this cause far more often than younger children. The same is true of the category catching cold. A further difference was seen in the category inadequate hygiene, with a fall in the frequency of such responses with age, i.e. older children stated this cause considerably less frequently.

We found that children of this age find it easier to express themselves about illness than about health. Children are more familiar with illness because it is more talked about both at home and outside the family, and because children have direct personal experience of it. They take health for granted at their age, and talk about health as the opposite of illness.

Practical recommendations

Our research showed what perceptions of health and illness are held by children in the early years of primary school. Parents, as the primary group, have the decisive influence on children of this age. The role of the school and extracurricular organisations is, however, also considerable. It is important that children are guided towards a healthy lifestyle in the future, and for health education at school to have a positive influence on children in this regard and act as a supplement to the basal influence of the family environment. It is appropriate for children of this age to be given the kind of models that will help them identify with habits of this kind into the future, and help to shape a healthy society with a respect for everything that supports health and a meaningful and satisfied life for each individual.

Our results indicate that programmes of primary prevention should be based on common preadolescent conceptions of health and illness, in order that children's perceptions of health and illness are influenced effectively. Health education must be specific, and reflect and take into account these specific child preconceptions of health and illness. Let's hope that this new generation of Czech children obtains adequate knowledge and appropriate attitudes and key skills for health, so that they can become an adult population that looks after its health.

DĚTSKÉ PŘEDSTAVY O FENOMÉNU ZDRAVÍ, NEMOC, SMRT, ANATOMIE LISKÉHO TĚLA

Abstrakt: Příspěvek se zaměřuje na dětské naivní, spontánní koncepce a představy pojmů zdraví, nemoc, smrt a představy o anatomii lidského těla jako na důležité výchozí aspekty výchovy ke zdraví u dětí primárního stupně ZŠ. Uvádí výzkumy zahraničních i českých autorů k této problematice a seznamuje s vlastním šetřením koncepcí zdraví a nemoci u dětí 1. stupně ZŠ v okolí Brna. Zaměřuje se na srovnání vědeckých teorií a dětských představ a nutnost znát tyto naivní koncepce dětí k navození konceptuální změny učitelem v edukačním procesu.

Klíčová slova: dětské koncepce zdraví a nemoci, dětské koncepce smrti, anatomické koncepce, výchova ke zdraví

THE DEPICTION OF CONCEPTION AND BIRTH IN CHILDREN'S LITERATURE

Milena ŠUBRTOVÁ

Abstract: The conception and birth of a new human life is generally cloaked in secrecy for preschool children and children in their early school years. The Outline Educational Programme for Preschool Education, however, states that the educational area Children and Their Bodies should lead to children being able to name the individual organs of the body (including the genitals) and having a basic idea of the origin of life and of birth. Fiction for children, which often provides children with the knowledge they are lacking and acts as a substitute for their lack of experience in life, can be an important and sensitive way of supplying them with information about this matter. How, then, is conception and birth depicted in literature designed for children?

Keywords: children's literature, conception and birth, fiction

Fairytales as a reflection of popular views, ideas and superstitions associated with conception and parenthood

Fairytales, which were not originally intended necessarily to be read to or by children, are a reflection of pagan and early Christian ideas and rituals. They provide a reflection of the value system of people for whom the birth of a child is connected with subordination to the laws of nature or the laws of God. The moment of birth (and the moment of death) was perceived as a turning point at which the boundaries of the human and that which is beyond human, the boundaries of social space and time (which are otherwise closed) are opened (Navrátilová, 2004). Pregnancy, birth and the postnatal period were, in view of the high infant mortality rate (and the mortality rate among mothers resulting from numerous births undergone without outside help or conducted in an unprofessional manner, and as a result of the complete absence of postnatal care), associated with fear for the lives of the child and the mother that lead to a large number of superstitious customs. There was an empirical or rational basis to some of these customs, though many grew rather from a faith in their magical effect. Both the birth and the death of a child were seen as the expression of God's will, and childless families were, to a certain extent, stigmatised. There was also an economic aspect to this stigmatism (a child was a form of insurance for an untroubled and secure old age for its parents).

Human procreation was depicted hyperbolically in fairytales, negating or conce-

aling the true physiological essence of conception and development in the womb (a woman becoming pregnant after eating a particular herb or food). Many fairytales ignored the moment of conception altogether, preferring to emphasis the parents' great desire for a child. It was generally the man who created their offspring with his own hands in an effort to satisfy his wife's unfulfilled maternal instincts. The man appeared in the role of the creator in these fairytales (in the fairytale Otesánek, for example, he digs up an old tree stump and carves it into the shape of a child, in the Ukrainian version of the story he creates a child from a wisp of straw, in the fairytale Snow White he makes the figure of a little girl out of ice). It is the woman, however, who gives life to the child by the strength of her love and her longing for a child – the artificially created child comes to life when the mother's tears fall on it, when the mother kisses it, holds it in her arms, or sings to it in the cot. Sometimes a personified animal (e.g. The Hedgehog and the Princess) appears in the role of an adopted child. In a number of fairytales the child rapidly attains adulthood (in Tom Thumb, for example), as if the story symbolically emphasises the image of childhood as a temporary state that must be bridged as quickly as possible in order for the child to join adult society. The longed-for child not infrequently turns against its parents as punishment for them daring to oppose God's will (Otesánek) or perishes (Snow White). We also find a similar depiction of conception and infant development in modern fairytales (František Nepil's Little Poppy-seed Boy is made from a poppy seed, Václav Čtvrtek's Cipísek escapes from the cradle after birth and wears out his shoes made from the bark of a pine tree), though they lack the motif of punished or heartbroken parents. Fairytales may well be an irreplaceable part of a child's reading, but they provide no impetus for discussion of the issues in question.

Birth as depicted in Czech fiction for children

Conception and birth were taboo subjects in children's literature for a long time, as were dying and death. While depictions of death appeared in children's literature on a routine basis in the first half of the 20th century, when death and funeral rituals were a natural part of a child's life, and were not to disappear from the horizons of the child's world until the second half of the 20th century, the subjects of conception and birth, and the topic of sex in general, found their way into literature for children and the young in a more open manner only from the nineteen sixties onwards. The turning point at which they began to cease to be such a taboo in the context of Czech literature for children came in the nineteen nineties, when both fictional prose and educational and pictorial publications began to appear with the aim of providing children with appropriate information about the given issues.

The first breakthrough in the process of detabooisation in the Czech context came with the short animated film The Mole and the Mother (1997) written by Zdeněk Miler. The way in which the pair of rabbits depicted in the film meet, their short honeymoon and the birth of their three little rabbits, during which the clueless parent rabbits are helped by the little mole, met with a negative reaction from parents at the time, who were surprised by the realistic nature in which birth was depicted. Colouring books and an illustrated book of The Mole and the Mother based on the film, with text written by Hana Doskočilová, appeared in 2002. The subject of pregnancy and birth is depicted through the personified animal protagonists in such a way as to provide children with

a more precise idea of the given events and to form something of a bridge to further educational activities.

The arrival of a new sibling in the world is a frequent theme in fiction for children, though attention is generally focused primarily on the child protagonist coming to terms with changes in the family situation. The subject of birth is often connected with the subject of death, with authors presenting children with an image of life as an eternal cycle in which pain and sadness have their place alongside moments of joy.

In her two-part film Nefňukej, veverko! (Don't Cry, Squirrel!) (1989) Věra Plívová-Šimková portrays her young heroine Kačka in the midst of a number of turning points. The girl shares her parents' eager anticipation during her mother's pregnancy, only to battle with feelings of jealousy towards the newborn twins. Just when she begins to form a clear awareness of her place within the family, she is confronted by another emotional trauma – the sudden death of her beloved grandfather. The loss of a loved one is, however, offset by the promise of a new addition to the family.

While Plívová-Šimková included pregnancy in her depiction of family life as one of its natural stages with no particular educational ambitions, Ivona Březinová was guided by an endeavour to provide children with a lucid explanation of pregnancy, childcare and the shaping of sibling relationships during the writing of her short story Mimínek (1999). Her prose begins with the mother announcing that she is pregnant. The first-person child narrator Vítek sees his awaited sibling and its growth with a child's naivety, and an image of prenatal development is presented to the child reader through Vítek's discussions with his parents. Recipients of preschool or early school age will not, however, form a particularly clear idea of events on the basis of this work. Conception is glossed over with the explanation that a baby is made from two seeds, while pregnancy is reduced to the unborn baby *lying quietly in Mummy's tummy and growing and growing until it reaches about half a metre in length*. Březinová has tried to provide a certain amount of information directly by means of various plot devices (Vítek worries that there is a baby in his tummy after he has eaten too much), though this is insufficient as far as forming a clear idea of conception, pregnancy and birth is concerned.

Jaroslava Paštiková refers directly to the topic under consideration in the title of her first book How Brothers are Born (2008). Preschool child Anička shares her parents' anxious expectation and looks forward to her mother coming home from the maternity hospital, but her brother's arrival arouses feelings of disappointment and rivalry. Only when she begins to share in caring for the baby does she draw close to her parents again and finds a new role as a sister within the family. The author's stylistically and compositionally unbalanced text adheres largely to the omniscient narrative perspective and provides the child reader with a generally realistic depiction of birth in Anička's dialogue with her mother. She describes birth with the aid of accessible analogies (a mention of a film in which a whale gives birth to its young) and the unsophisticated vocabulary of a child *(When the baby has grown big enough in the tummy to be able to breath and drink on its own, it tries to get out. And at that moment Mummy's tummy starts to hurt, and she knows that it's time to go to the hospital so that the doctor can keep an eye on things. Sometimes it takes several hours before the baby makes a kind of tunnel with its head and peeks out at the world from between its Mummy's legs.).* The unexpected death of Anička's grandfather acts as a counterpoint to this new life – the joyous celebrations

accompanying the birth of her brother are followed by the funeral ceremony. The author's didactic intent is rather too evident from her prose, and the artistic value of the work badly affected by its stylistic clumsiness.

The depiction of conception and birth in Czech educational literature for children

Czech educational literature for children has paid little attention to matters of sex education, conception and birth. This gap in the book market was evidently the impetus for the publication of the book Lucka and Lucinka (2001) by the authors Lumír Komárek and David Komárek, with illustrations by Helena Dušková. The book was published as an edition not designed for commercial sale by the Czech National Institute of Public Health, evidently intended to serve educational purposes.

Brother and sister Ondra and Lucka help a young couple become acquainted and then attend their wedding, which becomes the exposition for the story of the birth of little Lucinka and how she is looked after. Expectant mother Adélka tells Lucka that she is going to have a baby. Information about the conception is presented by means of sequences of drawings of a markedly anthropomorphisational nature, while the text itself avoids the issue entirely. Lucka accompanies Adélka to her ultrasound examination and follows the growth of the baby, though there is no indication of the length of the pregnancy. The birth is merely alluded to, with the authors focusing greater attention on the expectant mother being taken to the maternity hospital, which is described with farcical exaggeration. The topics of childcare, breastfeeding and bringing up the infant and subsequent toddler are considered in further chapters. The final chapter emphasises the importance of vaccination to the healthy life of every child.

The publication makes a rather confusing impression. Its attempt to merge factual information with a storyline and illustrations falls flat. An important role in the story is played by a figure taken straight out of fairytale – the fairy figure Lukin and his magic mirror that shows everything that would otherwise remain concealed to the human eye. The character of Lukin enables the children to witness the birth, while the fairy figure also serves the authors as a welcome means of overcoming the necessity of realistic description, explanation and narration.

The lack of modulation of an implicit addressee proves a fundamental shortcoming detracting from the entire process of literary communication. Assuming that the child recipient is to identify with the central character of Lucka, then the text was presumably designed for children aged around eight to ten. Neither the tone of the narrative discourse selected nor the plot construction with the fairy figure Lukin correspond to this, however, tending rather to indicate that it was written with preschool children in mind. The text, replete with a quantity of diminutives, is full of explanatory notes that underestimate children's general knowledge (ultrasound, for example, is described as *a special kind of medical instrument that can see the baby inside Mummy*). The stylistic indecision of the text, in which terms such as *connector, bacteria and antibodies* later appear without explanation, and which explains terms such as *immunoglobin and B-cells* with the aid of anthropomorphisation, make it inaccessible to younger addressees.

The text has no aesthetic value and also misfires unfortunately on the strictly informative level.

Zuzana Baudyšová's preface to the illustrated book of verses Bříško, bříško, kdo v tobě bydlí (Tummy, Tummy, Who Lives Inside You) (2008) by Miriam Pešková refers to it as *a remarkable and poetic textbook to sex education for the youngest of children and primary school pupils.* Baudyšová emphasises the fact that the text is intended to serve primarily as a source of inspiration when talking to children about parenthood. This characterisation is, however, a great exaggeration.

The introductory poem *What the Dandelion Wanted to Know* leans towards a tame anthropomorphisational conception of the subject in question, though thankfully serves merely as a motivational bridge. The matter of conception is chastely dismissed in the following poem *What Do You Want to Know* – continuing the analogy with the plant kingdom from the first poem – with some verses about a seed planted by Daddy that somehow makes its way to the ovary in Mummy's tummy.

The following nine poems correspond to the nine months of pregnancy. The accent is placed on an important stage of intrauterine development, from the human embryo to incipient birth, in each poem. The text of the poems tackles the informational aspect in a lucid manner, the excessive quantity of diminutives caused rather by a stubborn endeavour to retain the regular structure of rhythm and rhyme. The typographic emphasis placed on certain words in bold type enhances the educational impact of the text. The poetic form, however, seems to be something of an end in itself, the verses lacking both figurativeness and melodiousness.

The illustrations by Kristina Küblbecková provide a realistic depiction of the development of the human foetus. The fact that they are situated in a stylised frame, however, elevates them above the level of a standard textbook accompaniment to the text. The title of the book, a paraphrase of the title of a fairytale, indicates that the publication is intended for younger children. The author tries to maintain a dialogic position in the text (note the questions in the titles of the poems, visualisation of the intended addressee, etc.) and the publication can, in spite of the clumsiness of some of the verses, be expected to engage its child recipients on the whole, despite failing to provide all the answers it promises.

The title of the book How I Came into the World written by the Swedish author of Czech origin Kateřina Janouch is an apposite one. It was published in a Czech translation by L. Johnová in 2004 with accompanying illustrations by the Finnish illustrator Mervi Lindman.

The very first sentences of this pictorial book give a suggestion of its stylistic outlook: *Before I was made, I was just a little seed that Daddy carried around in a little bag. And a tiny little egg in Mummy's tummy. Just imagine, Mummy and Daddy walked around the world, and each of them had a little piece of the jigsaw inside them without even knowing it!* The addressee is immediately drawn into the story of human creation, which is described with undisguised astonishment as a real mystery. The narrator, stylised into the position of a child aged something roughly between four and six, uses a natural, universally comprehensible child's vocabulary that is sufficiently descriptive without the slightest vulgarity, while remaining realistic. The text is oriented towards the perspective of the child recipient, and develops from the perspective of the child

narrator, for which reason mention is made of what precedes procreation, this matter being handled in the form of a series of childlike fantasies that enable the reader's own projection. Attention is also paid to the child's emotional relationship with its biological or adoptive parents, while love between the parents themselves is also emphasised. In accordance with modern demographic trends, the author does not neglect the kind of family situation in which the children are not brought up by their biological parents. The text is constructed with a rather too obvious disregard for gender stereotypes (Daddy wants *a little girl he can play football with*, and *a little boy he can paint a rainbow on the wall with*).

The description of conception is of a realistic nature corresponding to the initial narrative situation: the narrative explains the term sex *(Maybe you think that sex is the same as six in Swedish. Well, that's true enough, but sex is also what grownups do together to feel good and so they can have children. They hug each other. And they kiss each other too)*. The genitals are referred to as a *peg* and a *crack*. In this way, the book responds to preschool children's interest in their own bodies and the difference between the sexes – the illustrations depict nudity without any kind of sensationalism. The recipient is carefully made aware of the meaning of additional words that appear in the book's depiction of the course of pregnancy (the womb as a little room for the baby that grows in size, test-tube babies, the umbilical cord, the placenta, etc.). Prenatal development is again presented through a child's eyes, with unequivocal answers given to the anticipated searching questions (doesn't the baby drown in the amniotic fluid, what does it eat, how does it excrete). The wait for the new addition to the family is also portrayed with a view to a child's perception of time. *One day Daddy and Mummy look very happy, and tell you, "We've got some great news for you. You are going to have a little brother or sister! And you think HOORAY, that's great! A little brother or sister, I'll have someone to play with! So you wait a few hours, and suddenly it's time for supper, but no one has rung on the doorbell and your parents haven't even laid a place at the table for the new member of the family."*

Birth is portrayed with a sufficiently vivid illustration, accompanied by text anticipating possible questions and uncertainties: *Most children are born in hospital. They come out of Mummy's tummy through the crack she has between her legs. They certainly do not come out of her tummy through her bottom, though some children think this.* A mention is also given to the possibility of the baby being born by caesarean section or a hasty birth before Mummy can get to the hospital. The text comes to an end with a passage about the development and growth of the infant baby.

This publication is a model of the openness with which such sensitive topics are treated in foreign-language literary contexts – Scandinavian literature is particularly progressive in this respect. Conception and birth are depicted with an objective, almost documentary precision, while also being presented as an unfathomable mystery that still conceals a great many unanswered questions. *How come I was born and not somebody else… well, let's just say that's my little secret,* says the narrator in conclusion, leaving good scope for the child reader's own reflections.

There is neither great quantity nor quality to be found in fictional depictions of conception and birth in Czech literature for children. Similarly, educational literature on the given topic is also not available in the kind of scope that would encompass various

age groups of child recipients and provide them with reading on a commensurate level. The creation of life, the birth of a child and the role played by parents in conception and subsequent care for their offspring are, however, basic topics in sex and family education. Fiction in this country focuses largely on the social aspects of the given issue – relationships in the newly structured family, the conflict between expectation and reality, coming to terms with one's role as a brother or sister. Only Kateřina Janouch's book can be used as a source of sound and natural answers to children's questions relating to parenthood and human sexuality. It is indicative that of all the literary works considered here, it is the publication by a Czech–Swedish author that is the only one to combine effectively the artistic with the educational and serve as a notable motivational stimulus for sexual and parental education. It is, however, worth noting in a positive light the fact that all the publications considered here bring an important element in terms of the cultivation of interpersonal relations to the issue of sex education, rather than reducing it merely to a question of physiology and reproduction.

OBRAZ POČETÍ A PORODU V LITERATUŘE PRO DĚTI

Abstarkt: Problematika početí a zrodu nového lidského života bývá pro předškolní děti a děti mladšího školního věku opředena tajemstvím. Podle Rámcového vzdělávacího programu pro předškolní vzdělávání však děti jako jeden z očekávaných výstupů ve vzdělávací oblasti Dítě a jeho tělo mají umět pojmenovat jednotlivé orgány (včetně pohlavních), mít základní představu o vzniku života a narození. Umělecká literatura, která dítěti mnohdy pomáhá dotvořit chybějící poznatky a nahradit nedostatečné životní zkušenosti, může být významným a citlivým zprostředkovatelem informací o této problematice. Jak tedy vypadá obraz početí a porodu v literatuře určené dětem?

Klíčová slova: literatura pro děti, početí a porod, představa

COLOR IN SYMPTOMATIC IMAGES OF HEALTH AND DISEASE IN THE CZECH LANGUAGE

Ivana KOLÁŘOVÁ

Abstract: *General Educational Program for Basic Education posits that the student will not only receive information about health, its protection and inherent risks. An integral part of all educational programs has always been the intent to develop communication abilities, including the ability to communicate and express opinions on the subject of health. There is a rich vocabulary in Czech dealing with the issues of health, which includes words usable either in their basic or their symbolic sense, figurative expressions and phraseology.*

Texts of different stylistic genres, especially those of artistic or journalistic nature, show how references to a person's color, or perhaps skin, are used to convey the symptoms of health and disease. For example, comparisons with yellow color are frequent in the images of sick people, whose face may be yellow as wax, or waxy yellow. Likewise, gray color tends to be associated with unhealthy, appearance (gray, as ashes, ashen-gray). At present, there is a wealth of linguistic materials we can access – a half-a-billion word collection of written texts in contemporary Czech. When explaining the use of color to characterize a healthy or an unhealthy individual, it is possible to draw on the knowledge gleaned from other studies (such as biology and medicine).

Keywords: *development of communication skills, educational program, health, color references and symptoms of health and disease in the Czech language, comparison, figurative expressions*

If students are to acquire the ability to communicate about health in different contexts and articulate their own opinion about it as required by the General Educational Program for Basic Education (Czech abbreviation RVP ZV) within the educational module „Man and Health" (in the subjects of health and physical education, see RVP ZV, 2007: 72 n.), it implies a development of their expressive capability, in other words a projection of the „health" theme into the „Language and Verbal Communication" module and the subject of Czech language and literature. Reading plays an important part. N. Sieglová (2008, 2009) a M. Šubrtová (2009) showed that reading of well chosen

literary works can advance the requisite knowledge and proficiency in the realm of health education. Health-oriented excerpts from literature, journalistic publications, art, even popular science articles tend to be included in the Czech language classes when discussing some area of interest from vocabulary or grammar, or possibly incorporated into foreign language instruction for purposes of translation or conversation in a foreign language on a given topic.

Reading is also considered an effective way to bolster both vocabulary and eloquence. To develop the students' expressive capability, it is important to cultivate their creative writing or reproduction skills, and sharpen their ability to understand what the text really means and signifies. This encompasses words in their primary (sometimes referred to as basic) sense as well as in their figurative sense –metaphor, metonymy, comparison – which are covered at length in classes of literature and literary education. The instruction in the Czech language and literature and others subjects within the educational modules „Language and Verbal Communication", „Art and Culture" and „Man and Society" presumes that the textual analysis will focus on the interpretation of both conceptual and connotational meanings. These two come together especially in figurative phrases, emotionally charged words, individually conceived ideas and unconventionally applied expressions (see below for examples of yellow color used to describe the symptoms of a disease, or various references to the colors purple and green). In this manner, the students gradually learn to percieve why the author chose that particular expression and not any other. In doing so, they can draw on the knowledge from other subjects, like biology and civic education. The facility to comprehend the narrative and appreciate a diverse vocabulary in all shades of meaning may be reinforced by a recourse to authentic literary works and collections of folkloric writings. Also available are dictionaries of popular phraseology and idioms (a dictionary of comparisons, non-verbal phraseological connections and sayings, i.e. phraseologisms with verbs, has already been published), along with some dictionaries of popular sayings (e.g. the well-known publication by J. Zaorálek). Articles with symbolic and figurative expressions now appear in textbooks for the first grade of primary schools, and several college graduates have demonstrated the children's ability to understand the meaning of comparisons and other types of phrases, even their active knowledge of some comparisons.

In a paper from 2009, we examined the phraseology with the words *health* (a noun) and *healthy* (an adjective) as a good way to expand the vocabulary, discover the expressive power of the Czech language, and be inspired to ponder our views on health, sickness and the value of well-being. However, the *health/healthy* phraseology represents only one example of a rich health-oriented vocabulary that comes from the cultural history and traditions of this language, including the vernacular. The same sources provide another example of the linguistic richness as evident in the possibilities of verbalizing the vision of health, illness and their outward manifestations, which is the use of color to describe the symptoms of health and (more often) disease that characterize a person marked by physical indisposition, illness, or mental distress (mainly the signs of fear). Such usage of color terminology may be found in the works of prominent Czech authors like J. Čep a K. Schulz.

It is to be expected that the **color gray** is often used to evoke an oppressive atmosphere or even repulsive surroundings: *The first impression was the most*

revolting. It was a dirty winter evening, the street from the railway station was **gray**. (Schulz 1998, Per amitia silentia lunae: 55); *A putrefying puddle glistened by the road, the wind brought irritably acrid smoke from the factory chimneys, all was* **gray** *and dilapidated, nothing but evening darkness.* (Schulz 1998, Madman in Front of a Mirror: 99). Pallor could also be a pathological syndrome. In the Czech phraseology, somebody could be *ashen gray*, or *grayish,* or *gray as ashes* (cf. SČFI, Comparisons, 1984: 451), *chalky pale, morbidly/lethally/deathly pale* (cf. SČFI, Comparisons, 1984: 34–35). Remarkable are the variations on the shades of **yellow color** to depict somebody who looks unwell or actually sick. *He was a small, thin fellow of* **sickly yellowish** *complexion.* (Schulz 1998, Madman in Front of a Mirror: 100); *Rozárka was* **turning yellow and coughed**. (Čep 1991, Rozárka Lukášova: 56); The p*regnancy made Amálka ugly and yellow, she started to hate him.* (Čep 1991, Man on the Road: 299). However, the phraseology handbooks mention only *yellow as sulfur,* which could conceivably refer to an unhealthy countenance, but the others – *yellow as a lemon, yellow as a canary* – do not normally have the same negative impact.

A plethora of linguistic materials is now available from the Czech National Corpus. We utilize the SYN collection of written texts, containing half a billion words from actual texts of journalistic, artistic, technical, and informational nature. In the previous studies we looked at different color-based comparisons of various aspects, such as characteristics of a healthy or an unhealthy individual. We shall now examine another type, formed by a combination of adverbs with the words of color. Using a relatively simple sorting procedure, we can electronically select from the this large body of texts only the parts that are of interest to us, specifically those in which a person, his/her skin, or parts of the body (hands, eyes, hair...) are characterized by a certain color. Working with the Corpus is not complicated and it could be introduced into primary schools as early as in the second grade.

The appearance that signals illness, sickness, disease, fatigue, or mental stress (fear) is identified by the words of color in two ways:

a) explicitly, by linking the word of color with adverbs like *sickly, unhealthily*, or otherwise with the words of exaggeration like *deadly, morbidly;*

b) implicitly, by assigning the person a non-typical color *(gray, yellow),* often in conjunction with an adverb indicating a similarity of that color with the color of the object *(ashen-white, waxy yellow),* which creates an impression of a sick or diseased appearance because its abnormality.

It is obviously not surprising that a frequent term for a symptomatic image of a not completely healthy, or even sickly, individual is the word *pale*. As in literature though, we find that the symptoms of unhealthiness are frequently associated with the color *yellow*, more so than with *green* or *gray*. In addition to the combinations of these colors with the adverbs *diseasedly, sickly* or perhaps *deadly* and *morbidly,* the portrait of a not-quite-healthy, sick, or terrified person may be complemented by other symptomatic expressions *(stooped, scrawny, ruddy with fatigue, groaning,*

sweating; watery eyes, sunken cheeks, empty stare in the eyes; to tremble, to be out of breath, to walk hunched over, to look old, to be scared to death).

Examples of color association with the adverb *sickly*[1]:

– She watches him: a nice man, but *sickly pale*, and walks with a terrible *stoop*.
– His face was *sickly pale*, the whole body *trembled* and he seemed to be scared *to death*.
– He looks *old*, his hair is almost white, the complexion *sickly gray*.
– The dark-red blood produces a striking contrast with the *sickly green* color of the body.

Examples of color association with the adverb *unhealthily:*

– I called him, elbowing my way through. Somebody gave him a shaft, and the eyes in his *gaunt, unhealthily yellow face* looked like two saucers to me.
– The man dying behind the transparent green curtain had a visitor once a week. Every Sunday, a sad, *unhealthily pale and obese* woman brought him a bouquet of flowers.
– Jakob Kahn was lying on a large double bed under a red blanket. His eyes were closed and *the cheeks sunken.* The skin of his face and hands was *unhealthily pale*.
– Heading for the door in the following moment was dr. Friss, a Danish philosopher and one of the translators of Schweitzer's works, who was visiting, and whose complexion now acquired *an unhealthily green hue* (from non-fictional literature).

Examples of the exaggeration usage:
   Color association with the adverb *morbidly*:

– Flynn recognized the tracheal tube that was still sticking out of his mouth, *morbidly pale complexion* and the open eyes which looked alive...
– That radiant queen of pop is a total wreck today. Marked by drug use, *an empty stare in her eyes, morbidly pale skin.*
– Stephanie was *morbidly pale* and her eyes were shut. It seemed that she was not breathing.

Color association with the adverb *deadly*:

–There was one primitive stretcher after another, and all were occupied by *moaning, sweating, deadly pale people,* who were trying to *catch their breath* in a stifling smell of excrement and iodoform.
–Good gracious, mom, are you sick? *Her face was frozen and deadly pale*, the eyes as if *sunken deep in the sockets,* and the edges of eyelids were *reddish with fatigue.*
–She also met a robust, bright Persian with a pair of *deadly green* eyes.

  The *yellow* color and other colors are perceived to epitomize the symptoms of poor health because they are not the normal colors of human skin, even without using the qualifying adverbs *sickly, unhealthily, morbidly, deadly*. They sometimes combine with comparison-serving adverbs, the so-called characterizing adverbs, derived from the material-type adjectives like *waxily, ashenly*. They are frequently coupled with the colors *yellow* and *gray*.

– Cashier Carter was a middle-aged man with an unexcited, permanently bored expression in his face, and *parchment-like yellow complexion*.

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[1] All examples are citied accoreling to the Czech National corpus SYN, including. The corpore SYN 2000, SYN 2005 and SYN 2006 PUB. In the English version of the article there one all the texts trenslated from Czech in English.

– At the table sat a man with a *parchment-like yellow face* and *pale watery eyes* above his *sunken cheeks*.
– Artur was terribly nervous. He had been overworked since the Lonsdale case and put on a lot of weight lately. He was *ashen gray* in the face and *visibly aged*.
– …and the custodian found what he was looking for in a man with *ashen grey complexion,* a graying beard, and quick, perceptive eyes.

Likewise, the addition of a shade of gray to a certain color tends to be perceived as a syndrome of physical or mental health:

– Those two guys looked the same. They must have been twins. They even moved alike. The skin, or whatever it was, had a *grayish yellow* tint, like rubber.

Assigning the color green or white to a human face often implies exaggeration, although the color encountered in serious writings was predominantly white.

– „I have not seen that many yet" said Anežka. „One is almost afraid to breathe". Now, in the twilight, her *face* appeared *rather white*, the lips were half-open and the eyes reflected long rays of light, as if turning a diamond...
– Father's firm grip stopped me in my tracks. I looked at him. The sinews on his neck stood out and his *chalky white face* was distorted by fear. The expression of his face used to haunt me in my dreams for years.
– We had managed to take off our raincoats and look around a little before the future lady of the house stumbled down into the hall on her shaky legs. Her face was *ashen grey with fear*, her meandering gaze vacant.
– He paused again and pressed the knuckles to his mouth as if to suppress a sudden emotional rush. When he lowered the hand, *his lips were almost white*. Troy discretely placed the photograph on the table.

References to green color suggest a humorous exaggeration:

– If I want to please the children, their friends, and myself too, we go terrain riding in the Brdy woods. Although the boys' *faces turn green* now and then, the Maverick with a four-wheel drive, a gear reduction and a lock can handle the slopes, the roughness, the mud, the snow, and the trenches without any damage to the car or its crew.
– „...Even though I tried to think about something else, I scarcely slept before the race" reminisced Palouš, who represented AMK Hořice, after his landing in Prague. „But when I glimpsed, during the official lineup, how nervous was Hasenakua, who was *virtually green in the face*, I calmed down. From that point on I felt fine throughout the race."

The color *purple*, sometimes in combination with other colors, is usually associated with a person in a moment of great physical exertion, or even critical condition:

– *Red eyes* and *dark-purple lips* glowed in the *face white as (whitewashed) wall,* the wheezing mouth catching breath, the body on the verge of collapse. Coxswain of the representative eight-oar boat Radek Zavadil looked like that after his boat came in fifth, the last in the qualification race for the Olympic Games on the Lake Lucerne.
– The monk did what he could. He sank heavily to one knee. His *face* was *starkly purple*, as if blood had coagulated under his skin. He moaned, grabbed his throat, and, being short of breath, drew his tunic open.
– They were clambering up, the old guy being almost *purple in the face*. He kept clutching at his heart. But on he went, crawling like a bug. Then he fell again, his face in a puddle. He groaned. The younger man picked him up.

Conversely, in other parts of the body (like teeth), the *white* color is a symbol of health:

– Clear eyes, *porcelain-white teeth,* pink tongue – those were the only human colors that stayed with her body.

Red color may be a symptom of health or a symptom of illness. It figures in folk-loric writings as a symbol of soundness and freshness – see for example *to sleep in until red* (Zaorálek 2000: 36), the comparisons talk about healthy *cheeks (red) like apples, like roses* (SČFI, Comparisons, 1984: 419) – see the following quotes:

– But that only pleased her. When we were saying goodbye, her *cheeks* were *beautifully red* and her eyes shone.
– But, out of the blue, he meets a little girl who is not afraid of freezing or *sniffles*, and she has red cheeks.
– He had a *healthy red color,* brilliantine on his hair, and smelled of suede and clean tweed.

Of course phrases like *red as a burning fire, feverishly red, the eyes as red as a hare's* also appear in Czech comparisons. In papers on medical subjects, red tends to be a syndrome of a disease or disorder:

– Exanthema does not normally occur in the face but the *skin* here looks – with the exception of mouth and chin (circumoral pallor) – *diffused red.*
– Apis is indicated for allergic reactions to insect bites, when the *skin* swells quickly and becomes *bright red.*
– On the other hand, vitamin P, also present in carrots, contracts the unsightly *red enlarged blood capillaries* in the face and the décolletage.
– If somebody has a headache because of the heat, sweats abnormally, is sleepy and sluggish, and has pinkish-red skin with an orange peel look will be helped by a medicine called Apis Mellifica (five granules every 10 minutes), according to Vančuříkova.

The authors of fictional literature sometimes draw on their insights for images that are almost naturalistic:

– The cyclist who had a two-minute lead suffered terribly on account of painful sores. He sat almost on the small of the back. His neck was dark red and his fair hair was bleached by the sun.
– Eliska... typhoid... he moved it gently aside and burst in the room. The smell of medicine surrounded him – and there, in the corner on a bed, against the golden sun of a spring afternoon, a sharp silhouette of her head! She was lying on her back, the face burning red, with glassy eyes, groaning frightfully.

When working with texts containing these types of color references, it is possible to apply the knowledge gained in the Czech language and literature and other studies, for example in the module „Man and His Health" (human biology) or „Man and Society" (awareness of folk customs, ideas about colors as indicators of health or sickness) to explain (or judge) why the author invoked the specific quality of, say, white or yellow color to highlight a symptom of a disease. In learning foreign languages, the words of color are part of the basic vocabulary, but when translating a text in Czech into a foreign language, it is necessary to differentiate in what meaning and in what function is the color reference deployed, because it may have some bearing on the translation. The use of colors as medical symptoms is therefore a form of communication about health and disease that allows to interconnect the various educational areas.

BARVA V OBRAZU SYMPTOMŮ ZDRAVÍ A NEMOCI V ČESKÉM JAZYCE

Abstrakt: Rámcový vzdělávací program pro základní vzdělávání předpokládá, že žák nejen získá informace o zdraví, o tom, jak zdraví chránit, o rizicích pro zdraví.

Nedílnou součástí vzdělávacích programů však vždy byl požadavek na rozvoj komunikačních schopností včetně schopnost komunikovat o zdraví a vyjadřovat se k tomuto tématu. Čeština disponuje bohatou slovní zásobou k tématu zdraví, nemoci, péče o zdraví, její součást jsou jak výrazy užité v původním významu, tak přenesená pojmenování, obrazná vyjádření a frazeologie.

Texty z různých stylových oblastí, zejména texty umělecké, popř. publicistické, ukazují., jak jsou pro postižení symptomů nemoci a zdraví využívána označení barev člověka, jeho pokožky: např. přirovnání s barvou žlutou je často využíváno pro obraz člověka nemocného, který má obličej žlutý jako vosk, voskově žlutý, podobně bývá se zdravým či spíše nezdravým vzhledem spojována barva šedá (šedý jako popel, popelavě šedý). V současné době máme k dispozici bohatý jazykový materiál – půlmiliardový korpus psaných textů současné češtiny. Při vysvětlení využití barev pro obraz zdravého/nemocného člověka je možné opřít se o znalosti z dalších oborů (např. z biologie a zdravotních věd).

Klíčová slova: rozvoj komunikačních schopností, vzdělávací program, zdraví, názvy barev a symptom zdraví a nemoci v českém jazyce, přirovnání, obrazná vyjádření

HEALTHY SLEEPING AND REST POSSIBLE MODIFICATIONS INTERIOR MICROCLIMATE

Jaroslav SVOBODA

Abstract: *This paper is concentrated on finding of the impact of ions in dwelling environment. It has been tested the influence of ions on amounts of VOCs (Volatile organic compounds).*

This thesis studies canopy bed and quality of inner environment. Main aim of this thesis is attempt to design bed (known as canopy bed), at which - by usage of technique, technology as well as design - it would be possible to create canopy, which would allow modification of microclimate in area between bed and canopy. Modification of internal microclimate would be provided by filtrating air in this area.

Keywords: *canopy bed, microclimate, air filtration.*

Introduction

The question of healthy sleep and housing is very often recently discussed the problem. It's given the state of our environment. This has been generally in the area improves, but still used on a larger scale a series of new materials and technologies, which despite all the efforts are not exactly known their effects on human life. Toxic gas components are entering the interior of the outdoor environment, arising from inside the buildings due to the construction materials and the influence of human activities. In measuring the impurities in the air in the interior, it was found that in interior air is more polluted than the exterior. Cleanness airs only affect the natural gas components, but in the dust, aerosols and various micro-organisms, whose source is, inter alia, the materials contained in the interior. And here spend one-third of life sleeping and at least one third of the second free stay. We know, because this represents the largest part of our lives!

Purpose of work

The concept of this task can be attributed to the application of historically well-known and psychologically oriented adjustments beds using canopy (heaven), so that a relatively closed area (defined heavens and the beds), in which it would be possible to clean the air in accor-

dance with the desired parameters such as the type and dependence allergies. This will also be in this area created the necessary microclimate for healthy sleep and rest. At the same time, this clean air was accompanied by negative ions, which are so necessary for human life. In the interior are still negative ions due to deteriorating environment in very small indeed, almost minor quantities. The use of this equipment can be seen not only for healthy sleep and relaxation, but also as for the prevention for healthy people living in a polluted environment.

Social - the historical position of beds

Beds were from ancient times among the most important furniture objects. It presentational piece of furniture not only the premises feudal dominion, but also houses wealthy burghers. Beds were covered canopy and curtains of rare substances. Form kind of massive element, dominant volume of the entire area of his bedroom. For living then such intimate area provide more warmth and protection against insects. Beds have often built in the area of the raised podium, which was even more highlighted their dignity. Canopy was often part of the architecture in the room and was suspended under the ceiling above the bed, using the columns. 20 sleeper furniture century is characterised by effort to achieve optimal composition sleeping area, which would meet the requirements of modern knowledge of the physiology of sleep. At present, there are beds to the heavens only very rarely.

Figure 1: Bed with a canopy - Late Renaissance

Figure 2: Spanish Baroque bed

Figure 3: Bed from the time of Louis XIV

Figure 4: Bed with a canopy -Empire Style

Ionic environment and air ionized incidence on man

Ions have important place in environment. Positive ions are attracted to Earth surface. Negative ions are repulsion towards ionosphere. Negative ions (N_2^+ and O_2^-) rising outdoor and in rooms in considerable quantity, but their concentration is quickly declined by polluting materials. Air contains always more impurities. These impurities joint to negative ions in consequence of electric changer distinctness. Ions decrease often brings health difficulties which are caused developed by lack of negative ions.

Influence of toxic materials on man

The activity of toxic materials on man can lead to development of different illness. Short term illness make neuralgic pains and low mental and physical efficiency and total tiredness. Long term lack of ions can lead to lasting neuroses and respiratory trouble. Main ions trap are smoke, smog, dust, aerosol and various micro-organisms.

Oxygen anions are considerably highly effect on our health and psyche and immune system.

Anions are exploited to cure different health disorders, especially for air ways, but even burn injuries and nervous disorders.

Philosophy proposal

This modern concept of the heavens beds can be seen as a memory of history, but in a new concept canopy and use of new advanced air-conditioning and ionization technology. Use "canopy" create an entirely specific conditions (microclimate) for healthy sleep and rest. The necessary quality is achieved by using micro-special cleaning, air-conditioning equipment and ionisation. All of these technologies are set into one device and incorporated into the structure of heaven.

Tested operating on a very pleasant man and his intimate mini induce space, which may have an impact on his psychological well-being. If we look back to the past, so we find that the beds were very popular heavens and tested before many hundred years ago. It is true that the beds were constructed as chest bedroom in the rooms where their massive canopy should feature more heat, protection against insects and decorative. Therefore, I think that is not nothing special but the thing that tested and proved in the previous years. It is, however, the method, which must transform and integrate into our modern time.

The proposal bed with a canopy – design

The proposals presented must be understood from the dual perspective. And this from the perspective of design-psychology and health concerns, which are not in this work in the first place. All proposals foresee beds suitable air-conditioning equipment technology. This technology can be effective in different ways according to specific user needs. In the interest of broad applicability beds - the city, countryside, young, old, etc. are handled in the spirit of classical shapes to the concept, to some extent, futuristic, but

in any case would be very carefully assessed the viability of their design. The idea of presenting the various proposals design beds, where the heavens internal micro-beds separated from the surrounding environment in the interior. The proof of this claim may be one of the proposals, which was conducted and presented in the context of international trade fair housing Mobitex 2008, where the "bed with the heavens" won the Grand Prix prize for progressive technology and materials.

Figure 5: The prototype bed with the heavens issued by the International Fair Housing Mobitex 2008

Bed with the heavens in living space

In this variant form a canopy free-floating element in the area, which is structurally related to the bed. This occurs to us very air and open space. Restraint is done to the ceiling plate and either hanging consoles, or using a reduced ceiling - the ceiling. The heavens are formed compared to the past and severe canopy, but are replaced by clear and textiles, which may be suspended to heaven in different ways. Easy to attach textile hinge ensures its easy cleaning and laundry. According to the interior in which a bed and used according to the wishes of individual users, the system may be equipped with air cleaners in addition to a ionizer well as a number of electronic accessories - special lighting, acoustic speakers, etc. Design beds designed in a modern style, material veneer Makassar wood high polish in combination with high white lustre.

Figure 6: Design bed with canopy in living space

Figure 7: Design bed with canopy in living space
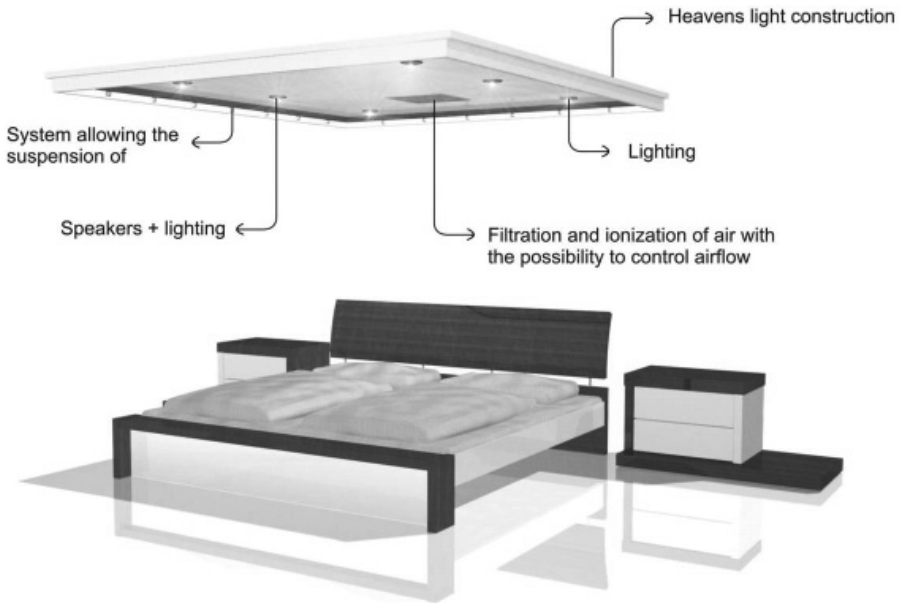
Figure 8: Design bed with canopy in living space - description main parts

Conclusion

The intention of this work was to highlight the proposal of a special bed with the heavens, which would allow adjustment of microclimate for healthy sleep. During this work, I took the view that it alone with a bed heavens may induce a very intimate and psychological environment, and the use of air conditioning and lighting are all points more leverage. This very intimate environment may create a fabric canopy, which will not only isolated from the surrounding insects, but will also have a very interesting psychological function. Furthermore, if the heavens will be supplemented by air-conditioning and negative ion generator, so we created the necessary microclimate for healthy sleep and rest. This possibility will appreciate how allergy and sick, as well as full health people who would welcome appropriate regulation of air quality.

Resume

The objective of this thesis was to design special canopy bed, which would allow modification of microclimate for healthy sleep, while meeting base requirements and with taking account of ergonomic and construction. Design and construction of bed are consistent with requirements for modern bed. Design of bed, by its shape and material composition influences furniture culture and psychological factors of human. Construction then serves for base factor affecting safety feeling for sleep and rest.

The advantage of canopy is that it is not linked together with bed, but is detached and can be sold separately. Design of canopy bed is conceived as modular system with possibility of exchange and complementation of selected parts.

Credits

ZDRAVÝ SPÁNEK A ODPOČINEK; MOŽNÉ ÚPRAVY INTERIÉROVÉHO MIKROKLIMA

Abstrakt: Tento příspěvek se zabývá otázkou zdravého spaní ve znečištěném prostředí a prostředím, které je chudé na záporné ionty, což může vést k různým zdravotním poruchám a onemocněním.

Těžištěm této práce je návrh postele (lidově: postel s nebesy), u které by bylo možné díky použití techniky, technologie a samozřejmě i designu (z důvodu vlivu na psychologii) vytvořit " nebesa ", která by umožňovala v různé míře ovlivnit mikroklima prostoru vymezeném nebesy a postelí. Změna interního mikroklimatu je řešena pomocí filtrace a ionizace vzduchu v daném prostoru mezi nebesy a postelí.

Klíčová slova: postel s nebesy, mikroklima, filtrace vzduchu

THE SOCIAL COMPETENCE DEVELOPMENT OF MANAGERS IN THE CONTEXT OF THE PERSON CENTERED APPROACH (PCA)

Eva SOLLÁROVÁ, Ivana GALLOVÁ

Abstract: The paper presents the results of a research whose aim was to examine the effectiveness of training for managers focused on the social competence development. The changes in the PCA attitude qualities - acceptance, empathy and congruence were evaluated in a scale by 2 experts and 116 participants of a six day experiential training. The growth of acceptance, empathy and congruence was identified both in the self - evaluation by participants and experts evaluation when measured on the participants of the training. The results confirmed the reinforced social competence of managers in the accomplished structure of the experiential training of PCA attitude qualities.

The concept of social competence can be defined as the effectiveness of social behavior and human activities. Models of social competence differ from those that rest on specific behavioral abilities to those which are focused on cognitive structures. Howes (1987) identifies the social competence with behavior that reflects the successful social functioning with other people.

The concept of **competence** was introduced to managerial practice by Boyatzis (1982). The concept was used to differentiate the successful manager from the unsuccessful. He understood the concept of competence as abilities and capabilities of a man to behave in a way that is adequate to the requirements of a working position within the framework given by the social space of an organization and in this way to achieve required results.

In the seventies of 20th C the **competence approach** was developed. Its aim was to examine the managerial competence in the organizations.

The essence of the competence approach is that the education and learning are not organized according to the content of the studied material; however, the priority becomes to decide what competences are necessary to develop and advance for participants. Instead of the presentation of information, facts and knowledge the role of the educator is to facilitate, lead and support a learner in a non-directive way to acquire and adopt the required competences. The aim of educational process is a positive change in

the behavior of participants of educational process and to acquire the ability to solve topical, or prospect situations autonomously, effectively and mainly with a high degree of competence. The survey of key competences differs from author to author. The *social competences* are central to our interest together with the competences necessary to perform managerial work effectively.

The ability of the individual successfully and effectively solve social situations, to integrate in a social environment, to understand not only the social situation but solve it in accordance to the needs and interests of participants is defined by Kollarik (1993) as social competence of the personality.

Vyrost (2001) composed a survey of components of social competence and outlined areas, which are covered by social competences:

- effective communication,
- ability to create and sustain relationships,
- effective solution of social problems,
- ability to make decisions,
- constructive solution of conflicts,
- application of social competence,
- social knowledge,
- self-control,
- the perception of the self,
- the self identity,
- ability to provide and acquire social support,
- effective social network,
- orientation to future,
- interest in others and the ability to take over the responsibility for them,
- respecting individual differences,
- ability to differ between socially positive and negative influences of groups.

Rogers (1951, p. 50) understands the potential of the person centered approach in "almost universal applications" and offers the approach to reformulate it for the use "in almost infinite variables of human situations". In the application of our research it is a man in the working situations, in the context of an organization whose identity we perceive as aligned to the presented image of an optimally working personality by the above mentioned representatives of the person centered approach; as a relevant image of a psychologically healthy, mature man who is able to create and sustain effective working relationships. The presented image of the fully functioning man or the psychologically integrated man offers a collection of characteristics which significantly overlap with the concept of social competences. The components of the concept of social competence (Výrost, 2002) significantly overlap with the presented characteristics of the optimally functioning personality.

Rogers (1962) states that a highly productive manager leads people through influence and effect as counter poles to power and control. Such psychologically adapted or integrated man is referred to by Rogers as "fully functioning person" who allows for relationships that are equal and mutually accepting. He does not have increased requirements for the others as well as he does not prefer his/her position or power. Such

relationships take the form that is not filled with threat, dependence or danger. The intimacy and relationships are sustained better and the relationships are more permanent. Such person is friendlier, more original, more open, interprets not only positive but also negative feelings. Thanks to that he/ she enjoys understanding but is not overprotective. The person builds the interpersonal relationships, but does not value power too much. The environment accepts him/ her positively. The person's behavior leads to the fact that they are visible, favored and respected (Merry, 2004). According to Rogers (1999) an effective leading worker, whose attitudes – acceptance, empathy and congruence are internalized, relates to other members of the team in a following way:

- enables the autonomy of the individuals
- offers freedom "to do own things"
- expresses own ideas and feelings
- stimulates the independence of thinking and acting
- grants full responsibility
- supports and relies on self-evaluation

There is a wide applicability of findings how person's own capacities can be released in order to change the person and the way in which the relationships can reinforce such a self oriented change.

Educational process belongs among possible applications. It was theoretically, practically and also in a research examined by Rogers (1951, 1983). His promotion to shift the intentions in education from teaching process to learning process and from a teacher to a facilitator of learning involving the whole personality is fully relevant for the forms of effective education of adults. The role of a facilitator - trainer is not to decide what the participants should study but to identify and create the main qualities of psychological climate that can help them to feel the freedom in learning and development. External conditions that facilitate learning and development contain:

- unconditional acceptance of the participant,
- authentic presence and expression of facilitator,
- empathic understanding,
- climate without critical evaluation,
- support of psychological freedom.

In our view, the characteristics of PCA skills training in a group overlaps with the characteristics of the development of a fully functioning person and comes out of the persuasion that PCA skills can be learned and have their function to achieve the social competence in relationships, in particular in working relationships (Sollarova, 2005).

Acquiring PCA skills for working and interpersonal interactions directly results in:

- skills of clear and congruent communication,
- skills to understand communication of the other in the interaction,
- skills to facilitate the clarity of communication with a person who has different opinion,

− skills to improve the communication in a team, whose members differ in their perception and experience,
− skills to understand the other,
− skills to manage effectively burdensome, conflicting, and stressful situations.

According to the authors results defined in this way significantly saturate components of social competence. Therefore it is possible to perceive the development of key qualities of the PCA within a group of managers as a support of their social competence in defined expressions, which create and manage working relationships in a narrower sense of the word and support optimally, more effectively, fully functioning person in a broader sense of the word. (more in Sollárová, 2008).

Research verification of changes in personal variables, interpersonal variables and behavior (e.g. Sollárová, Sollár, 2007) can be evaluated as compatible with changes, which the examinations of changes within a therapy focused on a client state, in the direction of reinforcement of optimal person's functioning.

PCA is understood as one of the models of theoretical and also methodological application to understand and develop social competences of managers. We were interested in the PCA training effectiveness lead from a perspective focused on participants. We tested if the training has an effect on a change of the level of attitude – *acceptance, empathy and congruence* as qualities reflected in social competence of managers.

Methods

We tested 165 managers working in the state administration of the Slovak Republic. 48 hour training was focused on effective creation and management of working relations through the training of PCA attitude qualities – acceptance, empathy and congruence and was accomplished in groups of 15 people under the guidance of 2 qualified lecturers in two 24 hour sessions with a two month distance between training sessions. To verify the level and changes of attitude qualities (acceptance, empathy and congruence) we created a 15 item *Scale to assess the level of interpersonal qualities*, which we administered to participants at the end of the training to self evaluate the original level and present level of monitored qualities. The level at the beginning and at the end was in a conclusion evaluated also externally, by the expertise evaluation of lecturers.

Out of 15 items of the *Scale* the quality of acceptance was reflected by 2 items (acceptance of the opinion of the other and the acceptance of criticism), empathy by 3 items (nonjudgmental attitude during listening, impersonal dissociation and control of the correctness of listening) and congruence by 4 items (clarity of the message, matter-of-factness, expression of the experience and congruent decision) evaluated on a scale from − 5 to +5, where the value of -5 represented the level of extreme incompetence and value of +5 extreme competence. Results were transformed to the index -100, +100 and defined 7 levels of competence: *highly incompetent, rather incompetent, slightly incompetent, unclear, slightly competent, quite competent, and highly competent*. To verify the differences in self evaluation of participants and evaluation of experts we used Student t-test for dependent samples (Sollár, Ritomský, 2002).

RESULTS AND DISCUSSION

Changes at the level of acceptance

Table 1. The significance of differences in score of acceptance during self-evaluation by participants and evaluation from experts

		N	AM	SD	T	p
SE	*situation at the beginning*	97	24.22	39.83		
	situation at the end	97	52.47	29.54	-8.716	0.001
EE	*situation at the beginning*	99	-12.32	33.40		
	situation at the end	99	13.43	35.66	-16.439	0.001

Legend: **SE**- self-evaluation by participants **EE**- experts evaluation

The participants achieved during self-evaluation in the subscale *acceptance* the average score 24.22 at the beginning and 52, 47 at the end. The difference identified was statistically significant at the 0.1 % significance level, in the direction of a higher score at the end of the training.

The experts evaluated the level of acceptance of participants at the beginning of the training -*12.32* and at the end of the training +*13.43*. The stated difference was statistically significant at the 0.1 % significance level, in the direction of a higher score at the end of the training. Monitoring the self-evaluation by participants we found out managers at the beginning of the training evaluated the achieved level of *acceptance* in the level of *slight competence*. At the end of the training the value of acceptance was of a rising tendency while it remained in the level of *slight competence*.

Significantly more critical were the experts who evaluated the level of participants' *acceptance* at the beginning of the training with a minus value in the level of *unclear*. A progressive change took place at the end of the training when experts evaluated the level of participants' *acceptance* still in the level of unclear, this time, however, with a plus value.

We assume that as a result of a change in the *acceptance* the managers will be more competent to perceive real social situations, especially in terms of tolerance to the opinions of the other, as well as in the ability to accept disagreement and criticism of the others. Therefore it is positive that in spite of differences in the original evaluation of the level of attitude quality there was a rising tendency in both evaluating groups. The tendency supports the statistically significant change in the increase of the *acceptance* level. In compliance with Rogers (1951) we assume that if manager introduces the *acceptance* value in team work the members of the group gradually take over the value. They start to express higher degree of *acceptance* to each other. They can be more tolerant to mutual disagreements. Accepting environment supports the willingness of individuals to express easier their own real attitudes and feelings and at the same time it enables them to accept authentic feelings and attitudes of the others.

Changes at the level of empathy

Table 2. The significance of differences in average scores in self-evaluation by participants and experts to evaluate the training in empathy

		N	AM	SD	t	p
SE	*situation at the beginning*	**92**	**18.98**	**32.83**		
	situation at the end	**92**	**52.82**	**21.38**	**-10.768**	**0.001**
EE	*situation at the beginning*	**100**	**-15.73**	**24.57**		
	situation at the end	**100**	**12.13**	**26.99**	**-18.296**	**0.001**

Legend: **SE**- self-evaluation by participants **EE**- experts evaluation

The participants achieved an average score *18.98* in the subscale *empathy* during the self-evaluation at the beginning of the training and *52.82* at the end. The difference was statistically significant at the 0.1 % significance level in the direction of a higher score at the end of the training.

The experts evaluated participants in the subscale *empathy* at the beginning of the score *-15.73* at the end of the training *+12.13*. The stated difference was statistically significant at the 0.1 % significance level in the direction of a higher score at the end of the training. At the beginning of the training participants evaluated the attitude value *empathy* as a plus value in the level of *unclear*. The evaluation at the end of training captures the positive tendency and managerial skills were shifted to the level of *slight competence*.

The same tendency of more critical evaluation than in the case of acceptance is revealed in the evaluation of experts of *empathy* quality. The original level of *empathy* of participants is evaluated by the experts as a minus value in the level of *unclear*, at the end of the training in the same level, however, as a positive value.

To compare the original values during self-evaluation of empathy by the managers with the average values of other qualities, these were lower. We assume that it is because *empathy* is underestimated as a quality supporting the building of relationships and facilitating communication in working relationships.

We assume that the increase of *empathic behavior* influences the social competence of managers mainly in the aspects of willingness to listen to others and assurance that they understand the others correctly as well as the willingness to listen without subjective interpretations and a risk to identify with their problems.

Changes at the level of congruence

Table 3. The significance of differences of average scores during the self-evaluation of participants and experts to evaluate the training in congruence

		N	AM	SD	t	P
SE	*Situation at the beginning*	94	30.37	30.71		
	Situation at the end	94	57.76	22.15	-10.664	0.001

EE	*Situation at the beginning*	100	3.65	25.59		
	Situation at the end	100	20.95	25.79	-12.384	0.003

Legend: **SE**- self-evaluation by participants **EE**- experts evaluation

Participants achieved average score *30.37* in the subscale of *congruence* at the beginning of the training and at the end it was *57.76*. The difference in score was statistically significant at the 0.1 % significance level in the direction of a higher score at the end of the training. The experts evaluated participants at the beginning of the training in the subscale *congruence* as the score of *3.65* and at the end it was *20.95*. The difference in score was statistically significant at the 1 % significance level in the direction of a higher score at the end of the training.

At the beginning of the training the participants evaluated themselves in the level of *slightly competent*. At the same time as it was mentioned above also in this case we follow the reinforced acquiring of *congruence* in the level of *slight competence*. In comparison with other qualities in the self-evaluation managers evaluated *congruence* as the highest value. We consider important to support and train effective forms of assertive behavior because traditional management understands assertion rather in the form of power and control than influence and effect (Rogers, 1999).

The change that was observed by the experts at the end of the training was directed toward the participants' *congruence* in the level of *slight competence*.

We assume that the growth of congruence affects the social competence of managers especially in the aspects of non-harmful self-assertion, comprehensibility to set tasks, as well as the ability to decide and express one's needs in correspondence to one's beliefs.

Conclusion

While evaluating attitude qualities we observed a common phenomenon .The evaluation of the original level of *acceptance, empathy* and *congruence* in self-evaluation by the participants was more positive on one hand and markedly more critical when it came from the experts.

We think that a number of managers idealize their own style of interpersonal functioning. A more critical evaluation from the experts can be linked to a more qualified and complex understanding of the content of the abovementioned concepts – *acceptance, empathy* and *congruence* and the competence to have a more operative idea how to use attitude qualities in specific interpersonal attitudes and behavior. Difference in self and other perception corresponds to results of research (Sollár, 2010), in which self-evaluators rated their interpersonal characteristics positively than external evaluators.

In spite of the original differences in the evaluation of the level of achieved qualities from the experts and in the self-evaluation of the participants both the self-evaluation of the training by participants and the evaluation from the experts recorded the increased level of all three interpersonal qualities. The results confirmed the effectiveness and reinforcement of the managerial competences in the pattern of the accomplished experiential training of PCA attitude qualities.

ROZVOJ SOCIÁLNEJ KOMPETENCIE MANAŽÉROV V KONTEXTE PRÍSTUPU ZAMERANÉHO NA ČLOVEKA (PCA)

Abstrakt: Príspevok prezentuje výsledky výskumu, ktorého cieľom bolo skúmať účinnosť výcviku manažérov zameraného na rozvoj sociálnej kompetencie. Zmeny v postojových kvalitách PCA (prístupu zameraného na človeka) – akceptácii, empatii a kongruencii boli hodnotené na škále 2 expertmi a 116 účastníkmi 6-dňového zážitkového výcviku. V sebahodnotení účastníkov aj v hodnotení expertov bol vo výcviku zaznamenaný významný nárast akceptácie, empatie a kongruencie u účastníkov výcviku. Výsledky potvrdili účinnosť posilnenia sociálnej kompetencie manažérov v realizovanom dizajne zážitkového výcviku PCA postojových kvalít.

Kľúčové slová: sociálna kompetencia, interpersonálne vzťahy, vzdelávanie manažérov, prístup zameraný na človeka (PCA)

INTERPERSONAL CHARACTERISTICS OF MANAGERS – SELF-OTHER AGREEMENT

Tomáš SOLLÁR

Abstract: The paper presents the results of a research aimed at agreement rate between self – evaluation and judgment by others regarding the interpersonal characteristics of managers. The rate of agreement among the judges of a different level of expertise regarding their work with managers was studied. Evaluation of interpersonal characteristics within Wiggins's theory was conducted by three evaluators in the group of 156 managers, participants of a short – term training focused on effective stress coping. Three evaluators differed in the rate of agreement of interpersonal characteristics. Lower agreement was most likely influenced by the nature of the situation in which the judges and managers knew each – other, by the short duration of the training, as well as by selective expression of judged characteristics in the training context.

Keywords: interpersonal characteristics, self-other agreement, managers

Introduction

Judgment of other people's traits is a part of human functioning in every interpersonal contact. Perception of others is usually done on the level we are sometimes aware of, but sometimes not. Since it is a natural manifestation when contacting other people, mutual judgment can be observed also in education not just at schools, but also when educating adults, including managers. As many researches indicate, judgment and self-evaluation of personality traits in people is not identical, but quite frequently it reveals discrepancies. Differences in perception are caused by some moderators; their current review can be found in Hřebíčková (2003). These are the four moderators that can influence the self-other agreement according to Funder (in Hřebíčková, 2003): judge, target – person judged, judged trait and information. In this study we investigate the self-other agreement. Specifically, three facilitators whose expertise experience with Rogers PCA (Person Centered Approach) application to work relationships was of a different level. We examined whether there is an agreement between self-evaluated and judged by others interpersonal characteristics. The research situation is described with regard to the four moderators mentioned above. Judged people were managers working in the Centres of Labour. Judged traits were interpersonal characteristics. We have chosen the Wiggins's theory which was inspired by Leary's theory of interpersonal behavior. It describes the

model of eight interpersonal characteristics (assured-dominant, arrogant – calculating, cold-hearted, aloof-introverted, unassured-submissive, unassuming-ingenuous, warm-agreeable, gregarious-extraverted) which create the circle with two independent factors (dominance and nurturance).

The fourth moderator of self-other agreement is information (Hřebíčková, 2003), which relates to the quantitative and qualitative aspects of the relationship between the judges. As for the period for which the judges have known the managers, it was a short – term period. The quality of the relationship was associated with the nature of the training. The main focus of the training was oriented on everyday situations which were classified by managers as stressful. Previous researches in the area of agreement between self-evaluation and judgment by others indicate different level of agreement in various situations. Blackman and Funder (1998) found out, that agreement between self-evaluation and judgment by others increases when the time of observation is prolonged and this finding is valid for the most visible personal traits. The duration of mutual contact between the facilitators/lecturers and the managers should accordingly result in not identical evaluation and self – evaluation, but on the other hand the nature of the contact – opportunity to demonstrate the ways of stressful situations solving – could cause higher agreement between judgment and self-evaluation. Also in trait evaluation – due to having enough time and opportunities to express themselves in training situations – the judges and participants should achieve higher degree of agreement.

The degree of agreement between the judges and participants increases when participants know each other in non-structured situation, which offers more possibilities to express one's behavior freely (Letzring, Wells, Funder, 2006). Since theoretical background of the training was Rogers' person centered approach (more about its application for work with managers see Sollárová, 2005, 2006a, 2006b, 2008, Sollárová, Gallová, 2010, Sollárová, Sollár, 2007a, 2007b), which is traditionally described as non-structured, with having more opportunities for natural expression of participants tendencies, higher degree of agreement can be expected. In accordance with this direction we could mention supportive findings of Andersen (1984), that conversation of people about feelings and thoughts resulted in higher agreement between self-evaluation and judgment by others than conversation about hobbies and activities (Letzring, Wells, Funder, 2006). The focus of the training was mainly on feelings and thoughts in real stressful situations of managers.

On the other hand, previous findings indicate, that when evaluating managers by lecturers, it can come to a disagreement. Kenny (2002) found out, that there is a higher agreement with those people, who are closer to us, even though he claims that it is not clear, why this is so. Hřebíčková (2003) found relatively high degree of agreement between relatives when evaluating personal traits. Participants perceived themselves as more extroverted and calm than they were perceived by others, while the gender did not have any impact on evaluation of personal dimensions (Farah, Atoum, 2002). Differences in perception skills were found by Sollárová and Gallová (2010). McCrae and Costa (in Hřebíčková, 2003) summed up the results of ten studies examining the agreement in evaluation of personal traits with mean correlation of 0.45.

We assume that agreement rate will differ not just among the three judges, but the differences shall be found also with regard to particular evaluated interpersonal characteristic.

Methods

Sample

Evaluation of interpersonal characteristics was conducted by three judges in the group of 156 managers, participants of a short-term trainings (altogether 48 hours in 6 days, 11 groups), aimed at searching effective ways of coping with stressful situations. Three lecturers differed in age, gender and amount of experience with Rogers's Person Centered Approach for work relationships. The first lecturer had less training experience with managers, with less number of PCA training hours in comparison with the next two, second lecturer (lecturer 2) had more training experience with managers and completed psychotherapeutic training, the third lecturer (lecturer 3) had the most training experience with managers.

Method

We used the Slovak version of Wiggins's Scale IAS-R (Interpersonal Adjective Scale) with 64 pairs of adjectives creating altogether 8 factors. Both versions (for judgment by others and self-evaluation of interpersonal characteristics) were scored on 8 point Likert scale. In our research we used 8 scales: PA (assured, dominant), BC (arrogant, calculating), DE (cold-hearted), FG (aloof, introverted), HI (unassured, submissive), JK (unassuming, ingenuous), LM (warm, agreeable), NO (gregarious, extraverted).

Research plan

Evaluation was conducted at the end of the training – altogether 48 hours. Three lecturers judged the managers – participants using Wiggins Scale IAS-R. In the course of the second three – day session the managers were asked to fill in the IAS-R, the instruction was to evaluate their own interpersonal characteristics. The comparison was the "self-other agreement". Each lecturer judged different managers (n = 44, 57, 55).

Procedure

In assessment of methodological aspects, Hřebíčková (2003) describes two possible ways of agreement computation: comparison of means and correlation. Means comparison describes to which degree the judging and evaluating is on average similar. High correlation describes that higher self-evaluation of characteristic will be also judged by others as higher.

To assess differences we used t-test for two dependent samples and Pearson correlation coefficient. The results were computed for all lecturers altogether since every lecturer judged different group of managers. Subsequently we examined the agreement for lecturers separately. The same procedure was used when we examined the relationship between self-evaluation and judgment; in this case the indicator was correlation.

Results

The agreement between judgment and self – evaluation of managers was examined by comparison of means. The results are presented in tables. In the first table there are the values without any identification of the lecturer, the second table present the differences among three judges separately. The assessed variables were 8 scales of IAS-R.

Table 1. Self-other agreement of interpersonal characteristics by three lecturers together and managers (n=156)

Variable	Self-evaluation		Judgment by lecturers			
	M1	SD1	M2	SD2	t	p
PA	43.71	7.14	39.48	9.60	5.089	<.001
BC	16.57	6.75	17.44	7.86	1.227	.221
DE	15.03	6.82	15.94	7.72	1.178	.240
FG	24.83	7.21	22.92	7.50	2.558	.011
HI	23.01	8.56	23.09	10.25	0.076	.939
JK	44.31	6.77	37.28	6.62	9.454	<.001
LM	48.61	7.67	37.46	10.07	10.377	<.001
NO	44.02	8.73	31.35	11.37	12.401	<.001

Legend: variables are described in the section Method

When evaluating self-evaluation and judgment by others regarding interpersonal characteristics of managers we found statistically significant differences in 5 out of 8 variables. In all cases, each interpersonal characteristic was perceived more intensively by the managers. In comparison with judgment of the lecturers, the managers perceived themselves as more assured, dominant (PA), introverted (FG), unassuming (JK), warm-agreeable (LM) and finally more gregarious (NO). The differences were more noticeable in the last three characteristics. Further the results of differences among the three lecturers are presented.

Table 2. Self-other agreement of interpersonal characteristics by three lecturers separately and managers (n=156)

Variable	Lecturer 1 (n=44)		Lecturer 2 (n=57)		Lecturer 3 (n=55)				
	Mself	Mother	Mself	Mother	Mself	Mother	t1	t2	t3
PA	43.49	40.41	44.48	43.74	43.11	34.35	2.395*	0.565	6.055***
BC	16.06	18.95	17.63	18.28	15.89	15.38	2.199*	0.626	0.380
DE	13.77	17.59	16.09	13.33	14.96	17.35	3.540**	2.507*	1.538
FG	24.57	23.84	25.05	19.35	24.81	25.89	0.500	5.357***	0.882
HI	22.34	25.14	23.05	20.61	23.53	24.03	1.633	1.740	0.272
JK	44.12	37.55	43.53	39.05	45.27	35.24	5.095***	4.190***	7.249***
LM	47.14	37.43	48.18	43.95	50.25	30.77	5.158***	3.175**	11.245***
NO	42.43	30.75	44.87	40.07	44.43	22.81	7.274***	3.831***	13.722***

Legend: * p<.05 ** p<.01 *** p<.001; variables are described in the section Method

We examined whether the differences among the lecturers are significant or not, when judging the same variables. In three characteristics, similar differences were found in all three lecturers (unassuming – JK; warm-agreeable – LM; gregarious – NO). When judging submissiveness (HI) no differences were found in either lecturer. When judging other characteristics, the differences occurred in one, or two lecturers. One lecturer judged differently introverted characteristics (lecturer 2, FG); calculating characteristic (lecturer 1, BC). The managers evaluated themselves as more assured (PA). In the characteristic "cold-hearted" we revealed the significant differences in the opposite direction (lecturer 1 perceived the managers as more cold-hearted, while lecturer 2 perceived

them as less – cold-hearted in comparison with their own perception). The differences are presented in the chart, which points out that the most significant differences were found in the following characteristics: PA, JK, LM and NO.
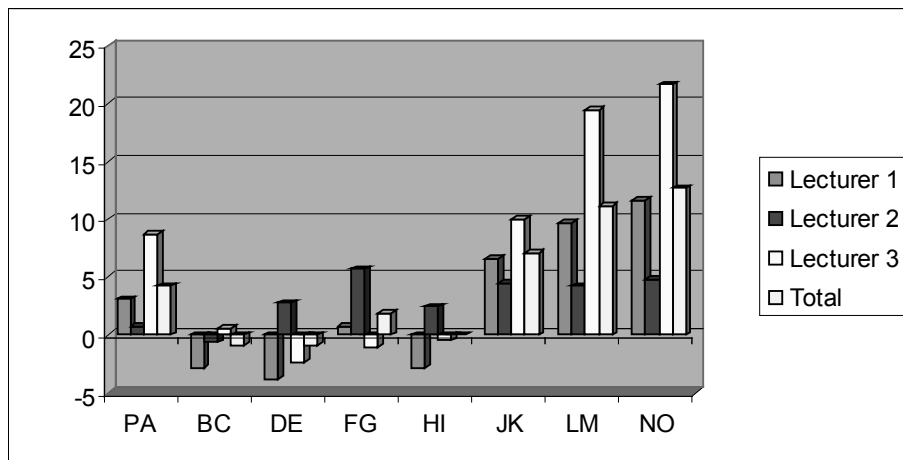
Graph 1. Mean differences in self-other agreement of interpersonal characteristics.

In the next analysis we tried to examine, whether the differences, except from the level expressed by the mean value, can be found also in the correlations. The first aspect in judgment refers to the relationship – whether it is positive or negative, the second aspect refers to the combination of a relationship and the level of judgment.

Table 3. Correlation of self-evaluation and judgment of interpersonal characteristics by others

	Total	Lecturer1	Lecturer2	Lecturer3
N	156	44	57	55
PA	0,260**	0,307*	0,130	0,310*
BC	0,267***	0,217	0,428***	0,138
DE	0,124	0,328*	0,314*	-0,045
FG	0,197*	0,136	0,303*	0,241
HI	0,194*	0,117	0,186	0,255
JK	0,039	0,058	0,040	0,093
LM	-0,127	-0,032	-0,086	-0,111
NO	0,215**	0,385**	0,288*	0,119

Legend: * p<,05 ** p<,01 *** p<,001; variables are described in the section Method

Ideal agreement of self-evaluation and judgment by others could be reached just in the case of high positive correlations along with non-significant differences. According to the findings of McCrae and Costa, who assert that when judging and self-evaluating of personal traits the mean correlation is .45, we consider the correlations that are close to this value as confirming the standard level of self-other agreement. Except from one pair of judges (Lecturer 3 in judging the characteristics cold-hearted, DE) and all judges in the characteristic warm (LM), all correlations were positive. All negative correlations were not statistically significant.

Just one correlation (Lecturer 2 – BC) reached the value that was higher than 4. The variables, in which the significant differences were found in the level of judgment (PA, FG, JK, LM, NO), the disagreement refers to the correlation in the characteristics JK and LM (unassuming and warm-agreeable). The level of judged interpersonal characteristic can account for the disagreement in the characteristics PA, FG and NO (dominant, introverted, gregarious). Not significant correlations (except from the differences in the mean values) indicate that besides the different judgment of a level related to the characteristic, we should take into account also different judgment of a characteristic in general.

Conclusion: Three judges differed in the level of achieved agreement regarding the interpersonal characteristics judgment. As it can be seen in the graph (Graph1), in some characteristics the judges achieved higher degree of agreement. When the relationships were examined, rather weak relationships (the mean correlation r=0,177) were discovered. The judges differed in the level of agreement with the target people-judged and in the characteristics in which the agreement was achieved.

Discussion

People interaction is the source of many ongoing processes. The level of agreement between the self-evaluation of interpersonal characteristics and judgment of these characteristics by three lecturers in the group of managers was most likely influenced by some of the following factors. From the aspects of moderators, which were introduced by Funder (in Hřebíčková, 2003), the first one to mention is the judge. We found the differences among the judges; they came to a different degree of agreement or disagreement in various characteristics. It is not possible to compare the agreement directly in these three judges, since they did not judge the same groups of managers even though the groups did not significantly differ in any characteristic when evaluating themselves. Therefore we can only suggest that it really matters who the judge is. From the aspect of expertise we suppose that having more training experience does not automatically mean higher degree of agreement when judging interpersonal characteristics of other people. Expertise is obviously displayed in the training effectiveness, but not automatically in the agreement between self-evaluation and judgment by others. The third factor – judged trait – probably plays more important part in the agreement. Interpersonal characteristics which revealed higher degree of agreement belong to those more visible and they were freely demonstrated by the participants in non-structured situations within the training aimed at solving stressful situations. In the above mentioned situations higher level of agreement is documented (Andersen, 1984; Letzring, Wells, Funder, 2006). Especially in these characteristics the agreement can be positively influenced by the accurate perception of other people, since the trainings focused on solving interpersonal situations enable the participants to express themselves quite freely. On the other hand the lower agreement in the remaining characteristics can be explained by the fact, that there were not enough opportunities to express the entire range of interpersonal characteristics of participants, for instance those, which were not stressful (protectiveness, affiliation).

The lower degree of agreement could be influenced by the short time of observation (Blackman, Funder, 1998) and by the fact, that judges and target-people judged were not in close relationships or relatives (Kenny, 2002; Hřebíčková, 2003).

Relatively lower level of agreement can indicate the advantage of having an open attitude towards other people, because we probably differ in self-perception of personal traits in ourselves and perception of personal traits in other people. Evaluation or judgment of another person is more important for our own decision making (how to sell a product to a particular customer) in some situations it makes the contact with another person more difficult. Rogers´ view on a person (also in education) provides the alternative approach in contact with other people. When being with the other person according to Rogers´ core conditions (being congruent, empathic and unconditionally positive regarding) one can express more fully "who he/she really is" (look for more in Rogers, 1998; Sollárová, 2005). We consider positive consequences of this approach to human interaction and to other people as humanistic and healthy.

Conclusion

The level of agreement between self-evaluation and judgment by others regarding the interpersonal characteristics in managers was lower; on the other hand it is comprehensible that most cited researches were carried out on the sample of rather close people or relatives. In our case the managers and the lecturers at the beginning did not know one – another.

However, the disagreement in self-evaluating/judging interpersonal characteristics of managers did not have any negative impact on the overall effectiveness of the particular training (confirmed by the research of Sollárová, Gallová, 2010). We consider as highly important to explore what is happening when people judge and when people do not judge the others in interpersonal contact. What is more important is whether confrontation of different ideas or views shall result in improving closeness or it will make the people to go away from each other.

ZHODA MEDZI SEBAPOSÚDENÍM A POSÚDENÍM INTERPERSONÁLNYCH CHARAKTERISTÍK MANAŽÉROV

Abstrakt: Príspevok prezentuje výsledky výskumu, ktorého cieľom bolo skúmať mieru zhody posúdenia a sebaposúdenia interpersonálnych charakteristík manažérov. Sledovali sme mieru zhody medzi posudzovateľmi rôznej úrovne expertnosti práce s manažérmi pri posúdení a sebaposúdení interpersonálnych charakteristík manažérov.

Hodnotenie interpersonálnych charakteristík Wigginsovej koncepcie sme realizovali pomocou troch hodnotiteľov u 156 manažérov, účastníkov krátkodobých výcvikov zameraných na efektívne riešenie záťažových situácií. Traja posudzovatelia sa líšili v miere dosahovanej zhody hodnotenia interpersonálnych charakteristík. Nižšia zhoda bola pravdepodobne ovplyvňovaná charakterom situácie, v ktorej sa hodnotitelia a posudzované osoby poznali, krátkym časom trvania výcviku, ako aj selektívnym prejavením hodnotených charakteristík v kontexte výcviku.

Kľúčové slová: interpersonálne charakteristiky, zhoda posudzovateľov (self-other agreement, manažéri

MANAGER EFFECTIVENESS TRAINING IN SOLVING STRESSFUL INTERPERSONAL SITUATIONS

Ivana GALLOVÁ

Abstract: *The paper presents the investigation of the managers' education in organizations from the perspective of person centered approach. The goal of the education is to develop the core attitude qualities of the approach – acceptance, empathy and congruence as a part of the social competences which support effective and successful working relationships. In the context of effective education the paper presents the effectiveness of interpersonal behavior of managers in solving interpersonal, primary stressful, situations. 116 managers solved three model situations after participating in 6 day training. Content analysis of interpersonal reactions did not support the hypothesis that effective reactions dominate over non-effective reactions. Low increase of effective reactions with dominance of congruent reactions over non-effective reactions was found out.*

Keywords: *managers' education, interpersonal situations, social competences, person centered approach, empathy, acceptance, congruence*

High technology level of organization connected with professional competences of managers doesn't guarantee success. Team success is significantly influenced by working relationships. The process of leading organization isn't possible without interaction of managers in interpersonal relationships. Employees are exposed to communication situations that can lead to stress and dissatisfaction on both sides. The necessity to preserve organization competitiveness exerts pressure on managers. Subsequent managers' inability to cope the stress produces their hostile behavior to the employees. Managers often don't use potential of effective social interactions because of non-effective communication such as aggressive, passive or manipulative behavior (Praško, Prašková, 2007). This takes energy necessary for production and achieving the desired results away.

From the factors distinguishing successful and unsuccessful managers identified by Lombardo, Ruderman a McCauley (1988), the successfulness of manager is supported by his competence in interpersonal relationships (in Sternberg, 2004). Kollárik (1993) confirms that the presence of personal social competences determines how effectively people are solving interpersonal situations. Majtán (2008) states that manager equipped by more social competences is usually more successful than manager equipped by low social competences.

Social competences can be to some extent influenced. From this reason they are becoming important elements of specific trainings. Training in person centered approach (Rogers, 1997b, 2000) is one of the developmental models. It is applied with the goal to develop personal, social and professional competences of managers by:
  – *supporting personal growth,*
  – *developing the ability of effective interpersonal relationships,*
  – *mastering the attitude facilitating the process of change in group.*

In our conditions the application of person centered approach in managers' education is verifying by researches and these results are basic conception of presented paper (Sollárová, 2005a, 2005b, Sollárová, Sollár, 2007a, 2007b). The goal of person centered approach is the complex personal development – "personal growth of self-actualization".

Rogers (2000) emphasized that effectiveness of any relationship depends on the presence of attitude qualities such as:
  – **empathy**, *the ability to enter fully into the world of other,*
  – **congruence**, *the ability to be myself, to communicate my own opinions,*
  – **acceptance,** *the ability to accept independently on the quality of fulfilling some particular conditions.*

Attitude qualities of person centered approach are connected with specific goals in management.

Empathy is quality enabling manager to understand what the words of other person mean. Communication becomes transparent and free from possible subjective interpretations when the person approves the sending message. When manager delays his subjective experience, conviction and evaluation he pays attention to what people are saying. Practically he offers space for others in the moment when he wants to understand, analyze and solve what is subjectively important for him. In this case a group member feels understanding (Rogers, 2000).

Congruence is the support to express what the manager experiences. It leads to competent manifestation of his own experience and to his assertion without arrogance. Its truthfulness significantly supports change to openness. This creates potential of group members to better understand themselves and to feel that the responsibility for evaluation depends on themselves (Rogers, 2000).

Acceptance enables manager to accept others as they really are without evaluation and conditions. In contact with others it means to see team members as independent beings who have right to have their own experiences and feelings. As a consequence of acceptance team members feel respected. They easily express their subjective feelings and at the same time they accept others' feelings (Rogers, 2000).

Presented attitude qualities can be a source that eliminates the lack of positive climate in interpersonal relationships. After their adoption and application into the team work Rogers (2000) identified specific forms of behavior that is competent manager consciously able to apply in the group:
  – *to demonstrate warmth and empathy,*
  – *to pay attention to other people,*
  – *to understand the meaning and intention,*
  – *to express acceptance and tolerance,*

– *to connect messages into the idea.*

The paper presents potential of person centered approach in education with the goal to support effective working relationships.

Subjects and procedures

Subjects were 165 managers working in civil service from all around Slovakia. The goal of the training was to master the attitude qualities of empathy, congruence and acceptance as a part of social competences. Research design represented 48 hours concentrated into 6 days which were divided in 2x3 days a two months. Training was realized in 11 groups which represents 528 hours of intervention.

Measure

Content analysis of managers' interpersonal reactions on suggested statements was used to measure which types of effective reactions predominate as a consequence of mastering the attitude qualities – *empathy, acceptance* and *congruence*. To verify the effectiveness three different interpersonal situations typical for manager practice were used.

Statement **1** can be characterized as *an emotional critique* in interpersonal situation.

"You don't report the performance you are supposed to. I suspected more when I had hired you."

Statement **2** can be characterized as *a negative evaluation* in interpersonal situation.

"I call for you because you repeatedly report non-stable performance that is demonstrated by three records I have. I'm forced to finish the contract of your employment."

Statement **3** can be characterized as *a passive-aggressive behavior* in interpersonal situation.

"It was much easier to communicate with the former boss. He could stand up for us and our department had better position in the firm as nowadays."

Managers wrote their reactions on every statement characterizing the real situations in organization environment. The *whole sentence* or *the phrase* was considered as an unit of content analysis according to Hradiská (2004). One reaction of the subject could consist of more *sentences* or *phrases*. Each statement was evaluated and categorized by two experts trained in person centered approach. The key to categorize consists of two basic categories and their three subcategories:

1. Category of effective reactions was represented by attitude qualities defined by Rogers' approach - *acceptance, empathy* and *congruence*.

Acceptance is demonstrated by accepting other person in the way he/she really is. Instead of defense or attack against behavior considered as a threat the individual changes blaming others to responsibility for him/herself.

Empathy is demonstrated by ability to understand the meaning of the other's message without subjective deceptive interpretations. The ability to understand the other's attitude considerably revises the statements and as its consequence the emotions disappear and differences are reduced from the dialogue. Participants orient communication more to solving problem rather than attacking person or group of people (Rogers, 1995).

Congruence is demonstrated by self-expression if the person decides. It is characterized by potential to realize the uniqueness of subjective experience which corresponds with actual experience and thinking as an extreme to its suppression.

2. Category of non-effective reactions includes – *aggressive, passive and manipulative* reactions. Defining non-effective reactions was inspired by dividing the forms of behavior according to assertiveness trainings (Praško, Prašková, 2007).

Aggressive behavior is characterized by assertion one's own interest on detriment of others. It is demonstrated by inability to take other's interest into consideration, non-adequate aggression as well as irony, sarcasm and underestimation.

Passive behavior is characterized by helplessness against other's requirements. It is demonstrated by inability to speak about subjective emotions and needs that are suppressed because of other's interests.

Manipulative behavior is characterized by the fact that person finds others responsible for the process and the result of situation. There are many manipulative variants such as pretending helplessness, emphasizing importance, using tears, possibly aggression (Praško, Prašková, 2007).

Chi square test of homogeneity (Sollár, Ritomský, 2002, Ritomský, Sollár, 2005) was used to verify the hypothesis that subjects will use effective reactions for solving stressful situations during the training focuses on mastering the attitude qualities.

Results

Reactions on three different interpersonal model situations were used to verify the hypothesis. *Accepting, empathic* and *congruent* reactions were evaluated as effective. *Aggressive, passive* and *manipulative* reactions on statements were evaluated as non-effective.

- ***Comparison of effective and non-effective reactions (in three statements)***

Following tables present differences in frequencies of effective and non-effective reactions and their sum number.

Table 1: *Differences in frequencies of effective and non-effective reactions (**statement 1**)*

Statement 1	Expert 1	Expert 2	Sum	Mean		Difference in eff. reactions	
Acceptance	6	12	18	9		χ2	p
Empathy	4	6	10	5		33,303	< 0,001
Congruence	38	33	71	35,5	49,5		
Aggression	21	22	43	21,5		Difference in no-eff. reactions	
Passivity	21	26	47	23,5		χ2	p
Manipulation	3	0	3	1,5	46,5	14,143	< 0,001
		Effective	*versus*	χ2	0,093		
		Non-effective	*reactions*	p	0,759		

No statistically significant difference between effective and non-effective reactions on the first statement was found out (p = 0,759). We registered balanced number of effective and non-effective reactions on situation marked as *emotional critique* (statement 1).

Table 2: *Differences in frequencies of effective and non-effective reactions (**statement 2**)*

Statement 2	Expert 1	Expert 2	Sum	Mean		Difference in eff. reactions	
Acceptance	14	19	33	16,5		χ2	p
Empathy	4	5	9	4,5		37,866	< 0,001
Congruence	46	42	88	44	65		
Aggression	21	26	47	23,5		Difference in no-eff. reactions	
Passivity	10	8	18	9		χ2	p
Manipulation	8	3	11	5,5	38	6,7	0,035
		Effective	*versus*	χ2	7,077		
		Non-effective	*reactions*	p	0,007		

Between effective and non-effective reactions on negative evaluation (statement 2) statistically significant differentiation of effective reactions (p = 0,007) was noticed.

In this analysis it was not differentiating between the types of effective or non-effective reaction but the dominance of any effective over any non-effective reaction was measured.

Table 3: *Differences in frequencies of effective and non-effective reactions* **(statement 3)**

Statement 3	Expert 1	Expert 2	Sum	Mean		Difference in eff. reactions	
Acceptance	14	10	24	12		χ2	p
Empathy	10	10	20	10		25,562	< 0,001
Congruence	36	34	70	35	57		
Aggression	21	23	44	22		*Difference in no-eff. reactions*	
Passivity	24	31	55	27,5		χ2	p
Manipulation	3	0	3	1,5	51	16,105	< 0,001
		Effective	*versus*	χ2	0,333		
		Non-effective	*reactions*	p	0,563		

Comparison of effective and non-effective reactions on passive-aggressive statement showed statistically significant difference (p = 0,563).

More effective reactions occurred in comparison with non-effective reactions on all of the statements but only in one case statistically significant difference was observed (statement 2 – negative evaluation). Using more effective than non-effective reactions was not confirmed.

- *Types of effective and non-effective reactions on statements*

We analyzed the types of effective reactions. We verified if there are an equal number of three types of effective reactions on three statements. Statistically significant difference was found out in three types of reactions on all three statements. *Congruent* reactions (all p < 0,001) were the most frequent in comparison with *empathic and accepting* ones.

Using non-effective reactions we were interested if the managers had tendency to prefer *aggressive, passive* or *manipulative* reactions on some of the statements. The most frequent reactions characterized as non-effective were *aggressive* and *passive*. There was less frequency of *manipulative* reactions.

- *Preferring effective and non-effective reactions according to the type of statement.*

Using effective reactions on particular statements we tested if managers had tendency to prefer *congruent, accepting* or *empathic* reaction. We verify if there is a difference in frequency of effective reactions according to the type of the statement.

Table 4: *Differences in frequencies of **effective reactions** on (3) statements*

Attitude quality	Statement 1	Statement 2	Statement 3	Sum
Acceptance	9	16,5	12	37,5
Empathy	5	4,5	10	19,5
Congruence	35,5	44	35	114,5
Sum	49,5	65	57	171
			χ2	4,239
			p	0,374

The statements aroused similar reactions of managers. No statistically significant difference in preference of particular effective reaction according to the type of the statement was found out.

It was observed that preference of some of the effective reactions did not depend on the type of the statement. Congruent reactions prevailed over accepting as well as empathic reactions.

Empathic reactions were least preferable.

Table 5: *Differences in frequencies of **non-effective reactions** on (3) statements*

Attitude quality	Statement 1	Statement 2	Statement 3	Sum
Acceptance	21,5	23,5	22	67
Empathy	23,5	9	27,5	60
Congruence	1,5	5,5	1,5	8,5
Sum	46,5	38	51	135
			χ2	12,475
			p	0,014

We verified if there is a difference in frequency of non-effective reactions according to the type of the statement. Statistically significant difference in preference of one of the non-effective reaction was found out. The difference was related to *negative evaluation* (statement 2) compared with *emotional critique* (statement 1) and *passive-aggressive response* (statement 3). On statement 2 (*negative evaluation*) managers reacted mostly aggressively.

Discussion

We suppose that mastering the qualities of person centered approach will lead managers to more productive solving of interpersonal situations. We anticipated the development of managers towards more *competent managers* prepare to work also in incompetent environment. And also mastering the skills in solving interpersonal, primary stressful, situations in training will demonstrate dominance of effective over non-effective reactions.

- *Comparison of effective and non-effective reactions (in three statements)*

Investigating the frequencies of effective (49,5) and non-effective (46,5) reactions in statement 1 we came to the conclusion that the rate of the reactions was equal. Interpersonal situation presented by statement 1 expressed *emotional critique*. Emotional critique often tends to be a source of hostile impulses. Hostile behavior appears when the relationship is seen in the way that the other person is a threat for us (in Rogers, 2000). If there are communication barriers between people (the other threatens me) it is not likely that the hostile attitude will be solved. If the person sees the emotional critique as the threat of his/herself then he/she constructs the barriers of free communication (Rogers, 2000). The reactions on critique (threat) often tend to be non-constructive. It can appear as an *aggressive* or *passive form* of behavior. *Passive form of behavior* is connected with fear of critique and it is saturated by low self-confidence and self-esteem. *Aggressive form of behavior* is connected with desire for victory and effort to dominate over others. The consequences of opposed types of interpersonal behavior lead to aggravation, quarrel or hostile silence (Praško, Prašková, 2007).

The hypothesis about the dominance of effective reactions on emotional critique (statement 1) was not confirmed and we interpret this by the demandingness of interpersonal situation such as critique. The ability of person to stop him/herself and look at the critique as at the "gift" while other person threaten us or others in the situation of critique inhibits the impact of the critique. Auto-regulation supported by the training can increase social competence and thus support more productive behavior. Specifically using *acceptance* in the moment when the critique is seen as a threat generates an assumption that the person will get back the power in contact with others (Sollárová, 2005).

The conclusion from investigation of reactions on statement 2 (*negative evaluation*) confirmed the dominance of effective (65) over non-effective reactions (38). The significant dominance of effective reactions in spite of their negative content can be explained by its congruent formulation. We work on the presumption that sending congruent message as an effective form of reaction lower the probability of defensive reaction (personal dialogue, Meadows, 08.02. 2002). Congruence breaks barriers (Vymětal, Rezková, 2001). Cherry's research (in Rogers, 1999) confirms that congruent manager is better oriented in his own motives. He is able to express immediately hostile feelings in the way that does not hurt the other's dignity. He is able to accept hostile feelings e.g. negative evaluation, too. He becomes more powerful and effective because he feels control over the situation instead of helplessness.

The conclusion from investigation of reactions on statement 3 (*passive-aggressive*) confirmed low dominance of effective (57) over non-effective reactions (51) but this was not statistically significant. *Passive-aggressive behavior* that hides fear and masks anger stops to form positive atmosphere and can be a source of chaos in working relationships. When reacting on tasks it is demonstrated by excuses, pretexts, forgetfulness, often by blaming others and avoiding responsibility (www.soulwork.sk/index.php/passiveaggresive). Training in attitude qualities, specifically in congruence, can support the competence of manager to decide not to escape the responsibility as well as to change blaming for responsibility.

- *Types of effective reactions on the statements*

While evaluating the frequency of types of effective reactions on three statements we concluded that the most often reactions on statements were *congruent* (114,5) in comparison with *empathic* (19,5) and *accepting* (37,5) reactions. The dominance of congruent reactions can be back up by the training where congruence brings participants significant value in competence to assert in non-aggressive way. The meaning of existence of organization is potential to assert that orients on productivity and profit. We assume that it is natural that managers most often reacted congruently. They reacted by effective form of behavior ensuring self-assertion without effort to gain control and power over the people. According to Rogers' notes about leadership congruent behavior can tend to a leadership based on influence and impact instead of power and control. From long-lasting perspective it is harmful if the person behaves in the way he is someone else. The ability to become a person helps to be more open to others. Then we less project *"fixed schemes"* and rigid rules into relationships with others (Rogers, 1999).

From possible effective reactions the lowest frequency of empathic reactions was found out (19,5). It can be explained by tendency to dichotomized emotions and facts as two different aspects. Organizations are traditional places where the emphasis is put on consciousness and intellect. Emotions are considered as undesirable (Rogers, 1997b). From the research it can be concluded that in the direct management process where the emphasis is on pragmatic side of communication empathic reactions are minimal. At the same time the effect of empathy is important in situations where it is necessary to show others understanding or facilitate communication (Rogers, 2000). Without target training managers consciously do not apply the value of empathy as one of the determinant of effective interpersonal relationships. More frequency of *empathic reactions* (10) was noticed in reactions on *passive-aggressive situation* (statement 3) in comparison with statements 1 and 2. It can be explained by potential of empathy. We supposed that managers reacted more empathic because in situations such as hidden hostility or anger and aggressiveness when we do not know how to react immediately it is appropriate to use this attitude quality. Thanks to empathy we gain time and space to be better oriented (personal dialogue, Meadows, 08.02. 2002). The lowest frequency of *empathic reaction*s was on *negative evaluation* that can be explained by constructive form of the statement.

The research confirmed that managers used less often than *congruent* but more often than *empathic, accepting reactions* (37,5). According to Rogers (2000) it is unchangeable fact that applying acceptance as an attitude quality is noticeably limited because of hierarchical arrangement in organization environment. To which extent is manager able to express acceptance to other team members is considered by Rogers as basic condition of person centered leadership. Specifically how he demonstrates willingness:
  a) to accept group where it is at that moment,
  b) to discuss themes group finds important,
  c) to respect group's decisions.

Rogers (2000) says about more demanding bounds in manager and superior relationship. According to Rogers managers have to operate in some laid down limits. Some

managers are in situations with fewer bounds while there are some who have to work in situations with many limits. We understand acceptance not only as a competence in relationship with other person but also as a competence that person uses for himself/ herself to restore his/her "impact" with the goal to interpret the situation in his/her favor. Acceptance in this complex form includes factors as follows: exclusion of evaluation, accepting others as they really are and accepting possible threaten of integrity as an impulse to gain strength and independence. In spite of the fact that managers used accepting reactions on the second place while empathic reactions were on the third place, acceptance is a quality that requires more demanding process of learning.

Conclusion

In the meaning of Rogers' term of **"fully functioning person"** Sollárová (2005) suggests to use the term of „**competent manager"**. The research results don't support the hypothesis about dominance of effective reactions over non-effective. No statistically significance in reactions on social situations such as *emotional critique* and *passive aggressiveness* was found out. Statistically significance was found out in reaction on situation of *negative evaluation*. Investigation of frequencies of effective and non-effective reactions confirms that mastering attitude qualities is a process and not a final point in development (Merry, 2004). The findings open the themes of qualities of competent manager with relevant concepts e.g. psychologically integrated person (in Sollárová, 2008) or proactive coping (Sollár, Sollárová, 2009, Daniel, Romanová, Sollár, 2002).

In spite of our enthusiasm during the training in person centered approach we define limits that were identified in the research. We present the principal ones.

- *A)* We find the low number of statements (3) limiting. Working environment brings unlimited number of interpersonal stressful situations. We suggest enlarging the scale and the number of statements.
- *B)* The basic step was to investigate the reactions of managers on the same statements before and after the training.
- *C)* Only women (experts in person centered approach) evaluated the reactions. The perspective to enrich the evaluation from the male point of view is offered.
- *D)* In the process of mastering and adopting the qualities of empathy, acceptance and congruence the need of more intensive and longer training emerged.
- *E)* The understanding of the term effectiveness remains controversial. According to Rogers the idea that effective behavior is saturated by empathy, acceptance and congruence was central. Reaching the goal in solving interpersonal situations can be supported also by non-effective reactions saturated by aggressiveness, manipulation, passivity.

In spite of the limits we supported potential of person centered approach in solving interpersonal situations. We are convinced that working relationships exist to support good results. Application of person centered approach in working environment means possibilities to participate more actively on personal or working affairs.

ÚČINNOSŤ VÝCVIKU VEDÚCICH PRACOVNÍKOV V RIEŠENÍ ZÁŤAŽOVÝCH INTERPERSONÁLNYCH SITUÁCIÍ

Abstrakt: Príspevok prezentuje skúmanie problematiky vzdelávania vedúcich pracovníkov v organizácii v intenciách prístupu zameraného na človeka. Cieľom vzdelávania je rozvíjať ústredné postojové kvality prístupu - akceptáciu, empatiu a kongruenciu ako súčasť sociálnych kompetencií, ktoré podporujú efektívne a úspešné pracovné vzťahy. V rámci účinnosti vzdelávania príspevok prezentuje efektivitu interpersonálneho správania vedúcich pracovníkov v riešení interpersonálnych, primárne záťažových situácií. 116 vedúcich pracovníkov po absolvovaní 6-dňového výcviku riešilo 3 modelové záťažové situácie. Obsahová analýza reakcií interpersonálneho charakteru predpoklad o prevahe efektívnych reakcií nad neefektívnymi nepotvrdila jednoznačne. Ukázala mierny nárast efektívnych reakcií s prevahou kongruentných reakcií nad neefektívnymi reakciami.

Kľúčové slová: vzdelávanie vedúcich pracovníkov, interpersonálne situácie, sociálne kompetencie, prístup zameraný na človeka, empatia, akceptácia, kongruencia

CHANGES OF THE VOCAL QUALITY OF TEACHERS IN RELATION TO THEIR PROFESSIONAL PREPARATION (AS MEASURED BY THE DYSPHONIA SEVERITY INDEX)

Jana FROSTOVÁ

Abstract: *The author´s research is based on the preceding stages of her work concentrated on changes of the vocal quality measured by means of the standard DSI (Dysphonia Severity Index) method. The research investigates to what degree the basic vocal characteristics of primary school teachers (who are at the same time part-time students) are influenced by their professional preparation (ie musical theory and practice) and by the real conditions of their school practice. The previous research is summarized and results are formulated as criteria for the future intensive work with a group of students in the final stage of the research project.*

Keywords: *voice, teachers, voice hygiene, voice evaluation, Dysphonia Severity Index.*

Introduction

Voice is one of the basic working tools of every pedagogue and any changes of its quality can considerably facilitate or complicate their work, sometimes so much that the impaired efficiency of work can finally even lower their pedagogical success.

Both my long-term experience of working with clients facing serious voice problems or even disorders (mostly teachers and other pedagogical workers) and professional studies confirm that the field of voice problems especially needs prevention.[1]

The aim of my project, focused on teachers´ voices and their characteristics in the conditions of their professional activities, is a conception of exercises that would improve the vocal condition, prevent or remove the consequences of professional load (or often overload) and tackle voice problems which might grow into disorders requiring

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1 The results of Czech and foreign experts´ studies have been referred to in my previous papers dealing with the gradual stages of my research. See FROSTOVÁ, J. 2009, pp. 135-147.

re-education or even therapy. The professional load is joined by negative impacts of an unhealthy life style. The somatic characteristics of the vocal cords (and the organs of speech generally) are greatly affected by smoking, other physical, climatic and biochemical influences and last but not least bad eating habits (or their consequences, eg *gastroezofageal reflux)*. The voice apparatus is damaged by alcohol, cold drinks consumed at an unsuitable time etc. The quality of voice and its condition at a particular time is also significantly influenced by various stressors, although their connection need not be immediately obvious (eg confrontational relations at home or at the workplace).

My previous research as well has shown the teaching respondents´ feeling that it would be highly useful for them to get acquainted (more thoroughly and in an acceptable form) with certain exercises and the principles of vocal hygiene which would help them to cope with the voice load that is logically brought by pedagogical communication.

My work on the methodical text for teachers is based on the research I have long been realizing thanks to my participation in the research project *School and health for the 21st century*.

In the previous stages of my research I applied a questionnaire directed towards finding out the social and professional factors that influence negatively (or positively) the quality of teachers´ voices. At the same time I also used the VHI (Voice Handicap Index) questionnaire, where each respondent assessed subjectively his/her voice quality and its impact on the socioprofessional functions – the results have already been published.

In order to monitor the differences in the teachers´ vocal quality during their socioprofessional preparation[2] I decided to use the DSI method[3] as an objective technique. During the recording of voices for the computer analysis by means of the DSI method, other audio and video recordings were made which helped to illustrate the situations relevant to the respondents´ vocal condition and vocal quality measured and analysed. All the recordings were made in strictly identical standard conditions for all the respondents and had the following phases: adaptation and motivation, pre-performance, performance, diagnosis.[4]

The research objective

The present stage of research follows the previous investigation the results of which were published in 2008.

Voice recordings of the first and the second series (n=113) have been finished.

The procedure of the investigation:

1. Voice recordings were made (the 2nd measurement of 47 tested persons, the 1st and the 2nd measurements of 66 TPs).
2. The results were processed by the DSI method.
3. The supplementary recordings (observing TPs while their voices were recorded) were analysed qualitatively.

2 namely 113 practising teachers simultaneously studying the Faculty of Education.
3 WUYTS, F. L.; DE BODT, M.; MOLENBERGHS, G. et al. The Dysphonia Severity Index: An Objective measure of Vocal Quality Based on a Multiparameter Approach. In Journal of Speech, Language and Hearing Research, Vol. 43, 2000, pp. 796–809.
4 Cf FROSTOVÁ, J. 2009, pp. 135–147.

4. The recommendations, notes, inquires, proposals etc that the tested persons expressed during the recording were processed.

The methodical procedure and the initial assumptions

All the tested persons´ voices were recorded for the electronic analysis which evaluated the following data for each TP: the maximum phonation time (MPT), the highest frequency (F0-High), the lowest intensity (I-Low), jitter, and the final dysphonia severity index (DSI).

Each tested person´s voice recording of MPT, F0-High and I-Low was done three times (after a detailed instruction) and only the recording with the TP´s best results was used for analysis.

The maximum phonation time was measured in seconds. Three tests were realized after the examiner´s instruction and demonstration[5]. Only the recording with the best result was analysed later. The TP phonated the „a" vowel for a long time and in his/her usual pitch and intensity to reach as natural and free phonation as possible. The TP was standing during the measurement and was instructed to take a really deep breath and to phonate „a" as long as possible until the breath supply is exhausted. The TP was in eye contact with the examiner during the voice performance. If any defects appeared, like an insufficiently deep breath, the end of the phonation before the air supply was exhausted, an unusual pitch of the voice, or too strong or too weak dynamics, the test was repeated.[6]

The DSI value was then calculated according to the formula made of the measured values of the highest frequency, the lowest loudness and the maximum duration of phonation and jitter.

I assumed that besides the negative and positive consequences of school practice the tested teachers´ vocal quality would be affected by the fact that for some time they had been exposed to the demands of musical theory and practice. The students (practising teachers) were guided to regular voice training during the interval between the first and the second series of their voice recordings. They were asked to study the compulsory literature for singers and to do some selected breathing exercises, phonation and resonance exercises and singing-voice exercises. Their attention was drawn to recommendations concerning voice hygiene. The respondents obtained theoratical information on the basic disorders and defects of voice and on the possibility to tackle their own possible voice problems at the specialized departments of ENT or phoniatrics.

My previous investigation already showed that study had positive consequences: the extent of the knowledge of voice hygiene increased, the concentration on voice training was more decided etc. The attitude to one´s voice changed as well. The TPs got much more interested in the problems of voice and began to observe its parameters more maturely. The previous rather accidental attention devoted to voice, as well as the rather intuitive interpretation of perceived difficulties, were replaced by a more erudite view.

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5 Some authors state that if the examiner´s instruction contained a practical demonstration as well, the MPT recording was affected positively. My experience has shown me that verbal instruction is not sufficient during the other recordings either. Cf. Neiman, S.G. – Edeson B. 1996, p. 286.
6 Cf De BODT, M. et al. 1996, p. 326.

Recommendations concerning voice hygiene began to be appreciated more properly. As to the school practice: in the field of voice condition, more attention was paid to the senior colleagues´ experience and its utilization.

These findings, folowing from conversations with the TPs before and during the second series of recordings, led me to the assumption that the given facts might result in some improvement of vocal quality and hence also of the DSI values.

The tested set

The set was (after the exclusion of persons with incomplete data) made up of 5 men and 108 women, all of them teachers and part-time students trained for the first stage of the primary school (the pupils aged 6–11 years).

Results

The comparison of the first and the following measurement results shows a slight positive shift. With the increase of the number of measurements this shift became a bit more obvious: in the set of 47 tested persons some improvement of the DSI was evident in 66%, while in the bigger set (n=113) the improvement showed in 80 %.

On the other hand, the average value of the positive shift of the DSI did not practically change (the 1st measurement being 1.49, the 2nd 1.37). The very small increase of the positive shift can be accounted for by the fact that my set of TPs was an accidental choice of part-time students, while most works using the DSI method concentrate on clients of phoniatric facilities, ie people seeking help in the field of voice disorders and diseases, so that their ´input´ vocal quality was different from that of my respondents.

It should be added that 22.1 % of the TPs showed *„a negative shift",* but all of them were vocally indisposed during the second series of measurements.[7] Only about one third of them had a real deterioration of their vocal quality mostly because of a relatively long-term working load (eg a sequence of their duties at open-air schools, a long-term stress at home or at work).

The following chart shows the spread of the shifts (with intervals usually given for the DSI):

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7 These persons were not excluded from the measurements due to the fact that *´the negative shift´* in their DSI values was hardly significant; the chart expresses rather the number of TPs with momentary problems than a real negative shift in the DSI values.
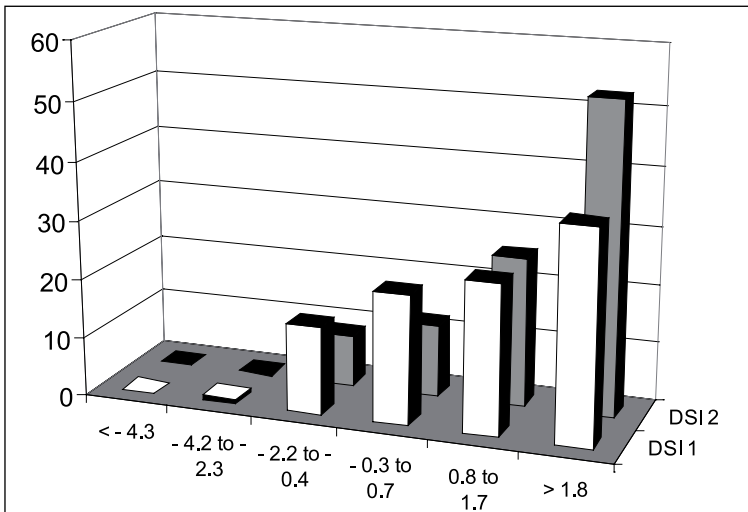
CHART 1. The comparison of the 1st and the 2nd DSI measurements (n=113)

Needless to say that I am aware of the fact that the present research has not suffi-ciently answered the question of what real influences cause the positive shift and in what proportions. This problem will be tackled in the following phase of my investigation, where a smaller number of teachers will be tested, which may facilitate a more detailed and differentiated account of the *causes* and *consequences* (see below).
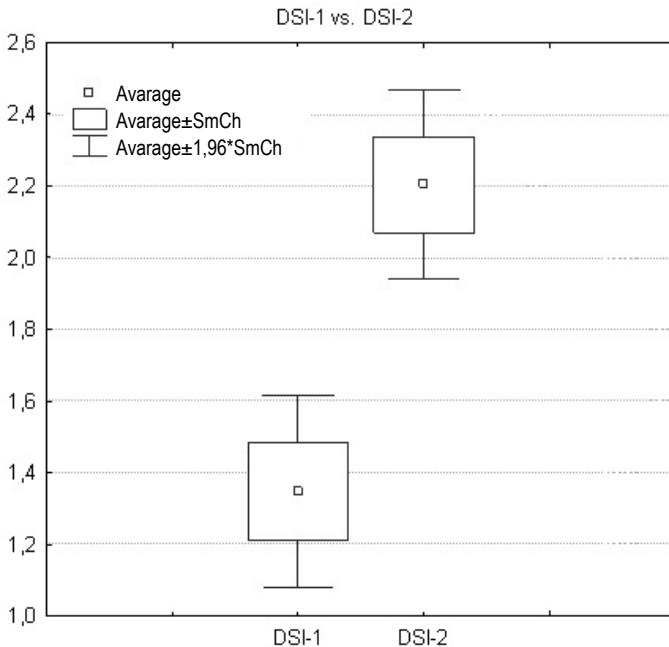
CHART 2. The comparison of the 1st and the 2nd DSI measurements (n=113) (T-test)

The comparison of the DSI-1 averages with the DSI-2 averages in CHART 2 shows an acceptable, but (in comparison with the DSI changes as a consequence of therapy in clinical patients) [8] rather dispersed values around the median, which suggests that my group of TPs was, from the point of view of individual vocal characteristics, not very homogeneous.

Changes in the duration of phonation (maximum phonation time, MPT)

During a year´s interval the MPT was, admittedly, prolonged in 70 % of the tested persons, but in most shifts the MPT was prolonged by 1 to 5 minutes (see a more detailed spread in CHART 4). Mere observation informed me that these results were affected by a wrong technique of breathing and that mastering the correct work with breath would shift the MPT values more decidedly.
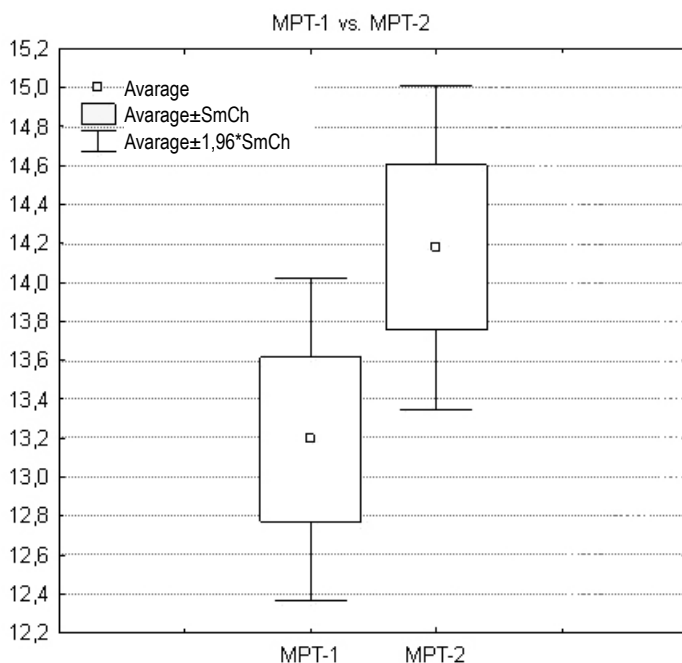
CHART 3. Changes of the MPT in the 1st and the 2nd measurements (n=113) (T-test)

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8 Cf GONNERMANN, U. – NAWKA, T. 2004, pp. 19-26.
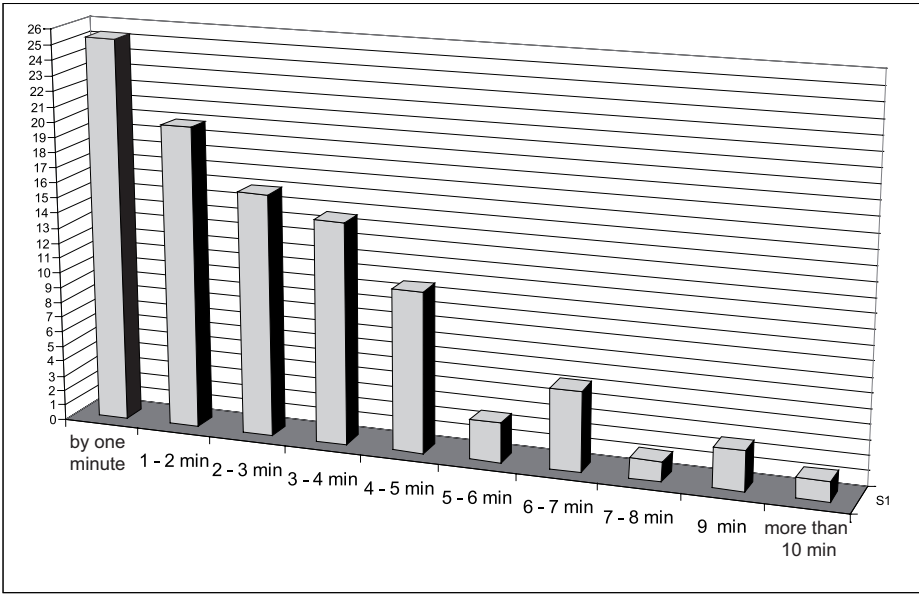
CHART 4. The duration of phonation

Changes of the vocal range
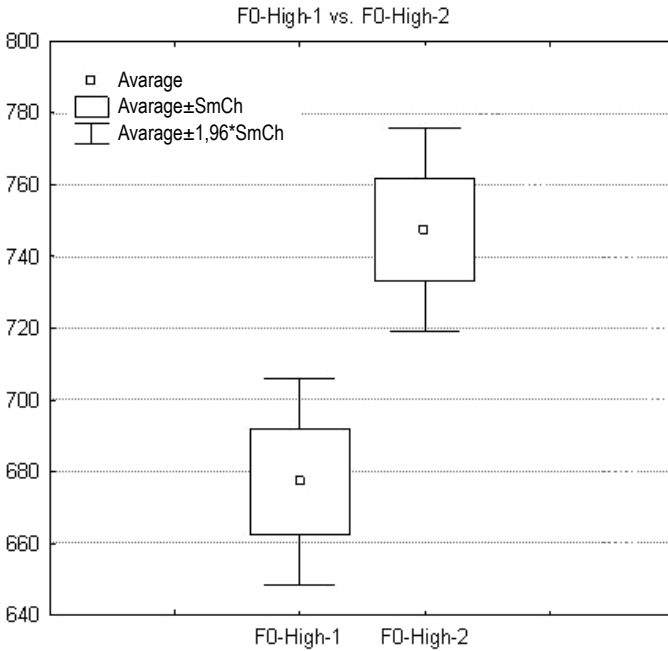
CHART 5. Changes of the vocal range (T-test)

Similarly to the changes of the MPT and other parameters measured for the calculation of the DSI index, all changes (even small ones) of the vocal range should be rather assessed as signals of changes which should be corroborated with a more detailed examination of the respondents

These changes are not as obvious as the changes of the total DSI index. Nevertheless, a little more than a half of all the TPs showed a distinct shift in their vocal ranges. Chart 6 offers a more detailed spread of the changes. In 20% of the TPs the vocal range increased by the major third.
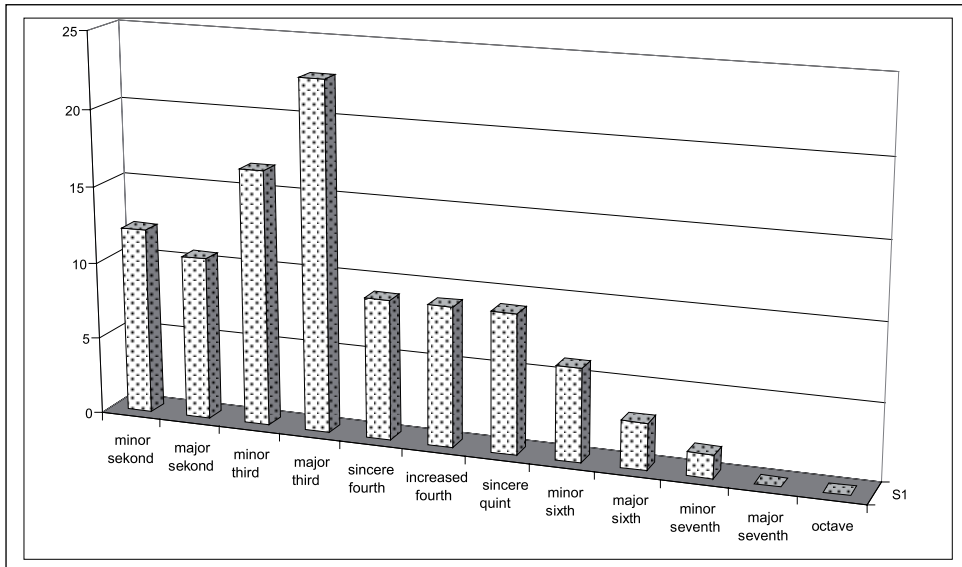
CHART 6. Changes of the vocal range

The respondents´ suggestions and notes

Valuable information was obtained from the TPs´ notes and observations presented and registered during the tests (recordings) and in the introductory questionnaires. They were used as illustrations of the data that had been found out, and covered the following fields:

Voice hygiene

The need of information on voice hygiene was expressed in a number of statements, eg: „I want to know everything about the care of voice“, „I know nothin“ or „I think I lack any information about the care of voice and therefore I don´t even know what I´d like to learn“. Many answers show a sense of responsibility for the maintenance of voice as a working tool, as well as a fear of the future: „I´d like to learn how to take care of my voice, how to save it so as not to have any problems with it in the years coming (with regard to the fact that voice in fact earns my living)“,

„how to look after my voice in the future, regarding its big load in the teaching profession" etc.

Voice indispositions in voice professionals are not at all exceptional: *„I caught a flu, in about a week´s time I became hoarse and finally completely stopped talking. During my treatment I tried to observe rest of voice. Talking made me very tired. After a month my voice was still hoarse, but I was forced to talk. My voice condition was not getting worse, but for a long time it did not improve either. At the chemist´s they recommended me some mints to suck."*

„I´d like to learn something about the disorders of the vocal cords and the ways of taking a better care of a tired voice. My voice is now tired sooner and more often than before, I feel that my vocal cords are tight and my throat sore."

„I´d like to know how to take care of my voice when I have a cold – so that the treatment is as quick as possible and my voice can be used properly again."

Inconsistent solutions and neglecting voice problems

Many TPs perceive and register their voice problems (also because of the feedback from the people around them), but postpone any solution and underestimate the consequences. *„My husband constantly urges me to clear my throat. It annoys me when my voice changes in the middle of the sentence. I feel as if I swallowed dust. Clearing my throat is not sufficient. I have to have a drink and wait a while to continue my talking. It´s unpleasant. My hoarse is worse and worse."*

„My voice is lately getting tired more quickly than before. I am beginning to talk in a hoarse voice and to lose a higher pitch."

„I usually have a slight hoarse in the morning; I feel that during my teaching practice my voice has got „darker"."

„I´m thinking about seeing a phoniatrician; my voice is often gone (I´ve had my tonsils taken out). It happened to me that I felt as if my vocal cords had tightened and then the pain passed to my ear and tongue (tingling). Therefore I´d like to learn how to save my voice, how to work with it more economically."

„I´ve lately been feeling a sore throat (clearing it by coughing); the cogh brings me relief. I see the cause in my overloading and straining my vocal cords."

„In 2005 I underwent an operation for a vocal node. My voice improved, but some problems still continue. The cause of ther origin: my unfamiliarity with voice work in the teaching profession."

Breathing

It follows from my own observation and from other authors´ findings that most teachers talk using the unsuitable upper, shallow type of breathing. Nevertheless, the respondents perceived the lack of breath and similar problems more often while singing (eg: *„I´d like to improve my breathing when I sing, I´m short of breath, I cannot keep the phrases"*, *„I´d like to improve my breathing technique"*) than speaking (*„I´d like to improve my breathing to keep my breath till the end of the sentence"*).

The range of the singing voice and the pitch of the speaking voice

Teachers feel negative changes in the range of their singing voices and the pitch of their speaking voices: *„I´d like to have a higher pitch of my voice, it has become gruff and its speaking pitch has lowered", „I´m unable to sing as high as before, and I see the cause in minimal training", „since I don´t train, my vocal range is diminishing, I´d wish to have more certainty in my voice as well as richness, especially in high tones".*

„My speaking voice has got gruff. I suppose that it has changed because I overloaded it at the beginning of my teaching practice as well as in my free time activities. Due to the same reasons the range of my singing voice is smaller now, a „jump" in my vocal range has appeared."

„I sometimes speak in a high voice. From time to time I get hoarse and have pain in my vocal cords. I shout more often – I´m unable to control my son in peace (when my son does something silly, I yelp at him). My voice has not such a range, clarity and sustainability as it had some time ago."

Conclusions

The obtained results suggest that the impact of the professional preparation in the field of musical theory and especially practice (training the singing voice) probably contributes to the required changes of the vocal quality measured by means of the DSI.

The exercises and singing preparation help to improve the voice condition (eg the shift in the MPT is recognizable, tendencies to the improvement of the vocal range are also obvious).

The perception of voice characteristics is cultivated and the attitude to the reflection on the vocal quality is changed positively.

The theory and practice of voice hygiene is more appreciated. The application of the elementary principles of voice care also seems to partly paralyse the negative influences of the teaching practice (overloading of the voice, consequences of teachers´ overall strain connected with the teaching profession).

The measurement of the vocal quality by means of the DSI method has proved to be successful for registering differences in the vocal quality in dependence on a certain intervention (therapy, rehabilitation, re-education, teaching etc). It can serve very well as an indicator of changes in some basic parameters influencing the quality of voice (MPT, F0-High, I-Low, Jitter). It can be a very reliable signal of a change (pre- and post-); however, this technique cannot be expected to give exact and differentiated information on the separate voice parameters and the causes of their changes. Moreover, the DSI method requires strict standard conditions for testing – especially a completely silenced room. In teaching practice (if, eg, a teacher is tested at school after his/her classes) it is necessary to take into account that the DSI method will measure the changes fairly reliably, but the measured values cannot be compared consistently with the usual classification of the degrese of dysphonia, because the input data will be affected by any imperceptible ´noise´, even in a quiet, but non-standard room.

On the basis of the existing investigation it is possible to draft out a project of training directed towards voice care for teachers – voice professionals. The methodical manual will meet the requirements expressed by the tested persons in the questionnaires as well as during the recordings of their voices by means of the DSI method (see above).

The manual will contain condition exercises that can also be used for rehabilitation, condition exercises whose objective is to develop the speaking as well as the singing voice, and comprehensive information concerning directly voice hygiene.

It will then be necessary to draw teachers´ attention to the way they work with breath during their teaching. Wrong breathing is the basis of the wrong voice technique and results finally in a lower quality and health of professionals´ voices. The condition **breathing exercises** try to create the skill of mixed breathing, thus contributing to the improvement of voice health as well as a change or development of various voice parameters.

Phonation and resonance exercises remove the undesirable strain in the throat and help to induce a feeling of relaxed vocal cords. The exercises teach how to use head resonance more effectively. Head resonance is the basic prerequisite for a freely sounding voice, both speaking and singing.[9] This will be followed by **staccato exercises** (supportig strong closing of the vocal cords), **combined relaxation exercises** (lowering muscle tension, especially in the regions of the neck spine and the breast spine), **exercises for improving articulation** and **exercises for improving the strength and setting of the voice**.[10]

In order to maintain the existing voice condition it is important to know how to work with voice when **the voice disorder has subsided** and what to avoid so that the voice organs cannot be impaired due to ignorance.

Teachers at the 1st stage of the primary school (with pupils aged 6–11) and nursery school teachers have singing as a part of their profession. Most teachers at the 2nd stage of the primary school feel a close relation to singing even if they do not teach music. The manual will therefore offer some exercises supporting the development of the speaking- and the singing-voice techniques. They should be a motivation and an inspiration for further self-education.

ZMĚNY KVALITY HLASU UČITELŮ MĚŘENÉ DSI V KONTEXTU PROFESNÍ PŘÍPRAVY

Abstrakt: Autorka navazuje na předchozí etapy šetření,zaměřeného na zkoumání změn kvality hlasu pomocí standardní metody DSI (Dysphonia Severity Index). Práce sleduje, do jaké míry intervenují způsob profesní přípravy učitele (v rámci hudební teorie a praxe) a aktuální podmínky školské praxe studentů kombinovaného studia ZŠ do základních charakteristik hlasu. Práce syntetizuje předchozí šetření a formuluje zá-

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9 In my conception the expression „singing voice" means the voice used for singing. It can either be a trained voice or a voice without any singing technique. Cf NOVÁK, A. 2000, p. 111.

10 Cf A Rehabilitation System and Recommended Exercises for Teachers with Voice Disorders. (FROSTOVÁ, J. 2007, pp. 417–426).

věry předznamenávající intenzivní práci se skupinou studentů, plánovanou v závěrečné etapě výzkumného záměru.

Klíčová slova: hlas, učitelé, hlasová hygiena, hodnocení hlasu, Dysphonia Severity Index.

THE PROJECTION OF „SINGING TENDENCIES" INTO PROFESSIONAL COMMUNICATION

Jana FROSTOVÁ, Jaroslav ŘEZÁČ

´Both arts, singing and speech, are closely related. I cannot work on my singing voice without simultaneously improving my speaking voice; in the same way, speakers will gain in the flexibility and strength of their voices if they practice breath exercises and even learn singing…´
<div align="right">Leo Kofler</div>

Abstract: *The present contribution is directed to the identification of the peculiarities of the basic parameters of voice, speech and communication as they are perceived by the partners in formal and informal communication.The aim of these reflections and investigation is to improve the techniques of the training of communication (interaction) and the work with voice in the context of communicative situations, including problem ones, occurring in professions where voice is one of the working tools (education, care, leading, management, therapy).*

The authors of the present paper have been working on the techniques of training in their professional fields.[1] Thy have concentrated on the intersection field, namely the human voice and speech in communication (communicative situations).

Their reflections are based on the idea assuming that the basic parameters of voice and specific features of speech, especially their formal characteristics (the use of the voice timbre, modulation, articulation, cadence and others, mostly called nonverbal or metacommunicative characteristics of speech) belong to the prerequisites of successful communication. One of the inspirations concerning the theme of the authors´ research was their participation in the ISME (The International Society for Music Education) Conference in Bologna 2008.

Keywords: *voice, speech,communication, interactive exercises, condition voice exercises, rehabilitation of voice disorders, singing tendencies*

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[1] Interactive exercises concentrating on the cultivation of skills, especially in the field of symbolic interaction (communication) (Jaroslav Řezáč), and condition voice exercises as well as the rehabilitation of voice problems and disorders (Jana Frostová).

Introduction

There is more and more evidence of the importace of effective communication for both the voice professionals (singers, actors) and those professions where voice is the basic means of influencing another person, thus being a „working tool" (in education, leading, teaching, management, therapy). Due to our professional orientation we are interested in teachers and the field of pedagogical communication where the basic specific parameters of voice, such as *purity, sonority, pitch* and *timbre,* are the prerequisites of quality speech (its *modulation, intonation, articulation, speed, rhythm*) and communication. Voice and speech as the means of expressing emotional and social dimensions in professional relations are more and more important if confronted with the „e-communication".

The goal of the project is to seek ways for improving communicative exercises. The investigation is a probe into the connections between the basic parameters of voice and the quality of communication. We shall try to find out whether the individuals whose voices are cultivated by singing differ in their professional communication from the others. In case such differences are found,the next stage of our investigation will be directed to the precise identification of these voice characteristics.

Our experience of exercises and training has led us to the following questions: do those whom we could tentatively call **„singing´ people"** [2] show different features in communicative situations in comparison with **„non-singing"** people? Do those whose parameters of voice and speech are more cultivated thanks to their singing differ in communicative situations? How are these people perceived by their partners in communication? Will there be any difference at all? These questions gain importace when such techniques of communicative exercises are constructed that would include a methodically well-founded cultivation of the non-verbal components of voice and speech.

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2 The concept of „singing tendencies" or „musicality", as we use it in the present paper, stands, admittedly, close to the concept of „musicality" used in the field of musical theory (eg Lýsek, F. 1956), but is not totally identical with it. Musicality is mostly understood in the context of preferences (of musical genres, singing or musical activities etc). From the psychological point of view, the emphasis is usually put on the relation between the content, *„the langure of music"* and the sense of its identification). (B. M. Teplov pointed out that „the main *characteristic feature of* **musicality** *is experiencing music as an expression of a certain content"* (1965, p. 21).) The attitude to a musical piece is then not primary here: primary is the ability to feel and understand its content. F. Sedlák as well seems to understand **musicality** as a personality´s quality changing during the ontogenesis (*„the development of musicality at the pre-school age")* ; he includes into this cluster of partial skills the following: vocal reproduction, the ability to transpose, etc; cf Sedlák, F. 1974, p. 87. He also uses the concept of *„musical maturity"* in connection with musicality. In his conception musicality is unequivocally a cluster of musical abilities *„integrated in the concept of musicality".* He explains the various musical abilities in connection with the diagnostics of musicality when the child enters school (ibidem, pp. 90-92). Some authors as early as in the 1920s and 1930s identified *musicality* and *musical talent* (eg C. Seashore); there are also some reflections on *the hereditary fundamentals of musicality* (Franěk, M. 2005, p. 143). Nevertheless, there is no unequivocal and generally accepted definition of musicality. Similarly, the concept of „singing tendencies" mostly refers to the individual´s preferences while choosing certain musical genres, and less often to active musical or singing activities. *„Social singing tendencies"* is another concept sometimes used: it accentuates not only the reproductive, but also the productive component of the attitude to music (cf,eg, Crha, B. b). The present study accentuates the productive aspect and uses the concepts *„singing", „non-singing","decidedly singing"* and others for marking respondents who have shown a certain score (see below) on the scale where **the quality, intensity** and **frequency** of singing activities is assessed by the respondents themselves (more details in the following chapter on the methodology of the investigation).

The methodology of the investigation and the research sample

Based on the experience from the practical training of communication (and interaction)[3] and from the application of condition exercises and techniques of the rehabilitation of voice disorders and problems[4], a two-part questionnaire has been worked out. Its first part offers a six-grade scale for the assessment and self-assessment of the following characteristics:

Communication – 6 items:[5]

(1) *communicative skills* in the narrow sense of the term (the establishment and development of communication, the argumentation skill, the presentation and upholding of one´s personal goal in communication, **(2)** *style* (the ability to captivate the listener by the manner of speech), **(3)** *the authenticity of the content* of communication, **(4)** *the interactive skill* (the establishment, development or even cultivation of relations in the communicative situation), **(5)** *the degree of pedagogical impact b*y means of communication, **(6)** *empathy* (the ability to put oneself in the partner´s situation and in the specificities of his/her personality).

Speech – 10 items

(7) *the fluency* of speech, **(8)** *the speed* of speech, **(9)** *the articulation*, **(10)** *the modulation,* **(11)** *the structuralization* of speech (the inner continuity and interconnection in expressing the content), **(12)** *the technique* of speech, **(13)** the expression of *emotions*, **(14)** *the timbre* (and its changes used for emphasizing the content), **(15)** *the condition*, **(16)** *the resistance* to the situational strain.

Voice – 5 items

(17) *purity*, **(18)** *intensity*, **(19)** *timbre*, **(20)** *pitch,* **(21)** *sonority.*

The three sections of the first part of the questionnaire, described above, are arranged in the given order so as to facilitate a gradual, more and more detailed direction and a constantly increasing exactness in assessing the individual characteristics.[6]

In the second part of the questionnaire the respondents have assessed subjectively their singing skills, motivations and attitudes to active singing on a seven-grade scale, the items being the following: *the appetence/aversion* to active singing, *the quality* (the level of their singing perceived subjectively), *the frequency*, *the intensity*, *the relation* to singing, *the type of singing activity* (amateur, half-professional or professional). The self-assessed scores in the second, third and fourth items of the second part of the ques-

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3 ŘEZÁČ, J. K problému rozvíjení sebereflektivní kompetence v rámci interakčních cvičení. Pedagogická orientace 1997, 4, pp.12-18, ISSN 1211-4669.
 ŘEZÁČ, J. Zpětná vazba jako aktivizující a facilitující faktor interakčního učení. In kolektiv.: Učitel,vyučování, situace. Brno, Paido 1994.
4 FROSTOVÁ, J. A study on teachers´ voice development in the context of their profession. In School and Health 21. 1. vyd. Brno : MSD, s.r.o., 2008. pp. 65-78. Social and Health Aspects of Health Education (3). ISBN 978-80-7392-043-2.
5 The respondents were instructed to read carefully the descriptions of all the grades of the scale, since each grade only expresses a feature or skill in the mutual context and in the whole of the item.
6 This paper makes no difference between the assessment and self-assessment. The relation between self-perception and the assessment from the outside will be discussed in another paper.

tionnaire express „*the tendency* or **non-tendency to singing**". The data on the attitude to singing and on the free time activities connected with singing or playing a musical instrument make only a sort of supplementary information and have not be included in the quantitative results.

The"*singing*" respondents are, according to the criteria of the present research, those respondents who have assessed *the quality, frequency* and *intensity* of their own singing within the scores 1.0 to 3.7. On the other hand, the „*non-singing*" respondents´ self-assessments have reached the scores 4.33 to 7.0 and expressed either a very low *level* (quality) of their singing and its low *frequency* and *intensity*, or the absolute *absence* of singing activities. The respondents who have chosen the medium interval of the scale (3.8 to 4.0) make only 6.1 % of the total number. One of the first conclusions of the research is the fact that the „*non-singing*"respondents visibly prevail over the „*singing*" ones.

CHART 1. The proportion of ´S´ to ´N´ in the sample examined
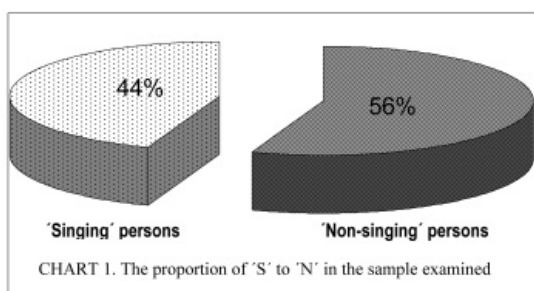
Originally 170 pedagogues of various types of schools (primary and secondary) promised to co-operate in the investigation. All of them were provided with a detailed and binding (written) instruction about the application of the questionnaire, as well as two questionnaire forms: for themselves and for the person examined. They tipped a colleague they had known intimately from formal and informal professional communication and were administering the questionnaire from February to May 2009.

The respondents self-assessed the above given parameters of *voice, speech, communication* and *singing tendencies*. The same parameters (except *singing tendencies*) were then assessed independently by their partners who had known them well and for a long time.They were not acquainted with each other´s assessments and moreover the tipped respondents were not informed that the colleagues who had asked them for „completing the questionnaire" assessed them as well.

The return of the completed questionnaires at the deadline was 164 (including three questionnaires where either one or two items were not completed due to carelessness).

TABLE 1. The professional status of the persons in the sample examined		
	abs.	%
Educators (teachers, instructors etc)	101	61,59
Management (managers, entrepreneurs etc)	23	14,02
Others (teaching students, a stewardess, policemen etc)	18	10,98
Services, shops	14	8,54
Health service (a doctor, a children´s nurse, male nurses etc)	8	4,88
	164	**100**

In order to identify the differences more distinctly, we have supplemented the two categories given above („S" for „singing" persons and „N" for „non-singing" persons) with two new categories („DS" for „decidedly singing" persons and „DN" for „decidedly non-singing" persons). „DS" are those respondents who have self-assessed *the quality, frequency* and *intensity* of their singing activities on the first two points of the seven-grade scale (the score: less than 3, namely 1.0 to 2.67). The category of „DN" is made by respondents who said that they did not sing and were not attracted by singing (the score: more than 5.0, namely 5.1 to 7.0). Introducing these categories has proved to be very useful for the description of the differences.

The results and discussion

Out of the 21 parameters of voice, speech and communication only the following assessed attributes show distinctive differences:[7]

Communication
Interactive skills (considered as the ability to initiate, establish and deepen interpersonal contacts),
communicative skills (the ability to initiate a meaningful communication and develop it adequately),
empathy (the ability to put oneself in the situation and specificities of the partner in communication).

Speech
Articulation (pronunciation),
modulation (adequate changes of intonation, voice intensity and the speed of speech, used for giving a clearer picture of the content of speech),
condition (the influence of tiredness on the condition during the communication,
technique (the support of the content of communication by means of non-verbal characteristics of voice and speech).

Voice
In assessing the basic parameters of voice the „singing" and „non-singing" respondents have not shown any signifiant differences with the exception of *voice sonority*.

Interactive skills
The most distinctive difference between the „singing" and „non-singing" respondents could be seen, in the assessors´ view, in *interactive skills*.

The item had the following grades of the scale:

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7 This survey only gives those qualities assessed where (using the F-test) the difference between the groups „S" - „N" and „DS" - „DN" is statistically relevant (on the level of 0.05%).

(Interactive skills)					
I can say that					
he/she is decidedly one of the people who can very well and naturally establish and develop relations with others	he/she establishes and develops new contacts with people without any major problems	he/she establishes or develops new relations quite well, as most people do	he/she establishes and develops relations with stran gers without greater problems but a bit „carefully"	he/sheestablishes new relations with a certain „watchfulness" or „noticeable problems"	establishing relations brings him/ her considerable and obvious problems
1	2	3	4	5	6

As the following CHARTS (2 and 3) show, the „singing" respondents („S") are assessed much better than „N" in the sphere of *interactive skills*. This is a quite surprising finding, since we rather expected such a distinctive difference in communicative skills. Our experience would justifiably lead us to the presupposition that the ability to work with voice (a better control of its characteristics due to intensive and frequent singing) would especially influence the formal aspects of communication. However, our probe does not corroborate this presupposition as markedly as the difference in the interactive skills, which is really significant.

CHARTS 2 and 3. The assessment of interactive skills in „S" - „N" and „DS" - „DN" [8]
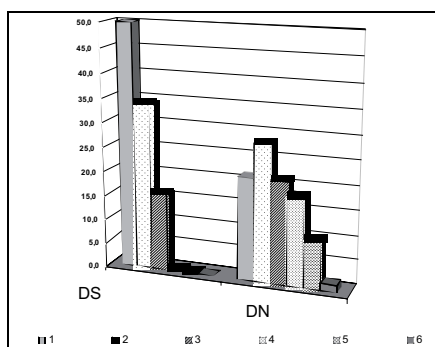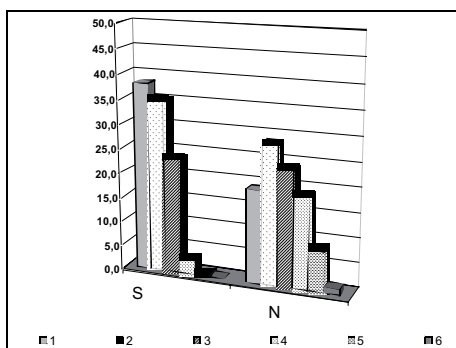
The results suggest that a bigger sample might *confirm* the current results or, most probably, even *accentuate* them. This is because in the groups „DS" -"DN" the difference is even more shifted to very favourable assessments, the „DS" group being assessed the most favourably in 50 %, mostly at the expense of preferring the fourth and fifth grades of the scale.

For the time being one can only speculate on the reasons for the favourable perception of „S" and especially „DS": is it *dependent* on „*the singing tendencies*", or on the fact that singing activities rather attract individuals that are decidedly *more sociable*? In view of the fact that especially the „DS" respondents go in for singing not only intensively and frequently, but also *in groups* or *teams*, it is quite probable that one can see

8 The comparison of the results (the spread over the scale) has been worked out into contingent tables. All the charts in the present paper are based on them.

here the positive „consequences" of „*team thinking"* and*"team co-operatio"* . Choir activities seem to evoke unintentionally certain models of interaction. Common succcess, as well as pleasure experienced by motivated singers, need co-operation and reciprocity. An individual´s success presupposes the others´success – and therefore virtually evokes the willingness to help the others, sharing the creative work and looking for ways that would remove individual mistakes. It remains to be seen what facts are the real determinants of the connection just revealed.

Communicative skills

As we have adumbrated, the assessment of *communicative skills* is also more favourable in the „S" group, but not as markedly as the assessment of interactive skills.
Communicative skills are characterized on the following scale:

(Communicative skills)					
He/she is one of the people who					
are able to establish communication in a really outstanding way, direct it or lead discussions arguments or in formal debates etc	can open a dialogue or another form of communication and adequately influ ence its progress	can communicate well, are relatively successful in commmunication, although they do not exactly seek debates, dis cussions etc	mostly manage to communicate, do not avoid debates or discussions, but do not usually initiate them or step in them vehemently	rather avoid debates or discussions, especially led in groups, since they find it quite difficult to present themselves and get the upper hand	prefer to avoid communication with people if it is posible at all, because their presentation skills are not good are not good them to reach success
1	2	3	4	5	6

The assessments are also spread differently over the scale: the „S" group is mostly assessed as „*very goo"* at communicative skills (41.18 %) and even „*outstanding"* (29.41 %), while the „N" group is most frequently assessed as „*very good*" (50.59 %) and „*good"* (22.35 %).

CHARTS 4 and 5. The assessment of communicative skills in „S" - „N"
and „DS" - „DN"
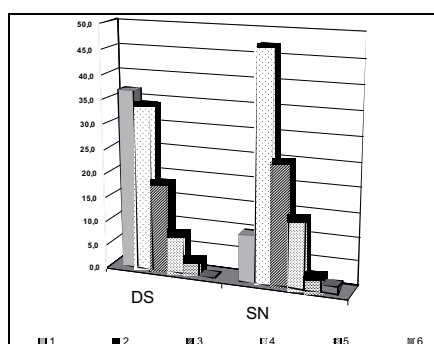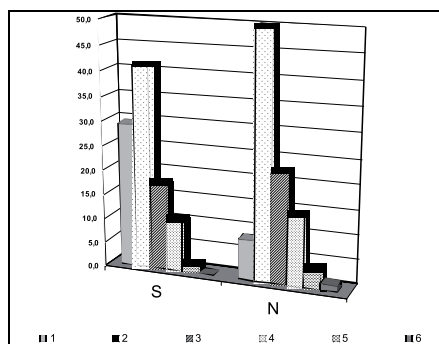
As CHART 5 shows, in the „DS“ the proportion of evaluating assessments is changed towards the most favourable section (36.84 %), while in the „DN“ group it does not change very much. We suppose that the less marked difference between „S“ and „N“ („DS“ and „DN“) in their communicative skills, as compared with their interactive skills, may be caused by the fact that during communication the formal aspects of voice, as well as speech expression, do not play any important role. A successful (especially formal) communication will be conceivably more dependent on the argumentative force of the content than on the accentuation of the statements or expression (ie on the metacommunicative, formal aspects of communication). However, at the same time,it is obvious that the cultivation of voice (and consequently of speech) projects into communicative situations so greatly that it is worth planning a connection between the training of communication and the cultivation of voice and formal characteristics of speech.

Empathy in communication

Quite great differences between „S“ and „N“ have also been found in assessing the characteristics of speech from the point of view of *communicative empathy*[9]. The assessments were based on the scale with the following evaluations:

(Empathy)					
During communication this man/woman					
can in an outstanding way put himself/ herself in other people´s situations and personalities	can well identify himself/herself mentally with others	can quite well identify with others	in spite of certain problems can identify himself/ herself mentally with others	is not really good at putting himself/ herself in others´ situations, experi ences or qualities	is not „empathic“ at all, is not given that talent
1	2	3	4	5	6

The results show again that „*singing tendencies*“ to a certain degree correlate with communicative empathy. In CHARTS 7 and 8 the „DS“ group is unequivocally assessed favourably („mark“ 1 on the scale in 54.29 %). The difference between „S“ and „N“ is not so obvious, but it evidently rises with stronger „singing tendencies“.

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9 During our work we have used this concept for assessing empathy as a prerequisite for an adequate perception of the partner in communication as well as an impact on him/her (ie for an adequate and effective transference of the message on the recipient).

CHARTS 6 and 7. The assessment of *empathy* in „S" - N" and „DS" - „DN"
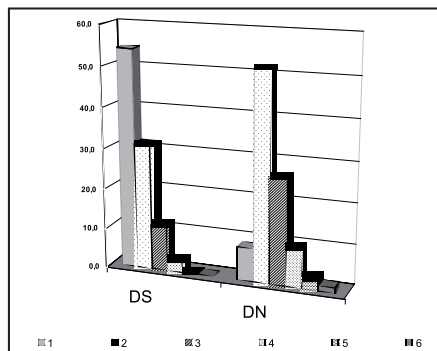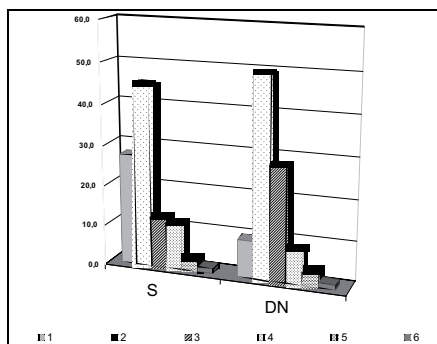
The change in the spread of the assessments over the scale is quite visible. While the „S" group is evaluated with „marks" 1 and 2 on the scale (27.5 %, 45.0), the „DS" group shows the dominance of the most favourable grade of the scale before the second one (54.29 %, 31.43 %). Further connections are shown clearly in CHARTS 6 and 7.

Articulation

The following scale was the criterion for assessing articulation:

(Articulation)					
His/her speech					
is an example of correct articula lation, his/her pronunciation is per fect, everybody understands him/ her very well	is easy to understand, he/ she articulates correctly and clearly	shows minor mistakes in pronunciation, but is quite easy to understand	needs more concentration on the part of the partner because of certain problems in his/ her pronunciation	has considerable defects in articulalation which rather seriously complicate the understanding of his/ her communication	has so serious defects in articulation that he/she is difficult to understand or cannot be understood at all
1	2	3	4	5	6

The „*singing tendencies*" seem to be connected with the quality of pronunciation as well. The „S" group is mostly assessed with „marks" 1 and 2 on the scale (35.29 % and 51.47 % respectively) (see CHART 9), while the dominance of the most favourable assessments is even more obvious in the „DS" group (50 % and 42.11 %) (see CHART 10). The proportions of „N" and „DN" do not basically change.
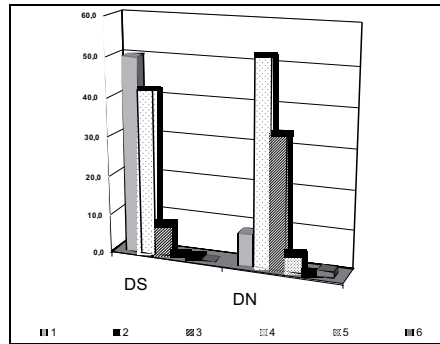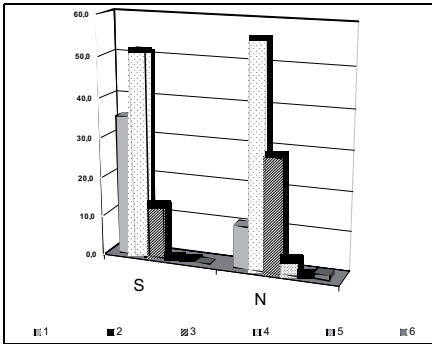
Similarly to the preceding cases, an analysis of the spread of the median values disproves the zero hypothesis on the equality of choices and suggests that (after veri-fying the current results on a greater number of examined persons,which is in progress now)it will be most probably possible to classify a good level of articulation as one of the features and skills denoting people with „*singing tendencies*".

Modulation

We supposed that the modulation of voice (in speech) will be more obvious in „*singing*" people (ie that the transfer of the characteristics and skills connected with the voice control while singing will manifest themselves positively).

The evaluating scale has been formulated as follows:

Speech modulation)					
His/her speech					
very markedly accentuates its content with changes of intonation, the intensity of voice, the speed of speech etc	mostly quite adequately supports the content of communication with changes of intonation, the speed of speech, voice intensity etc	makes the content of communication clearer by means of changes in intonation, the speed of speech etc	supports the content of communication with modulations of the speed of speech, intonation and voice intensity only in cases where the speaker is really interested in something	ie its speed, in tonation and voice intensity are not dependent on the content of communication	is monotonous, as if without any feeling
1	2	3	4	5	6

The difference between „S" and „N" is not really great (see CHART 10). It has also been found out that unlike the other characteristics of speech (and communication), *the*

modulation of speech is assessed with the focus on the 2nd and 3rd grades of the scale. This seems to give evidence of the fact that, in contrast to the other characteristics, *modulation* is not given such parameters by population that would be needed in optimal communication. As far as the comparison of „DS" and „DN" is concerned, the difference in favour of *the „singing tendencies"* is evident here. In the „DS" group the majority of assessments correspond with the 2nd and 3rd grades of the scale (47.37 %, 18.95 %), while in the „DN" group the spread of the evaluating assessments is shifted towards the grades 3 and 4 (36.62 %, 26.76 %). The difference in the dispersion of the median values of the two choices is, similarly to the preceding characteristics, evident on the 0.05 % level of importance.

CHARTS 10 and 11. The assessment of voice modulation in speech in „S"-„N" and „DS"-„DN"
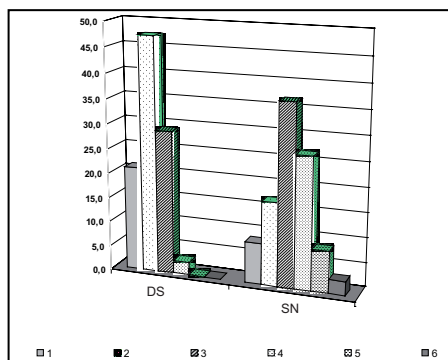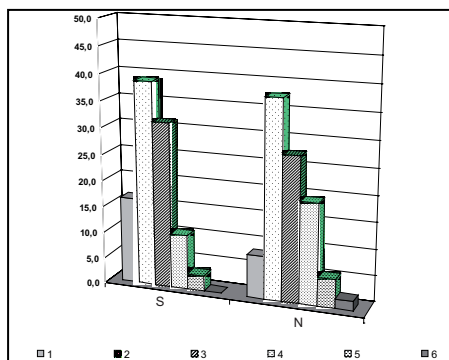
The technique

The item expressing „*the technique of speech*" has been oriented towards finding out whether communication is supported by certain „singing tendencies", „musicality" or „pleasantness" of voice – that is to say, by non-verbal voice characteristics (and is therefore a kind of control question to the items that *measure* intonation, modulation etc individually).

The evaluating scale has been formulated as follows:

(The technique of speech)					
The speaker					
can handle his/her voice so well that he/she sounds like a speech professional	can manage his/her voice so much that the very „music" of his/her voice is a communication	can attract people´s attention with his/her voice and the technique of its control, even though the content of his/her speech needn´t be very attractive	has a voice whose pleasantness is comparable to most people´s usual voices	has a voice which seems not to be connected with the content of communication and hardly helps to understand it	has voice characteristics that do not accentuate the content of communication, or sometimes even distort it
1	2	3	4	5	6

The comparison of „S" with „N" as well as „DS" with „DN" shows a considerably different dispersion of evaluating assessments on the scale (and in the T-test).

The assessment of all the groups is relatively „stricter" here than in the preceding items (the most favourable assessment only occurs in 4.41 % of the „S" group and in 1.19 % of the „N" group), but on the whole the „*singing*" respondents get more positive assessments than the „*non-singing*" ones. The „S" group and even more the „DS" group seem to project better into the technique of speech their ability to express more clearly (or to support more markedly) the content of speech with the formal characteristics of voice.

CHARTS 12 and 13 show that in the „S" and „DS" groups the work with voice is automatically or intentionally more intensive and that their communication is perceived as „*more interesting*" or „*pleasanter*" and consequently „*more communicative*". 23.53 % of the „S" respondents and 23.68 % of the „DS" ones have been given „mark" 2, which means that the very „*music*" of their voices brings a certain communication; the assessors have evaluated 38.24 % of the „S" group and 47.37 % of the „DS" group as capable of holding the listener´s interest by means of their *voice technique*. The „N" and „DN" groups are placed in the 4th grade of the scale (meaning that *the pleasantness* of their speech is comparable to „*usual*" voices that can be found *in the majority of population*).

CHARTS 12 and 13. The assessment of the technique of the work with voice
in „S" - „N" and „DS" - „DN"
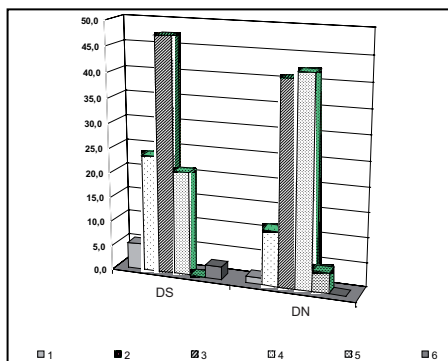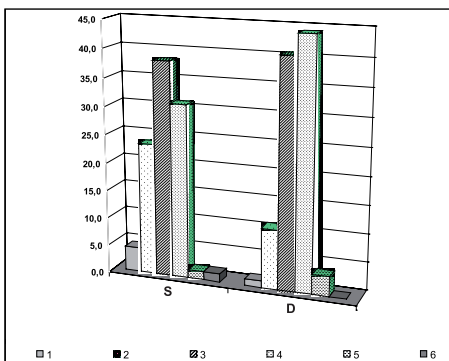
The sonority of voice

The most frequent phoniatric classifications of the basic parameters of voice usually enumerate *purity, intensity, timbre* and *pitch,* and sometimes also *flexibility*, taken as „*the complex perception of all the given parameters together*".[10] The given parameters can directly be derived from the physical quantities of the measured phonation. Nevertheless the perception of the human voice (not only the singing voice, but the speaking voice as well) needs a more colourful terminology to express its characteristics based

10 Cf, eg, Novák, A. 2000, p. 11.

on the requirements and criteria for the communicativeness of communication (taking into account both the form and the content), for example: a full voice, a sonorous voice, a resonant voice; the voice can be metallic, fruity, mellow; it can be perceived as a well set voice, a badly set voice (the voice in a mask) etc.

The sonority of voice in our research means especially its *richness, clearness* and *regard to details* and is one of the prerequisites of a good communicativeness in communication. Sonority cannot be directly derived from the physical attributes of voice, since it mostly depends on the technique of the work with voice.

The almost natural assumption that „singing" people´s voices will be perceived more favourably than „non-singing" people´s voices has not been corroborated. An important role can be played here by the fact that in the perception schemes people do not usually pay sufficient attention to details so as to perceive the separate parameters of voice (which often holds good even about „singing" people introspecting themselves).

The assessors in our research have perceived the differences between the „S" group and the „N" group only in regard to *sonority*, as characterized on the following scale:

(The sonority of voice)					
His/her voice is					
really very sonorous, rich and „detailed"	expressive and sonorous regardless of the intensity	adequately sonorous, quite rich	not very sonorous, it could be more expressive	rather weak, not very variable/ detailed	rather „subdued", lacks the needed sonority
1	2	3	4	5	6

CHARTS 14 and 15 show that especially the assessments evaluating the „decidedly singing" respondents are shifted to the left (ie the most favourable) edge of the scale. The voices of 57 % of the „DS" respondents have been perceived as „*expressive and sonorous regardless of the intensity*" (grade 2) and almost 30 % as „*adequately sonorous – rich*" (grade 3). The „N" and „DN" groups show that their assessments are dominantly placed in the middle of the scale (grades 3 and 4).

CHARTS 14 and 15. The assessment of the sonority of voice in „S" - „N" and „DS" - „DN"
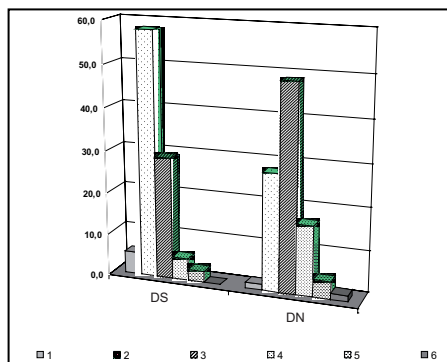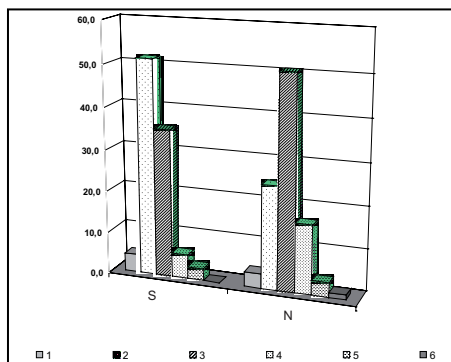
Condition

The assessment of the condition (ie of the manifestations of tiredness projected into voice and speech) is based on the assumption that people training their vocal cords by means of singing[11] will be better at managing the load that is evoked by a certain communicative situation.

(Condition)					
If the speaker is tired,					
it is not at all noticeable in his/her voice or speech	the influence of the tiredness on his/her voice is hardly noticeable	the influence of the tiredness can be traced in his/her voice	the tiredness mostly has a negative impact on his/her voice	the influence of the tiredness on his/her voice is audibly obvious	the influence of the tiredness on his/her voice and speech condition is immediately and un mistakably heard
1	2	3	4	5	6

The „DS" and „DN" groups show *conditions* where the differences border on the limits of dissimilarity (see CHARTS 17 and 18). To find out whether a significant difference does exist between the groups, it is necessary to enlarge the examined sample (since our sample is, admittedly, relatively small). The assessments of the „S" group are quite similar to those of the „N" group. On the other hand, the „DS" group shows a visible increase of evaluations expressing the best assessment (grade 1 of the scale): while only 2.99 % of the „S" respondents have the most favourable assessment, the proportion of the „DS" respondents with the same assessment has risen to 15.79 %.

The overall dispersion of the assessments on the scale is, however, suggestive of the fact (also known from our other investigations) that the voice condition that is influenced by a number of identified voice problems is not very good in teachers.[12] A relatively high percentage of teachers examined during the preceding stages of our research had considerable voice problems (which was also corroborated by the objective DSI examination).

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11 We are, of course, aware of the fact that we have no data at our disposal on the technique of singing, and therefore it is impossible for us to identify those examined persons who,eg, have an incorrect technique of singing, or who extremely overload their voice (not observing the rules of voice hygiene); in this way they lower the quality of their voice (primarily of their voice organs) or even destroy it.

12 Cf, eg, Frostová, J. 2008.

CHARTS 16 and 17. The assessment of speech condition(the influence of tiredness) in „S" -"N" and „DS"- „DN"
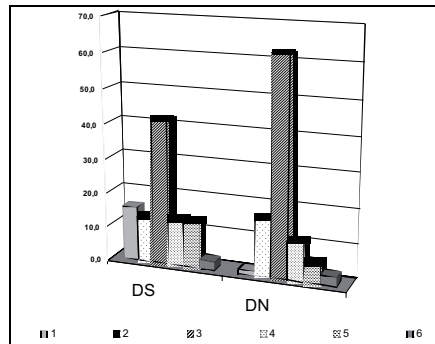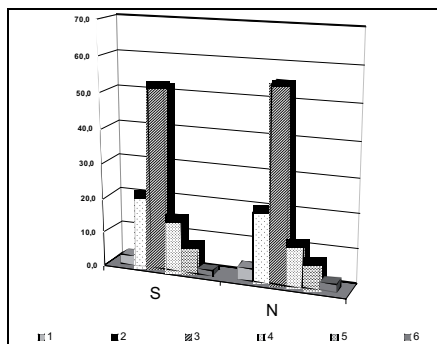
Conclusions

- The present study has confirmed the assumption that people who actively (ie with more intensity, depth and cultivation than the other population) devote themselves to singing are, because of some parameters of voice, speech and communication, perceived distinctly differently from people who do not actively go in for singing. The examined characteristics relate to positively perceived and evaluated communicative strategies (procedures and patterns of communicative behaviour).
- The current results of investigation signalize dissimilarities not only in the formal (non-verbal) characteristics of communication that are directly derived from the parameters of voice (trained and cultivated by singing activities), but also in the field of relations (eg in the interaction).
- The evaluating assessments by the partners who know the assessed individuals intimately and for a long time show that it is justified to include voice condition exercises and voice rehabilitation exercises into the project of training that is oriented towards the cultivation of communication and interaction.
- In the future research activities it will be necessary to raise the number of examined persons so as to make the results more exact and general.

It will be suitable to supplement the research with:
- an objective measurement of the „*singing*" and „*non-singing*" people´s voice parameters,
- a technique that would help to find out whether persons who appear to be „*singing*" have a specific set of skills, qualities and features, and what the socializing and educational determinants of their origin are.

PROJEKCE „ZPĚVNOSTI" DO PROFESNÍ KOMUNIKACE

Abstrakt: Příspěvek je zaměřen na identifikaci zvláštností základních parametrů hlasu, řeči a komunikace, tak jak se jeví partnerům ve formální i neformální komu-

nikaci. Cílem úvah a výzkumného šetření je zdokonalení konstrukce technik výcviku komunikace (interakce) i práce s hlasem v kontextu komunikačních (problémových) situací profese, v nichž je hlas jedním z pracovních nástrojů (výchova, péče, vedení, řízení, terapie).

Autoři stati se zabývají technikami výcviku ve svých profesních oblastech. Soustředili se na průnikovou oblast: lidský hlas a řeč v komunikaci (komunikačních situacích).

Vycházejí z představy, že základní parametry hlasu a specifika řeči vytvářejí jeden z předpokladů úspěšné komunikace, zvláště v jejich formálních charakteristikách (využití barvy hlasu, modulace, artikulace, kadence) a dalších charakteristikách, řazených obvykle mezi charakteristiky *metakomunikační*. Inspirací pro zaměření šetření byla i účast na konferenci ISME (Mezinárodní společnosti pro hudební vzdělání) v Bologni 2008.

Klíčová slova: hlas, řeč, komunikace, interakční cvičení, kondiční hlasová cvičení, rehabilitace hlasových poruch, zpěvnost.

PRIMARY CANCER PREVENTION AT SCHOOLS

Iva ŽALOUDÍKOVÁ, Drahoslava HRUBÁ

Abstract: The article deals with cancer prevention education of children in a primary school setting. It outlines an educational preventive programme designed at Masaryk University Brno that focuses on promoting healthy life styles, especially on non-smoking, healthy diets, exercising, mental health, avoiding excessive sunlight exposure and developing life skills. It describes a survey of the programme's efficiency at primary school and compares children's perceptions of cancer before and after the targeted intervention.

Keywords: cancer prevention, school programmes, health education, children's concept of cancer

Introduction

It is generally accepted that health is of a hidden or latent value, and that even adults appreciate health better after they had some personal experience with a disease. Children and young people often do not regard health as their priority because their health is largely taken care of by their parents. Children only begin to learn to take responsibility, and the idea that they might fall ill when they grow up is too distant future. Oncology diseases afflict adult populations more than they afflict children. These all are obstacles educators may have to face when they implement cancer prevention education.

How do children perceive health risks, what do they know about cancer, what factual knowledge do they have and what do they really understand? Are they concerned about their health, and do they know how to, and wish to, care for their health? Researchers in other countries have been dealing with these questions for a long time. They study children's knowledge, attitudes and beliefs about cancer and their understanding of health and healthy behaviours for maintaining good health in the future (Oakley et al. 1995). They also map the **factual knowledge about the origin of cancer in primary school children** (Schonfeld et al. 1999, 2001) and they do **cancer prevention at schools**.

This is a topical issue also in the Czech Republic, primarily because cancer prevalence in Europe is on the increase. Emphasis is mainly placed on the analysis and recognition of risks and their prevention already at schools among the youngest children

because it is there that foundations of responsible attitudes to one's health are being laid. Childhood and adolescence are important stages of human life when every person undergoes important physical and mental development, acquires social and health habits and adopts patterns behaviour he will keep for life. Big influence in this period is wielded, besides the family, by the school.

Primary cancer prevention includes necessary instructions of how to behave to avoid cancer. What decisions to make for an appropriate behaviour. **Prevention is primarily focused on the reduction of smoking, healthy diets and abundance of exercise, i.e. on the three main risk factors.** The aim of education is to teach to make the right decisions that help to promote health, and to implement them in everyday life.

Based on research and surveys, the American Cancer Society **recommended that cancer prevention education be included in the school curriculum**. It is assumed that about two thirds of oncology diseases are attributable to the choice of a bad lifestyle. **One third is the result of tobacco use, and the other is the consequence of unhealthy dietary habits**. Cancer prevention in young children should include the main and the **most general risks** such as **smoking, unhealthy diet, excessive exposure to sunlight and lack of exercise**. Physical activity and physical education at schools play a major role in reducing cancer risks. Appropriate foods in combination with abundance of exercise are basic factors in cancer prevention. **It is important to understand that cancer can be prevented.**

The fundamental question in children health education that we may ask ourselves is: "**Why should we teach children at school about cancer?**" The reasons for including cancer prevention in school curriculum as mentioned above are very many. In spite of that there are still many parents and teachers who are afraid of the topic, considering it premature to discuss it with the very young children from primary schools. Teachers are overloaded fulfilling school curriculum's objectives. There are a number of programmes on the prevention of unhealthy lifestyles, and teachers can choose among them. In its outputs and key competences, the school educational programme includes competencies, attitudes and skills focused on health promotion, disease prevention, etc. Children receive general information on enhancing and maintaining health in the standard school curriculum. Why should we then discuss cancer issues in a special programme with the very young school children? There are quite a few reasons. It is possible to refer to research conducted abroad (Schonfeld et al. 2001, Chin et al. 1998, Oakley et al. 1995). Several reasons are listed in Schonfeld's programme (2001):

1) The majority of children does not understand correctly what cancer is. We come across misconceptions (fallacies) that cancer can be contracted through physical contact from someone with cancer. Few children know that specific types of behaviour, such as eating wrong foods or excessive sun exposure, may cause the disease. The three top risk factors are smoking, wrong foods and excessive sun exposure, especially for young schoolchildren. Cancer can be treated and it can also be prevented.

2) Cancer directly concerns schoolchildren's lives. Cancer affects both adults and children. Many children have met with cancer in their families. A better understanding of cancer at their age is associated with less fear of the disease and better acceptance of and interaction with cancer patients.

3) Behaviour that leads to cancer may be avoided by prevention, specifically by healthy diets, non-smoking, reducing excessive exposure to sunlight, abundant exercise, etc. It is a well-known fact that cigarette smoking and unhealthy eating habits enhance the development of about 70 per cent of all oncology diseases.
4) Patterns of behaviour that support healthy lifestyles develop during childhood and adolescence. Most smokers begin experimenting with tobacco at 10 to 14 years of age, 80 per cent of individual cumulative time of exposure to sunlight is spent in childhood and early adolescence, dietary habits of adults are influenced by childhood habits.
5) It is easier to establish healthy habits in childhood than to try change behaviour patters later in life: to change dietary habits, to quit smoking, etc.

These are the main reasons why the National Cancer Institute and the American Cancer Society acknowledged the strategic role of schools in cancer prevention and education.

Drawing on these surveys, the **WHO has recommended to its member countries to introduce cancer prevention education to schools**. In 12001, the Czech Society for Oncology launched its "National Oncology Programme" for the Czech Republic, in which it focused on prevention at schools (available at http://www.linkos.cz).>. In the programme, it also mentions the strategic importance of cancer prevention education at schools.

Primary preventive oncology programmes for children

Experts in many industrialized countries such as the UK, USA, Netherlands, Spain, Italy, Portugal, Norway, Sweden and Australia have come to understand that primary cancer prevention for children at schools is necessary and irreplaceable. They drew upon many surveys in their countries and in the world. It was established that a good primarily preventive educational programme must respond to practice requirements and existing situation findings. Before it is broadly applied and regularly used, such a programme must be evaluated in a pilot study. It is necessary to test a programme's effectiveness before it is promulgated because we very often come across a discrepancy, an abyss, between research and implementation in practice. In this chapter, we are going to take a closer look at several cancer prevention programmes and research projects in different parts of the world.

In Europe (Rabier 1989), a survey of teachers from 12 EU member states (Belgium, Denmark, France, Germany, Greece, UK, Ireland, Italy, Luxembourg, Netherlands, Portugal and Spain) was conducted in which respondents expressed their opinions on cancer prevention education at schools. A total of 2,750 teachers were contacted, with about a third of them from primary schools and two thirds from secondary schools. Each of them was interviewed on topics including cancer, drugs, AIDS, methods of prevention, organisation of health education in schools. Who is responsible for health education at their school, the role of the teacher *vs.* physician and parent, smoking prevention for teachers and children. It was established that **cancer prevention was not sufficiently represented in schools, and that teachers would welcome more extensive cooperation with physicians and parents**.

In the USA (Chamberline 1999), an approach was developed to help children suffering from cancer cope with tumour chemotherapy side effects. Five psychologists with personal experience with the disease because they themselves had to have cancer treatment, joined the efforts to help other people cope with this very serious life situation. They wanted to prepare children with leukaemia and their parents for chemotherapy. They wrote a comic book called **Kemo Shark**. The shark swims around in the body and eats the bad cancer cells, but sometimes it eats the good ones by mistake, which creates the unintended "side effects". Kemo Shark is a metaphorical description of what is taking place in my body during chemotherapy. The shark eats the diseased cells but it also eats the healthy ones, which make the treatment problematic. A comic book **Kemo Shark** and informational video **My Mom Has Breast Cancer** were developed to help children prepare for changes in the family function during the mother's disease and communication in the hospital. Available at http:// www.kidscope.org.

In his study, David Schonfeld (1999) from Yale University confirms that it is possible to discuss AIDS and cancer with children without causing them any harm. Children know very little about these diseases. Events that frighten adults did not have the same effect on children. Children were not afraid to discuss these health threats and the discussions did not have any negative impact on them. **Done properly, health education does not traumatize or scare children. It gives them a realistic and rational insight into the situation.** There is a feedback from the children to their parents, and the parents learn from their children. Cancer prevention education must start in early school age, because the basis of most risk behaviours impacting health later in life is formed at that age. Based on his study, he calls for a more effective health education to be included in the US school curricula. He is critical of school approach to health education. Teachers spend very little time on it but the expectations are extreme. He sees this field as a critical part of primary education. Researchers have only made the first steps along the road to develop a theory explaining how children understand key health-related concepts.

Jones, Saraiya, USA, (2006) deal with cancer prevention, more specifically with protection **against sunlight** that should become part and parcel of every school's curriculum, particularly in summer months. It is particularly important to avoid excessive sunbathing in childhood **because sun exposure accumulation and sunburns in childhood are associated with skin cancer development at adulthood**. Sun's rays may damage human cells and cause a healthy cell to become a cancer cell. UV irradiation of the cell genome triggers gene mutation and uncontrolled proliferation of cancer cells. A questionnaire survey showed that sun protection is more frequently observed by women than by men and by the young than the old. They are more frequent users of **creams, glasses, head covers, hats, caps, clothing, sunscreens with SPF of 15 or higher, protect themselves against the noon sun, seek the shade**. It is recommended to include sun radiation prevention into other prevention programmes. Children are at school during the sun's peak intensity period, i.e. between 10 am and 2 pm, and therefore teachers have to look after their protection. ***Guidelines for school programs to prevent skin cancer,*** **CDC 2002, published prevention guidelines to help school.**

Working with a group of 9-10 year-old children in the UK, Oakley, Bendelow, et al. (1995) investigated how **children understood the concepts of health, disease**

and cancer. The used a qualitative methodology with the "draw and write" and group discussion techniques. Under the "Healthy Things" heading, children most frequently listed healthy foods (fruit, vegetables, fish, cheese, eggs, cereals, milk, mineral water, vitamins). They also mentioned exercise and sports, hygiene, smoking abstention and abundant sleep. Listed under the "Unhealthy" category were smoking, unhealthy foods (fatty foods, meat, sweet foods, drinks, chocolate, salty foods, chips), polluted environment, violence, hygiene, etc. The authors also wanted to find out **what children knew about cancer**. Almost half of them knew that it is a fatal disease, and 40 % said that it is caused by smoking, 30 % said that people will loose their hair (there was a child with leukaemia in the class). In drawings, four main themes were identifiable: smoking as the cause of the disease, individual parts of body affected with cancer, cancer as a group of cells and cancer as an unpleasant face or a monster. Almost half of the children said that they knew somebody who has or had cancer. Personal contact significantly increased the volume of information in children. The types of cancer children were most familiar with included cancer of the lung, skin, blood (leukaemia), brain, head and breast. They mentioned also other internal and external organs. In their perception, cancer prevention consisted mainly in non-smoking, maintaining generally good health, eating healthy foods, avoiding excessive exposure to the sun, limiting alcohol and drug abuse, protecting oneself against passive smoking, etc. Children had adequate knowledge, the prevention they mentioned most frequently was healthy foods and non-smoking, which are generally well-known negative factors. Their main sources of information were the TV and the media.

In their study, David Schonfeld and his co-workers (1999) set out to find what children knew about cancer and they confirmed insufficient cancer prevention education at school. They developed a curriculum that meets these needs and evaluated a programme to find out whether the programme works. This **cancer prevention program and instructional curriculum for elementary school children** was developed in the Cancer Center of Yale University, New Haven, USA (1999) and has been tested in a pilot study. They called it "STAYING HEALTHY: WHAT I CAN DO. First steps to prevent cancer." It has been designed for grades K-6 (from kindergarten to elementary school).

According to D. Schonfeld, most risk behaviours in adulthood, such as smoking, unhealthy dietary habits, lack of exercise and unscreened sun exposure, are formed and fixed in childhood and early adolescence. For that reason, effective tumour prevention must start already at that age. Rather than trying to frighten children with possible risks, the programme aims at fostering positive skills in children that will help them maintain health in the future. **Children are not threatened with cancer yet but it is necessary to start now to learn to maintain good health for the future**. In his study, the author interviewed 1,500 children. He asked open questions on the causes, transmission, treatment, prevention, symptoms and treatment of cancer. Twenty-four per cent of children knew that cancer is caused by smoking, 22 % that it is contagious. Other causes were improper foods, pollution of water and of air, excessive sun exposure, alcohol and old age. Half of the children were afraid of developing cancer. The programme was tested in a school and it was found that children were taught very little about the topic. Children's knowledge on cancer was investigated. Based on this research, the author and his team of paediatricians designed a 7-unit cancer prevention curriculum for elementary school children.

D. Schonfeld's curriculum "**STAYING HEALTHY: WHAT I CAN DO**", **First Steps to Prevent Cancer**, consists of 7 interconnected units, each focusing on a specific theme suitable for and understandable to children of that age.

Unit 1: Differences among illnesses
Unit 2: What is cancer
Unit 3: What is risk behaviour
Unit 4: Cancer prevention: Avoid tobacco
Unit 5: Eat healthier foods
Unit 6: Protect yourself from the sun
Unit 7: Helping people stay healthy, summary

Class teachers are to present the entire programme by techniques appropriate to the age of the children (brainstorming, role playing, drawings) that will make it attractive for them. It was associated with positive feelings, activity in classes, it was led by understanding of the seemingly difficult and non-topical theme. Parental cooperation is an important aspect that significantly contributes to the programme's effectiveness. At home, children often eat unhealthy foods, are exposed to passive smoking and are unprotected by their parents from excessive exposure to the sun. Evaluation established that children generally understood the causes of the disease and its prevention, broadened their knowledge and accepted that cancer was not spread by physical contact. The programme was recommended to schools to be used in regular classes.

M.D.Anderson Cancer Center, Houston, USA, developed a computer programme for high-school students to enhance knowledge and awareness of cancer, nutrition, exercise, sun protection and tobacco. The interactive programme called "**Good Living Mall**" is an attractive and entertaining form of gaining knowledge for the students. A total of 957 students participated in the programme. Seventy-three percent of the students showed an increase in knowledge. The programme proved to be an excellent teaching tool for cancer prevention instruction and was well-received by both students, school staff and parents. Available at http:// www.mdanderson.org/goodlivingmall.

"Be smokeFree" (Josendal 1998) – intervention programme for schools in Norway. It was designed by the Norwegian Cancer Society in cooperation with Bergen University for middle school students. The programme evaluation was conducted on a national sample of 99 schools with a total of 4,441 children. A change in smoking behaviour and the programme's effectiveness were confirmed. Schools were recommended to carefully plan intervention to reduce smoking among adolescents.

Primary prevention of malign melanoma in Stockholm, Sweden (Boldeman 1993). The aim of the Stockholm Cancer Prevention Program is to increase the awareness of excessive sun exposure risks because malign melanoma is the most rapidly increasing tumour in Sweden. The education programme focuses on changing behaviour with respect to exposure to UV rays.

"SunWise school program" Boston, USA (2003). Boston University evaluated a health education programme for elementary and middle school children designed to raise their sun awareness. Excessive UV exposure in childhood greatly increases the risk of skin cancer incidence in adulthood. For that reason, the SunWise programme has been included to the existing school curricula. It significantly increased the intention of children to play in shade and use sunglasses.

Preventive skin cancer programme called "**Sunshine at school"** was introduced in five cities in the **Orleans region (France)** (Esteve 2000). Children received instruction about risks associated with excessive sun exposure and protection against it by nurses and dermatologists during informal discussion meetings. Evaluation confirmed broadening of knowledge and the children's intention to protect themselves against the sun. Available at WWW <http://www.Eric.esteve@chr.-orleans.fr >.

Lutte contre le Cancer (League Against Cancer) in **Montpellier (France)** provides cancer prevention education for schools in its **training centre Epidaure**. It has a long history and tradition with this education established by Professor of oncology Henri Pujol, the first to do so in France. At present, it is headed by Professor Helene Sancho-Garnier, MD. During my visited to the Centre in 2004 I had an opportunity to observe experts giving instruction on proper nutrition in cancer prevention. Teachers used activation methods involving group activities with the children based on original interactive educational tools right there in the Epidaure Centre. The children used a computer programme, models of foods, watched a story on the video, competed in groups. I was very captivated by computer programmes where children were able to follow and actively work on tasks related to the history of tobacco and smoking, the cultivation and use of cocoa beans and chocolate manufacture, history of alcohol and other lifestyle risk factors. Always, however, interactively. In 1989, they developed an **anti-smoking programme for children aged 9-12 years called "Pataclope"**. The programme addresses children through cartoons and offers a children's magazine of the same name, takes advantage of children's interest in sports and organizes sporting events, sets up miniclubs for non-smoking children, gives printed t-shirts to competition winners, supports football tournaments, participants in endurance runs, etc. **The Epidaure Centre also trains teachers in cancer prevention.** Available at <http//*www. epidaure@valdorel.fnclcc.fr>*.

The **"Sun and the Skin"** programme in Ontario (Canada) (Barankin et al. 2001) was designed to consist of two arms. One was aimed at parents and provided them with information on how to protect their children, the other at children in the school setting. There was an improvement in children's attitudes to sun-tanning and to wearing of sun-protective clothing. Co-operation with parents helped reinforce behaviour aimed at reducing skin cancer risks.

The "**Sun Safe**" programme from Nottingham (UK) capitalizes on the attractiveness of a computer-based programme and workbooks for children to offer a broadening of knowledge about UV rays protection for 10-11 year olds. It focuses on attitudes and behaviour. The evaluation showed significant positive changes in knowledge, attitudes and behavioural intentions. It was introduced to schools before the summer holidays to increase its effectiveness and so that children could most usefully put their new knowledge into effect during the holidays.

The Carey study (Great Britain, 1995) evaluated the **level of cancer education** in primary school teachers. **Results identified a lack of materials on the topic that teachers have at their disposal. It is necessary to increase teachers' awareness and to develop cancer prevention materials for them.**

The programme "**Sole Si Sole No GISED**" (2003) was launched in Italy to increase protection of primary school children against excessive sun exposure. The

effect of the intervention, particularly the attitudes and behavioural changes, were monitored. This is one of a very few programmes that were monitored in a controlled study. The programme's effectiveness was confirmed. Many skin cancer risk behaviours emerge in early childhood. It proved positive to introduce programmes of sun-protective practices before the summer holidays and to conduct a post-test after the holidays.

In Slovakia, a cancer prevention course was included into the curriculum in 1999. It was included among elective courses for secondary school students based on the authorization of the Ministry of Education of the Slovak Republic No. 130/99-4 of 28 Jan. 1999. The course is a project of the Slovak League against Cancer where it is taught by foremost Slovak experts in oncology. Selected teachers attended three one-day seminars. The teachers were given teaching texts, textbooks for students, promotional material, video cassettes and sets of booklets on the topic.

The **BRAVO** project (Barba 2001, Italy) is a survey of obesity prevalence among children. **Childhood obesity is a strong predictor of obesity in adulthood.** For that reason, it is important to start with obesity prevention in childhood. The aim of the study was to investigate dietary habits and anthropometric factors in a sample of 6-12 year old children from southern Italy. The results confirmed the trend of increasing childhood obesity prevalence that was also found in western European countries.

A smoking prevention programme was used in Spain (Barrueco et al. 1998). The programme was evaluated after three years. The first encounter of children with tobacco was found to occur at the age of 11. The reasons why children smoke are usually associated with curiosity, adventure, and peer pressure. They knew that smoking caused lung cancer and cardiovascular diseases. Fourteen per cent of 12-14-year old students were regular smokers.

University of Houston in Texas (Smith et al. 1998) conducted a survey with the aim of finding out how community agencies helped schools with cancer prevention education. It focused on the degree of implementation into the school curriculum. Smoking prevention and proper nutrition received most extensive coverage by school activities, protection against the sun was less extensively covered. School personnel had little training and the school had little community support. The author estimates that effective education programme might decrease the number of new smokers by up to 37 %, and reduce the use of alcohol and drugs. Prevention in schools may be of significant influence. He recommends that cooperation be developed between partner schools, the community and health personnel. There should be more cooperation between schools and the American Cancer Society. Teachers would like to get more of latest specialist information, specialist training, lessons, materials, literature of cancer prevention.

The **Expanded Food and Nutrition Education Program** (EFNEP) targeting dietary habits has been developed at the university in Minnesota (USA). It was recommended to eat less fat and cholesterol. The study confirmed **changes in participants' behaviour towards a greater focus on healthier diets and a greater interest in preventing cardiovascular and cancer diseases** (Hartman et al. 1997).

Cancer prevention programme "it's normal not to smoke" for children in the czech republic

The programme "It's Normal not to Smoke" is a comprehensive primary prevention programme of support to and education towards non-smoking behaviour for young school children (aged 7-11 years). It draws on international research, experience and programmes already in existence and listed above, mainly from the USA (Shoenfeld et al. 1999) and France (Pataclope Programme, 1989). The programme was designed with a systematic approach to cancer and anti-drug prevention in mind, and with a follow-up in each subsequent grade of the primary school. The programme "It's Normal not to Smoke" covers the entire primary school age period. It is divided into two sub-programmes, one for grades 1, 2 and 3 which is a follow-up of programmes for kindergartens, and the other for grades 4 and 5, which is connected with the programme "Smoking and I" intended for the second-level grades of primary schools. The programme was developed by the Medical Faculty of Masaryk University Brno on the initiative of the League against Cancer Praha.

Acting as a guide through the entire programme is a plush doll Věrka Squirrel , the symbol of a healthy lifestyle, and her opposite is Retka Cigarette symbolizing an unhealthy lifestyle. Motivational stories tell the children in an entertaining manner about healthy lifestyles, healthy foods, the risks they may encounter, harmfulness of smoking and effective prevention that will help them maintain good health also in adulthood. The programme's main objective is a **child that has made a conscious decision to be a non-smoker**. It is a long-term objective and for that reason other short-term goals also need to be set. The programme's content is **focused comprehensively on influencing children's attitudes, behaviour and knowledge on a healthy lifestyle**. It emphasizes the main risk factors that may have up to 60 % influence on cancer development and which are completely preventable. They are the following two basic factors: a) smoking 30 %, b) healthy diets 30-35 %.

The aim is a better understanding of issues relating to healthy lifestyles, principles of healthy nutrition and cancer prevention in a fairy-tale-like story featuring the Heart, Lung, Tooth and Retka Cigarette. In five units, children learn about smoking, good dietary habits, the need for sufficient physical activity, appropriate daily routines and mental hygiene through a fairy tale-like story of a squirrel and several other forest animals. The programme is extended to include information on the history of smoking in the world, understanding one's own body and its functions, formation of an adequate self-concept, self-knowledge, fire prevention, nature protection, relationship between man and nature, more information on healthy diet principles, daily routines and mental and personal hygiene.

The programme includes a section that focuses on children with worksheets, motivational stories and tasks. The teachers' section focuses on methods to be used in individual five units. **The methodology is open to other broadening ideas, and it allows for creative additions according to local conditions of the schools and teachers' creative inventiveness to tailor the programme to the needs of their classes, thus enriching the programme with their experience and making it their own.** It

also includes posters for parents because emphasis is placed on cooperation and positive relationships with parents, because the programme would be less effective without their assistance.

The programme's positive dimension is the evaluation of the programme's effectiveness, which is conducted in each successive grade. The programme and its evaluation are designed as a longitudinal investigation. The same children cohort is monitored over the entire programme implementation period, i.e. for five years between primary school Grades 1 and 5.

This programme's aspiration is to make a contribution to the formation of values, attitudes and behaviours prioritizing a healthy lifestyle. If a healthy lifestyle is successfully fixed in childhood, there is a greater probability that it will be automatically observed in adulthood. That is the main intent of long-term influence of comprehensive health education in school educational programmes and in the school official as well as hidden curriculum generally. It is important that no-smoking education be conducted systematically from kindergartens through primary to secondary schools and universities.

Cancer prevention in the programme is accomplished primarily through:
1) smoking prevention
2) principles of good nutrition and dietary habits
3) emphasis on enough physical exercise
4) protection against solar radiation
5) mental hygiene.

The programme was launched in 2005, and the first stage was completed in 2008 when the programme for grades 1, 2 and 3 was developed and tested, and received accreditation. The programme "It's normal not to smoke" is also presented at web pages www.normalnijenekourit.cz, where the programme content is outlined together with materials for download, pages for teachers, parents and children, and practical experience.

Children's concepts of cancer and their changes after an intervention

The issue investigated in this survey was children's understanding of the cancer phenomenon and its changes after an intervention using methodology that had been applied and tested abroad, and to do it in the social and cultural context of our location in the Czech Republic. The aim was also to test the effectiveness of the primary cancer prevention programme "It's normal not to smoke" for grade 3 of primary schools. We asked ourselves questions like: What do children know about cancer? What does that word bring to their minds? Do they know more about cancer after the intervention, i.e. after the implementation of the programme? Did they show a shift towards more healthy behaviours? Is the programme effective?

Methods and research sample

Our research sample was neither a representative nor a random one. The selection of our sample was purpose-oriented. The sample is composed of third graders from public primary schools from Brno and its immediate environs that agreed to participate in the research and to implement the prevention programme. Two of the 10 participating schools also participated in the "Healthy School" programme. Their results were not evaluated separately.

Children from grade 3 of primary schools were selected on purpose because they seemed suitable for their relative independence compared with younger children from grades 1 and 2, but also because of their lower level of cognitive development compared with children from higher grades. The choice was also made in view of their curriculum content emphasis. The science trivia material on man in grades 1 and 2 is socially oriented, in grade 3 it already has a more biological focus, on the structure and function of internal organs. It should also be added that children from the experimental group had for three years participated in a long-term primary programme "It's Normal not to Smoke" intended to promote healthy lifestyle and a no-smoking behaviour. No such intervention had been made in the control group, the group was not affected by the programme. The research sample consisted of 311 children in the pre-test and 373 in the post-test. The research sample consisted of an experimental and a control group to allow for a comparison of results and for programme evaluation. Both **the control and the experimental group** consisted of respondents of the same age, had approximately the same boys-to-girls ratio coming from the same environment and their sizes were about the same, i.e. **they were homogenous**.

We drew from experience of foreign authors and their research into children's beliefs and knowledge of cancer. Oakley, Bendelow, et al. (1995) conducted a study in the UK using the "Draw-and-Write" technique to investigate subjective perceptions of the term cancer in a group of 9-10 year-old children. Pridmore, Bendelow et al. (1995) conducted a similar study with 100 children aged 9-10 in Botswana. The study of David Schonfeld et al. (2001), who developed and tested cancer education curriculum for children K-6 (kindergarten through grade 6) in the USA, helped understand the causes of some diseases and their subsequent comparison, specifically of common cold, AIDS and cancer. In their 1998 study, Chin, Schonfeld et al. (USA) investigated developmental causal reasoning for cancer and its prevention.

To evaluated the entire programme, we used a mixed design of quantitative and qualitative methods. For evaluation, the "draw-and write" technique, a semi-structured interview and a questionnaire design by us were used. The intervention was made in the experimental group only. The evaluation took the form of a pedagogic experiment. A pre-test was conducted before the intervention and a post-test followed four months after the intervention was completed in both the experimental and the control group. In this way, the medium-term effectiveness of the programme was tested. A comparison between the experimental and the control groups' results was made both for the pre-test and the post-test, and the statistical significance of their differences was then evaluated in the EPI Info 6.09 programme by the *chi-square* test and its modification according to *Yates* and *Fischer*. After the pre-test in January 2007, the programme was implemented

in four weeks. Four months later in June 2007, the study was concluded with a post-test, verification of medium-term effectiveness and programme evaluation. The same procedure was applied in all schools and it was strictly observed.

Results

To analyse, classify and categorize qualitative data, we used open coding and a system of categories that were defined based on the answers obtained. Based on the coding, the respondents' answers were gradually classified, organized and combined. Codes were thus set up that correspond to the aim of a thematic allocation of individual answers.

The data obtained were coded, categorized and evaluated in four thematic areas:
   A) Drawing
   B) Understanding the concept of cancer
   C) Causes of cancer
   D) Cancer prevention

A) Analysis of children's drawings

In the first area, we analyzed drawings and written comments of children that had been told to "**Draw and write what you think cancer is, and how it can be prevented**". Answers of any one child may have been included into more than one category. The drawings were coded and divided into nine categories.

The most numerous were drawings from the "**smoking**" category, which included drawings of, e.g., a smoker, cigarette, pipe, a man throwing a cigarette away. Children's perception of the concept of cancer was expressed in this manner by more than half of the respondents (65 %). Also numerous were drawings from the "**affected body organs**" category (up to 56 %). The most frequently depicted organs were the lungs, heart, brain, stomach, liver, skin, breasts, etc. Drawings by about a quarter of the children depicted a sick person lying in bed, physicians, a hospital, an ambulance. These were assigned to the "**sick person**" category. About 5-7 % drawings were assigned to the "**death**" category where a tomb, coffin or skeleton were used as symbols of dangers to life. This category was more frequent among boys than girls. The category "**tumour**" (lumps, spots, papulae, ulcers) was depicted in about 8 % of drawings, and approximately the same number of drawings was assigned to the "**micro-organisms**" category (viruses, bacteria, bacilli). Also represented, although only infrequently (in about 3% of cases) were drawings of a forest, polluted places with industrial zones, chimneys, drains, automobile exhaust fumes, air polluted with cigarette smoke (passive smoking). These drawing were assigend to the "**environmental factors**" category. The "**abstract monsters**" category fitted to drawings of about 4-8 % of respondents. Drawings depicted healthy foods (fruit and vegetables), alcohol, drugs, sports, persons without hair, injection syringes, etc., about 10 % of the drawings, were included in the "**other**" category.

It follows from the results that children from the experimental group depicted various organs affected by cancer more frequently (heart, liver, brain, breast, blood, kidneys, etc) than children from the control group. A significant difference in favour of

children from the intervention group in the "**affected body organs**" was found in both pre-test and post-test ($p<0.01$ and $p<0.0001$, respectively) The control group, on the other hand, remained unchanged. This proves a better awareness and understanding of the disease in the experimental group children following intervention (Fig. 1).

Categories "**smoking**" and "**sick person**" were significantly more frequent ($p<0.05$) in the post-test of children from the control group. A significant difference ($p<0.05$) in favour the intervention group was demonstrated in the post-test for the "**tumour**" category compared with the control group. In other categories, i.e. "micro-organisms", abstract monsters", "environmental factors", "death" and "other", no major differences between the intervention and control groups were found (Tab. 15a).

Table 15b shows significant differences in the experimental group in the categories of drawings of affected organs ($p<0.001$), "micro-organisms" ($p<0.05$) and "other" ($p<0.05$) in post-tests, i.e. after the intervention. In the post-test, children from the control group depicted a smoking person significantly more frequently ($p<0.05$) than in the pre-test. In the intervention group, drawing assigned to the "tumour" category were also more frequent (up to 13 %), but the difference was not significant.
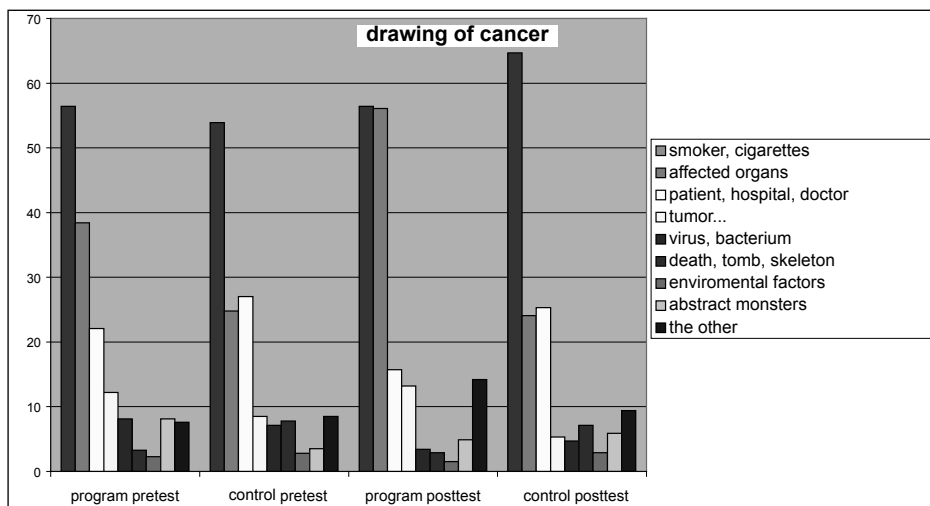
Fig. 1: Drawings of cancer

Lay concepts of cancer among the experimental group children were manifested more by images of affected body organs, and in images of smokers or cigarettes in the control group, i.e. images more congent and appropriate for the topic were presented by the experimental group children. Children's concepts are specific, unique, autonomous, lay and subjective, and variability in the drawings of cancer very broad, as demonstrated by the results.

B) Understanding the concept of cancer

By analyzing the drawings and the interviews, we created a categorial system where we assigned children's answers to questions "What is cancer? Can you explain it?".

One and the same answer may have been assigned into several different categories, and the sum of all answers therefore exceeds 100 %. The answers were coded and placed into eight categories. Our results showed that children most frequently perceive cancer as an incurable and fatal disease. Cancer is incurable, a fatal disease, causes death were among the answers that we placed to the "**fatal disease**" category. Over half of the children (up to 62 %) gave that answer. Almost a third of the children from the control group and up to half of the experimental group gave answers that were placed to the "**lung disease**" category. The next category was that of a "**serious disease**" for answers like a dreaded disease, difficult to treat, dangerous disease. About 40 % of the children gave those answers. The "**infectious disease**" category included the children's concepts that cancer is communicable, infectious disease, and children's recommendations to avoid contact with cancer patients. This might be called a misconception although we know that some types of cancer are communicable and are of viral origin. Only 4 % of children made that statement. Some children said that their grandpa or grandma had died of cancer, and so they associate cancer with **elderly people's ailments** (only 1% of answers). From time to time, we came across an answer that cancer is a **tumour**, but without any connections or understanding of that concept (1-4 % of children). Many children, more girls than boys, were unable say anything about the concept of cancer and stated they knew nothing about cancer. This was characteristic for the "**I do not know**" category (about 5-10 % of children). The category "**other**" (4-8 % of answers) included answers e.g. something that is harmful for people, inflammation of the intestines, painfulness and coughing.

Table 16a gives statistical differences in the pre-test and the post-test between the experimental and the control groups. It clearly shows the significantly higher frequency of answers that cancer is a lung disease among the children from the intervention group in both pre-test ($p<0.01$) and post-test ($p<0.0001$) compared with the control group.

It follows from Table 16b that more than half of all children of the entire group were aware that cancer is a fatal disease, a threat to life. This was mentioned by significantly more children from the intervention group ($p<0.01$) as well as the control group ($p<0.05$) in the pos-test compared with the pre-test. The relative frequency of occurrence (62 %) in post-tests was the same in both groups. Following the intervention, the experimental group children described cancer as a lung disease significantly more frequently ($p<0.0001$). The number of answers in the "I do not know" category decreased in post-tests in both groups, the difference was not, however, significant. There were no differences between the groups in other categories. These results demonstrate a positive effect of the intervention and an increased amount of information among the experimental group children (Fig. 2).
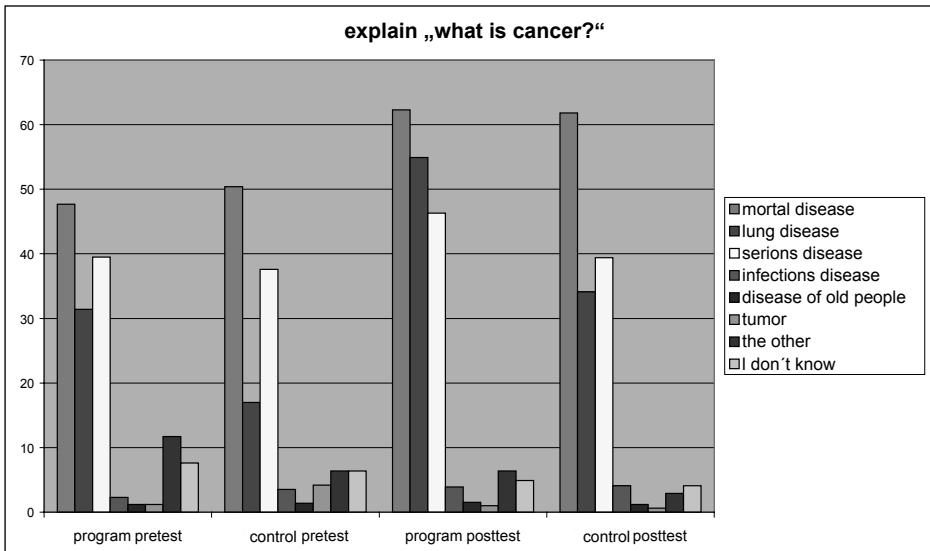
Fig. 2: Understanding the concept of cancer (%)

An exceptional answer was that cancer is a tumour, which is a cluster of cells that multiply. It is remarkable that so small children are able to come up with such an answer.

C) Causes of cancer

We analyzed and coded answers to the question of what causes cancer. The answers were assigned to 7 categories. The only significant difference between the groups in the pre-test was in the category "alcohol" ($p < 0.05$). This factor was mentioned more frequently by children from the control group. In the post-test, significantly more children from the intervention group said that causes of cancer were in unhealthy foods ($p < 0.01$) and in environmental factors ($p < 0.001$)

The absolute majority (up to 90 %) of children gave **cigarette smoking** as the cause of the disease, their numbers being greater in the post-test (by up to 10 %) in both groups. **Smoking was unquestionably the most frequent cause of cancer given by the children.** Another relatively frequent category was "**unhealthy foods**", where we included mainly lack of fruit and vegetables, fatty foods, smoked meat products, sweets, etc. Approximately one in every ten children identified unhealthy foods as the cause of cancer. Excessive consumption of **alcohol** was considered a greater risk by up to a quarter of the children in the pre-test. The children also referred to **drugs** as a cause of disease, but very sporadically: drugs were mentioned by only 5 % of the children. The reason may be that they consider drugs as a general risk factor for the development of a disease. To the category "**environmental factors**" we assigned car exhaust fumes, waste, air pollution, industrial pollutants, cigarette smoke, excessive exposure to the sun, passive smoking, etc. This category had the greatest difference in the number of answers between the pre-test and the post-test of up to 30 % in favour of the experimental group.

Very many (up to 20 %) respondents were unable to give any answer, and they were placed into the "**I don't know**" category. The category "**other**" included answers, e.g., use of medicinal drugs, food additives, insufficient clothing, stress and sadness. **Some children mentioned several causes.**

The number of answers in the "**smoking**" category increased significantly in the post-tests in both the experimental group (p<0.0001) and the control group (p<0.001). This was not, however, attributable to the intervention because there was no difference between the groups with respect to the answers' frequency. In the categories "unhealthy foods", "alcohol" and "environmental factors", however, significant differences in the post-test after the intervention were statistically demonstrated. This significant increase in the number of answers in the experimental group in the post-test compared with the pre-test was found in categories "**unhealthy foods**" (p<0.001), "**alcohol**" (p<0.001) and "**environmental factors**" (p<0.0001). At the same time, the **number of respondents who did not know the cause of the disease decreased significantly** (p<0.0001) in the group with intervention.

No such differences were found in the control group. There was a significant increase in response frequencies in the categories "**smoking**" (p<0.001) and "**environmental factors**" (p<0.001). At the same time, the post-test showed a significant (p<0.01) decrease in the number of those who did not know the answer, there was a decrease in the number of respondents in the "**I don't know**" category. This proves that the intervention increased the amount of information for the children in the experimental group (Fig. 3).
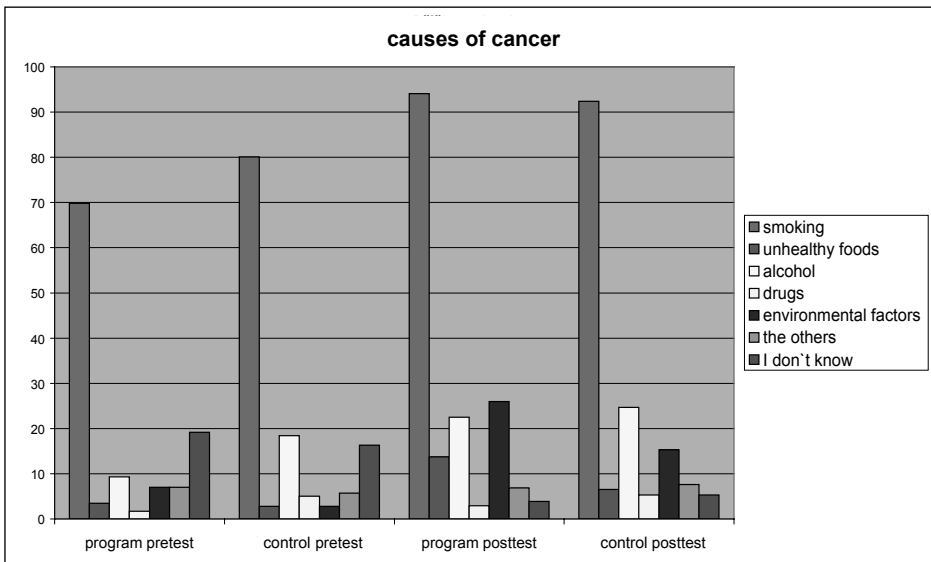
Fig. 3: Causes of cancer (%)

A change in the cognitive dimension of the concept of cancer causes was demonstrated.

D) Cancer prevention

We also investigated children's beliefs about, and interpretations of, the concept of cancer prevention. Only few (less than 10 %) of children described cancer as a disease that cannot be prevented. A majority of them said that cancer is preventable, and 10 % of them were unable to give any answer and were included in the "I don't know" category. Over 96.1 % of respondents from the experimental group said that cancer can be prevented, which significantly differentiated ($p<0.0$) them from the control group's post-test results (87.6 %). Unambiguously negative answers were given by less than 10 % of children, most of them in the control group's pre-test. Only 1 % of intervention group children said in the post-test that cancer cannot be prevented. In this respect, there was a significant ($p<0.01$) difference between the experimental group (1 %) and the control group (7.1 %).

The frequency of the "I don't know" answer in the post-test decreased significantly in both the intervention group ($p<0.01$) and the control group ($p<0.05$). The experimental group differed significantly in the post-test increase in the frequency of positive answers ($p<0.01$) and a parallel decrease in negative answers ($p<0.05$). A significant increase ($p<0.05$) in positive answers was also recorded in the control, i.e. no intervention, group (Tab. 18b). **This was a statistical proof of an increase in the volume of information in the experimental group.**

Children from both groups saw cancer prevention mainly in abstention from smoking, almost 80% of them mentioned "**non-smoking**". Another frequently mentioned factor of cancer prevention was **healthy foods**, both in the intervention group (almost 38 %) and the control group (almost 20 %). Approximately the same numbers of answers referred to categories **limiting excessive consumption of alcohol (almost 17 %)** and **medical aid (10-16 %)**, and included children's answers like regular visits to the doctor, medical treatment, surgery, vaccination, etc. In the experimental group, **abundance of physical activity (**almost 8 %**)** was mentioned more frequently, while children from the control group focused more on **drug abuse (**almost 5 %**)**. **Environmental factors**, such as excessive exposure to sun radiation, suntanning, avoiding cigarette smoke, exhaust fumes, etc., were referred to in 8-23 % of answers, more frequently in the experimental group. A separate category was established for the **observation of hygienic rules** (2-6 %). We used this category for answers referring to the avoidance of contacts with the patient, hand washing, etc., because children also mentioned it. The use of vitamins, reduction and management of stress, recommendation to lead a healthy life, take care of oneself, dress warmly, frolic, have fun, be careful, do everything the way it should be done, etc. were included to the category "**other**" (8-12 %).

In the pre-test, i.e. before the intervention, the experimental and the control groups differed significantly only in the category "healthy foods" ($p<0.001$) in favour of the former. After the intervention, a significant increase was demonstrated in the number of answers in the experimental group in categories "**healthy foods**" ($p<0.001$), "**physical activity**" ($p<0.05$) and "**environmental factors**" ($p<0.01$) compared with the controls.

An increase in the number of answers in the experimental group was recorded in categories "no smoking" ($p<0.001$), "environmental factors" ($p<0.001$), "healthy foods**"** ($p<0.01$) and "reducing alcohol consumption" ($p<0.01$). In the post-test, control group children mentioned "no smoking" and "healthy foods" categories significantly

more frequently (p<0.01 and p<0.05, respectively). Differences in other categories were not statistically significant. It means that there was an increase in the number of children following the intervention who thought that cancer can be prevented by non-smoking, eating healthy foods, limiting alcohol intake and reducing harmful environmental influences. The greatest intervention effect was in the more frequent reference to healthy foods by the experimental group children. These results confirm the intervention effectiveness.
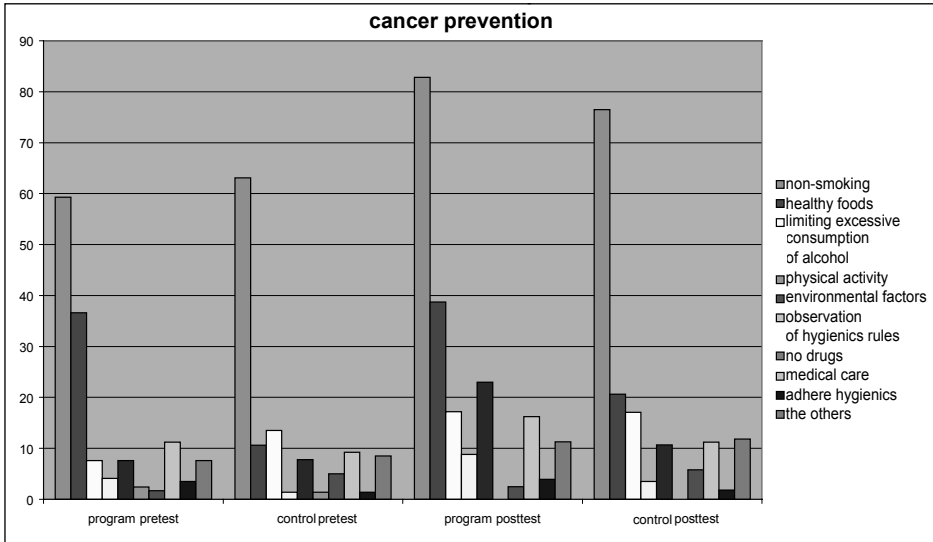
Fig. 4: Cancer prevention (%)

Several children's concepts about cancer:
"Cancer may cause damage to the organism, for that reason there usually is a warning on cigarettes that smoking may kill." (a girl, control group)
- *"Cancer is a disease caused by cigarettes." (a girl, control group)*
- *"Cancer can be transmitted from one man to other people." (a girl, control group)*
- *"The person with cancer has difficulty breathing, coughs, his heart beats slowly." (a boy, experimental group)*
- *"If somebody is a smoker, he will develop a tumour. Cancer is a disease that produces a tumour in a person's body, it is caused by smoking, the person should get some treatment." (a girl, experimental group)*
- *"Cancer is a disease that may appear if a person smokes too much. We can prevent it by refraining from smoking. Cancer causes heart and lung disease." (a girl, experimental group)*

In our **drawings, more than half of all the children from both the experimental and the control groups**, in the pre-test as well as in the post-test, associated cancer with a **drawing of a person smoking** or of **cigarettes** without any major distinction. The children perceived cancer in this way probably because they meet with this asso-

ciation between the terms smoking and cancer in their environments. They notice ads in the media, billboards in public places and warnings on cigarette boxes. A significant decrease in the number of drawings of micro-organisms and the increase in the number of drawings of affected parts of the body following the intervention underscores the intervention's effectiveness.

Understanding the concept of cancer

Control group children perceived cancer as a dreaded disease, they associated it more often with death, threat to life, experimental group children were able to perceive cancer more realistically as an affliction of different parts of the body. Children know various types of cancer. In their answers, they mention cancer of the brain, blood, stomach, kidneys, breast, heart, etc., depending on what they have encountered in life, on their own experience. Some children told us that their grandfather, grandmother or uncle had died of cancer. This is one of the reasons why children associate cancer with the diseases of the old. The risk of cancer does increase with advancing age, as mentioned above. The increase in the number of answers that cancer is a disease of the lungs and of other parts of the body in the experimental group and a parallel decrease in the "I don't know" answers caused a positive change in the level of cognitive dimension of the concept about cancer in the experimental group.

This **demonstrates a greater volume of information among the intervention group children and the intervention's effectiveness**. The experimental group demonstrated a **greater volume of information and a stronger cognitive dimension of the concept of cancer**. The change in cancer concepts can be interpreted as a shift towards a more rational and less emotional (fear, anxiety, grief) concept of the disease in the experimental group children. We believe that the shift was consequential to a greater amount of information about the disease, mediated either by our intervention or a greater interest in the issue and to the adoption of influences from one's environment (information from the media, discussions with the family, peers, etc).

Causes of cancer

Noteworthy and unique were the children's drawings showing their perceptions of **cancer as a battle of bacilli**. In various studies (including the survey of health and disease concepts presented here), children often identified the cause of various diseases as micro-organisms: viruses and bacilli. That perception of the disease is common among children in this period, as documented by some authors (Ellen et al. 1981) and also by our previous study of health and disease perceptions. Preschool children see the reasons for the disease in something magical, around the age of 10 they believe that the cause of diseases are bacteria, microbes. In children under 7, the level of cognitive processes according to Piaget is not at such a degree of development to make it possible for them to understand contagion and infection (Bibace, Walsh 1980). Recent studies have confirmed that these children are able to understand biological causes of diseases in the form of micro-organisms (Williams et al. 2002). Our respondents were 8-9 years old. About 10 per cent of children in our group conceived their drawings of cancer as micro-

organisms fighting the human body. However, it was interesting that children almost never mentioned micro-organisms in their explanations of the causes of the disease. **They saw the cause of cancer in smoking**, unhealthy food, excessive consumption of alcohol, in polluted atmosphere. In some of their drawings, children depicted cancer as a **fight of various viruses, bacteria and other micro-organisms against the body, but they believed that the causes of cancer were smoking, bad foods, drinking alcohol and taking drugs**. From this we might deduce that there are periods when they adopt **two contrary concepts about cancer at the same time**. Similarly conflicting or even contradictory concepts were manifest in the survey of children's concepts of the Earth (Vosniadou, 1992).

This may prove the existence of a double concept of cancer in children from our group. As mentioned earlier, almost 90% of children from our sample identified smoking as a cause of cancer. This is more than reported in foreign studies. For instance Bibace, Walsh, (1980) found that almost half of children knew that it was a fatal disease and 40% said that it was caused by smoking. Chin, Schonfeld et al. (1999), Oakley et al, (1995) also noticed that children aged 8 to 9 years give smoking as the main risk factor of cancer. We believe that the higher incidence in our group is the effect of two years' intervention in the experimental group with the programme "It's normal not to smoke" Unexpectedly higher results in the category **smoking** were also found in the control group. The children may have been influenced by the advertisement on cigarette boxes, or we may speculate about the effect that control tests focusing on smoking had on the control group. Other findings indicate that children apparently consider the heart as the main, the most important, organ in the body, and they associate its proper function with life. For that reason cancer of the heart is also frequently mentioned, and all that in connection with smoking.

According to the children, cancer prevention consisted mainly of non-smoking, maintaining generally good health, healthy foods, limiting excessive alcohol consumption, protecting oneself against passive smoking and polluted air, etc. Children had adequate knowledge, they most frequently suggested healthy foods and non-smoking as cancer prevention, which corresponds with foreign results (Chin, Schonfeld et al. 1998, Oakley et al, 1995). In his study, Schonfeld (1999) claimed that the majority of children does not understand correctly what cancer is. Some children mistakenly believe that cancer can be contracted through physical contact with a patient or by getting very cold, and the same situation existed in our group. Few children know that, e.g., eating wrong foods or excessive sun exposure, may cause the disease. The three top risk factors are smoking, wrong foods together with lack of exercise and excessive sun exposure, especially in young schoolchildren. Cancer can be treated and it can also be prevented, and so said also the majority of the children from our group. Personal contact markedly increased the volume of information the children had.

Children in our sample saw prevention also in the observance of hygienic rules. They draw on their own experience with diseases like flu, tonsillitis, etc. In the pre-test, they also expressed an opinion that preventive measures should also include the limiting of contacts with cancer patients to rule out the risk of contagion. They see the cause of the disease in the physical contact with the disease, with the patient, or in engaging in high-risk behaviour (Bibace, Walsh 1980). In their beliefs about cancer prevention, chil-

dren sometimes confused cancer causes with diseases as aftereffects of getting chilled, e.g. to dress warmly. We may call that a misconception regarding the causes of cancer, just as the use of drugs, which was more often mentioned by the control group children. Another misconception is the belief that cancer can be prevented by limiting contacts with cancer patients. Some children listed very correctly several prevention options, e.g. to refrain from smoking, to eat healthy foods, to engage in sports, to keep one's distance from smokers. It means that there was an increase in the number of children following the intervention who listed non-smoking, eating healthy foods, limiting alcohol intake and reducing harmful environmental influences among cancer prevention measures. The greatest intervention effect was in the more frequent reference to healthy foods by the experimental group children. These results confirm the intervention effectiveness.

Summary

Concepts of cancer

   Children's concepts of cancer as a disease are absolutely unique beliefs, subjective interpretations, as documented in this paper. They are often mixed beliefs about the effects of micro-organisms combined with the effects of smoking, which often affects the lungs and the heart. Children often consider the heart as the principal organ of the body on which life and death depends. They perceive cancer as a dreaded disease, they associated it more often with death, serious threat to health, as well as a disease affecting multiple organs, most frequently the lungs, heart and brain. They view cancer as a serious, difficult-to-treat and often incurable, fatal disease. Some also believe that cancer is contagious, an infectious disease, and recommend to avoid contacts with cancer patients. Smoking was cited by the children as by far the most frequent cause of cancer followed by alcohol, drugs, bad foods and environmental factors. Among prevention options they most frequently mentioned non-smoking, healthy foods, restricting alcohol intake, limiting negative environmental factors, abundance of exercise, but also cutting down on contacts with the patient. Only a minority of the children did not know possible prevention measures or thought that cancer cannot be prevented.

Changes in the post-intervention concept of cancer

   Changes in the post-intervention concept of cancer were demonstrated in *an increase in the number of drawings* depicting affected organs (mainly the lungs and the heart). Children were more likely to list various types of organs affected by cancer. A *change in the level of cognitive dimension* of the concept of cancer also occurred in the children's belief that cancer was a disease *of the lungs and other organs*, and, at the same time there was a decrease in the number of those who did not know the answer. There also was an increase in the number of children who understood the cause of cancer in smoking, unhealthy food and environmental factors. There was an increase in the number of children following the intervention who listed non-smoking, eating healthy foods, limiting alcohol intake and reducing harmful environmental influences as cancer prevention measures. The greatest intervention effect was in the more frequent reference to healthy foods by the experimental group children. These results confirm the intervention effectiveness.

It follows from the above that children from the experimental group gained more information on cancer. **This demonstrates a greater volume of information among the intervention group children and the intervention's effectiveness. A shift in the concept of cancer in this group due to targeted intervention was demonstrated.**

There was a change in the concept of cancer following the intervention, an increase in the level of cognitive dimension of the concept of cancer. The increase is gradual, and it is not possible to unequivocally decide whether it is the result of purposeful instruction, the intervention, or whether also out-of-school influences have a role in it - and to what extent. The strengthening of the cognitive dimension may have been caused by personal experience, out-of-school influences, unintentional learning. The "*attractiveness*" of a topic also seems to play a role in the cognitive dimension formation. Because there was a considerable period of time between the intervention and the post-test (4 months), there is no doubt that **out-of-school influences and other information in the school curriculum newly played a role in the formation of the concept of cancer in the group surveyed**. Our objective, however, was to change that dimension.

We consider it important to state here that the study results are valid only for this group surveyed. It provides a greater insight into the phenomenon studied. The results are only locally valid, they could be further applied to a broader age category of children from 5 to 14, 16 years of age. It would be desirable to extend the study and conduct it as a longitudinal study in which the development of the children's concept of cancer would be monitored over time in connection with their age.

Use in school practice

There is no doubt that cancer prevention should be given systematic, methodologically well thought-out and uniform (rather than only random) attention at schools. The content of instruction should truly be governed by an analysis of information already known to the cohort and identification of that which is unclear, misinterpreted or completely insufficient. An important prerequisite is also the preparation of teachers for instruction, which can be provided for by their on-the-job training of teachers and specialist training of undergraduates in teacher's training colleges. Issues relating to cancer are some of the major health themes that certainly deserve attention of teachers and their students. **And it is the programme "It's Normal not to Smoke" that offers such systematic cancer prevention education at schools.** Results have confirmed the effectiveness of the primary prevention programme It's Normal not to Smoke. We can recommend it for implementation in the school curriculum across the Czech Republic.

PRIMÁRNÍ ONKOLOGICKÁ PREVENCE VE ŠKOLE

Abstrakt: Článek se zabývá možností výchovy a vzdělávání dětí k onkologické prevenci ve škole již na primárním stupni. Nabízí edukační preventivní program vytvořený na MU Brno, který se zaměřuje na podporu zdravého životního stylu zejména na nekouření, zdravou výživu, pohybovou aktivitu, duševní zdraví, omezování slunění

a rozvíjení dovedností potřebných pro život. Výzkumným šetřením ověřuje efektivitu programu na primárním stupni ZŠ. Zjišťuje dětské prekoncepce pojmu rakovina a jejich změny po cílené intervenci.

Klíčová slova: onkologická prevence, školní programy, výchova ke zdraví, dětské pojetí rakoviny

STUDENTS' IDEAS ABOUT RESPIRATION: A COMPARISON OF SLOVENE AND CZECH STUDENTS

Barbara BAJD, Luka PRAPROTNIK, Jiří MATYÁŠEK

Abstract: Many students and even adults have misconceptions about respiration. When referring to respiration they think of how animals and plants get oxygen into their body (lungs, grill, skin or stomata) rather than about aerobic metabolism, which requires oxygen to release the energy stored in food. They also often confuse respiration in plants with photosynthesis. Many investigations show that this topic is very difficult to understand, especially for children in lower secondary school. In our investigation we wanted to obtain information on preconceptions about this topic among students who had just entered the Faculty of Education and who intend to become primary school teachers. We wished to analyze the extent of any possible misconceptions on these subjects, and if there are any differences between the answers of Slovene and Czech students to the same questions. The results demonstrate significant errors and misconceptions among both groups of students and that it is essential to improve science teaching within the Faculty of Education to ensure that future primary school teachers possess a correct understanding of these fundamental topics, and so will teach children correctly about respiration.

Keywords: respiration, photosynthesis, plants, animals, misconceptions

Introduction

Children and adults alike often have misconceptions about respiration, or what breathing is as a biological concept. In everyday life we say that we breathe with our lungs, fish breath with gills and amphibians breathe through their skin. This process is not breathing but inspiration and expiration, exchange of the air. Inhaled air, high in oxygen and low in carbon dioxide, travels through the respiratory tract deep into the terminal portions of the lungs; this is **inspiration**. There, oxygen diffuses across the lung surface into the blood. From the lungs, oxygenated blood is carried to the heart and then, via the systemic circulatory system, to all part of the body. The real biologically accepted definition of breathing is, in fact, at the cellular level. Each cell needs oxygen for living. During cellular respiration, oxygen moves from the blood into the cells,

and carbon dioxide and other wastes are released from the cell into the blood. Finally, deoxygenated venous blood, carrying its load of carbon dioxide, circulates back to the lungs, where carbon dioxide is exhaled during **expiration**.

Body tissue requires a constant supply of oxygen. Everyone knows that living organisms need oxygen, but they usually do not know why. Cells need oxygen because they require energy for metabolic processes. In the process of cell breathing/respiration the energy stored in carbon containing molecules, especially glucose is converted into high-energy bonds of ATP, the only usable energy source for many cellular activities. The process of converting the energy into ATP at the cell level we call cell breathing or respiration. The cell organelles in which the energy is converted into ATP are the mitochondria.

The process of cell respiration goes on in all the cells of both animals and plants. But many students confuse plant respiration and photosynthesis in green plants. From this they often state that plants breathe carbon dioxide whereas animals breathe oxygen. In fact, respiration is the same process in both animal and plants cells. Plants cells respire (ie breath) all the time, because they need energy, but photosynthesis occurs only in the presence of light and in particular parts of cell particles called chloroplasts. Breathing and photosynthesis are, in fact, two distinct and opposite processes: in one the sun energy is stored in carbon containing molecules (especially glucose) and in another the energy is transformed into ATP which is needed for all cellular processes.

But these topics are very difficult for primary –and, indeed many post-primary - children to understand, and that is why they have misconceptions about breathing and photosynthesis (Marmaroti and Galanopoulou, 2006). Teachers must accordingly be aware of the problem and pay more time and attention to this and other fundamental topics, so that student will not continue their misunderstanding until entering university or even later. In our investigation we wanted to see what misconceptions, if any, first year Czech and Slovene students in the faculty of education have about respiration. Such students will, of course, on completing their degree, as teachers go on to teach children about respiration and photosynthesis. The accuracy of their knowledge and understanding about these basic processes will fundamentally affect their teaching and so the learning of their pupils.

Methods

We gave the Slovene and Czech students the same questionnaire in their respective languages which included 6 open-ended questions about respiration. We obtained answers from 130 Slovene students and 85 students from the Czech Republic, with each student answering individually. They were not time limited. The responses to each question were divided into two or more categories, and are represented by graphs. The questions were:

1. What is respiration?
2. Do plants also respire?
3. Do animals and plants respire in the same way?
4. Why do organisms respire?

5. What are they respiring? What do they need for respiration?
6. When do plants respire?

Results
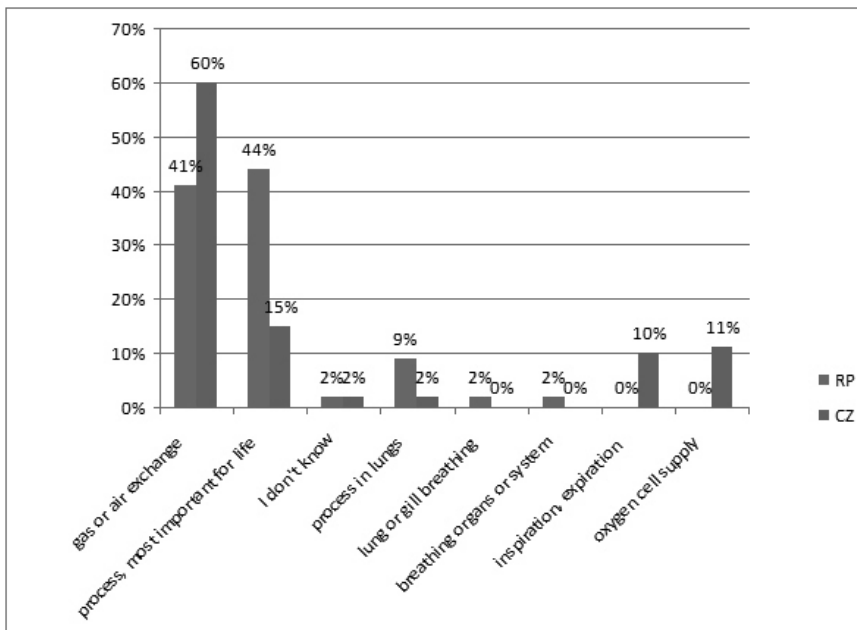
Graph 1: What is respiration?

For the first question "What is respiration? "We got the answers we expected (graph 1). The answers were very general. 41 % Slovene and 60 % of Czech students answered that respiration is the exchange of gases, the second most common answer was that respiration is important for breathing (44 % Slovene and 15 % Czech students). 10 % of Czech and none of the Slovene students mentioned that this is the process where blood cells are provided with oxygen.

On the second question "Do plants also respire?" practically all the students answered 'yes'. Only one Czech student answered that plants are not respiring

Most of the students (Slovene 97 % and Czech 98 %) answered that plants and animals are not respiring in the same way.
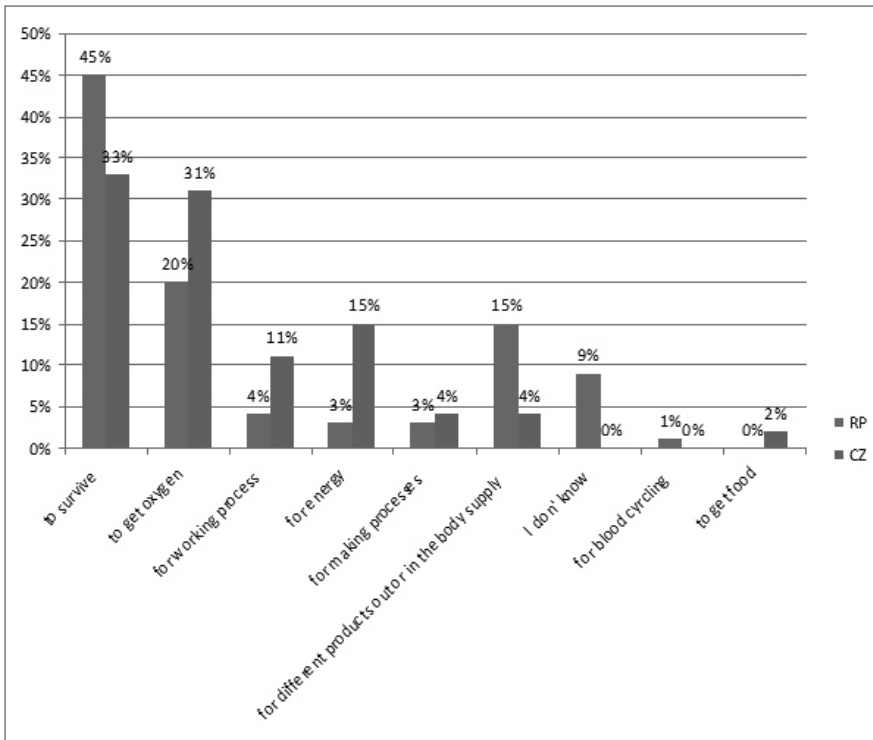
Graph 2: Why do organisms respire?

In response to the question 'Why do organisms respire?' 45 % Slovene and 33 % Czech students answered 'to survive.' 31 % of Czech students think that organisms respire to obtain oxygen, while 20 % of Slovene students are of the same view. Energy was mentioned by 15 % of Czech students and only 4 % of Slovene students. 15 % Slovene and only 4 % of Czech students think that organisms respire to obtain oxygen and excrete different products from the body (graph 2).
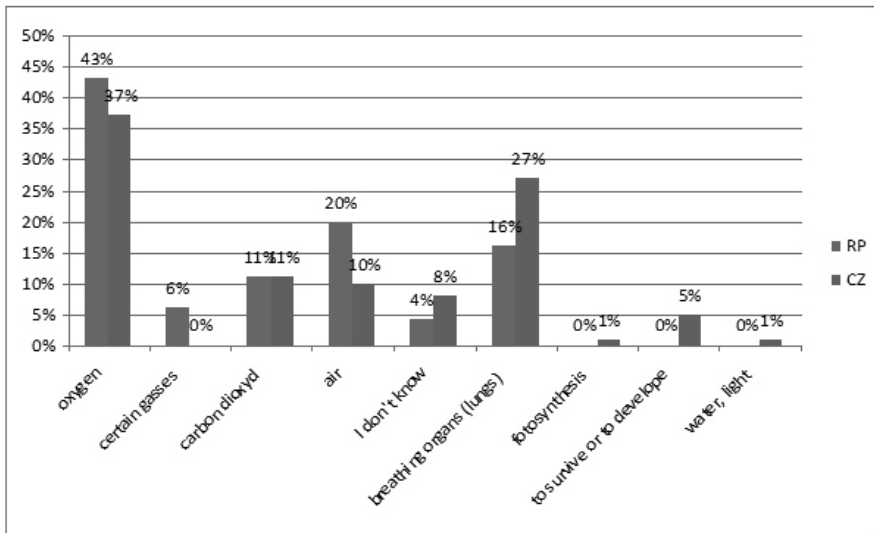
Graph 3: What are organisms respiring?

The apparently simple questions: "What are organisms respiring? What do they need for respiration?" in reality were not so easy to answer, with not even the half of the students giving the correct answers. 43 % Slovene and 37 % Czech student mentioned oxygen, but 11% of both groups of students answered that organisms are breathing carbon dioxide. Some students answered just air (20 % Slovene and 10 % Czech students), while 16 % Slovene and 27 % Czech students mentioned breathing organs, for instance lungs (graph 3).
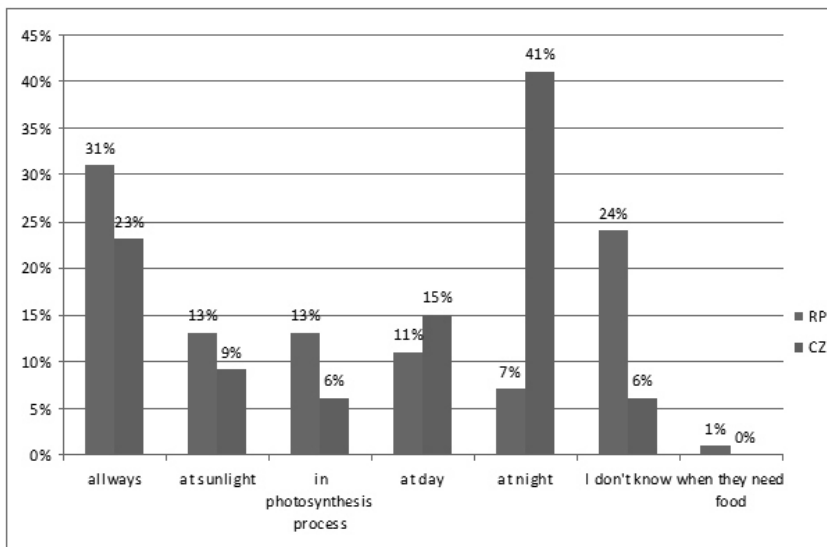
Graph 4: When do plants respire?

Although students know that all living organisms need oxygen their answers to the question "When do plants respire?" showed that they confuse the different processes of respiration and photosynthesis. Only 31 % Slovene and 23 % Czech students answered that plants are always respiring, whereas 41 % of Czech and 7 % of Slovene students think that plants respire only during the night. 26 % Slovene and 15 % Czech students stated that plants respire during the process of photosynthesis or when sunlight is present. One quarter of Slovene and 6 % of Czech students did not know the answer (graph 4).

Discussion

Our investigation showed that when considering respiration students think about inspiration and expiration (the exchange of gases) and not the process at cellular level where respiration really occurs. Students were also unaware of the differences between respiration and photosynthesis. Although they had learned about both processes in school they had not grasped the fundamental point that these are two opposite processes, during which in photosynthesis energy is stored, and in respiration energy is realised. In the process of cell respiration the energy stored in carbon containing molecules, especially glucose, is converted into the high-energy bonds of ATP, which is the only usable energy source for many cellular activities. The conversion of energy into ATP at the cell level is cell breathing or respiration, with the process occurring within cell mitochondria. The students had learned about cell components, including mitochondria and other organelles, but they did not connect their knowledge of cell respiration with everyday life and the importance of survival. So we used oxygen because of the energy which keeps organisms alive, whether they are animals and plants.

One of the problems about understanding such a fundamental topic as why we respire is that during their secondary school studies students have to learn many details about cell structure and function but they do not see the important facts that are crucial for understanding the living world. In response to the question "What do you think respiration is?" nobody mentioned cell respiration and the conversion of energy to ATP. It is surprising that in reply to the question "Why do organisms respire?" 15 % Czech and only 3% Slovene students mentioned energy although in upper secondary school they had been taught that respiration is an oxidative process in which the oxygen is necessary to convert the energy stored in carbon containing molecules into ATP. Moreover, when they were asked about plant respiration they forget that the process is similar in plants and animals and located in mitochondria. Instead students confused respiration in plants with photosynthesis. Only 31 % of Slovene and 23 % of Czech students knows that plants respire day and night and it is surprising that 41 % of Czech and 7 % Slovene still think that plants respire only during the night.

It is further surprising that 11 % of the students answered that organism need carbon dioxide for respiration. The answers to the question about whether plants and animals respire in the same way showed that most of the students (Slovene 97 % and Czech 98 %) were thinking about the process of inspiration and expiration, and not about cell respiration. In every day life we do not think of a process at cellular level but only about receiving oxygen and releasing carbon dioxide, with this exchange occurring

via the lungs in mammals and many other land vertebrates, through gills in fishes, and in some animals through the skin while land plants receive air through stomata.

We can conclude then that both Slovene and Czech students have some significant misconceptions about respiration. The Czech students were more aware than the Slovene students that respiration is connected with energy.. On the other side, more Czech than Slovene students think that plant only respire during the night. The results indicate that students do not bring sufficient knowledge about the process of respiration from their upper secondary school experience to the university. As future primary school teachers they must be aware of their misconceptions, and as their university educators we must pay more attention to respiration and other fundamental topics to help our students understand basic biological processes so that they will, in turn, provide correct information to their pupils in school.

CO ZNAJÍ STUDENTI O DÝCHÁNÍ: SROVNÁNÍ SLOVINSKÝCH A ČESKÝCH VYSOKOŠKOLÁKŮ

Abstrakt: Mnoho studentů, a dokonce i dospělých, má mylné představy o dýchání. Při odpovědích o vlastním vnímání pojmu dýchání se vyjadřují převážně tak, že živočichové a rostliny dostávají kyslík do těla (plícemi, kůží nebo póry), a opomíjejí existenci procesů aerobního metabolizmu, který předpokládá kyslík potřebný k uvolnění energie uložené v potravě. Také si často pletou pojem respirace v rostlinách s fotosyntézou. Mnohé výzkumy prokázaly, že toto téma je velmi obtížné pochopit, a to zejména pro děti na 2. stupni základní školy. V našem šetření jsme chtěli získat informace o představách na toto téma mezi studenty, kteří právě vstoupili na pedagogickou fakultu a kteří mají v úmyslu stát se učiteli základních škol. Chtěli jsme analyzovat rozsah případných mylných představ a výsledky případných rozdílů mezi odpověďmi slovinských a českých studentů na stejné otázky. Výsledky anketních analýz ukazují významné chyby a nepochopení u studentů obou národností, nezbytnost zlepšit výuku v přírodních vědách na pedagogických fakultách tak, aby vysoká škola zajistila u budoucích učitelů základních škol správné pochopení těchto základních témat. Děti by se měly správně učit i o dýchání.

Klíčová slova: dýchání, fotosyntéza, rostliny, živočichové, mylné představy

SMOKING TOLERANCE AND ATTITUDES TO ANTI-SMOKING POLICIES AT SELECTED WORKPLACES

Ivona PAVELEKOVÁ, Viera PETERKOVÁ

Abstract: The aim of our research was, using an attitude questionnaire with Likert scale of evaluation, to analyze the rate of respondents´ tolerance to smoking at the workplaces, depending on age, gender, place of work, as well as their smoking habits. The research sample consisted of 160 respondents, the teaching staff of a secondary school –The Gymnázium of J.Hollý in Trnava and The Primary School of Kornel Mahr and the employees of a private company Orange, Inc.residing in Bratislava. On the basis of our results can be stated that men are more tolerant to smoking at the workplaces and their attitude to anti-smoking policies is rather negative.The highest % of smokers have been seen in the age group of 21 to 30 years and the proportion of smokers in the school facilities was not significantly different from their share in a private company, but in a private company a large number of respondents deprived of this bad habit.

Keywords: smoking, attitude, anti-smoking policies

Theoretical bases

Our society has been remarkably changing recently, this process of transformation has brought a lot of positive as well as negative features ,one of these is growth of smoking. Rising tendency can be noticed not only with adult smokers, but also with lower-age categories. Adult population do not realize their negative influence on children and teenagers. Those teenagers who are dependent on the influence of their environment, gangs, mass-media, family, who are followed by an amount of problems and stressful situations. It is the time when young people mature, learn how to live and can not cope with their lives, and in spite of their upbringing in a good family or an institution , they reach for a drug-a cigarette. On the contrary a lot of adult people start smoking in their late ages. Advertisements of tobacco firms, sponsoring attractive sports competitions , automobile races and related life style of freedom and adventure, encourage them. These are the reasons of some problems at workplaces, where smokers and their bad habits limit non-smokers.

Damaging effects of smoking are not unknown, its negative results are described on every cigarette package. And these negative effects influence not only smokers themselves, but also non-smokers who when amongst active smokers become passive smokers. Many studies support harmful effects of also passive smoking on health of people, on the presence of both cardiovascular or cancer deseases(e .g. Kademani et al., 2008, Karim-Kos et al., 2008, Foschi, 2008, Takasaki et al., 2008 etc.)

The subject of our research was to detect and analyze the factors that play a role when buliding up an attitude to smoking ang anti-smoking policies at workplaces.

Hypotheses

We tried to verify a number of hypotheses using a questionaire.

Hypothesis H1

We presume that men will have more positive attitude to smoking and will be more tolerant in anti-smoking policies than women. Our presumption came from a Japanese study, which showed that up to 57 % men, but only 16.6 % women are active smokers and living in a town has a negative influence on men smoking as contrasted to women.(Fukuda et al.,2005) and from a study Tsai et al.,2008, in which they found out that Taiwan men smoke out more cigarettes per day than women. We conclude that tendency of women not to smoke or smoke less can positively influence more positive attitudes to anti-smoking policies.

Hypothesis H2

Considering a working climite in a private company being more stressful, and smoking at schools being prohibited we presume there will be more smokers in a company than at schools, where smoking should be unacceptable, having bad educational influence on students and also attitude to smoking in a company will be more tolerant than at schools.

Hypothesis H3

According to the above mentioned studies ,which located differences in tolerance to smoking regarding age in favour of younger women, we presume that age will influence the attitude to smoking and anti-smoking policies.

Hypothesis H4

We presume that smoking of parents influences the attitude of respondents to smoking and anti-smoking policies.

Research sample

We executed the presented research at two different school workplaces, at a secondary school – The Gymnasium of J.Holly in Trnava and at The Primary School of Kornel Mahr and at a private company Orange, Inc.residing in Bratislava. We also pre-

sumed that the results could be influenced by specific conditions of a town.

160 respondents altogether,39 men and 121 women aged from 21-54 of it, participated on the research.

Selection of research sample was carried out by means of an available choice.

Research methods

The research was being executed from January-March 2007. We chose a questionaire research method. We acquired our questionaire by modification of the questionaire in the work of Khanga and Choa, 2006. The questionaire consisted of 22 statements, positive and negative ones in an equal ratio. Individual statements were divided into 2 areas (Table 1) according to a factorial analysis with Varimix rotation, 7 statements in Area 1 and 8 statements in Area 2, while the areas as well as positive and negative statements were mixed. The other statements did not show adequate relation to the previous two dimensions or represented independent dimensions. These were not possible to interpret (each dimension must have at least 3 statements), that is why they were eliminated from the analysis.

Each statement was scored from an absolute disagreement (1) to an absolute agreement (5) in the so called Likert scale. Negatively formulated statements were scored in the reversed order to keep positive scoring of statements.

Table 1 Monitored areas

Area 1	Attitude to smoking (statements 2, 8, 9, 14, 17, 19, 21)
Area 2	Anti-smoking policies (statements 1, 3, 5, 6, 7, 13, 18, 20)

We verified reliability of the created questionaire by help of reliability index calculated by Cronbach alfa,the value of Cronbach alfa for dimension attitude to smoking was 0.87 and for dimension attitude to anti-smoking policies 0.84. Total questionaire reliability was 0.89, which exceeded the critical value of 0.7, meaning the questionaire can be considered highly reliable and can be recommended in other researches of a similar character.

Research organisation and process

Altogether 200 questionaires were distributed, in which we were examining our respondents´ attitudes to smoking and anti-smoking policies. The return was 80% of questionaires so we evaluated 160 completed questionaires.

Numeric values (1-5) were assigned based on the the degree of agreement, resp. disagreement with the given statements .They gave a cumulative score of a subject. Numeric value order reversed (5-1) with negative statements, positive attitude always had a highest value.

The sums of individual points of various areas were examined using a multi-factorial variable analysis as far as the respondents´ influence of age, workplace, gender, smoking as well as smoking of their parents and their attitude to smoking and anti-smo-

king policies. We evaluated the research being carried out by a scale questionaire with the help of a special software-statistic programme Statistica. As a basis for statistical evaluation of the questionnaire we needed the manual pointing of responses from all 160 questionnaires.

Results and discussion

Computer-processed research results were put into the Table with statistic test values (Tables 2-4) and graphs (Graph 1-5) for the both monitored areas.

Table 2 Influence of individual factors on attitude to smoking anti-smoking policies

Factor	Test	Value	F	p
Workplace	Wilks	0,988945	0,83282	0,436834
Age	Wilks	0,996339	0,27377	0,760888
Gender	Wilks	0,92252	6,25705	0,002459*
Smoking	Wilks	0,706038	14,16293	0,000000**
Gender*Smoking	Wilks	0,998214	0,06664	0,991825

Table 3 Influence of individual factors on attitudes to smoking

Factor	SS	MS	F	p
Workplace	9,212	9,2116	0,71071	0,40055
Age	6,92	6,9198	0,53389	0,466114
Gender	72,101	72,1015	5,56292	0,019634*
Smoking	455,933	227,9664	17,58853	0,000000**
Gender*Smoking	2,035	1,0174	0,07849	0,924546

Table 4 Influence of individual factors on attitudes to anti-smoking policies

	SS	MS	F	p
Workplace	2,502	2,5021	0,10917	0,741548
Age	2,154	2,1536	0,09397	0,759614
Gender	16,331	16,3306	0,71255	0,399941
Smoking	1319,62	659,8099	28,78955	0,000000**
Gender*Smoking	3,184	1,5921	0,06947	0,93292

H1 We presume men will have more positive attitude to smoking and will be more tolerant to anti-smoking policies than women.

Considering Graph 1 and the level of significance of gender influence on the monitored attitude areas as well as an overall attitude listed in Tables 2-4 it can be

concluded that gender has an influence on attitude to smoking (p=0.002459) so our presumption H1 was confirmed. Evaluating individual areas we detected remarkably more negative relation of men to smoking (part 1-p= 0.019634), but this detection can be caused by a lower sample of men in the sample of respondents, for the results of foreign researches state that women smoke less cigarettes per day and start smoking in a later age, though they are more subject to socio-economic as well as cultural conditions of their environment (Khang, Cho, 2006, Tsai et al., 2008, An et al., 2008, Khang et al., 2008, Cho et al., 2008). In the second part ,in which we were looking on attitude to anti-smoking politics at the workplaces, we did not detect any statistically important gender influence on given attitude (p=0.399941) although on Graph 1 we can see little more positive attitude of women in this area. It follows that women reject smoking as such, but do not condemn and tolerate others smoking more than men.
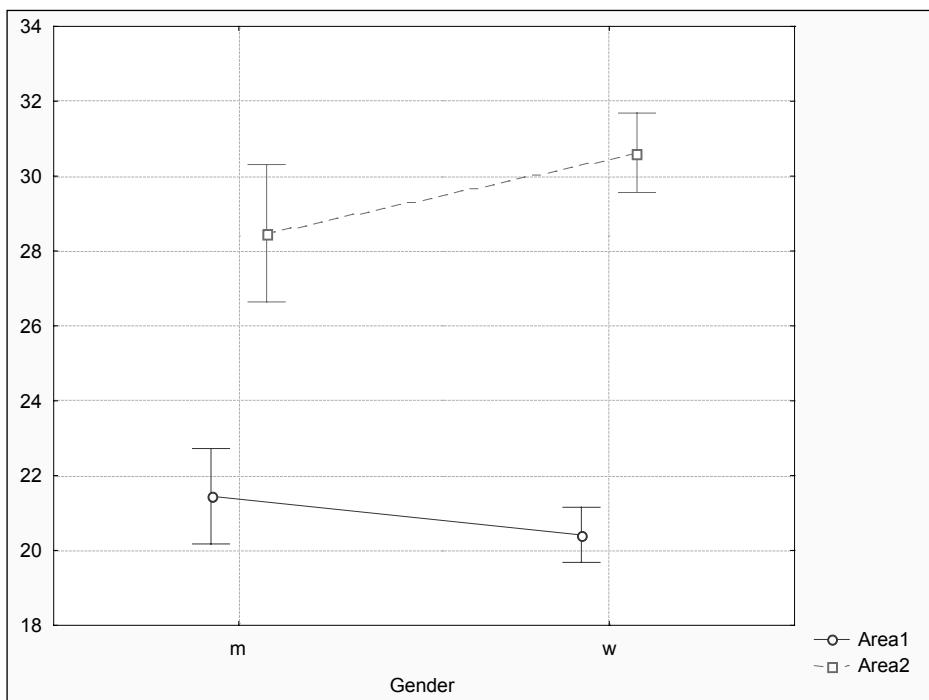
Graph 1: Gender influence on attitude to smoking anti-smoking policies

Area1 Attitude to smoking
Area 2 Attitude to anti-smoking policies

H2 Considering a working climite in a private company being more stressful and smoking at schools being prohibited we presume there will be more smokers in a company than at schools, where smoking should be unacceptable, having bad educational influence on students and also attitude to smoking in a company will be more tolerant than at schools. Evaluating this hypothesis, we assessed the number of respondents- smokers

at the workplaces but also the overall proportion of respondents who smoke, do not smoke, respectively, quit smoking. We summarized the results in Table 5.

Table 5 : Smoking of respondents according to the workplace

	áno v %	nie v %	prestali v %
School employees	28,8	63,8	7,5
Orange employees	33,8	46,3	12,5
Alltogether	31,2	58,8	10,0

We found out that 31.2 % of the respondents smoke currently and 58.8 % of respondents are non-smokers. We were monitoring the proportion of respondents who smoked in the past, but currently do not smoke. Our research has shown that 10 % of respondents quit smoking, but no men. At schools where young people are educated and teachers should be an example for their students, we have seen up to 28.8 % of active smokers which surprised us. We also wanted to find out whether the respondents' own smoking affects their attitude to smoking of others and anti-smoking policies at the workplace. Therefore the influence of subject´s own smoking on the monitored attitudes was subjected to the analysis. On the basis of Tables 2–4 and Graph 2 can be stated that the smoking of respondents statistically highly significantly influences their attitude to smoking, as well as to anti-smoking policies (p = 0.0000).
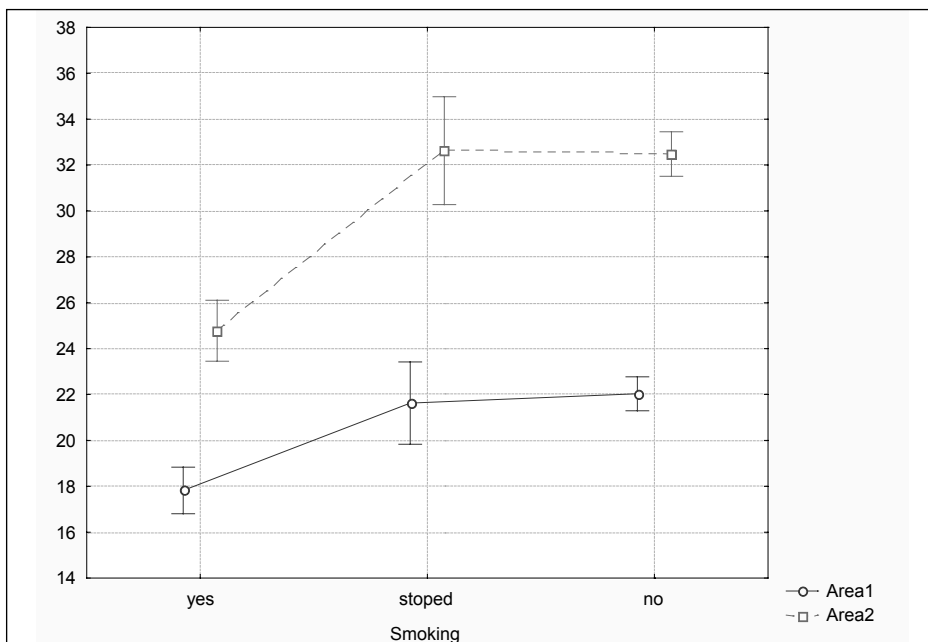
Graph 2: Influence of smoking of respondents on their attitude to smoking anti-smoking policies

We found that respondents-smokers statistically significantly more tolerate others smoking and have negative attitudes to all restrictions and limitations in this area, which of course is not so surprising. There is a positive finding though, respondents who quit smoking were the least tolerant towards smoking as such, as well as concessions to smoking at the workplace, to smoking of medical personnel and so on. Thus their own smoking significantly affects the attitude in this area. The rate of the workplace influence to this approach is shown in Tables 2 through 4 and Graph 3.
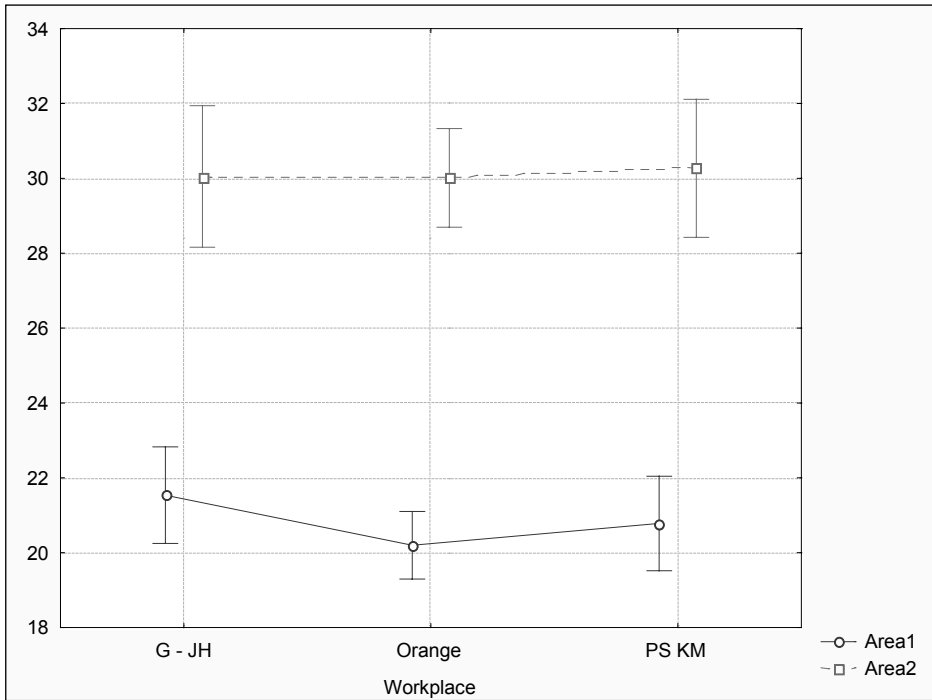
Graph 3: Workplace influence on attitude to smoking anti-smoking policies

Area1 Attitude to smoking
Area 2 Attitude to anti-smoking policies

Considering the level of significance and Graph 3 we can conclude that the workplace has no impact on whether respondents smoke or do not smoke.Not even in one area we found a statistically significant difference between workplaces i.e. hypothesis. 2 was not confirmed.

However, finding the influence of smoking as such on the respondents we can point out how important it is to prevent the occurrence of addiction to smoking. We consider smoking of school employees very inappropriate, because smokers and their

tolerance of smoking may facilitate the development of this negative habit. One of the factors which influences smoking of respondents is their education (Cho et al., 2008). We are confound that school employees with higher education do not want to admit the harmfulness of this habit.

H3 Given the above mentioned studies that found differences in the tolerance of smoking in terms of age, in favor of younger women, we assume that age will affect the attitude towards smoking and anti-smoking policies.

Based on the results listed in Tables 2 through 4, Table 6 and Graph 4 can be concluded that age did not have statistically significant influence on the attitude toward smoking and anti-smoking policies ($p = 0.7608$), i.e. the H3 hypothesis was not confirmed. In contrast, we found the highest proportion of smokers in the age category of 21 to 30 years. Studies form Japan (Fukuda et al., 2005) and South Korea (Khang, Cho, 2006) show that in these countries the proportion of smokers in the younger age categories does not increase, and smoking mainly of women is particularly influenced by socio-economic conditions and also marriage.

We can conclude the retrograde trend of smoking in these areas, which would be needed also in our country.

Table 6 : Ratio of smokers in the monitored age categories

Age	21 – 30	31 – 40	41 – 50	51 – 54
Smoke in %	38	30	24	8
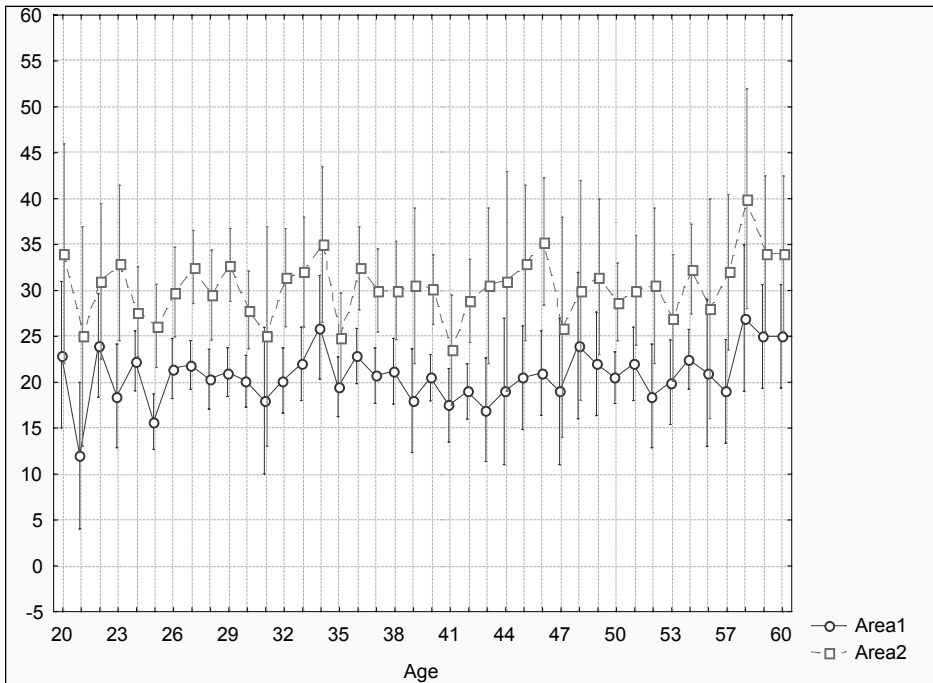
Graph 4 : Age influence on the attitude to smoking and anti-smoking policies

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Area1 Attitude to smoking
Area 2 Attitude to anti-smoking policies

Conclusion

In the presented research we were examining the influence of various factors on subject´s attitudes towards smoking and anti-smoking policies at the workplace. We intended to determine which one out of the monitored factors will influence people´s attitude to smoking and anti-smoking policies. We were mainly interested in school employees, we were monitoring basic school teachers as well as secondary school teachers, whether their approach to this harmful habit will be more negative and whether they approve of smoking restrictions on public places, among teachers, doctors, etc. We determined there is still remarkable ratio of smokers at schools, smoking is constantly favoured in lower age categories and men´s attitude to smoking is more negative. However smokers, or women-smokers tolerate smoking and refuse anti-smoking policies. There is a positive cognition though, people who quit smoking have even more negative attitude to smoking than non-smokers, so their tolerance to smoking statistically significantly falls.

TOLERANCIA FAJČENIA A POSTOJ K PROTIFAČIARSKEJ POLITIKE NA VYBRANÝCH PRACOVISKÁCH

Abstrakt: Cieľom našej práce bolo pomocou postojového dotazníka s Likertovou škálou hodnotenia analyzovať mieru tolerancie respondentov k fajčeniu na pracovisku v závislosti od veku, pohlavia, pracoviska, ako aj ich fajčiarskych návykov. Výskumnú vzorku tvorilo 160 respondentov, pedagogickí pracovníci Gymnázia Jána Holého v Trnave a Základnej školy Kornela Mahra v Trnave a pracovníci akciovej spoločnosti Orange, a. s. Bratislava. Na základe zistených výsledkov môžeme skonštatovať, že muži sú tolerantnejší k fajčeniu na pracovisku a ich postoj k protifajčiarskej politike je skôr negatívny. Najvyššie % fajčiarov sme zaznamenali vo vekovej kategórii 21–30 rokov a podiel fajčiarov v školských zariadeniach nebol preukazne odlišný od ich podielu v súkromnej spoločnosti, avšak v súkromnej spoločnosti sa tohto návyku zbavilo väčšie množstvo respondentov.

Kľúčové slová: fajčenie, postoj, protifajčiarska politika

BLOOD DONATION IN ADOLESCENTS

J. MAČALOVÁ, Tamara KIMÁKOVÁ

Abstract: Today, the full rush, and increasing the quantity of life-threatening injuries. And then starts decline precious word, blood. Medicine, of course, knows many other emergencies, when human blood is needed. Despite the fact that we live in the third millennium, yet failed to produce replacement blood. May donate blood every healthy man aged 18 who is willing to donate to help a patient who is unable to help himself. Either the donor blood given to save or prolong the life of a sick or a patient will remain without assistance. It is necessary to give the young man enough information on the donation of blood, its contribution to others. Information: donate and save lives "and" donate at least 1x a year, and transfused to the station and bring at least 1 friend, "one of the most important.*

Why donate:
1. *Overcomes himself.*
2. *Find out your health status.*
3. *Blood donation is a "training" the body for emergency situations associated with major blood loss.*
4. *Donation contributes to the overall regeneration of the organism, it has a stimulating effect, says the so-called. juvenescence.*

One of the 19 annual student responses to the questionnaire, the question of why donate read: "We live in a fast time and any fraction of a second do I need it and myself."

Keywords: *blood donor, adolescent*

Introduction

The present time is hasty, full of rush. This often brings about unexpected situations to which man is not prepared. An injury or a disease sometimes hit man like a flash of lightning from a clear sky. The number of life-threatening injuries shows an increasing trend recently. And so the notion of precious blood gets into a focus of attention. Human health and lives depend on sufficient blood stock.

Human Blood

Blood – the rare fluid circulating in our blood vessels – is a symbol of life. Human organism cannot exist without it. From the chemical point of view it is a suspension, from the morphological point of view a mesenchyme tissue and from the physiological point of view a heterogeneous liquid. The most important thing is that our existence depends on our blood and its quality affects human health and may even cause death (Sviteková, 2009).

Blood with all its components is too complex and perfect fluid. Healthy man remains its exclusive and irreplaceable donor.

Annually around 500 thousand women in the world die during pregnancy and delivery and up to a fourth of them could be saved by blood transfusion. Bleeding is the second most frequent cause of death after traffic accidents. In our region people are used to believing that they will get blood whenever they need it, but not everywhere in the world this can be taken for granted.

Even though around 80 million blood units are made in the world annually, blood is still inaccessible for many people in need. Whether because the countries they live in have created insufficient blood reserves (the so called blood banks), or simply because a suitable blood type is not readily available. In up to 70 countries of the world there is no official blood donation programme. Blood also helps save lives of patients suffering from long-term illnesses or patients after injury and excessive blood loss. This would be impossible without cooperation of permanent and voluntary blood donors. These people donate blood regularly without a claim for compensation and also on request when urgently needed (Rosochová, 2009).

History of Blood Transfusion

The miraculous human blood, its nice red colour, its ability to help the sick and sometimes also its rejuvenating effects were already noticed by the mankind in the ancient past. People noticed that blood running away from the body of an injured animal or human seriously threatened their lives. They believed in the supernatural power of blood and that is why the Romans drank blood of their gladiators. Even in the territory of the present Slovakia, as the legend has it, the famous Lady of Čachtice bathed in the blood of young virgins in late 16th and early 17th centuries (Nedvěd, 2009).

Karl Landsteiner (14 June 1868 Baden by Wien – 26 June 1943 New York) – a doctor-Nobel Prize holder for medicine and physiology (1930) – was an Austrian immunologist who focused his career on research into immunological reactions of blood and monitoring if its agglutination properties. In 1990 he discovered the agglutination effect of blood serum on erythrocytes, on the basis of which he divided erythrocytes to three groups, A, B and c. Later he contributed to the discovery of the Rh factor.

In his honour the world celebrates the annual Global Day of Blood Donors, a worldwide event connected with the date of his birth (14 June).

The celebrations of the Global Day of Blood Donors are connected with various cultural events, sporting events, public discussions, quizzes and debates around the world. The importance of this day also lies in the facts that at the same time the

same ideas are promoted in all parts of the world and the whole world follows the same objective – expression of thanks to the active voluntary blood donors who provide a priceless service to the human society, and encouraging of other people to join them. All this is done for us to be able to be sure that at the moment we will need blood there will be a sufficient stock of it and the blood will be available. The celebrations of the Global Day of Blood Donors also include events promoting healthy lifestyle, which is crucial for active blood donors (Global Day of Blood Donors, 2010).

The first scholar correctly classifying blood into the four basic categories was the Czech psychiatrist Jan Jánsky. In 1907 he published his results of research into blood properties in psychiatric patients, marking blood categories with Roman figures I, II, III, IV. Independently of Jánský the four blood categories were also described in 1910 by the American William Lorenzo Moss. About thirty years later the blood categories were marked A, B, AB and 0. At that period the direct blood donations were still carried out, i.e. the artery of the donor was directly connected to the artery of the recipient. Full progress was only reached by blood transfusion after year 1940 – the year of discovery of the Rh factor, blood conservation and stabilisation for storage purposes (Classification of Blood Donors, 2010).

Blood Donations

Blood donations by voluntary blood donors are carried out at the sites of the National Transfusion Service of the Slovak Republic, at Haematological and Transfusion Departments and Mobile Donation Points. One donation results in 450 ml of blood. Blood cell separators allow for separation of the individual blood components needed by the particular patient: platelets, erythrocytes and plasma. The shelf life of the individual components is different: erythrocytes can be stored for up to 42 days at the temperature of 2 – 6 °C, platelets – thrombocytes for five days in the thrombo-agitator at the temperature of up to 25 °C and freshly frozen plasma may be stored for three years in freezers with the temperature of – 30 °C.

Blood category frequency in our population:

A Rh pos: 36.7 %	A Rh neg: 6.3 %
O Rh pos: 27.2 %	O Rh neg: 4.8 %
B Rh pos: 15.3 %	B Rh neg: 2.7 %
AB Rh pos: 6.8 %	AB Rh neg: 1.2 %

Blood transfusion does not equal other surgical procedures. It cannot be separated from the voluntary act of blood donation by the donor. The healthcare professional is a mediator of self-donation by the donor. The purpose is the life and health of another person – the patient.

Blood donation is not a temporary one-off action, but a permanent need of these deeds. Blood therapy and life rescue by blood are taken for granted today. But blood donation does not go without saying like that, even though people know that without the help of blood donors there would be no transfusions, surgeries, rescue of bleeding, burnt or other patients.

Why do people consider less obvious to donate blood when their fellow humans need it than to take it? The former is much easier than the latter. The attitude of people to this social need is often indifferent, whether because they are not urged b this problem or because they rely on others. However, the fail to realize that the word others actually means all and that blood donation should be considered moral and human duty. Human health and lives depend on blood stock sufficiency. A sufficient number of blood donors indicates human awareness, advanced culture and moral standards of the society. The need for blood cannot be satisfied by a group of unyielding donors – on the contrary, every healthy individual should repeatedly donate his or her blood when needed, also for those whose health state does not allow them to do so as well (Sakalová, 1995).

People must come to understand that blood donation is an issue of deep human responsibility, an expression of relationship to other people and realisation of the fact that the boundary between a blood donor and a blood recipient is often a mere question of time and luck.

Blood Donations in Slovakia

Historic origin of blood donations and transfusions must be sought at surgical departments as originally blood transfusions were part of surgeries and therefore the domain of surgeons. Before 1937 blood was mainly donated by family members of the patients in need and individuals living on the financial remuneration for the donations. Despite the financial remuneration for blood donation there were not many voluntary donors. That is why the healthcare professionals began to organize groups of core blood donors. The groups consisted of volunteers, honest citizens from the nearest surroundings of the hospital, who were able to turn up for an act of blood donation very quickly. A turning point came after 1947, when the Blood Donor Centre was established, and another in 1948 by establishment of the National Transfusion Service, pioneered by MUDr. Mikuláš Hrubiško, the founder of haematology and transfusiology in Slovakia. After 1950 the transfusion service saw rapid progress and the blood donors were perfectly organised by the Czechoslovak Red Cross. On that basis the Slovak National Transfusion Service and the Slovak Red Cross have cooperated since.

In Slovakia blood donation is voluntary and free. The European Council has recommended and introduced principles of self-sufficiency based on voluntary free blood donation.

„Blood donation is considered voluntary and free if the donor donates blood plasma or cells on the basis of his or her free will and without a claim for any remuneration in the form of a monetary contribution or in another form that might be considered equivalent to money, which may include for example working time off longer than the time needed for the blood taking and transport to the site. Small souvenirs, refreshments and travel cost compensations are compatible with voluntary free blood donation" (Annex, 2003).

In Slovakia voluntary blood donations without a claim for remuneration are awarded by the Slovak Red Cross Slovenským červeným krížom.

Criteria for Awards of Professor MUDr. J. Janský Placard

Janský Bronze Placard – 10 free blood donations

Janský Silver Placard – 20 free blood donations

Janský Gold Placard – 30 free blood donations (females), or 40 free blood donations (males)

Janský Diamond Placard – 60 free blood donations (females), or 80 free blood donations (males)

Kňazovického Medal – 80 free blood donations (females), or 100 free blood donations

Doc. MUDr. Vladimír Krišl, CSc. Memorial Placard – for blood donation promotion (Classification o Blood Donors, 2010).

A blood donor may be:

A person without history of infectious hepatitis of types B,C, and not HIV carrier,

- A person without history of syphilis, sexual partnership with people suffering from these diseases and contact with people with these diseases in the course of the past year,
- A person without any surgery, tattoo, acupuncture therapy, ear piercing or other body part piercing, blood transfusion, plasma transfusions, endoscopic examination in the past year,
- A person not treated with pituitary hormones and without family history of this disease,
- A person not characterised as a person with risk behaviour,
- A person who is not and was never a drug addict or alcohol abuser,
- A person not regularly taking long-term pharmaceutical therapy (Procedures and Rules of Blood Donation, 2010).

Blood should never be donated any more by a person who:

- Takes or used to take narcotics through intravenous or intramuscular application
- Has provided or taken paid sexual services
- Is a homosexual
- Has led promiscuous life with frequent changes of sexual partners
- Has used anabolic steroids not prescribed by a doctor
- Has taken anticoagulants

(Before you Donate Blood, 2010)

Reasons for blood donation:

1. To outperform.
2. To find own health state.
3. To contribute to overall regeneration of the organism, to stimulate the body to regenerate and rejuvenate.

Medicine knows a lot of urgent cases of need for human blood. Even though we live in the third millennium the mankind has not yet managed to produce any blood substitute.

Blood may be donated by any healthy individual willing to help a patient who cannot help himself or herself. Either the blood donor donates his or her blood and rescues or extends the patient ´s life or the patient will be left without help.

It is necessary to provide young people enough information about blood donation, its contribution to other people. Information "Donate blood and you will rescue a life" and also "Donate blood at least once a year and bring at least one friend to the transfusion station" belong to the vital ones.

Education of blood donors mainly involves cooperation with schools and other educational institutions from nurseries to universities. At the nursery, through the project A Drop of Blood, the children get acquainted with the importance of their health and the value of the life-fluid – the blood. At primary and secondary schools the pupils and students obtain necessary information about blood and the importance of blood donation through various workshops. This provides priceless outlook to the young people before they reach the age of 18 and can begin their careers of blood donors. The educational activities are organised by Club 25, preparing educational and motivation programmes for future blood donors (Annual Report, 2008).

The Slovak Red Cross creates space and suitable conditions for voluntary work of children and youth from 5 to 25 years of age (Annual Report, 2009).

Conclusion

The human society must take care of blood donation not only by acquisitions of new active blood donors but also by its respect for them and their social reward.

Modern transfusiology is governed by the principle of giving every patient just the blood component he or she is missing. That is why the blood collected from the donors is further processed for its separation to erythrocytes, thrombocytes and the plasma. The staffs of the transfusion departments take care of the collected blood as a gift. The blood taken, its components and the products made from it are considered a gift donated by the donor and entrusted to the transfusion site for taking care of until the moment of its use (Code of Conduct, 1997).

Blood donation is justified from the ethical point of view by the principle of solidarity and love, as a highly human and morally valuable deed – man donates his or her blood to rescue life or health of another person. For these purposes voluntary free donations of blood and plasma should be promoted. It is necessary to extend information to the general public about the medical need and the high moral value of blood donation. An important role in this process is also performed by education about blood donation at secondary schools and universities.

DARCOVSTVO KRVI U ADOLESCENTOV

Abstrakt: V dnešnej dobe, plnej zhonu, narastá i množstvo život ohrozujúcich úrazov. A vtedy sa začína skloňovať vzácne slovo, krv. Medicína, samozrejme, pozná mnoho ďalších urgentných prípadov, kedy je ľudská krv potrebná. Napriek tomu, že žijeme v treťom tisícročí, doteraz sa nepodarilo vyrobiť náhradu krvi.

Krv môže darovať každý zdravý človek vo veku od 18 rokov, ktorý je ochotný pomôcť svojim darovaním pacientovi, ktorý si sám pomôcť nedokáže. Buď darca krv daruje a zachráni či predĺži chorému život, alebo pacient ostane bez pomoci.

Je potrebné poskytnúť mladému človeku dostatok informácii o darcovstve krvi, jeho prínose pre ostatných. Informácia: „Daruj krv a zachrániš život" a tiež: „Daruj krv aspoň 1x ročne a na transfúznu stanicu priveď aspoň 1 kamaráta", patria k tým najdôležitejším.

Prečo darovať krv:
1. *Prekonám sám seba.*
2. *Zistím si svoj zdravotný stav.*
3. *Darcovstvo krvi je „tréningom" organizmu na mimoriadne situácie, spojené s veľkou stratou krvi.*
4. *Darovanie krvi prispieva k celkovej regenerácii organizmu, má neho stimulujúci účinok, hovorí sa o tzv. omladnutí.*

Jedna z odpovedí 19 ročného študenta v dotazníku, na otázku, prečo darovať krv znela: „Žijeme v rýchlej dobe a v hociktorý zlomok sekundy ju môžem potrebovať i ja sám".

Kľúčové slová: *Darca krvi, adolescent*

THE INFLUENCE OF PSYCHOLOGICAL AND SOCIAL ASPECTS ON THE EATING HABITS OF PRIMARY SCHOOL CHILDREN

Jana VESELÁ, Šárka GREBEŇOVÁ

Abstract: *The article is focused on rarely mentioned psychological and social aspects, that along with physiological aspects influence children's and teenageres' eating habits. The article deals mainly with the influence of family and social environment on the feeding behavior and its evolution. Attention is also paid on the formation of preferences, attitudes, and aversions to food. The contribution introduces the issue of school meals and the impact of media and advertising on primary schoolchildren's attitudes to food and eating habits.*

Keywords: *feeding behavior, psychological aspects, social aspects, diet, eating habits, personality, society, environment, preferences, aversions, family, school canteen, food,*

1. Introduction

Food is an integral part of human life. Today's hectic lifestyle, however, reflects negatively on access to food and our eating habbits. Time for family lunch or dinner is becoming shorter. It leads to the lack of opportunities when parents can influence their children's eating habits. Lack of educational influence on children's nutrition may lead to the formation of irregular eating habits and attitudes towards food.

Food and eating were considered only as a subject of exploring science until the middle of the last century. Professional community focused mainly on physiology of nutrition and diet as a source of energy for our body. This concept usually persists even today. Above all, a healthy diet is a hot topic for today's society that is obsessed by cult of attractive and desirable body.

Physiological aspects of food are closely linked to psychological and social aspects. Recently, psychological and social aspects of food are often ignored. Unlike the physiology of nutrition, this area is very little mapped out, although we could provide answers to many questions.

2. Feeding behavior and its evolution

The issue of eating behavior is of interest to both natural and social sciences. Knowledge of food behavior and mechanisms of control of food intake and utilization are very useful in further exploring of the human body and its interaction with environment. Especially for the understanding and explanation of some diseases, such as eating disorder, knowledge of food behavior plays a key role.

Fraňková and Dvořáková (2003) describe the feeding behavior as a complex of activities which serve to uncover food sources, to identify food and deciding whether the food will be accepted or rejected, then to get food and its preparation for consumption, and finally food consumption and metabolic conversion of nutrients.

Feeding behavior, as well as other types of human behavior is motivated, focused primarily on meeting the needs. If there is no disruption during the eating behavior, eating behavior goes regularly in certain cycles.

Every baby comes into the world equipped with mechanisms that enable it to obtain food. Any mammal, including a man, is born equipped with a set of reflexes - a move that will bring him the food.

Shortly after giving birth, newborn baby begins to carry out reflex movements of the head to the left and right and searches for mother's breast nipple. This form of behavior is innate and occurs only in first days of life. Then these instinctive movements are replaced by oriented head movements toward the breast.[1]

Food intake in the newborn baby begins with sucking, based on the sucking reflex. There is evidence that such movements occur during intrauterine life. Fetus even suck its hands during the last weeks of pregnancy. It is a sort of training movements that help a child to survive in the new living conditions.

Breastfeeding is not only a physiological activity to feed a child. Breastfeeding is also accompanied with very strong feelings, that help a child to gain experience with the outside world and begins to communicate with others. Through the senses, baby gets a lot of information: perception of breast milk taste, hear mother's heart beat, take gentle touches. Visual stimuli are also very important. While breastfeeding, baby observes mother's movements very closely, instills her physical appearance, the smell of her body etc. All this creates a feeling of security. Pleasant feelings associated with nutrition are the source and basis of emotion.

It might seem that in the first weeks and months of life the child is just a passive recipient, but it is not the truth. Soon after the birth, a child communicates with its surroundings and is starting to show its individuality. There can be recorded just for feeding. Some children should be forced to drink, often ceases to suck and monitors around, another child obediently sucks or shouting demands for more frequent breastfeeding.

Breast milk gradually ceases to be enough for a child and it is necessary to start with additional baby food to meet child's need adequately. Child used to suck the sweet breast milk suddenly receives food that is salty, has a different color, different smells. Child's position during feeding ganges too. Child is no longer held in mother's

1 FRAŇKOVÁ, Slávka; DVOŘÁKOVÁ-JANŮ, Věra. Psychologie výživy a sociální aspekty jídla. 1.vyd. Praha: KAROLINUM, 2003. 255 s. ISBN 80-246-0548-1

arms, but gradually learn to sit and eat in an upright position. It has to learn to chew and swallow soft foods. Also child's digestive tract has to adapt to these changes. Addition of new kind of food into the infant diet is associated with the advent of many new initiatives that affect the child's senses. At the same time there is also a rapid development of a child's brain. It has to sort new sensations, process information and store them in memory in such a way that they can later be used at any time for comparison with recent experience.

Another task of this period of child development is to manage the timing of food intake. Feeding frequency was gradually reduced to just a few doses. Portion size and meal times when food is served is dependent on the family traditions and cultural backround in which children grow up.

It is very important when we start with expanding the child's diet inclusion of meals, that are not appropriate for a given age, as well as delay to the introduction of new foods into the child's diet may adversely affect the development of eating behavior and child's attitudes to food.[2]

3. Psychological aspects of food

„Psychological motives include feelings and emotions, which force us to eat and drink. They also include those that result from the very food and drink. The most important variations of feeligs are natural hunger and thirst, taste and depth, the delight and disgust or loathing and disgust. The ability to experience and feel is unique and common only for human species. The content of the association associated with certain food or a situation that is reflected, however, is the result of individual experience. Individual experiance is incommunicable.“[3]

PERSONALITY AND FOOD

Psychologists, psychiatrists and other professionals have tbeen trying to define personality for more than hundred years. Drapela argues that all theories of personality could be deployed on one axis, which connects the opposite views. On one side stood the axis of the theorists of „I" who consider personality as something that actually exists and has a real effect on the surrounding world. On the other hand, there are behaviorists who define personality as *„merely a derivative of conduct, which is itself only directly observable and measurable phenomenon.“* [4] Drapela defines personality as „*a dynamic source of behavior, identity and uniqueness of each person".*[5] He defines the concept of behavioral processes including thinking, emotion, decision making, physical activity, social interaction, etc.

We could say that every man is a typical figure whose formation is caused by heredity and environment influences. Each personality has its own characteristics, which is given by the combination of certain features. According to these features it is possible to divide the different types of personalities.

2 FRAŇKOVÁ, Slávka; ODEHNAL, Jiří; PAŘÍZKOVÁ, Jana. *Výživa a vývoj osobnosti dítěte.* Praha: HZ Editio, 2000. 198 s. ISBN 80-86009-32-7
3 DVOŘÁKOVÁ – JANŮ, Věra. *Lidé a jídlo.* 1.vyd. Praha: ISV nakladatelství, 1999. s. 1
4 DRAPELA, Viktor. *Přehled teorií osobnosti.* 3.vyd. Praha: Portál, 2001. s.14
5 DRAPELA, Viktor. *Přehled teorií osobnosti.* 3.vyd. Praha: Portál, 2001. s.14

Hippocratic theory is one of the oldest and still used typology of personality. This theory devides people into four basic types of temperaments (sanguine, choleric, phlegmatic, melancholic), according to body fluids, which prompt it. Some authors dealing with nutrition add a distinctive approach to food[6] and eating to these types of classical temperaments.

ATTITUDES TO FOOD. RITUALS.

Attitudes to food are shaped from an early age and are strongly influenced by environmental pressures. Family plays the main role, as well as the child's individuality, which is given by temperament, conscious qualities, emotion and experience of the child with food.[7]

The place of the food in our value rankings is given primarily due to cultural and economic levels of society in which we live. We can learn about the relation of a particular culture to food and eating by studying of menus, method of eating and preparing food technological processes.

Attitude towards food is important for some religions and philosophical systems. For example, for the Taoists the food is part of spiritual practice. We have to take a balanced diet and follow the correct procedure for the preparation of meals in order to to achieve understanding and harmony of body and spirit. According to Buddhists, it is necessary to prepare the food carefully and thoroughly as food borne power of Buddha.

In our predominantly Christian society we rarely meet with respect for certain old habits referring to the sacred nature of food. For example during fasting before Easter or Christmas etc.

Throughout our life we get a series of rituals associated with preparing and eating meals. Rituals become a nomical part of our personalities and traditions are passed down from generation to generation. For example, the ritual of tea drinking, use of bread and salt to welcome guest, or prayer before meals.

Rituals are an essential part of holidays and important events of the year.

PREFERENCES AND AVERSIONS

According to Fraňková et al.,preferences and aversions are the basis of attitudes to food. These two mechanisms help all living creatures to eat, to survive, but also to avoid harmful substances that may harm or even kill. Part of these characteristics are innate, part of them are created by individuals during their lives. The mechanism of nutrient preference are described in Fraňková's and al. book.[8]

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6 Eg. Faltus defines sanguine as a good host, having the enjoyment of gourmet food, complying with his enthusiastic gourmand appetites. Choleric is stead fast in its activities and impulsive. He reflects passion and fanaticism. In relation to eating often demonstrate their displeasure. Phlegmatic is very quiet, little excitable. In relation to food, he usually does not matter the quality of food. If he could choose, he prefers traditional kitchen and eat with pleasure. He spoils the taste considerations about food quality and its impact on the physical line. Melancholy in his meditation often does not realize the feeling of hunger. If he decides to eat food, he not perceive because he is too preoccupied with his worries and problems.

7 FRAŇKOVÁ, Slávka; DVOŘÁKOVÁ-JANŮ, Věra. Psychologie výživy a sociální aspekty jídla. 1.vyd. Praha: KAROLINUM, 2003. 256 s. ISBN 80-246-0548-1

8 Fraňková and team (2003) describe the formation mechanism of nutritional preferences as follows:
   Exposure to food. Repeated administration of a meal is possible for a child to grow its popularity. But this does not happen always. Too frequent use of certain foods, can achieve the opposite effect. Preference will be reduced or even disappear.

It was found that the man has high preference for sweet taste from his birth. Most agree that the sweet taste preference is innate in mammals. Apparently it has something to do with the fact that the sweet taste is typical of breast milk, but also for a range of energy sources that are found for example in the roots of certain plants or fruit. The preference for sweet compel the animal to seek sweet eatables.

Similarly, even aversion should protect individuals from ingesting substances that could endanger him. Some aversions are innate too. These include a natural aversion to bitter taste.

Most aversion rise on the basis of unpleasant experiences associated with food. Child could acquire resistance to meal, from which it vomited, or was forced to eat during its attendance in kindergarten. This aversion can endure until adulthood. Strong aversion to food can lead to serious eating disorders.

EMOTIONS AND FOOD

Emotions are psychological phenomenons. When talking about emotions, we think of anger, joy, regret or sympathy. Despite the fact that we all understand content of emotions, there is no uniform definition. In its broadest concept, as understood by M. Nakonečný, emotions can be defined as *„a complex phenomenon, which has its experiential, physiological and behavioral side. Close connection of emotion and physiology of the organism, in particular with visceral changes and moves, expresses their original biological effectiveness: emotions are experiences that meaningfully organize our behavior (eg. fear - flight), so it is possible to assign every emotion to a particular purpose, such as to avoid danger, you feel fear, or in other words, fear and danger signals are simultaneously accompanied by physiological changes that enable escape movements,,* [9]

According to this definition it is clear that emotions are also linked to our digestion. Nutrition education, attitudes towards food, cooking and rating, these are all inextricably linked with emotions. Food calms us. We rejoice a baby with food when it fell and scraped its knee. Food could be a reward or a gift.

Most social events in our life are associated with food. In these situations, the food is usually associated with positive emotions. It is quite normal that events such as infant baptism, wedding or birthday celebration are associated with good meals and drinks. But food also belongs to the less pleasant events in human life, e.g. a treat mourners after the funerál etc.

One turns to eat when he is happy to celebrate. When experiencing grief, search for food, that helps forget negative emotions. Food keeps our digestive system working and it does not allow us to think about what bothers us. Overeating is not the only way to solve our problems. Some people are trying to solve their problems by refusing food and denying hunger. In both cases there is a risk of severe psychosomatic problems.

Conscious control of food intake or, on the contrary, excessive consumption of

Pavlovov's conditioning. This type of conditioning is based on the concentration of food certain other stimuli.Mainly stimuli acting on our senses, such as food color, aroma, general appearance of the plates of food.

Social factors. Social factors are a powerful factor influencing the formation of preferences. Children are very perceptive and pay attention to how and chat family members eat. They prefer such foods that know from the family or peer group.

9 NAKONEČNÝ, Milan. *Základy psychologie*. Praha: ACADEMIA, 1998. s. 415

food may indicate an eating disorder such as anorexia or bulimia. In this case, it is necessary to seek psychological and social causes. Treatment of such psychosomatic illness is lengthy and in some cases almost impossible.

4. Social aspects of food

There is little doubt that food occupies a solid and important point in mankind history. A table is a kind of mirror of period in which we live, it is a a scale of civilizational maturity.

Food and eating are usually mentioned only in connection with the satisfaction of physiological needs. In addition to the maintenance function, food performs an important social, cultural and communicative funciton.[10]

We forget that man is primarily a social creature, and therefore all its activities, including food intake are influenced by human societies.

Effects of social environment on the feeding behavior, nutritional habits and customs of individuals can be classified into three categories:

1. influences of family,
2. social influences outside the family,
3. effects of the media and cultural environment. [11]

FAMILY INFLUENCES

The family is regarded as a distinct social group whose main task is to ensure the healthy development of the child's personality. Family as a social group is characterized by intense emotional relationships among its members. In relation to its members, family shall perform the function of reproduction, socialization, educational and economic.

For a child, the family is the first social group, whose member it becomes. A child gains its position in this group from birth automatically. The family represents first model of social coexistence. Child's personality is gradually shaped by living in family and its attitudes to the outside world are formated

The formation of the child's personality and its grow in the society is a part of the process of socialization. During this lifelong process, the child learns a specific form of human behavior, perception, thinking and accaptance of social norms applicable to the society. This also includes habits and attitudes relating to food and eating. All adult family members are involved into the process of educating and upbringing.

Education of parents, parenting style, family financial situation, and also the place where the family lives have significant impact on family lifestyle and nutritional education of children

Relationship between family members play a key role in the issue of relations between family life and nutrition. It regards relations between adult members of families

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10 Communicative function of food is often mentioned mainly in connection with eating disorders. Refusing food or, conversely, increased consumption, could be the way how individual suffering from an eating disorder communicates to those around, expresses something that can not or does not want to say in words.

11 FRAŇKOVÁ, Slávka; DVOŘÁKOVÁ-JANŮ, Věra. Psychologie výživy a sociální aspekty jídla. 1.vyd. Praha: KAROLINUM, 2003. 256 s. ISBN 80-246-0548-1

involved in child rearing and relationships between parents and children and ultimately, relationships between siblings.

Common dining with parents is an effective way how to reinforce children's good attitudes to food. Even for older children it is important to eat with their parents as frequently as possible. Common dinners at least on weekends should be obvious. Parents should instill that eating several times a day is perfectly normal, and that overeating and possession and special diets are inappropriate.

Wrong and unhealthy eating habits, like overeating or irregular meals or eating alone, which many children do, can be very dangerous. This kind of habits can lead to eating disorders. If parents have not overview of when, where and what their children eat during the day, these disorders can be identified very late.[12]

SOCIAL INFLUENCES OUTSIDE THE FAMILY

Child's world is in first few years its reduced to a social environment that includes the closest family and relatives.With increasing age, however, the child becomes independent and it gets into the broader social environment outside the family. This environment has en effect on children and participate in shaping their attitudes.

Transition from home to kindergarten or to elementary school is an important moment in the life of each child. There are also big changes in a field of eating habits. Child has to submit a new dining system, get used to the new diet, learn how to eat and dine in the dining room with other children. For the child who is used to eating at home only in the presence of the mother or siblings could be difficult to use to the noise in the dining room, the clink of cutlery and other children shouting. This unpleasant experience may affect the development of eating behavior.

Visiting a restaurant or an invitation for lunch or dinner with friends is usually a nice change in the run-in dining family stereotype. This new social situation has a great importance for the development of the child's personality and its relation to food and restaurants

EFFECTS OF THE MEDIA AND CULTURAL ENVIRONMENT.

Educational influence of parents on the dietary habits of their children is unfortunately weakened by the strong effect of the cultural environment in which children grow up. It is not possible to raise the child and protect him from the influence of the press, television or the Internet.

The negative effect of television on the youngest members of our society is a subject of many discussions today.

Younger and younger children spend most of their free time in front of the television screen or computer monitor. These two media play a major role in shaping the ideas of standards, ways of behavior, expression, clothing and meals that are accepted or even required in our society. Advertisments and advertising is very effective mean how to influence attitudes to food.

Advertisements for food are based on knowledge of psychology. Creators of ad-

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12 OBČANSKÉ SDRUŽENÍ ANABELL. *Kouzlo stolování* [on-line]. Citováno dne 9.4.2008a. Dostupný z www: <http://www.anabell.cz/index.php/clanky-a-vase-pribehy/vyziva/19-stravovaci-navyky/256-kouzlo-stolovani>

vertising campaigns use a number of effects on the psyche and human behavior. Billboards, leaflets and short films that promote food effect on human senses, especially thanks to their colors and sizes. There are many tricks how to draw the attention and attract emotional passion for food that is offered. This job employs whole teams of psychologists. Our rational side is influenced by emphasizing the health aspects, economical, and quick and easy preparation of offered goods. Last but not least, the advertisers try to focus on our emotions. Offered products are presented as those that meet our needs, bringing joy to our children, ensure a pleasant holiday days.[13]

This kind of advertising is very refined and could have strong effects mainly on small children, who accept it uncritically, and forcing parents to buy these products. For example, younger children do not distinguish between commercial adds and normal program. Children believe them like they believe to fairy tales. Older children are already able to distinguish advertising from the story and take a critical opinion.

Most of the advertising spots[14] promotes too fatty, salty or sweet food. This food is not health for developing children's healthy organism, but if it is presented by peers, popular film heroes or characters from children's animated series, it is hard to resist.

In recent years, we can more often meet a new phenomenon in eating habits. It is about watching TV while eating. It is usual that in restaurants or in the so-called „Fast Food" there is large plasma TV on the wall, which dislays continuously animated movies, sporting events or music programs. In these places we are forced to watch TV involuntarily while we are eating.

Going a few years back, we can find that the previous generation eating was accompanied by radio. It was not the same in all restaurants and families, as well as television does not play in all households today.

General knowledge of psychology is widely used in the supermarket business. Chain stores usually employ large teams of experts. Those create stratgies on basis of detailed analysis of shopper behavior and force the buyer to buy specific products.

The best-known strategies are eg. an arrangement of goods on shelves, arranging conspicuously expensive things next to things at an average price or the promulgation of time-limited actions on the less valuable foods or foods for which the warranty expires. Especially tricks with candy and chewing gum at the checkout work good, they usually cannot escape the attention of impatient children waiting with their parents in a row.

5. School lunches

Accrding to MD. Tláskal, President of the Society for Nutrition, school lunches are *„an important tool for nutrition and food policy of the state."[15]*

The first mention of an organized school meals comes from the period after World War II. There was no use lunch as we know it today, but for some snacks that

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13 FRAŇKOVÁ, Slávka; DVOŘÁKOVÁ-JANŮ, Věra. Psychologie výživy a sociální aspekty jídla. 1.vyd. Praha: KAROLINUM, 2003. 256 s. ISBN 80-246-0548-1

14 Some countries, like Great Britain or Scandinavia, have decided to fight with statistics showing an increase of child obesity and adopt a ban on ads promoting this so-called „junk food". Despite the negative impact of such advertising on children's eating habits is evident ,this topic is not yet perceived as a problem in our country and therefore no legislative action are being prepared.

15 TLÁSKAL, P. *Školní stravování*. Výživa a potraviny, 2008, roč. 63, č.5, s.66-67 ISSN 1211-846X

were served to children in all schools. These snacks were collected from stock UNNRA. With the increasing employment of women in the 50th years the need to provide meals for their children also increased. First school canteens were opened. Schools were the first iniciators.

In 1953 the Ministry of Education issued first decree, which was devoted to the issue of school meals. This decree established the authorities that were responsible for establishing and operating the school canteen, the financial standards for the purchase of food and catering charges.

This decree was replaced by the new one in 1963. This new decree set out precisely rations by age groups of children. First County inspectors of school meals were appointed, regional and district education center for school meals was also established. Their main task was to oversee the implementation of the tasks of school canteens, foster the development of school meals and increase the skills of canteens staff.

Charges for lunches served only to purchase food and their amount was determined by the social situation of the family. Other expenses for the operation of the dining room was funded from the state and municipal budgets.

In the 60. and 70. a large increase in natality was seen. In this period there were built new housing estates with schools and school canteens. Gradually 10 000 school canteens were built, where 100% of nursery school children, more than 90% of elementary school pupils and 65% of secondary school students came for a lunch. Initially, school meals faced the problem within adequate facilities and the lack of finances to ensure adequate supplies of high quality and diverse raw materials. The increase in charges for meals would be pretty difficult for parents, could help to improve conditions of school meals, but was not support by the ruling party in this time.

After the year 2003 districts came to end and also their Centres for school boarding. Ministry of Education gradually restricts its activities in   the school boarding. Dining room becomes part of schools. We managed to adjust the charges for meals so that it is possible to apply the recommended dietary allowance.

In the nineties, the nutritional standards, that should be an indicator of the quality of prepared meals, were announced. Later the market basket was build up for easier orientation of school canteen staff. Market basket is a continuously updated set of nutrition standards that must be followed when creating menus. The average food consumption per boarder per month is fixed.

Currently school meals has a long tradition. Methodical assistance for canteens is today provided exclusively by Society for Nutrition. Many school canteen go throught extensive construction and modernization in recent years. They have to meet strict hygiene and technology rules set by European Union.[16]

Also interiors of school canteens have undergone vast changes throughtthe recent years. Today's school canteen is rather reminiscent of a cozy restaurant, than the canteen, which we were accustomed to before 1989. When furnishing dining rooms, the emphasis is not just for functionality but also the convenience of diners.

Replacing the traditional square dining tables with round tables could be considered as a quite revolutionary change in the arrangement of school canteens. This idea

16 ŠULCOVÁ, E.; STROSSEROVÁ, A. *Školní stravování (historie a aktuálně)*. Výživa a potraviny, 2008, roč. 63, č.5, s.68-71 ISSN 1211-846X

came from one Moravian company that specializes in the production of school furniture. This idea is based on the roundtable theory. Round table has no corners, no edges, so that all the persons who sit at the table have the same status. At the round table, there is no privileged place. In the cafeteria, which is quite noisy place, round tables could help to calm the students and improve the general atmosphere in canteen.

In Czech Republic there is currently 9028 school canteens, which regularly prepare meals for 1.61 million consumers, more than 10% of the population of our country. According to figures of the Society for Nutrition, school canteens are used by 100% of nursery schools, 78% of elementary schools and 58% of secondary school students.[17]

LUNCH AS A NECESSARY PART OF A HEALTHY DIET OF THE CHILD

According to the Information Consultancy Centre for Nutrition, lunch should cover approximately 30-35% of daily energy intake. Unfortunately, the truth is that most children completely skip lunch or buy food at inappropriate restaurants, fast food type. School lunch seems to be the best option.[18]

Children who are not enrolled in school canteens, often claim that their school food does not taste good and that they do not like it. The problem is not in variety of food offered in school canteens, but in families. Children refuse to eat some meals only because they do not know them from their homes. The family diet is either generally unhealthy or on the contrary, parents trying to eat a healthy diet according to the rules, but they let their children eat only those foods that they like. These children are often allowed to eat sweets, chips and other fatty foods, inappropriate for their organism. It is clear that these children do not like dishes from school canteen.

Parents should realize that if they want to lead their child to a healthy diet, they must themselves set an example and follow certain principles of healthy eating.

School canteens, cafeterias and vending machines are kind of alternative to school canteens. In contrast, however, canteens do not offer fully valued meals.

First cafeterias and canteens in schools occured soon after the Velvet Revolution in 1989. These „shops" were operated mostly by school janitors. The main purpose of these cafeterias is not to ensure that children get valuable, energy and healthy food, but mainly to make money.[19]

Offer of these buffets are therefore driven by demand. Commercial interests are stronger that efforts to lead children to healthy eating habits.

Canteens, cafeterias and vending machines in schools should be just some kind of supplement meals for children during their school day. Unfortunately, increasingly we can see that food from machines substitute a fully valued lunch (offered by the school cafeteria), and are often the only meal that child eats per day.

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6. Results of research in the influence of selected psychological and social aspects on eating habits of children in a primary school

During March 2009 I carried out an investigation which aim was to determine the potential effect of psychological and social aspects on eating habits among primary school pupils. Research has focused on the effects of close family and social environment outside the family. Part-task of this probe was also to investigate how much are children's dietary preferences affected by media and advertisments.

The research was conducted by questionnaire, which was filled in by 322 pupils aged 8-16 years. The investigation was carried out at three primary schools in Zlin region. The divergence of these schools were given by pupils place of residence. Most respondents were from primary school Bílovice, which is a village school in which children commute from a number of surrounding villages. Primary school Zlín is a housing estate school, which is mainly attended by children living in the city. This school has several classes with extended lessons of physical education. The third school was primary school Napajedla, a small town school, attended by children living in the city, but also by children from nearby villages.

SCHOOL MEALS - SNACKS, LUNCHES

In almost every school we can find a school cafeteria, canteen or vending machines with sandwiches, baguettes, sweets and beverages. The suitability of these foods could be certainly discussed. Unfortunately, these substitute meals replace even a child's fully valut lunch very often. The results of the questionnaire probes that, for pupils aged 14 to 16 years, this way of providing snacks or lunch is probably more acceptable than to eat snack prepared at home or eat at school cantem. Teenagers are trying to manifest their independence and adulthood, and these include an effort to show that they are able to deal with money that they get from their parents. Whether they use this money for snacks and lunches, this could be a theme for discussion. It is evident that not all teenagers spend money for a nutritionally valuable foods.

On the contrary, younger schoolchildren aged 8-11 years preferred snacks prepared by their parents. In my opinion, these children are not yet well adapted to the school. They are still dependent on their parents. Preparing snacks could be a difficult task for many of them and if they get money for lunch, they would probably spend them on sweets, which would satisfy their cravings, but not feed them. Parents are aware of this fact. Brunch prepared by parents is more suitable for these children. For example, snack or brunch prepared by mummy can be for first graders a sort of link with home. Mother knows her child, knows what it tastes and what not.

It is certainly no surprise that girls often prepare their own snacks. It is possible to explain it, for example, that girls, unlike boys, are from a very early age led to housework, to independence in preparing simple meals and small works in the kitchen. If entrusted with tasks such as preparing a snack for themselves or for their siblings, they like accept it.

FAMILY INFLUENCE ON CHILD'S EATING HABITS

Family influence on children's eating habits is undoubted. In most families parents and children meet each other every day at least to dinner. It is mainly because parent are very busy. In today's hurried time, it si more difficult for some people to find the time for valuable lunch. They even have no time for regular family dinners at home. Children of these parents are usually used to the fact that everyone eats alone, takes „something" from refrigerators. Lack of rules and regularities in the family eating may enable children to be more easily influenced by wrong nutrition examples. They are lost in the world of food , they are trying to find themselves.

The results confirmed, that children whose families meet regularly for joint lunches and dinners, are less sensitive to advertisments of food and snacks. Children from these families have a knowladge of wide range of traditional and less traditional dishis from their homes, and are often included in the preparation of meals. They are oriented in the world of food. Assume that this family has run a dietary rules are observed both adults and children. (eg. family meets for dinner daily at 18.00, the son set the table, daughter prepare vegetables, cut bread, etc.) Parents talk to their children more about food and have the opportunity to influence their dietary preferences. During a common dining, parents may influence the eating habits of their children mainly because they set an example.

PEER INFLUENCE

Family members are not the only ones who can influence children's eating habits. The majority of children spend most of the day at school or in after school center, where they meet their peers and friends. Mutually influence each other. I wonder how much influence have classmates on individuals when selecting meals. I started from my own experience. I believe that every child is trying to find and consolidate its position in the group of peers. It wants to engage. In an effort to gain favor with friends, children are often forced to adopt rules of the group, they are trying not to stand out, they do what others do. It could be similar in case of nutrition preferences. I can imagine a group of girls, friends who choose the same food for a lunch just because they are friends. They have the same idols, listen to the same music, wear the same hairstyles, eat the same food. My presumption was not proved. The questionnaire responses showed that the selection of pupils' meals governed primarily by what they like. They do not let their peers to influence them. Today's children are confident and not afraid to express their opinions. They are used to eat at restaurants, choose foods from the menu, at its discretion.

FASTFOODS AND SCHOOL CANTEENS

Growing popularity of quick-service restaurants, so called fast food restaurant, is relatively young phenomenon in Czech republic. Today's generation of school children are fed with meals from food chain restaurants like KFC and McDonald's. These eating establishments are designed to serve and feed as much as possible people in relatively short time. Noise, screams, and the constant movement of people is nothing unusual here. It is quite impossible to enjoy your meal in peace in place such as McDonald's.

Most of the adults prefer lunch or dinner in a quiet pleasant environment. They are not able to enjoy their food in the canteen or fast food restaurant. On the other hand, children, who are accustomed to eating in fast food from an early age, do not notice the noise and constant movement in the school canteen. They are not disturbed. The results obtained by questionnaire confirmed this fact. 75 % of all respondents replik that they do not mind noise, chatter and constant movement in the school canteen. Nearly 10 % of pupils answered that they like the bustle and noise in the dining room.

CHILDREN FROM THE CITY, CHILDREN FROM VILLAGES

Children from villages often commute to school outside their residence and they are likely to be eating in a bus or train or buy something to eat in fast food, cafeteria on the railway station, etc. Children who commute, often skip the lunch at school canteen just because they do not want to miss the bus to home. This research, however, demonstrated that the residence had no impact on whether children are more likely to eat in the cafeteria or outside. The number of urban children eating in the school canteen is not very different from the number of village children who eat at school.

Previously, maybe children from a village often had lunch at home. Mummy prepared lunch one day in advance, or there was grandmother to which children went every day for lunch. The situation is different today. Rural life is not very different from city life. Most parents of children from villages are just as busy as urban parents. Mothers do not have time for everyday cooking. Family relationships are also freed. Thus left no choice but to ensure the child with school lunches.

7. Conclusion

The research showed that pupils of primary schools eat most meals at home and at school. Most students who participated in the investigation, eat in the company of their parents during working days. This finding is very positive because common dining with parents is exceptional in these hurried times. Educational influence on shaping attitudes towards food is weakened. Survey among pupils of selected schools revealed, that regular eating families, where parents have the opportunity to influence children's attitudes to introduction of new food to family diet, has possitive effetcs on reduction of influence of advertisments and media on pupils' eating habits. A surprising finding was the fact that today's children and young people are not influenced in their dietary preferences by their peers and that there are no differences between the eating habits of urban children and children from villages. Life in the village appears not to be so different from life in the city.

Food guide us through our lives and is an essential part of daily reality. Although food is one of the most important factors that keep our bodies healthy, it does not only fulfill the function of maintenance, but also an important social and communicative function. Due to the increasing number of psychosomatic disorders associated with food intake, physiological aspects of nutrition should not be overstated, but attention should be paid to the psychological and social aspects too.

VLIV PSYCHOLOGICKÝCH A SOCIÁLNÍCH ASPEKTŮ NA STRAVOVÁNÍ ŽÁKŮ ZŠ

Abstrakt: Příspěvek se snaží poukázat na často opomíjené psychologické a sociální aspekty, které spolu s aspekty fyziologickými ovlivňují vztah dětí a mládeže k jídlu a stravování. Zaměřuje se především na vlivy rodiny a sociálního prostředí na potravní chování a jeho vývoj. Pozornost je věnována také otázce utváření preferencí, averzí a postojů k jídlu. Příspěvek se věnuje také otázkám školního stravování a vlivu médií a reklamy na stravování žáků základních škol.

Klíčová slova: potravní chování, psychologické aspekty, sociální aspekty, stravování, stravovací návyky, jídlo, osobnost, společnost, prostředí, preference, averze, rodina, školní jídelna

NUTRITION KNOWLEDGE AND ATTITUDES OF 12–13 YEAR OLDS TOWARDS HEALTHY NUTRITION IN SLOVENIA

Verena KOCH, Mateja KAVČIČ

Abstract: *In the report we present the views of pupils on healthy nutrition, and knowledge of pupils about healthy diet. In the research 242 students participated. To get the answers about the knowledge and views of pupils we administered a questionnaire which was composed of two parts. In the first part the pupils had to express a positive or negative position related to a healthy diet. In the second part they were given written statements to which they had to decide whether they were correct or incorrect. We wanted to determine whether the knowledge of primary school children varies according to the gender and age, or class. The majority of pupils have positive attitudes to healthy diet; they are aware that what they eat has effects on their health now and in the future. The results also show, that there are differences in nutritional knowledge between sexes, where girls have slightly better knowledge, and more positive result are among pupils who attend higher classes.*

Keywords: *nutritional knowledge, attitudes, pre-adolescents, Slovenia*

Introduction

Good health is an important indicator of the quality of life and refers to broader human environment, in which healthy nutrition takes an important place. The indexes of healthy nutrition according to the guidelines of WHO, are closely related to lower general and specific mortality rate due to heart and coronary diseases and cancer. These two diseases are also top reasons for mortality (WHO, 1990; Ferro Luzzi, Gibney, Sjostrom, 2001).

The statistics in Slovenia shows that 66.4% of all death cases were due to coronary heart diseases and cancer. The fourth place (6.6%) is taken by diseases of gastro-intestinal organs. Some of them are related to unhealthy nutrition and bad eating habits.

Education about healthy lifestyle and healthy nutrition is an important factor which influences the formation of healthy lifestyle and healthy eating habits of an individual. An early inclusion of healthy nutrition teaching programmes into compulsory elementary school curricula and into other levels of formal and informal education can improve knowledge and behaviour of children connected with eating habits.

Nutrition knowledge alone does not influence behaviour, but does provide individuals with the ability to know how to select a healthy diet. The nutritional knowledge and skills need to be taught during childhood when firm eating practises are being established (Birch, 1987; Shepherd, Dennison, 1996). Therefore, school is the major area for providing young people with nutrition knowledge and skills.

In the Republic of Slovenia, like in other countries, nutrition has gained a significant place in strategies of nutrition policy at all levels of education. This issue has been implemented in the official policy of Slovenia in 2004 (Resolution on the National Programme , 2005**)**. It stems from the need to maintain people's health and to decrease the so called modern civilisation diseases which cause premature death of the population. For this reason education is an important element for achieving this goal.

The resolution on the national nutrition policy and sport activities for healthier living in 2005-2010 was accepted in 2005 and emphasizes strategies for increasing professional education and training in healthy nutrition and healthy life-styles.

The majority of the population gain knowledge about nutrition during the period of compulsory education. For this reason the teachers need to encourage students to take regular and healthy meals, and point out the consequences of unhealthy nutrition and its impacts on human health.

In Slovenian educational programs nutrition topics are integrated into other subjects, with the exception of secondary school programs for food technology and catering, medical school and home economics programmes. Nutrition, as a special didactic program is »hidden« is home-economics curricula in the fifth and sixth grade of elementary school where it is a compulsory subject. Nutrition can be taken as an elective subject in the last three years of elementary school, however it is optional (Koch, Kostanjevec, 2005).

Nutrition in the pre-school curricula

At this level we can talk about a »disguised« curriculum. Children are engaged in all sorts of communication and interaction activities, through reward and failure they learn about the rules how to manage time and space. It is through these activities that a disguised curriculum can be brought in. Such a curriculum is not precisely defined but lends itself to bringing in elements of education which can be more effective compared to a targeted curriculum .

Nutrition in the curriculum of elementary schools (nine-year programme)

Compulsory elementary school education lasts for 9 years and begins when children reach the age of six and ends when they successfully complete the educational programme, or after nine years of schooling.

In the first cycle (grades 1–3) all, or most of the subjects are taught by general class teachers. Half of the lessons in the first grade of the elementary school are assisted by the pre-school teacher. During the second cycle (grades 4–6) specialist teachers

become more and more involved in the teaching process. In the third cycle (grades 7–9) lessons are taught solely by specialist teachers.

The compulsory elementary school curriculum is based on several national curricular documents which were prepared and adopted by the National Curricular Council and the Council of Experts for general education of the Republic of Slovenia (1998-2006) and were launched by Ministerial decrees, and issued in accordance with the Elementary school Act. The Act specifies which school subjects are compulsory.

Scholl is the basic institution of formal education where students acquire knowledge about nutrition through compulsory, as well as elective subjects and science subjects. Thus, topics on nutrition are included in all triads. In the first triad nutrition is incorporated into the Environment subject (1st, 2nd and 3rd grade), in the second triad in Science and Technology subject (4th and 5th grade) and Home economics (5th and 6th grade). In the third triad nutrition topics appear in the following subjects: home economics, science, biology, chemistry, and electives (modern methods of food preparation and nutrition). The main compulsory subject with most topics on food and nutrition is home economics in the 6th grade of nine-year elementary school programme. According to the home economics syllabus, students are supposed to have acquired certain degree of knowledge about food and nutrition after the 6th grade.

Two elective subjects with topics on nutrition are offered in the nine-year elementary school: Modern methods of food preparation and Nutritional methods. These two provide more in-depth knowledge on the topics which are useful for later vocational training or in everyday life. These subjects are optional and can be taken in the third triad (i.e. 76th, 8th or 9th year). The subject Modern methods of food preparation includes topics on the significance of correct nutrition for maintaining health, e.g. safe, protective, and healthy nutrition and cooking. The syllabus includes topics on nutrients and health, quality of food and healthy meals, and nutritional habits. The subject Nutritional methods focuses on the aspects of nutrition as a means for protecting and maintaining health, e.g. the importance of healthy eating habits, healthy food in various stages of life, and nutrition in special circumstances. The syllabus includes topics on: over-nutrition, traditional and other nutritional habits, nutrition in different age groups and in special circumstances. In addition to this students acquire relevant knowledge also through Science subject in the 6th grade and Biology in the 9th grade.

School meals as part of a curriculum

By law, every elementary school in Slovenia has to organise at least one meal at school (Art. 57, Elementary School Act, Official Gazette, No 12 -29 II. 1996:884). Thus school meals also represent a form of nutrition education, which is in fact a disguised curriculum.

The teaching goals are operationalised so that pupils can:
• understand the meaning of school meals and learn about the nutritional rhythm
• understand the importance of good eating habits and their significance for health

- learn basic hygiene needed in catering
- learn good manners during eating
- evaluate school meals and compose menus
- assess suitability of school meals according to their sensory value.

<div align="right">(Simčič, 1999)</div>

Studies have demonstrated that adolescents are not worried about the consequences of what they eat today on their health in the future. However they do know what they should be eating to have a healthy diet but their eating behaviour does is not reflected in their knowledge (Story, Resnick, 1986; Gracey, Stanley, Burke et all 1996).

Methods

SUBJECTS

Subjects were recruited from schools in Slovenia. There were approximately equal numbers of males and females.

Table 1. Children aged 12-13 y by gender

gender	number	%
male	118	48.8
female	124	51.2

QUESTIONNAIRE

A questionnaire, which was previously designed and used successfully with 11 to 12 year olds, was employed (Frobisher, Maxwell, 2001). The subjects were asked to complete the questionnaire on their own. The first part of the questionnaire examined the subject's attitudes to various aspects of nutrition and healthy eating. The subjects were asked to state their level of agreement or disagreement with statements using a 5-point Likert scale. The second part of the questionnaire tested the subjects' knowledge on nutrition and healthy eating. The statements provided tested either the subjects' theoretical or practical knowledge. The subjects responded to statements by selecting a 'true', 'false' or 'don't know' response. Points were awarded for a correct response and deducted for an incorrect one.

STATISTICAL ANALYSIS

Using the data from the questionnaire, cross tabulations and frequencies were calculated for the whole group. Independent t-tests were carried out on the knowledge scores from part two of the questionnaire to test for any significant differences between pupils by gender and age. The level of significance used was 0.05.

HYPOTHESES

- Elementary school children have positive attitudes towards healthy nutrition.
- Healthy nutrition attitudes differ by age and gender.
- Children are aware that diets have impact on their health.

- Children's knowledge about nutrition is fair (medium) on the average, however, differs by gender or the age of children.

Results:

CHILDREN'S ATTITUDES TOWARDS HEALTHY NUTRITION

In analysing the data we used the Likert scale which is used in pedagogical research. There were five categories of answers to which we assigned numerical values (number of points). For positive statements (which describe desired attitudes) we assigned the category »Agree« 5 points, and 4, 3, 2 and points to the remaining categories. For negative statements (which describe undesired attitudes) the »Agree« category was assigned 1 point value and the remaining statements 2, 3, 4 and 5 points.

Table 2: Attitudes of children towards healthy nutrition

	Arithmetic mean (M)	Standard deviation	Variance
I like cooking.	2.20	0.95	0.91
I have never been on a slimming diet.	2.74	1.48	2.18
I like the taste of healthy food.	2.13	1.03	1.07
I am too young to think about healthy nutrition and about a balanced diet.	3.58	1.24	1.53
I understand what a healthy diet is and I know what I should eat.	1.86	0.80	0.65
Perhaps the food I consume now will have impacts on my health in the future.	2.17	0.96	0.92
I know what energy values different food products have (calories).	2.89	0.99	0.98
Our school meals are not healthy.	3.28	1.19	1.41
I believe that my diet is balanced.	2.45	0.89	0.79
We eat healthy food at home.	2.20	0.92	0.85
My friends are not eating healthy.	3.11	0.92	0.85
I don't know which food to take to eat healthy.	3.48	1.13	1.27
My friends are afraid of getting fat.	2.60	1.06	1.13
Healthy nutrition is a loss of time.	4.13	1.15	1.32
For most of food products I know how much fat they contain.	2.82	1.06	1.12
I eat what my friends eat.	3.61	1.11	1.24
I know how to prepare a healthy meal.	2.22	0.83	0.68
I always read and understand declarations on food products.	2.78	1.07	1.14
I don't like the taste of healthy food.	3.77	0.998	0.996

The data in tables show average answers of all children.
Children have positive attitudes towards their own nutrition; they understand

and know which food is good for them. The majority agree that healthy food tastes good which is a positive indicator, in particular when new food is being introduced to children.

In our survey we made two opposing statements: I like the taste of healthy food and I don't like the taste of healthy food. For both statements we got very positive responses: the agreement with the former statement was (M=2.13), and for the latter (M=3.77).

Children also agreed with the statement that they eat healthy food at school (M=3.28) and at home (2,20) which is encouraging since children's nutritional habits are formed at this stage and will probably remain permanent. This attitude has been additionally reinforced by answers to the statement that the food they eat now will have impacts on their health in the future. Also, children did not agree with the statement that consuming healthy and balanced diets is not important because they are too young for that (M=3.58). Children are also aware that reading declarations on food products is important.

Nutrition knowledge of elementary school children

Part of the questionnaire contained a test with 17 items, i.e. statements, to which they had to decide whether the statement was correct or incorrect. They could also opt for a third option (undecided) if they did not know the answer.

The test items contained questions referring to the role of nutrients for human body, knowledge about nutrients and nutritional values for particular food items, and general principles and recommendations for healthy nutrition.

The results were arranged by the grading criteria: fail (1), pass (2), fair (3),very good (4), and excellent (5). The maximum number of points was 17. Other points were distributed according to the following criteria:

0 – 8 points = 1 (fail)
9 – 10 points = 2 (pass)
11 – 13 points = 3 (fair)
14 – 15 points = 4 (very good)
16 – 17 points = 5 (excellent)

Table 3: Grading scale with the results

Grading scale	Grade	No of students	Distribution of grades achieved %
from 0 to 8	1 (fail)	110	45.4
from 9 to 10	2 (pass)	66	27.3
from 11 to 13	3 (fair)	59	24.4
from 14 to 15	4 (very good)	7	2.9
from 16 to 17	5 (excellent)	0	0
		N=242	100%

THE AVERAGE NUMBER OF POINTS ACHIEVED WITH THE GRADES FROM THE KNOWLEDGE TEST

On the average children achieved 8.87 points, which is a negative grade, i.e. 1.87 (arithmetic mean). The results show that the knowledge of children is poor; 110 children (i.e. 45.4 %) failed at the written test, followed by 66 children (27,3 %) who achieved a pass grade, 59 children achieved fair grade, and only 7 (2,9 %) were very good. None of the 242 children collected maximum points and none got an excellent grade. However, there were three children who collected no points. All the three encircled the third option, i.e. remained undecided and therefore we could not treat their answers as relevant.

Children know the general principles of healthy nutrition only to a certain extent. Problems arise when they deal with a question which requires higher level of knowledge and when they need to apply previously acquired knowledge. We were expecting that their knowledge about general principles of healthy nutrition would be at the fair (medium) level. Of course, it would be necessary to find out the reasons for such poor knowledge acquired by formal education, to analyse what teaching methods are used at schools, and to take the syllabus of home economics subject and related topics taught under other subjects under scrutiny. Also, children motivation should be carefully analysed.

Table 4: Nutrition knowledge of elementary school children by gender

Gender	Average number of points achieved	Average grade achieved during the test
	(arithmetic mean)	(arithmetic mean)
Boys	8.81	1.82
Girls	8.75	1.87

NUTRITION KNOWLEDGE OF ELEMENTARY SCHOOL CHILDREN BY GENDER

We analysed the data according to the age of students as well: our hypothesis was that the knowledge of older children would be better, particularly because older children have already been taught more complex topics within the home economics course and in addition they have had other subjects and thus had more possibilities to be able to relate the knowledge about healthy nutrition acquired from other subjects.

Grades achieved in the test by twelve-year olds

Table 5: Grading scale and grades achieved by 12 – year olds

Grading scale	Grade	No. of children	Distribution of grades achieved % %
from 0 to 8	1 (fail)	69	51.9
from 9 to 10	2 (pass)	31	23.3
from 11 to 13	3 (fair)	31	23.3
from 14 to 15	4 (very good)	2	1.5
from 16 to 17	5 (excellent)	0	0
		N=133	100%

The table above shows the grades achieved by 12-year-old children at the knowledge test. As can be seen from the table almost 48 % achieved a positive grade, and 51.9 % failed the test.

Grades achieved in the test by thirteen-year olds:

Table 6: Grading scale and grades achieved by 13-year olds

Grading scale	Grade	No of children	Distribution of grades achieved % %
from 0 to 8	1 (fail)	41	37.6
from 9 to 10	2 (pass)	35	32.1
from 11 to 13	3 (fair)	28	25.7
from 14 to 15	4 (very good)	5	4.6
from 16 to 17	5 (excellent)	0	0
		N=109	100%

It needs to be noted that 13-year olds attend the 7th or 8th class of elementary schools.

Table 7: Average number of points collected and average grade achievement in the knowledge test by student age

Age	Average number of points achieved	Grade achievement in the knowledge test
	(arithmetic mean)	(arithmetic mean)
12	8.48	1.76
13	9.29	2.07

The table above shows that the number of points collected and consequently the grade improves with the age of children. This may be due to the fact that 13-year olds have passed the course in home economics and have attended some other elective courses.

The study shows that children are unable to apply theoretical knowledge acquired at school to everyday life situations. For example, they know some basic nutrients but do not know what nutrients are contained in certain food products and in what amounts. This means that children know some general principles of healthy nutrition but are unable to apply higher levels of understanding, or practically apply the knowledge in problem solving.

We should need to look for the reasons for poor nutrition knowledge in the methods used in formal education, and to find out whether children do receive all the necessary knowledge required by the syllabus.

An important factor for nutrition knowledge acquisition is learner's interest. Some children are more interested in certain topics than others and this normally results in better knowledge. For example, girls have better nutrition knowledge which may be due to the fact that girls at this age put more emphasis on the body image than boys.

Also, nutrition knowledge improves with the age, because learners have already gone through the process of formal education and have already been taught about food and nutrition during home economics courses and other subjects.

Conclusions

Good eating practises, healthy attitudes and a good knowledge basis to nutrition and health need to be established in childhood and adolescence. Data from this study suggests that healthy attitudes need to be established more within the subjects. This study supports the idea that nutrition needs to have a secure place in the curriculum at school. Pre-adolescents need to be educated in nutrition and healthy eating so they will be able to select, produce and consume a healthy diet now and in the future to help slow down the increasing levels of many diseases.

NUTRIČNÍ ZNALOSTI A POSTOJE DVANÁCTILETÉ A TŘINÁCTILETÉ ŠKOLNÍ MLÁDEŽE KE ZDRAVÉ VÝŽIVĚ VE SLOVINSKU

Abstrakt: Ve zprávě prezentujeme názory žáků na zdravou výživu a jejich znalosti o ní. Výzkumu se zúčastnilo 242 žáků. Pro získání informací o postojích a názorech žáků jsme použili dotazník, který byl složen ze dvou částí. V první části měli žáci vyjádřit svůj kladný nebo záporný postoj související se zdravou stravou. V druhé části jsou uvedena jejich písemná vyjádření, ve kterých museli vyznačit, jestli byly jejich postoje správné nebo nesprávné. Chtěli jsme zjistit úroveň znalostí, postojů a vztahů k výživě na základních školách, zda jsou v tomto smyslu mezi dětmi rozdíly v závislosti na pohlaví, věku nebo konkrétní třídě. Většina žáků, kteří mají pozitivní vztahy a názory na zdravou výživu, je si vědoma, že to, co jedí, má vliv na jejich zdraví nyní i v budoucnu. Výsledky také ukazují, že existují rozdíly v nutričních znalostech mezi pohlavími, kde děvčata mají o něco lepší znalosti a další pozitivní výsledky jsou mezi žáky vyšších ročníků.

Klíčová slova: nutriční znalosti, postoje, dospívající mládež, Slovinsko

EVALUATION OF BMI IN THE SELECTED SAMPLE OF TRNAVA UNIVERSITY STUDENTS

Viera PETERKOVÁ, Ivona PAVELEKOVÁ

Abstract: *The study results bring analysis BMI values of students Trnava University in relation to age, gender and nutrition. BMI analysis was carried out based on height and weight of individual respondents, what we measured the direct measurement and weighing. The research sample consisted of 1386 respondents selected the four faculties of Trnava University (educational, law, philosophical, and Faculty of Health and Social Work).*

Based on the calculation of BMI and its assessment in relation to age and gender of respondents, we found that a majority of respondents had a normal weight. The incidence of overweight and obesity occurred mainly in respodnentov men, in women were surprising finding of a significant incidence of underweight. It should be noted that a similar risk of underweight than overweight, respectively obesity. The incidence of both is undesirable. Risk of the importance of physical appearance and smartness brings undesirable behavior of youth, wrong eating habits, poor diet and irregular eating preferences.

Keywords: *BMI, overweight, obesity, underweight, university students*

Theoretical background

University students are from the development perspective in the category of young adults 18 to 25 year olds. We can say the age, which is generally characterized by reaching maturity in the somatic, psychological and social. Although they are a healthy and educated young people, yet they are not rescued from applying various effects, which are closely linked to the way of life and especially the study of high school. Thats why a university course is an important period in the life of every student.

Changing climate changing their lifestyle to an independent life, what affecting theirs nutrition (Colico 'Baric'et al., 2003). Nutrition and eating habits of students of various universities are deal in several published studies (Racette et al., 2005, Steptoe et al., 2002, Biro, L. et al., 2005, Papadakis, A. et al., 2007). Eating habits and food preferences are influenced by changed living conditions and financial capabilities of

students (Papadakis - Scott, 2002), increasing preference intake food in the form of snacks (Nicklas et al., 2001).

Changed living conditions and financial possibilities of influencing eating habits and food preferences and dietary modification of food, increasing irregular food intake and preference in the form of fast food, which may reflect negatively on the overall health and in particular the occurrence unbalanced weight.

Research Hypotheses

Using a questionnaire we tried to verify some hypotheses.
Hypothesis H1:
We assume that the younger students will be better than BMI as a older.
Hypothesis H2:
We assume that women will be more balanced BMI than men.
Hypothesis H3:
We expect that BMI of respondents with good eating habits will be more balanced than BMIof respondents with incorrect eating habits.
Hypothesis H4:
We expect that BMI of respondents with good dietary preferences will be more balanced than BMI of respondents with incorrect dietary preferences.

Research sample

The research sample consisted of 1,386 students of Trnava university. The number of respondents divided by faculty and gender shown in the following Table 1.

Table 1: Number and gender of respondents from Trnava university faculties involved to research

Students		
Faculty	**Total**	**Gender**
Faculty of Education	399	36 male
		363 female
Faculty of Philosoph	401	89 male
		312 female
Faculty of Law	300	92 male
		208 female
Faculty of Health and Social Work	286	66 male
		220 female
Total	**1386**	

Research methods

On the basis of a study dedicated to eating habits and food preferences of Greek university students published by Papadakis, A. et al. (2007) was used a modified questionnaire survey devoted to dietary habits and preferences of students of different faculties of the University of Trnava. The questionnaire was anonymous and the return was 93 %. Reliability was assessed by calculating the questionnaire Cronbachovho alpha, its value was 0.8764.

Research consisted of a series of questions based on the detection frequency of intake of individual foods. One question that focused on dietary preferences consisted of a list of 33 foods. In the table for each food respondents selected one of eight options that reflect their preference for the food. Each statement in questionnaire were assigned by numerical values that data can be statistically evaluated and compared, and we used the scoring using the positive scoring.

From the measured data (height and weight), we calculated separately for each student his BMI (Body Mass Index).

BMI (kg/m2) = body weight (kg) height (m2).

Table 2 - Evaluation of body mass index

Values of BMI(kg.m-2)	classification
pod 18,5	underweight
18,5 - 24,9	normal weight
25,0 - 29,9	overweight
30,0 - 39,9	obesity
over 40,0	severe obesity

Data from questionnaires were processed in a table in Excel, we evaluated a multiple analysis of variance in the program STATISTICA. From data we create images in the form of graphs.

Results and discussion

Figure 1 evaluate the impact of gender and age on BMI of the respondents. We found a statistically significant effect of gender and age on the BMI of students of Trnava university, the evidence supporting the value of students' lower (p = 0.0377) than in students, where this factor showed a highly statistically significant (p = 0.000000004) (Figure 1). On this basis, we found that a hypothesis is confirmed.

From the data processed we have found that BMI of female-student increase with increasing age. In female students aged 18 years, we have found underweight, continues to occur until the age of 24 years, at a later age appears overweight or obesity. Most of the female respondents aged 19-23 years have the normal value of BMI. Men BMI increase with age less significant, but obesity in this gender is higher (7.7 %). Percentage of men with normal weight (76.9 %) is higher than the percentage of women (61.2 %), where we recorded a significant degree of the occurrence of underweight (28.4 %). These findings show that hypothesis 2 is not confirmed.
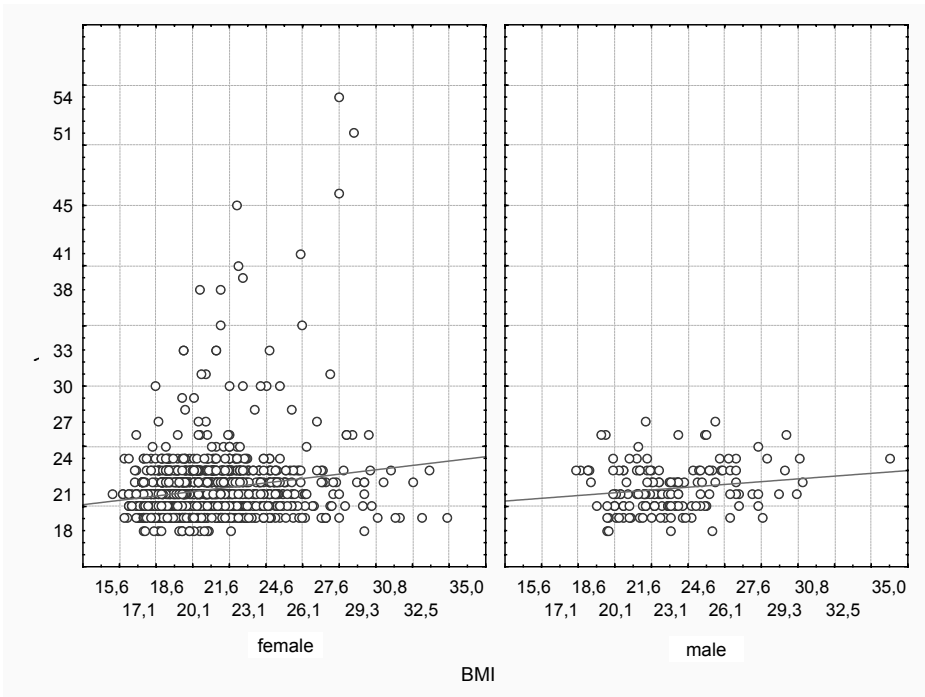
Figure 1 Effect of age and gender of student BMI
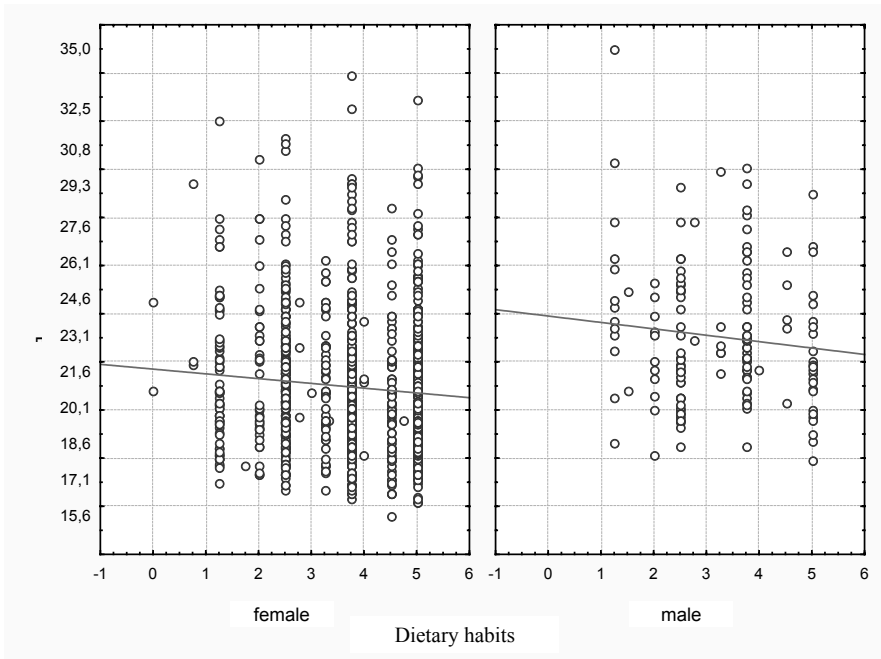
Figure 2 Effect of dietary habits men and women (students) to their BMI

The assumption stated hypothesis 3, that eating habits will affect the value of BMI was confirmed in both sexes of students of Trnava university. From Chart 2 it is clear that the better eating habits of respondents impact to their BMI balanced, thus moving normal values. This effect was more prominent in women (p = 0.0045) than men (p = 0.01969).

In the next section we evaluated the dietary preferences of respondents. Each of them was able to determine the frequency of intake of the type of food in the table included foods that can be defined as beneficial to health, respectively. a negative impact on health.

To assess this question, we used the scoring 1-8, respectively. 8-1, the score values were assigned the health benefit of food. Custom compare the behavior of respondents, given the choice of food was made of the average values obtained for all 33 foods.

The choice, in terms of healthy eating unacceptable, meals is fundamentally contradicts the National Programme to fight obesity, as their consumption may directly lead to an increase in overweight and obesity, which affects the overall health of their consumers.

The evaluation, we found that differences in dietary preferences with regard to BMI of the respondents are more pronounced in women (p = 0.00000002). We found that the choice of quality food is in women with normal range of BMI limit. With inferior quality, respectively less divergent composition of the food spectrum increase the risk of underweight respondents, respectively. obesity. A similar conclusion was reached in men (students) who, however, this conclusion was less significant (p = 0.05301) (Figure 3). The hypothesis 4 is confirmed.
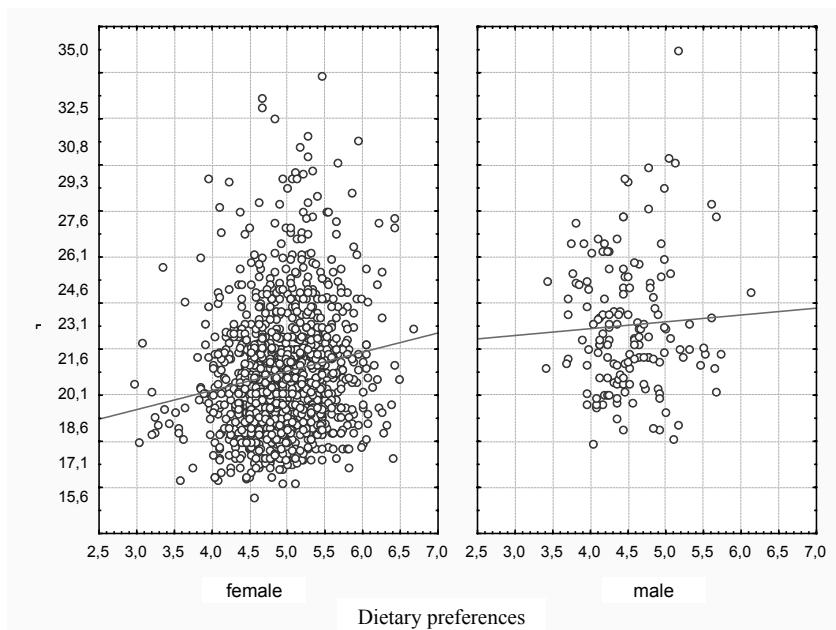
Figure 3 Effect of dietary preferences of women and men (students) to their BMI

It was found that weight gain and poor eating habits during university studies may lead to overweight and obesity in adulthood (Raccet et al., 2005). There is evidence that good nutrition and lifestyle can influence the genetic predisposition for obesity (Niklas et al., 2001).

Conclusion

In the presented study, we aimed to assess BMI of students of University in Trnava. Analysis of BMI values was made based on height and weight of the individual respondents, what we measured by the direct measurement and weighing. Found BMI we assessed in terms of age, gander, eating habits and dietary preferences of respondents. We found that the university environment, an organization providing food and education play an important role for nutrition students.

In this context, and based on these results, we propose the following recommendations:

- encourage students to take more responsibility in the approach to their health and to reinforce a positive approach to healthy lifestyles by organizing discussions with experts, health days, and so on.,
- to promote change bad eating habits of students, we propose to create conditions conducive to a healthier diet for students, school meals contribute to improving the eating habits of students and thus can major change in attitudes towards healthy eating and to promote a proactive approach to change lifestyle
- increase the number of students stravujúcich in school catering facilities, realization of new trends in nutrition and diet to create interest among students about healthy eating,
- improving the drinking regime in terms of quality and quantity of consumption of drinks
- extend the range of school food buffet for groups of students according to requirements such as fruit, vegetable salads, wholemeal bread and dairy products and thus give them the opportunity to choose healthier foods.

POSÚDENIE BMI VO VYBRANEJ VZORKE ŠTUDENTOV TRNAVSKEJ UNIVERZITY V TRNAVE

Abstrakt: V štúdii prinášame výsledky analýzy hodnôt BMI študentov Trnavskej univerzity v Trnave vo vzťahu k veku, pohlaviu a spôsobu stravovania, ktorí študenti uplatňujú. Analýzu BMI sme realizovali na základe hodnôt výšky a hmotnosti jednotlivých respondentov, ktoré sme zisťovali ich priamym meraním a vážením. Výskumnú vzorku tvorilo 1386 respondentov štyroch vybraných fakúlt Trnavskej univerzity v Trnave (pedagogickej, právnickej, filozofickej a fakulty zdravotníctva a sociálnej práce). Na základe výpočtu BMI a jeho posúdenia vzhľadom na vek a pohlavie respondentov sme zistili, že nadpolovičná väčšina respondentov mala normálnu hmotnosť. Výskyt nadváhy a obezity sa vyskytoval najmä u respodnentov mužä, u žien bol pre-

kvapujúcim zistením výrazný výskyt podváhy. Je potrebné zdôrazniť, že podváha predstavuje podobné riziko ako nadváha, resp. obezita. Výskyt oboch je nežiadúci. Riziko nadmerného zdôrazňovania významu telesného vzhľadu a módnosť nadmernej štíhlosti prinášajú nežiadúce správanie mládeže, nesprávne stravovacie návyky, zlé stravovací preferencie a nepravidelnosť stravovania.

Kľúčové slová: BMI, nadváha, obezita, podváha, univerzitní študenti

THE IMPORTANCE OF FAST
FOR A MODERN INDIVIDUAL

Tatiana KIMÁKOVÁ, Petr KACHLÍK

Abstract: *Term beneficial starvation or fasting is not used in the expert or popular literature very frequently. Even many doctors and other medically educated professionals don't comment on the issue very often. Fast or a long-term starvation, perceived as a voluntary rejection of any meals, even the juices is one of the most important, but at the same time currently the least accepted way of retaining and restoring health. Fast is recommended and practiced by all widely spread religions, such as Christianity, Islam and Buddhism. Starvation was practiced and used to treat patients, by various influential physicians or personages of scientific field in the past. We can refer to, for example, Hippocrates, the founder of a rational and dynamic medicine, dubbed "the father of medicine",Abú Alí al-Husayn ibn Abdalláh ibn Sína (Avicenna), Pythagorus, Socrates, Plato, then the founder of a rational hygiene Christoph Wilhelm Hufeland, or an American writer and the Pulitzer prize laureate Upton Beall Sinclair. Contemporary western medicine has lost the idea of fasting, because in its opinion it only observes purely religious purposes of a soul absolution, but doesn't deliver any benefits to the body. The facts, however, prove this idea wrong. In the published writings, we can even find the cases, in which some fatal diseases were cured by the means of fast. It is up to the contemporary medicine itself to rediscover the beneficial influence of fast on human organism and to begin seriously setting up a research of relevancy of its indications regarding various diseases.*

Keywords: *starvation, the famous people of medicine*

Introduction

It is necessary to discern between the recovery fasting and the so called hunger-strike, directly at the beginning, latter being a way of a nonviolent protest against reality, decision of a higher authority or a way of enforcing one's wishes. Political hunger-strike was probably used for the first time by Móhandás Karamčand Gándhí. It is also important to notice the difference between the forced and voluntary fasting. Forced starvation, caused by natural disasters, wars, poor crops or other catastrophes is linked with unimaginable suffering. It is a cause of multiple serious chronic diseases and death.

In our commentary, we are addressing a voluntary, health-recovering fasting.

One of the most important but at the same time the least comprehended ways of preservation and restoration of health is voluntary starving called a fast. Recovery fasting is a topic witch is not mentioned, in the expert or professional publications very often. Quite the contrary. Even the numerous medically educated professionals don't discuss the topic very often, actually hardly ever.

The Hunger-Strike

Long-term fasting, a hunger-strike, is one of the most important, but currently the least understood method of preserving and restoring health.

The fast, limited diet and food consumption and a spiritual purification at the same time, stemming from the self-denial, is recommended by all major religions: Christianity, Islam and Buddhism.

In the case of a healthy diet it is possible to talk about certain link with a fast, although the fast is a privileged practice of expressing the religious faith in attempt to reach the God or a deity. A bodily fast, or a purifying therapy, is a way of a voluntary self-denial and is effective in cleaning human's mind and body. A fast, perceived this way does not have much in common with today's trends of slimming diets, the goal of which is a "slender body".

Famous historic personalities and a hunger-strike

Historically, the most famous personality, with his 40-day fast, was Jesus Christ (Holy Bible, 1996). In the factual literature on the history of medicine, we are likely to learn about many famous persons, healers and physicians who identified with the idea of fasting, relating to the treatment of various illnesses and applied it successfully not only on their patients but also on themselves.

The Egyptians in the 15th century BC assumed, according to the archives of Herod that the basis of health and the preservation of youth, is a systematic fast (three days a month) and a stomach purification by means of nauseating medicines and enema. "The Egyptians", wrote Herod, "are the healthiest of all mortals."

In the Ancient Greece Pythagorus himself fasted for forty days. He was convinced that he was increasing his mental cognition this way. He even forced his pupils to starve. This opinion was common among other Greek philosophers **Socrates** and **Plato**. Both of them systematically observed a ten day fast, which in their opinion, contributed to an attainment of a higher level of cognitive acumen.

The link between diet and illness was well known by one of the most famous physician of Antiquity, Hippocrates (5th century BC), who recommended a fast at the beginning of disease.

Hippocrates, the founder of rational and dynamic medicine, called "the father of medicine", used to say that the increase of food consumption is necessary only rarely. It is often more useful to dispose of the meals completely. If the illness doesn't reach its climax the patient will sustain it.

A man carries a doctor in himself. It is necessary to assist him with his job. If the body is not purified and we will nourish it further, we will harm it. If the patient is fed

abundantly, his illness is nourished as well. Each excess is against the nature. Asclepius had a similar opinion, what's more, on top of the fast he also subscribed spa therapy, exercise and balms to his patients (Nikolajev a Nilov, 1996; Junas a Bokesová-Uherova; 1985).

During Napoleon's occupation of Egypt there were recorded many cases in which syphilis inflicted patients in Arabic hospitals, were cured by means of a hunger-strike.

A hunger-strike pioneer was **Dr. Heinrich Tanier** who fasted twice for forty days, to prove, that man can easily survive without food for a long time, with no damage to his body.

The founder of a Cistercian order, **Robert Molem**, decided after the death of a friend to end his life by starving. He retired to his friends' place in the mountains, stopped to eat and waited for death. After seventy days he concluded that the fate didn't wish his death. He started to eat and lived to an old age. An American writer **Upton Beall Sinclair (1878-1968)**, laureate of Pulitzer price, the prestigious American journalistic and artistic award, also identified with a positive affect of starving. He treated his health problems with a twelve day fast (Upton Sinclair; Nikolajev a Nilov, 1996).

Definition of a hunger-strike

It is a voluntary refusal of any kind of food, including the juices. Drinking of water, mineral or distilled is necessary. Voluntary starving has a positive impact on human organism. It can work preventively or directly for treating various diseases. For someone who is determined to practice a hunger-strike, it is important to do a research on the topic in advance, either by studying the appropriate literature or consulting with someone who has practiced the hunger-strike themselves. It is the most appropriate, obviously, to consult with a medical professional - a physician, a nutritionist, or another specialist, most conveniently with someone who has their own personal experience with it (Cingoš, 1998).

Hunger-strike is not a method to lose weight. Fasting is a vehicle of physical and mental purification and a way of treating chronic and cancerous diseases. During the starvation, the organism does not replenish energetic outputs and is forced to exist merely on its internal reserves. Throughout the process of fast, an increased physiological regeneration, renewal and replenishment of the cells and stabilization of molecular and chemical systems of an organism take place. Furthermore, during the starvation, a decomposition of useless and harmful substances - phlegm and residues of different kinds, happens. The ultimate result of a fast is, a purification and a normalization of a body microflora and defensive functions of an organism and an improvement of the metabolism and the absorbent abilities of a body which can even lead to its rejuvenation (Partyková, 2006).

Length of a fast

A man can survive without food for a handful of weeks, forty days at the most. There are known some extreme cases when people fasted for even more than sixty days. However, for the safety of a patient it is recommended that a voluntary, recovery fast

should not last longer than forty days. After crossing this limit, some irreversible changes might happen to the organism, causing even death. Fast can also be short-term (up to seven days), mid-term (seven to fourteen days) and long-term (maximum up to forty days). Even a one day fast (once a week) is beneficial for the body.

The effects of a fast on the body

Hunger is one of the oldest and most practical phenomena in human's life and its use as a method of healing is as old as the humankind itself. Although healing by hunger is not typical only for man. Animals, lead by an instinct, use hunger as a healing method. Sick dog, cats and horses stop to consume nutrition (Horáková, 2008; Cingoš, 1998).

It is possible to compare human organism to an oxygen burning device. The amount of fuel equivalent to approximately half a kilogram of fat is burnt in it over twenty-four hours. As soon as we stop the intake of fuel, the body immediately changes its way of supplying. The fuel is administered from internal reserves. The nutrients that are least needed such as excessive tissue, various lumps, adhesions that only restrict the body's functioning, are burnt first. That is why in many cases a long-term starvation leads to curing cancerous tumors.

It is known that under the influence of a fast the organism is disposing of useless particles. During the fast we burn approximately half a kilogram of tissue, harmful substances, fat, tumors, phlegm and other needless matter, what's more, we even save a huge amount of energy that is necessary for digestion. The body has to rid itself of all waste and extra food. Heart, bowels, liver, spleen, skin and various glands work diligently. All of these organs participate in the process of using the nutrition.(Horáková, 2008; Cingoš, 1998; Nikolajev a Nilov, 1996). The increase in the number of red blood cells occurs during starvation. The 100% increment of hemoglobin happened after a twelve day fast. The quality of blood improved as well. A decrease in the muscle volume occurs throughout a long-term fast. The loss of fat and muscle is not a threat to the body. A short-term fast does not decrease the number of muscle cells. The blood circulation improves as well. The organism is compelled to use the proteins scattered over the arteries, which has a rejuvenating effect on the organism and boosts the calcium-riddance of the arteries and the increase of their passage.

After the completion of a hunger-strike the increase in the production of fluids with an increased digesting ability occurs. The abscesses are cured, the enormous appetite and uncomfortable feelings diminish. Hunger also cleanses the digestive system in the fastest and most natural manner.

The effective rejuvenation of skin is visible. Sharp lines and wrinkles subside. Blemishes, colorless spots and boils gradually disappear. The skin is taking on a finer tone and the tissue structure is improving.

Hunger-strike improves the physical and mental condition of an individual. Literature even describes cases, particularly, of depressive and fear-stricken patients on whom starvation had very beneficial effects. Hunger positively affects all senses. The sight becomes sharper. Cases in which the cataract completely disappeared during the fast were chronicled. Many cases of deafness disappearance occurred as well. Maybe it's caused by the fact that Eustachian tube which links the inner ear with the nasal

area, is disposing of the filth and cataract residue(Cingoš, 1998; Nikolajev a Nilov, 1996).

Drinking and hygiene during the fast

It is recommended to drink as needed, preferably clean water. The intake of milk, fruit or vegetable juices is not advised during the fast. Milk is a food (babies). Fruit and vegetable juices belong to a special diet, which starts the starvation.

It is necessary to be increasingly hygienic over the fast. It is required to shower often, brush the teeth, wash the tongue (with an edge of a flipped coffee-spoon), walk in the fresh air and sleep long enough.

Body organs during the starvation

If the organism has nothing to digest, it will start to consume its own organs. This is exactly where the important facts emerge. The consumption of the reserves in various organs is unequal. The slightest losses are in the nerve centers and heart (Nikolajev a Nilov, 1996).

The most important facts concerning the fast

Starvation or fast is not merely a religious matter, it works to prevent various diseases and can even cure them.

It has a rejuvenating effect.

It is necessary to consult a physician before the first hunger-strike, preferably such who has their personal experience with it.

Do a research, using appropriate resources.

Not to worry! A voluntary decision to fast is important.

It is recommended to practice fast during a weekend or holiday, when one has enough time to purify their body, enough sleep, and exercise in the fresh air.

Keep your feet warm! The risk of getting a cold.

Remember! How many days to fast and how many days lasts the reverse phase.

During the reverse phase the salt mustn't be added to the meals. To consume meat, meat products, mushrooms and eggs is forbidden. Alcohol and smoking is restricted. The violation of these rules is dangerous for the body (Horáková, 2008; Cingoš, 1998; Nikolajev a Nilov, 1996).
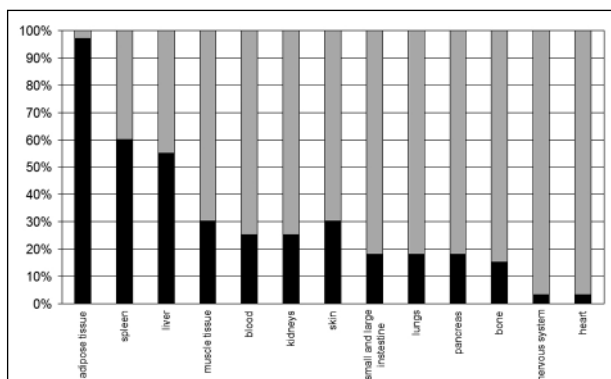
The weight loss of specific organs and tissues in percentage

Who can't fast:

- breast-feeding mothers,
- patients with following conditions - lung tuberculosis, Basedow disease, adinism, disorders of central nerve system, acute conditions that require a surgical treatment - acute appendix, entanglement of bowels, cysts, abnormalities of inner organs, high level of exhaustion especially in the elders,
- HIV positive patients (Nikolajev a Nilov, 1996).

Conclusion

It is up to the contemporary medicine itself to rediscover the beneficial influence of fast on human organism and to seriously begin establishing the research of relevancy of its indications in relation to various diseases. Besides the improvement of physical fitness and health it also brings an unexpected rush of energy and optimism. It can restore lost health. Patience and inner strength are highly recommended during the fast. The feeling that we have done something good for our health is worth it.

VÝZNAM PÔSTU PRE MODERNÉHO ČLOVEKA

Abstrakt: Pojem ozdravná hladovka alebo pôst sa v odbornej a populárnej literatúre nepoužíva príliš často. Dokonca mnohí lekári a iní medicínsky vzdelaní odborníci sa k tejto problematike vyjadrujú zriedkakedy alebo vôbec nie. Pôst alebo dlhodobé hladovanie je ako dobrovoľné odmietnutie akejkoľvek stravy, teda i štiav jedným z najdôležitejších, ale súčasne najmenej chápaných spôsobov uchovania a obnovy zdravia. Pôst doporučujú a praktizujú všetky veľké náboženstvá: kresťanstvo, islam i budhizmus. Hladovku sami praktizovali a ňou i svojich pacientov liečili mnohí významní liečitelia či osobnosti vedeckého života v minulosti. Môžeme spomenúť napríklad Hippokrata, zakladateľa racionálneho a dynamického lekárstva, nazývaného „otec medicíny", Abú Alí al-Husayn ibn Abdalláh ibn Sína (Avicenna), Pythagora, Sokratesa, Platóna, ďalej

zakladateľa racionálnej hygieny Christopha Wilhelma Hufelanda, či amerického spiso-
vateľa, nositeľa Pulitzerovej ceny Upton Beall Sinclaira. Súčasná západná lekárska veda
stratila pôst, pretože podľa nej sleduje čiste náboženské účely očisty duše, ale neprináša
žiadny úžitok telu. Fakty však dokazujú opak. V literatúre nájdeme opísané prípady,
kedy sa pôstom vyliečili i niektoré nevyliečiteľné ochorenia. Je na samotnej súčasnej
medicíne, aby opäť objavila blahodárny vplyv hladovky na organizmus človeka a začala
sa seriózne zaoberať výskumom vhodnosti jej indikácie pri rôznych ochoreniach.

Kľúčové slová: pôst, slávne osobnosti medicíny

BIOETHICS AND ENVIRONMENTAL ETHICS AS PART OF THE TRAINING OF FUTURE CIVICS AND SOCIAL SCIENCES BASICS TEACHERS

Petr JEMELKA

Abstract: *This paper focuses on the area of extending the contents and scope of traditional ethics by bioethics and environmental ethics. They undoubtedly reflect very serious issues of the contemporary world (global environmental crisis, the value of health and life etc.). These issues are not a simple fashionable trend, but they significantly touch upon the future prospects of our civilization. Bioethics and environmental topics thus currently become a substantive part of real politics. The issues of health care, population policy or protection of the environment therefore make an important part of campaign platforms of most political entities – from local to national levels.*

Training of qualified Civics teachers thus cannot leave out this aspect of philosophy and ethics which has such strong ties to practical life issues.

Bioethical issues are thus a way to a really creative school education. They are based upon a concrete information basis, which is up-to-date and attractive (e.g. the question of cloning) and yet easily available to get oriented in the subject. They therefore have an important potential for meaningful educational/instructive activities.

Keywords: *bioethics, environmental ethics, environmental crisis, health, protection of the environment, training of teachers, educational programs*

Josef Šmajs, a philosopher from Brno, says in his *The Lease Contract with the Earth*: "Globalised culture also devaluates the traditional structure and content of school education. Also today, school provides us lots of useful knowledge; however, in the sensitive phase of human ontogenesis in which cognition is relatively easily connected to values, it does not develop thinking respectful of the Nature. School does not teach us what is the Nature and natural evolution..."[1]

It is exactly the consciousness or intuitive perception of such a situation which is

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[1] Šmajs, J.: *The Lease Contract with the Earth.* In: Jemelka, P., Lesňák, S., Environmentální etika. Prešov 2008, p. 90.

the challenge and inspiration for all the creative and passionate teachers, methodologists or workers in eco-centres, who strive for overcoming such a cognitive and emotional deficit in the education and instruction.

The development of the natural-science aspect of the educational effort is surely an important and essential part of such a process. Social-sciences potential is also quite large; civics at primary schools and social sciences basics at secondary schools belong also among important fields which provide space for such topics. For such a reason, environmental topics are considered to be important aspects of the training of future teachers of the above-mentioned subjects, as such a scope of topics touches upon almost all the aspects or parts of the subject-matter of such studies (philosophy; ethics; political sciences; aesthetics; culturology; economics; etc.).

In such a context, it is also important to realise that bioethics and environmental topics thus currently become a substantive part of real politics. The issues of health care, population policy or protection of the environment therefore make an important part of campaign platforms of most political entities – from local to national levels (including foreign policy level) – see e.g. concepts of sustainable development as a standard political doctrine of many countries.

The ongoing social debate thus requires culturing of pupils and students in order to make them better informed, and also able to hold dialogues (development of tolerance, art of argumentation, etc.). For such a reason, such topics are closely linked to the culturing of the value and attitude components of personality development.

<center>***</center>

This paper focuses on the area of extending the content and scope of traditional ethics – this means, so-called environmental ethics and bioethics. Without any doubt, these reflect quite topical issues of the present times (global environmental crisis, values of health and life, etc.). Such issues are not simple fashionable trends, but they significantly touch upon the future prospects of our civilisation.

Training of qualified teachers thus cannot leave out this aspect of philosophy and ethics with such a strong ties to practical life issues. Teachers of Civics and Social Sciences Basics will surely cover such issues within the framework of their educational – instructive practice. For such a reason, a new course (Bioethics) was created in our Department (within the scope of the above-mentioned development project), which should help in the basic orientation in this internally quite extended and demanding, however without any doubt very attractive scope of topics in this area of special training of future teachers.

The objective of this paper is not to give detailed information on the subject matter of this newly implemented course.[2] We wish to outline a certain conceptual approach towards the above-mentioned field of studies (bioethics and environmental ethics), which has become a concrete methodology basis for its creation.

Let's begin giving a reference to a document of international validity – the Universal Declaration on Bioethics and Human Rights from 2005.[3] The Declaration is a reaction to the contemporary development of science and technology and it leads to the requirement for the acceptance of global responsibility also for the moral aspect of such a development.

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2 The syllabus of this new course is attached.
3 See Universal Declaration on Bioethics and Human Rights. UNESCO, Paris 2005.

Such a responsibility applies both to the preservation of cultural diversity and interests of future generations, and biodiversity – protection of all forms of life. It starts from the fact that man is an integral part of the biosphere; however, man is the only creature responsible for her/his behaviour and s/he is capable of realising such a responsibility.

Referring to this key document, we would like to argument in favour of the approach we have chosen for the creation of our concept of the bioethics course. The point is that nowadays, we may encounter two approaches to this subject field. The usual (quite narrow from our point of view) understanding of this subject more or less reduces bioethics to a reflection on the issues of medicine and nursing ethics. Generally speaking, such an approach falls into an anthropological reduction of the issue, as it deals mainly with moral aspects of human health and disease, dying and death or human reproduction.

A wider approach, however, understands bioethics as a specific reflection on the phenomenon of life (which means not only human life). Life is looked upon as a universal value – which corresponds to the original definition of bioethics at the time of its creation in the seventies of the last century. For such a reason, environmental ethics may also be included and meaningfully developed within the scope of bioethics approached in such a manner.

Expressed in other words, such a narrow common approach towards bioethics leads to a paradox when life ethics is mostly focused on the death and suffering, reducing thus its focus on the life as a whole just to a human life. Another essential problem is the fact that such a reduced approach means that such an ethics is in fact mostly applied ethics (typically professional ethics of healthcare professionals, etc.).[4]

We prefer to see a wider scope of bioethics as being based upon a core value – life. This is why it includes both the specifically anthropic reflection and the value and moral dimensions of existence of other than human forms of life, including thus also the relatively autonomous area of environmental ethics.

Bioethics is thus developed with a view to the necessity of interconnection of biological (including environmental) and social reflections – anthropologic and culturologic. It also interconnects the systematic approach (determination of basic issue areas; defining of key terms) with the histographic level, dealing with the development of reflection on this scope of problems as an essential and important part of the ethical theory.

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The enforcement of such an approach towards bioethics and its basic scope of topics may also be perceived as a certain meaningful innovation of the teaching of social sciences. This is a really concrete connection to a scope of topics which are very attractive (also due to mass media influence). Thanks to the instruction of socio-scientific subjects, bioethical issues may embody the way in which pupils and students face hot themes and issues of the contemporary world.

As it has been already said, such a situation will require a further amplification of the specialised instruction of teachers who will need specific information on the situation in the related fields of science, on the implementation of technological possibi-

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4 Applied ethics does not have its own authentic value basis; it is usually based on quite a general formulation of values with a high level of abstraction, which enables an universalistic applicability of these.

lities and on the status of legislation and basic valid legal standards, applicable to e.g. research, medicine branches, human reproduction, hygiene, but also animal welfare and legal status of the environment protection.

It is also important to interconnect such an "information basis" with knowledge of the specific political and economic situation – let's mention, by way of example, different aspects of the healthcare reform, biocombustible-programme subventions, but also some aspects of the problems of minorities (sources of racism and xenophobia), etc.

Bioethics may thus be very likely regarded as a means by which the instructive and educational aspects (not only) of social science may be successfully based upon specific, interesting and important issues, in which the originally not very captivating and general method of instruction may be transformed.

In such a manner, an important connection may be created e.g. to the multicultural-education scope of issues (see e.g. the above-mentioned topics of xenophobia and racism) or global education (environmental topics from the point of view of global environmental crisis; humanitarian aid or medicine-ethics issues in underdeveloped countries, etc.).

Due to the content attractiveness and diversity, it is also possible to point out that such a diversity also provides an important didactic inspiration, which especially means that it offers possibilities for the development of less traditional educational methods – in relation to the ultimately discoursive character of bioethics.[5] Suitable methods may considerably improve the level of instruction not only of social science – projects, case studies, simulation games, brainstorming, etc. Such methods represent an important factor for the creation of much desired interdisciplinary relations. Bioethical issues may thus offer an important interconnection to other subjects through cross-sectional topics. The list is far from being complete; we may anticipate e.g. possibilities in the area of the choice of career (science; medicine; cosmetics; agriculture), family education (health; reproduction; care for the handicapped), aesthetic education (non repeatability and beauty of live nature; aesthetically creative aspect of project education), issues of healthy lifestyle (hygiene; nutrition; healthcare, etc.), etc.

Bioethical issues are thus one of the ways to a really creative school education, as such issues are not based upon vague and general motifs or topics, but it is built upon a very strong concrete information basis, which is up-to-date and attractive (e.g. cloning) and yet easily available to get oriented in the subject, offering thus important (and also vital) topic potential for meaningful educational – instructive activities.

Attachment:

BIOETHICS
(Syllabus of the Department of Civics of the Faculty of Education of the Masaryk University of Brno)

I. Introduction to Bioethics Studies
1. Bioethics as a part of the ethical theory; anthropocentric and biocentric scope

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5 The characteristic feature of this subject matter is the fact that it is not a domain only for experts, but it includes an all-society public discussion on sensitive topics (typically, e.g. abortions, euthanasia, etc.).

of bioethics; application (normative) and descriptive approach to bioethics.
2. Science and technology as direct sources of bioethical topics (research using biological material; possibilities of medicine technologies; anthropogenous changes of biosphere).

II. Bioethical Reflection of Live Nature Value
1. "Life" – the core category of bioethics (from the biological to axiologic definition).
2. Issue of rights of live organism in the contemporary context (cloning and genetic engineering).
3. Environmental ethics (origin and development of ethical reflection on environmental problems).

III. Anthropological Issues of Bioethics
1. Human life as a specific value; pursuit of human nature; issue of justification of the influence upon the human life (interference in human behaviour; research using human beings; ethical aspects of legislation – absolute punishment; eugenics; problem of racism).
2. Beginning of human life (ethical aspects of human reproduction; assisted reproduction; prenatal diagnostics and its moral impacts; abortions).
3. Human life in health and disease; corporal and mental health as a value; length and quality of life; issues of medical and nursing ethics (patients rights; ethical aspects of transplantation).
4. Bioethical reflection on dying and death (death as a part of life; human intervention in the natural end of life - euthanasia, suicide).

IV. Bioethics and the Education towards Citizenship
. Bioethical issues as an important part of education and instruction (development of knowledge, skills and approaches); citizen and healthcare (importance of voluntary blood and bone marrow donorship; prevention; healthy lifestyle).
2. Demands for teachers.
3. Principal recommended methods.

BIOETIKA A ENVIRONMENTÁLNÍ ETIKA V PŘÍPRAVĚ BUDOUCÍCH UČITELŮ OV A ZSV

Abstrakt: Příspěvek ukazuje potřebu rozšířit obsah „tradiční" etiky o témata bioetická a o etiku environmentální. Obě tyto dílčí disciplíny sledují závažné otázky současného světa související s environmentální krizí, chápáním hodnot zdraví a života. Zdůrazňování významu bioetiky a environmentální etiky není jen „módním trendem", jejich témata se zabývají závažnými problémy budoucnosti civilizace, stávají se součástí politických dokumentů. Péče o zdraví, populační politika i ochrana životního prostředí hrají důležitou úlohu v programu politických stran a ve volebních kampaních na regionální i celostátní úrovni. Bioetická a environmentální etika má důležité místo

nejen v předmětech přírodovědných, ale také v předmětech společenských, především v občanské výchově na základních školách a v základech společenských věd na školách středních. Ani biotika, ani environmentální etika by tedy neměly chybět ve vzdělávacích programech budoucích učitelů těchto předmětů.

Klíčová slova: etika, biotika, environmentální etika, ochrana životního prostředí, zdraví, vzdělávání učitelů, vzdělávací programy

NEW AND OLD TASKS OF ERGONOMICS
AT BASIC SCHOOL

Petr KACHLÍK, Marie HAVELKOVÁ

Abstract: *Child growth and development need suitable types and dosing of movement activities. Risk of insufficient movement activities (immobilization) belongs to significant risks of school attendance, besides infections and overloading. In the city of Brno 50 pedagogues have been inquired by means of anonymous questionnaires in 10 basic schools. Questions were focused on defects of the movement system with emphasising disorders of back (the incidence, diagnostics, prevention). In classrooms of one-fifth of the teachers there are children with orthopaedic disorders of back. Just parents should bring their children to regular and various movement activities, encourage them in proper life habits, motivate them by joy of movement; the school should use short exercise during lessons, motivation to movement in breaks, in interest groups and in out-of-school activities, reduced performance evaluations in physical training lessons and care of proper body posture.*

Keywords: *exercise, questionnaire, spinal column, motion, prevention, school, teacher, defect, back, pupil*

Introduction

Ergonomics is a new interdisciplinary scientific branch; its name comes from Greek words ergon = work, nomos = laws. In several countries other terms are used for this branch, e.g. "human engineering" or "biotechnology" (in the United States) or "Engineering psychology" (in Russia). Ergonomics is focused on effort to use findings of biological sciences effectively and intensively in design, planning, projects and construction of technical devices to serve people, in operation of the devices also with regards to appropriate environment. Biological factors of tools, machines, instruments, operating practice and environment are equivalent or dominant aspects besides technological, engineering and economical criteria *(Hrubá, 1995)*.

Ergonomics influences especially the following fields *(Hrubá, 1995):*

- Means for work (machines, tools);
- Working technology and placing;
- Organization of work and relaxation routine;
- Forms and ways of training and education;

- Protection of workers;
- Choice of workers.

School practice applications of ergonomics affect the following items *(Hrubá, 1995):*
- Equipment of general and specialized classrooms, cabinets, study rooms and other workplaces;
- Working processes, arrangement of workplaces;
- Organization of school time structure for teachers and pupils (lessons, breaks, work, relaxation, leisure time);
- Contents and forms of acting on pupils, apprentices students;
- Health damage prevention at school;
- Choice criteria of pedagogical workers and pupils.

In this paper the authors are focused on back disorders problems and their prevention.

Spinal column

The spinal column consists of 33–34 vertebrae: 7 cervical, 12 thoracic, 5 lumbar, 5 sacral vertebrae secondary fused to the sacrum and 4–5 vertebrae coccygeal that form the coccyx. They work as a functional system. Every vertebra consists of three parts of different function: the body, the arch and diapophyses. The vertebrae are mutually connected by joints, ligaments and muscles. By means of this structure the vertebrae can keep stable position of the body and are also movable to such extent that they enable various movements. Intervertebral discs between adjacent vertebrae act as absorbers to protect the spinal column against shocks and they influence the range of movement of individual spinal parts. So the mobility of the spinal column is given by the sum of movements between individual vertebrae; the range of movement is determined by the shape of junction surfaces, the shape and angle of vertebral spines and relative height of intervertebral discs *(Dobeš, Michková, 1997; Zelená, 2004).*

In the thoracic part the spinal column is connected with the ribcage and in the sacral part with the pelvis. Many ligaments and muscles are bound to the spinal column that carry out mutual movements of individual vertebrae resulting in movements of the whole spinal column and the body.

From the lateral view the spinal column shows multiple curvatures, which increases its stability. The curvatures must be proportional, the lordosis in the cervical area, the kyphosis in the thoracic area. The excessive lordosis is called hyperlordosis, the excessive kyphosis is hyperkyphosis. From the anteroposterioric view the physiologically minimal curvature is called scoliosis, the excessive curvature is considered to be pathological.

Basic movements of the spinal column are forward bends, backward bends, bends aside, rotations and springy movements *(Dobeš, Michková, 1997; Zelená, 2004).*

The spinal column ensures supporting and movement function – it acts as the support of the erect posture and as the movement axis of the body, it protects existing important nerve structures (the spinal cord, nerves,); it is the organ of high sensitivity

(it participates in keeping balance in the space) and also the organ representing mental processes. Proper function of the movement axis can influence not only the structures existing in the spinal canal but also function of the body movement system as a whole, i.e. limbs with joints, muscles and internal organs functions. Because of those multifunctional relationships the spinal column should always be perceived in connection with the function of the pelvis, the lower limbs and muscles *(Gúth et al., 2000; Zelená, 2004)*.

Importance of the spinal column to keeping balance has been clearly proved. The area of craniocervical junction, where deep nuchal reflexes originate, is considered to be very important. For keeping balance a correct proprioception is essential from this area, whereas the function of the internal ear labyrinth is not necessary. The spinal column, as the movement axis of the body and the organ of balance, works as a reflexively controlled function unit. If a position or function is changed at one end of the spinal column it is immediately manifested at the other end *(Lewit, 1990)*.

As regards the function of the spinal column, the most important part are the so called "key areas" or "key segments", the transition parts where functions of the spinal column are suddenly changing. It concerns the craniocervical, cervicothoracic, thoracolumbar and lumbosacral junctions *(Lewit, 1990)*.

The cervicocranial junction (head joints) enables extensive movements in all spatial directions and is able to bear the heavy head at the fragile cervical part of the spine. Functional discrepancies reduce mobility of this part, they can cause higher tonus of postural muscles and failure of balance.

In the cervicothoracic transition the very movable cervical spine passes into the least movable thoracic part of the spine. (The mobility is reduced by connection of ribs and the shoulder girdle with voluminous muscles). The spinal column is heavy loaded in the area of the thoracolumbar transition; here the movement mechanism of the thoracic spine is changed in the lumbar mechanism in the place of the last thoracic vertebra. The function discrepancy of this area results in spasms of many spinal, abdominal and pelvic muscles.

The lumbosacroiliac junction is the basis of the spinal column with decisive influence on the body statics. It transmits the motion from the lower limbs to the spinal column and acts as the shock absorber. The spine and pelvis represent a function unit. The pelvis connects the spine with the lower limbs; it transmits the motion from the lower limbs to the spinal column and acts as the shock absorber. In the pelvic area there are strong muscles and ligaments to ensure sufficient firmness. The pelvis consists of three associated bones: os illium, os ischii and os pubis. The symphysis line of the bones is approximately Y-shaped and goes through the acetabulum of the hip joint. The both parts of the pelvis are anteriorly connected with the discus interpubicus and posteriorly with the sacrum. The pelvic bone and the sacrum are connected in the sakroiliac junction that enables mobility of the pelvis. The function of the pelvis and its influence on the statics depend in substantial measure upon the pelvis type. Different pelvis types exist according to considerable variability of the last lumber vertebra, which is called "the transitional vertebra" *(Lewit, 1990; Zelená, 2004)*.

The key areas used to be the place of primary functional deficiencies of the spine that affect particularly children. They influence the whole spine, also due to secondary disorders - the spinal blocks *(Lewit, 1990)*.

Back muscles

The back muscles are sorted in three levels: the deep muscles of the back (intrinsic muscles), the intermediate muscles and the superfacial muscles. The deep muscles of the back are situated along the spinal column. The deeper muscle is, the shorter is the respective muscle fascicle. The shortest fascicles connect only two nearest segments.

The deepest layers of muscles influence mutual position of individual vertebrae. They are even activated by the thought of movement. They act in the sense of extension and several of them can decrease the pressure in the intervertebral discs. The intermediate layers connect more segments and control individual parts of the spine. Participation of the superfacial muscles in keeping the upright posture of the body is minimal; they play a role at instability.

The activation of the both sides of the back muscles complex enables extension of the spine at fixation of the pelvis. So the lumbar lordosis can be increased and the muscles are activated at respiration. At side bending the one side activation produces the rotation of vertebrae to the other side *(Véle, 1997)*.

Muscle syndromes

Functional defects of the motion system result in a gradual imbalance between the weakening physical system and the tonic system. The tonic system is getting dominant and becomes shorter. This imbalance is most evident in the area of the pelvis and the shoulder girdle.

The imbalance in the pelvic area is called *the lower cross syndrome;* it can change static and dynamic conditions in the pelvic area and the corresponding spinal parts. Consequently the pelvic anteversion is developed (the forward turnover) with the more significant lordosis in the lumbosacroiliac transition area and then the load distribution in the hip joints and spinal the segments is changed in the lumbar and sacral areas (mainly in the discs). Consequently the extension in the hip joint is insufficient and the anteversion of the spine can be intensified, which causes the continuing overload of the lumbosacroiliac spinal parts. The so generated anteversion is subsequently compensated by the lumbar hyperlordisis caused by the flexion in the hip joints. The hip is loaded unsteadily and responds to the situation by adaptation reconstructure of the bone. The intervertebral discs are also loaded enormously in this section and gradually degenerate. Also intervertebral joints are affected. Contractures can occur as reaction on painful excitations. This state can consequently influence walking *(Dobeš, Michková, 1997; Zelená, 2004)*.

In shoulder girdle the so called *upper cross syndrome* can occur. It is manifested by the forward head posture with overload of the cervical spinal column, by the increased cervical lordosis, the rounded, forward shoulders and change in position of shoulder-blades. Changes can appear in the shoulder girdle area, abduction of shoulder blades and overload of the muscular apparatus, which can cause change in position of the shoulder joint and degenerative changes. Disorder of the cervical spine can provoke change in the cervical sympaticus whose plexus is situated here and also the nerve structures connected with inner organs *(Dobeš, Michková, 1997; Zelená, 2004)*.

The third muscle syndrome is the *layer syndrome* with alternation of hypertrophic and hypotrophic muscle layers. At the dorsal side of the body the layers can exist of

hypertrophic and shortened muscles in the area of the hip, crura and glutea, hypertrophic erecting muscles in the area of the thoracal and lumbar spine, the layer of weakened inter-blade muscle and the layer of hypertrophic and shortened upper fibres of the rhomboid. In the front part of the body the weakened ventral muscle structures dominate with the shortened sternocleidomastoideus, the weakened deep flexor muscles, the hypertrophic shortened muscle iliopsoas and the straight semitendinosus *(Dobeš, Michková, 1997; Zelená, 2004).*

Body posture evaluation
In the sagittal plane the human spinal column is visibly physiologically double curved. We can here find *(Lewit, 1990)*:
- Cervical (C) lordosis (the spinal column is arched with convexity forward);
- Thoracic (Th) kyphosis (arched with convexity backward);
- Lumbar (L) lordosis;
- Sacrococcygeal (S-Co) kyphosis.

Those curvatures make the spinal column more flexible and in a complex with the intervertebral discs they enable damping of vertical shocks, mainly by walking.

The spinal column of newborns is straight, its shape changes in dependence on the underlayment used. In the first months the child begins to lift up the head and at first the cervical lordosis begins to form. At sitting the thoracic and lumbar parts of spine are in one kyphotic bend – the dorso-lumbar kyphosis. The thoracic lordosis is formed as late as in the standing position. The final formation of the human spine is finished not before the age of twenty.

The upright posture is a complicated matter. The so called posture stereotype of the posture is ensured by participation of the inborn unconditioned reflexes and the acquired conditioned responses that ensure the posture stereotype. The posture is quite individual characteristic and exceptions considered as pathological can not be easily defined. Nevertheless the postural standard has been defined, which is used in attempts to evaluate and to define the posture variations. However, to declare a posture as pathologic is problematic (*Lewit, 1990).*

Postural standard (Janda, 2001):
- Lateral view: the perpendicular going from the external auditory meatus going through the shoulder joint and the centre of hip joint, terminated in the os naviculare of the lower limb,
- Backward view: the perpendicular going from the back of the neck, touching the top of the thoracic kyphosis and then going through the intergluteal cleft.

Especially children are investigated in this way. If the child meets this standard its posture is declared to be the *proper* one. Each difference from the proper posture that is not caused by a structural change (inborn malformations of the spine or a disease, etc.) is considered to be *the defective posture (Janda, 2001)*.

Another simple and reliable investigation of the defective posture is the test of the posture by Matthias. The child is in the standing position with arms horizontally rai-

sed forward at 90º for 30 seconds. If the position is not substantially changed during this time, the posture is correct. If the head and the upper part of the thorax lean backward, the shoulders go forward and the belly is pushed up, the posture is incorrect *(Haladová, Nechvátalová, 1997)*.

Correctness of the posture should be checked in the body resting position, i.e. in the standing at attention position with the muscles relaxing but not relented *(Haladová, Nechvátalová, 1997)*.

The body posture of children can be evaluated by use of silhouettes images as proposed by Klein, Thomas and Mayer; these authors distinguish four types of the body posture: excellent, good, feeble and bad. Five basic criteria are evaluated: the head position; the thorax- and abdomen position; the spinal curvature; the position of shoulders blades, sides, thoraco-brachial triangles and the shoulder silhouettes *(Haladová, Nechvátalová, 1997)*.

Reasons for development of the defective body posture

The defective posture is included among diagnoses sorted within the wider term „*postural defects*“. Those problems are very frequent; they affect substantial groups of population and concern function changes, later also structural changes connected with pains. Medicine has studied those problems since the end of 18th century. A lot of works exist that prove functional changes in about 80 percent of the population of children and youth *(Janda, 2001)*.

The muscular system is a decisive agent participating in development of the defective body posture. It is not only the muscular force which is decisive but mainly the balance between individual muscle groups. Deviations of the proper body posture are in most cases caused by muscular imbalances between muscles in the front and back sides of the body. In such a pair, the first of the muscles is postural with tendency to stiffen and the second is phasic with tendency to weaken. The both muscles compete in „tug-of-war“ for the spine and the victory of the postural muscle against the physical one results in the defective body posture *(Tichý, 2000; Zelená, 2004)*.

There are many reasons for emergence of the defective body posture – the endogenous influences still have not been fully discovered, the exogenous influences are is close relation with life style changes. The most frequent cause is shortage of physical activities and exercises. This civilization factor concerns not only the adults but also the children involved in the sedentary lifestyle. This handicap exists even among children of the preschool age and if not detected in time, it becomes worse during the school attendance. Besides the shortage of moving activities among children, e.g. as the consequence of the passive sitting at TV or computers, the bad nutrition and consequently the obesity, participate in the muscular imbalance. Another factor with negative effect is the stress. The muscular imbalance can affect also the sporting children because of an unilateral load due to a certain sport - if it is not compensated with another exercises or procedures *(Janda, 2001; Zelená, 2004; Mužík, Krejčí, 1997)*.

The typical wrong body posture of children and adolescents is characterized with slack muscles and a loose ligament system. In standing position it is especially demonstrated by the pelvis turned over in the forward direction, the elevated abdominal wall, the higher lumbar lordosis and the thoracic kyphosis, in the upper body part by the pro-

truded shoulder blades with the prolonged shoulders and the forward head posture. The lower limbs are often bent.

For adults a certain type of defective body posture exists which is connected with structural changes of the spine or with a degenerative disease.

In most cases the defective body posture does not manifest an isolated local defect but it represents response to dysfunction of the whole motion system. The most sensitive structure is created by muscles that are considered to be a crossing area in which changes in both the peripherial parts of the movement system and the central system are reflected. Therefore according to the muscles reactions we can make conclusions on defects in the peripheral areas and also in the central part which controls movement actions *(Janda, 2001; Zelená, 2004)*.

Generally summarized: the defective body posture represents a set of divergences from a norm that can be purposely compensated by muscular activities. These functional defects are without evident structural changes, e.g. the slack body posture, flat back, child's round back protruded shoulder blades, scoliotic position of the spinal column. They originate from muscles imbalances as consequence of a lack of the movement activities, exercises, at unilateral load, eye sight defects, hearing defects, failures of mental development. It is manifested by shortening of hip flexors, knees, weakening of abdominal muscles, increasing of lumbar lordosis, flexion of head. When the long time problems are not detected and persist/are not solved, the described state is fixed as permanent, it can progress and the organic damages can appear *(Janda, 2001; Zelená, 2004)*.

Movement stereotypes

The dynamic movement stereotype is a temporarily constant system of conditioned and unconditioned reflexes which was developed on account of stereotypically repeating stimulations. Stereotypes are changed in time course, are influenced by internal factors and react to external environment changes *(Janda, 2001)*.

At healing of functional defects of the movement system and also the defective body posture the most important task is to improve incorrect movement schemes, when muscle coordination became negatively affected in consequence of defects of the central control. However, the movement stereotype is very individual and characteristic for each of individuals. It is created during the human ontogenesis as a chain of conditioned and unconditioned reflexes and it is not easy to define the threshold of a norm. In the ideal case the movement stereotypes should organize movements as economic as possible i.e. with the minimal energy consumption *(Lewit, 1990)*.

At evaluating of the movement stereotypes, the stage of activation and coordination is important for the muscles participated in the stereotype. The aim is to find if a pathological stereotype exists, if it is fixed and in what extent of fixation. The stereotype of the hip joint extension, the thorax flexion, the abduction of the hip joint, the shoulder joint and the neck flexion are evaluated most often. For each stereotype the ideal time sequence of muscular activation is defined *(Dobeš, Michková,1997)*.

The muscular imbalance, i.e. damping of physical muscles and hyperactivity of postural muscles, can substantially disturb coordination of movements and proper movement schemes. Reorganization of pathological movement schemes is very complica-

ted and time demanding, with need of active and qualified patient participation *(Lewit, 1990)*.

Sitting

In the course of social development the portion of sitting in human activities has been substantially multiplied. The movement system of the human body is overloaded not only by the increased physical effort but also by sedentary working conditions or by activities connected with the continuous and repeated load of specific movement segments. Also the everyday sitting during school lessons overloads the movement system of pupils. Not only back pains but also distant pains – headache, vertigo, formication or strong pains in extremities are the most often consequences of our modern time and they originate often from defects of the spine and the movement system.

The body posture and all movements can be realized either in the physiological way when the respective structures are protected by a suitable loading or the body posture is "flaccid" and the movements are unphysiological which can cause overloading. Each sitting position should be evaluated individually, with considering its purpose. Therefore it is accordingly important how relevant diseases, injuries and damages of the movement system can affect the joints and the muscular system and change mobility of the spine and the joints of extremities *(Rašev, 1992)*.

Rašev (1992) uses the term "back school" for acquiring skills for convenient behaviour towards one's own body and principles of a modest loading of the organism with using movement activities in a comprehensive methodical system. At the back school this optimal behaviour towards the own body is trained with the aim to change the long-life harmful habits responsible for all the troubles.

The most economical load of all spinal structures in the approximately normal state (muscles without shortening, suitable height of intervertebral discs, joints free movable in whole extent) – it is the position that must be poised. The balance is ensured by the poised muscles. It is the most convenient position that enables the axial load of supporting structures although is can be easily deflected. This position is not-stable but enables optimal distribution of loads acting on the intervertebral discs.

In the sitting position our body gravitates towards a loose sitting, with the rounded back, the pelvis flapped backwards; now the loading of intervertebral discs is uneconomical, the discs are wedge-shaped, the ligaments connecting vertebrae are disproportionately stretched. The short–lasting strong stress due to bending always brings negative effects but young undamaged structures can subjectively resist them for a long time. Such more often long-lasting and disadvantageous loading positions (the sitting with rounded backs and the forward head) impact substantially on creation of adaptive changes that enable the spine, its joints and muscles react to external effects and postpone threat of damage from overload.

If the body should sit upright, with the vertebral discs uniformly loaded in the whole surface, it must be supported by the system of muscles and joints. If the muscles are not shortened, have the normal structure and strength and are without damage effects, so the upright sitting can load economically the responsible muscle groups of the trunk and the extremities. More often, however, the floppy sitting posture is used, because the muscles are imbalanced, shortened and weakened. The sitting posture

with the rounded back can deform the intervertebral discs but is very well tolerated for a short term if the intervertebral discs had not been substantially damaged *(Rašev, 1992; Zelená, 2004).*

Children often suffer from the kyphotic sitting position, which causes the overload of intervertebral discs, the sternum compression and the share-bone symphysis, the forward position of the head and the neck position and the hyperlordosis in the craniocervical passage. It can result in higher tension in majority of the postural muscles. The function of the whole spine can be compared with a system of mutually connected cogwheels: one of them is the cervical spine, the second is the thoracic spine and the third is the lumbar spine. Thus, even the lowest part of the spinal column can influence the highest part of the spine, i.e. any overloading of the lumbar spine after the long-term sitting can result in pathology of any other spine part.

For maximal release the Brügger sitting position is recommended; the patient is sitting at the very end of the stool, keeps his knees and legs apart, the legs propped, the abdominal and the gluteal muscles are floppy. Then the pelvis is tilted forward, the lumbosacral lordosis is enforced and the abdomen is arched forward. After assuming this position the upper lumbar, thoracic and cervical spinal parts are being evened up and reach the static balance. This sitting position can be a certain compensation of the common kyphotic sitting position which is the most frequent working position in the sedentary employment in the situation of muscles relaxed without any support *(Rašev, 1992; Zelená, 2004).*

Proper standing position and posture

The body posture should be ensured by the muscular system with exerting a minimal energy for a certain long-term body position and without creating the bending stress that could cause overloading of characteristic structures. Simultaneously the optimal position is instable because the body structure can be easily shifted from this position.

In the upright position the body must permanently resist the gravitation. For the most economic function of the muscles it is necessary, at average curvatures of the spine, to adopt the standing position with the pelvis slightly leaned forward and the head kept upright. The shoulders should be kept in the natural position, not forced backwards.

The distance between the lumbar spine and the perpendicular going from the rear head should be 3-3.5 cm at maximum, the distance of the cervical spine 2 - 2.5 cm. The angle formed between the head and the body is 90º. The angle between the feet is 30º - 40º; at longer duration of the standing position it is recommended to transmit the weight from heels to tips and vice versa in order to avoid overloading the back muscles. The lumbar spine is in the middle position (Rašev, 1992*; Zelená, 2004*).

Methodology

A probe was carried out in the segment of pedagogical community in Brno town. The unstandardized and anonymous questionnaire *(Ševčíková, 2004)* with 14 items (5 with the closed offer of responses, 6 with the half-open and 3 with the free offer of responses), focused on etiology, diagnostics, incidence, school classes equipment,

therapy and prevention, addressed 50 teachers participated in the research from 10 randomly drafted Brno schools - 15 men and 35 women, their practice averaged 14 years, 43% of the respondents were teachers of the 1st grade of basic schools, 57 % of the 2nd grade of basic schools. Because of the small data collection, it was processed by univariate analysis.

Results

All respondents know some type of spinal defects of children. The most frequent responses of the teachers were: only scoliosis (68 %), scoliosis, kyphosis and lordosis concurrently (29 %). 2 % of responses were "the shifted vertebra", "the pressed vertebra", "the rounded and flat back".

17 % of the respondents teach a pupil with a spinal defect. They were informed about the defect by the pupil or his parents (82 %), 18 % of respondents themselves found out this defect.

22 % of the respondents (only women) know methods for detecting spinal defects. They were informed on the methods: by physician, in medical consulting rooms, in studies at the Faculty of Education or by means of mass media. 68 % of the respondents are of the opinion that it is not necessary for teachers to know diagnostic methods used for discovery of spinal defects.

One half of the respondents (52 %) would like to know more about the issues of orthopaedic defects, 60 % of them would prefer the form of an information booklet, 40 % would choose an information seminary (here preferred mainly by women).

The most often responses of the question concerning causes of spinal were as follows:
- Lack of physical movement (52 %),
- Bad sitting position (57 %),
- Carrying heavy loads (52 %),
- Unsuitable school furniture (21 %),
- Rapid growth (21 %).

Most of the respondents were not properly informed about the appearance frequency of the defective body posture, muscular imbalances or spinal defect of children (80 % is usually quoted). The nearest answer to this literature data was "50 %".

If the children affected by spinal defects are just in classes with the respondents as teachers, so in 47 % of such cases they are given preferential treatment by using two sets of textbooks (one set for the school, the second one for home) and by arrangement of exercise breaks.

More that three quarters of the pedagogues (84 %) try to guide the children to the proper body posture during their lessons, 52 % of them use verbal notice by calling attention to bad sitting with sequential advice to repair. About one third of the respondents (28 %) enable relaxation breaks for pupils with stretching exercises in all lessons to compensate the stiff sitting in school benches.

All schools participating in this research offer pupils activities of various interest groups. The most frequently quoted activities are:

- Floorball (36 %),
- Sporting games (36 %),
- Body ball exercise (15 %),
- Remedial exercise (31 %),
- Aerobic exercise and swimming (8 %).

69 % of the respondents consider the class equipment to be satisfactory, also for the pupils with the spinal defects, and they are positive about its preventive function.

The teachers offered the following most frequent changes concerning education:
- Equipment of the classes with vertically adjustable school benches and chairs to adapt them to pupils' height requirements (69 %),
- Integration of targeted compensation or relaxation exercises or at least stretching breaks in each of lessons (63 %),
- Installation of remedial exercises minimally for 1 hour/day (58 %),
- Possible purchase of two sets of exercise books not only for the pupils with spinal defects (47 %),
- Purchase of balls to supplement classical chairs (42 %),
- Development of physical leisure activities in in-school clubs and school interest groups (37 %),
- Opportunity for children to use sporting school areas during education hours and also in their leisure time (37 %).

This probe in the environment of basic schools demonstrated that the pedagogues had not usually exact opinion about mechanisms of the origin and diagnostics, possible healing methods and prevention of spinal defects. Because of high incidence of the above mentioned problems in groups of children and adults and also according to interest of teachers, the group of specialists from Department of Family Education and Health Education, Department of Special Education and other workplaces of Faculty of Education, Masaryk University prepared a special information booklet. Here interested persons can find basic facts about developmental spinal defects of children, methods used in detection of problems, the set of basic stretching or remedial exercises. For general overview we here offer several selected content parts of this booklet.

General possibilities for restoration of muscular balance

The first step for the restoration of muscle balance is to normalize conditions in peripheral structures of the movement system. An important part of remedy is release and stretching of shortened muscular structures and strengthening of their weakened parts. It is practically impossible to learn proper performance of the corresponding movements if it is complicated by existence of the shortened or weakened muscles.

Elimination of the muscle imbalance is the premise and precondition for re-education of physiological performance of more complicated movements, especially the everyday movements. Physical training focused on health is applied not only for recovery of muscle balance but especially for rehabilitation of correct movement processes.

The muscle balance must be fixed continuously by exercises because daily disturbing interferences often persist *(Kabelíková, Vávrová, 1997; Mužík, Krejčí, 1997)*.

Method of muscle balance restoration:
- Investigation of the stage of shortening of postural muscles, phasic muscles strength and movement stereotypes;
- Training of proper breathing stereotype, muscle stress release and proper performance of controlled movements (slow movements, tension movements, movements in coordination with breathing) used for stretching shortened muscles and for strengthening shortened muscles;
- Release and stretching of shortened muscles,
- Training of proper activation of appropriate muscles in movement schemes with the aim to create a correct movement routine;
- Finally, strengthening of weakened muscles *(Kopřivová, 2001)*.

School chair usability for sitting

The nature of the human body is to change position often, not to remain at one place too long. Nevertheless, for working activities demanding on concentration our body must remain in a relatively stable position. This solution is not however suitable for our movement system because certain muscle groups are loaded statically more intensively and for longer time than the others.

In basic schools the pupils spend in the sitting position in the school bank number of hours per day and are demanded to be fully concentrated on learning. The structure of lessons does not enable them to move significantly during the lessons; therefore their movement system is statically considerably loaded. One of methods for solution of this problem is a system for dynamic sitting and proper choice of sitting furniture for school classes.

The systems for dynamic sitting enable to load dynamically both the postural and phasic muscle groups. Stress and release of muscles alternate, without influence on concentration and visual perception. It can be achieved by use of an unstable seat – by means of a vibration chair which enables not only the stress-release alternation but stimulates the effort to stabilize the sitting position without a substantial unilateral muscle activity needed for this stabilization.

The good chair should be equipped with such dynamic system but it is not often possible because of the school environment and economic reasons. Therefore it is advisable at least to practice dynamic sitting and to change various *(Rašev,1992)*.

Each of chairs should fulfil the following conditions:
- Adjustable height of the seat;
- Spacious and comfortable seat space;
- Rounded front edge of the seat;
- Fixedly adjustable backrest, with ability to move in front-and-back direction;
- Backrest height should not exceed the shoulder blade area;
- Adjustable supporting cushion in the lumbar spine area.

There is a certain alternative of such chair with the dynamic sitting system, namely the gym-ball. It offers the balance surface that produces reactions of the movement system similar to using this chair. The gym-ball is financially available and easy to stock. Those balls can be placed in the gym room or the classroom, e.g. suspended

from the ceiling where they do not interfere in pupil's movement and usual operation of these rooms. The gym-balls can be used not only for exercise alone which becomes more interested for pupils but also for sitting at school bench in some lessons. In this way the balls can partially substitute unsuitable school chairs and influence positively the movement system of the pupils during lessons. The gym-ball can be profitably used also for exercise breaks in the classrooms.

Another aid exists to support the proper sitting, namely the sitting wedges. They enable a natural position with the pelvis flapped forwards and are soft enough to ensure the non-stiff position that can be continuously adapted to sedentary activities. Also this aid can be used for children sitting in the school banks *(Rašev, 1992)*.

Training of proper sitting

Starting point is the sitting position at a horizontal surface or slightly declined forwards. The plane going through hip joints is several centimetres higher than the plane going through the knee joints. The heels are on the ground under the knee joints, the leg in the approximate angle of 45º and the feet follow the line of the thighs. The angles between the knee and the insteps are obtuse *(Rašev, 1992)*.

Manoeuvres important for proper sitting:
- Pelvis flapped forwards;
- Thorax raised;
- Head in the body axis,
- Abdominal breathing,
- Shoulder relaxed, in external rotation, with pushed shoulder blades;
- Thighs in the angle of 45º, foots under knees, in slight external rotation.

Existence of some shortened muscles hinders accomplishment of the proper sitting position. Therefore in the training we can not be concentrated on achievement of a certain position until the stretching of shortened muscles is performed. It concerns especially pectorals, neck muscles, quadratus lumborum, lumbar erector spinae muscles, thigh muscles, hip joint flexors and calf muscles *(Rašev, 1992)*.

Proper posture

The proper position of the standing body can be trained if the back is slightly leaned against the wall. In this way it can be easy checked if the spine curvatures agree with the theory. Our hand should fit in the sufficient distance (3 -3.5 cm) between the wall and the lumbar spine if the trunk is slightly pressed against the wall. Here the plumb line hung down can be advantageously used for correction of the posture. The plumb line hung down from the external auditory meatus should go through the shoulder, the centre of the hip joint, the knee and the forefoot. If the plumb is hung from the back of the neck in the frontal plate it should go through the spine, between haunches and end in the centre between the feet *(Rašev, 1992)*.

Training of proper posture (modified by Dohnalová, 2002)

Upright head, the neck pulled back and up, the chin tighten slightly drawn to the chest and in the right angle with the neck axis;

- Thorax slightly arched forward;
- Spine smoothly physiologically curved;
- Shoulders released down and backwards;
- Shoulder blades enclose the back part of the thorax in all extent;
- Abdominal and gluteal muscles are contracted;
- Lower extremities are non-violently stretched in knees;
- Body mass is on external side of the extrinsic part of the front feet.

Discussion

This contribution is not presented as a collection of generalized inquiry data; it is only a probe which should earn more detailed verification with use of more numerous respondents from schools of a different character (situated in the city, smaller town, village).

From the data of this research it is evident that a discrepancy exists between the wish of pedagogues to know more about problems of spinal defects and the children's body movement system, and the knowledge and current occasion to get it.

There are various school furniture designs that consistently respect ergonomic demands. However, higher production costs and high quality materials are reflected in higher prices which can be a limiting factor in the education branch. Nevertheless, for a long time various organizations (health service institutions, hygienic stations, National Institute of Public Health etc.), paediatricians and professional public bodies have pointed out to issues of suitable and accessible school furniture; for the present, the simple and common solution has not been offered.

The body posture is a frequented concept that is used in various consequences with professional topics and practical life, with interference points in many branches. From the health care point of view the term "body posture" is interpreted as a representation of a maturity stage of neural-motoric functions and also as a symptom of various diseases and pathological processes, especially those concerning the movement system.

The posture is changing during the human life course. It is a dynamic process which is affected either positively or negatively by a lot of internal and external factors. The posture can be substantially influenced by individual behaviour and style of living.

For each profession the typical posture exists, which is caused by a long-term and unilateral loading of the movement system. Significant differences can be discovered e.g. for professions based on manual labour, in comparison with occupations with prevalence of sedentary work. In the both cases the loading is not, however, well balanced and it shoud be suitably compensated by other movement activities and relaxation. Similar situation occurs for children in the time of their obligatory school education, when the children spend the major part of the day in school benches and their leisure time usually at computers, TV or with another sedentary activity. Such style of living and insufficient movement motivations results in continuing overload of the movement system, defective posture, functional discrepancies and later structural malfunctions.

The posture is a very individual and to a certain extent subjective attribute. It is not easy to define a norm or a scale to evaluate if the posture is good or bad. Many

authors, professionals of the health care or physical education, deal with the problems of the posture and its evaluation in specialized (see e.g. *Janda, 2001; Rychlíková, 1994; Dvořák and Vařeka, 1999)*. Although the definition itself of the defective posture and its evaluation are complicated, most of authors agree on primary prevention and remedy measures. The proposed means are mainly: to remove muscle imbalance, bad movement stereotypes, to motivate for convenient movement activities and to apply the back school principles on a long-term basis.

Most often the defective posture of children is detected in the basic school attendance age. In this period the children often change their lifestyle and reduce physical activities. It is just school environment that can significantly participate in influencing the health and movement ability of the school leavers. In this direction it depends on knowledge and approach of pedagogues used for motivation of pupils to proper movements and regular physical activities.

There is a lot of options and procedures to prevent emergence of body posture defects and to teach children the correct movement practice. In the present time many exercise and health aids are offered that are effective and attractive for pupils (e.g. gymballs). They can serve as a motivation element for the pupils and first of all they increase exercise effects.

The body posture problems have a bio-psycho-social character and they concern every human. For successful results of repair endeavour supported by health workers, pedagogues and other specialists, it is necessary to accept responsibility for own health and to start taking it as a value that must be actively pursued.

Conclusions

Child population is influenced by many risky moments in the style of living which includes also unsuitable working postures, movement stereotypes and low motivation to move. It is very important for pedagogues to know basic facts about issues of orthopaedic defects, their incidence, diagnostics, therapy and prevention. School represents a sample that can intervene in the life of pupils strongly and in a desirable way.

The pilot probe was performed in the environment of 10 basic schools, focused on the spinal column defects. From this investigation it has followed that there is a discrepancy between knowledge of the respondents and their willingness to learn more profound and topical information. The teachers use various methods to activate children, motivate them to movement activities and teach them to enjoy such movements. The school furniture can play an important both preventive and pathological role in the incidence of spinal defects. The conveniently selected furniture must respect ergonomic demands of users and enable not only convenient but also healthy sitting and undisturbed school working. The tasks of parents should be to guide children to regular and variable movements activities, to support proper lifestyle habits and joy of movement; the tasks of school are to use appropriately exercise breaks in lessons, to motivate to movement activities in the school break time, in interest groups, out-of-school activities, to reduce performance evaluations in physical training lessons and care for proper body posture.

The team of the authors from several workplaces of the Masaryk University, Faculty of Education, prepared a guideline with information about basic relaxation and

strengthening exercises, instructions for self-testing of physical ability and possible remedies of discovered imperfections/defects. The guideline is assumed to be published on web sites, prepared in the form of the e-learning course or CD.

Early prevention and remedial measures (in the family, in the kindergarten), that are applied in advance of organic damage of the movement system, restore harmony in the health quality system, improve the quality of life and enable better well-being in learning and at work. Also economic consequences are not negligible, e.g. lower consumption of medicaments, lesser medical benefits, lower number of sickness absence days, quicker return to the normal life, etc.

STARONOVÉ ÚKOLY ERGONOMIE
NA ZÁKLADNÍ ŠKOLE

Abstrakt: Růst a vývoj dítěte s sebou přinášejí nutnost vhodného typu a dávkování pohybové aktivity. K hlavním rizikům školní docházky patří mimo infekcí a přetěžování též riziko nedostatku pohybu (imobilizace). Byla realizována sonda na 10 brněnských základních školách, kdy bylo pomocí anonymního dotazníku osloveno 50 pedagogů. Otázky byly zaměřeny na vady pohybového systému s důrazem na problémy se zády (výskyt, typy, diagnostika, prevence). Pětina učitelů má ve svých třídách děti s ortopedickými vadami zad. Úkolem rodičů by mělo být vedení dítěte k pravidelným a pestrým pohybovým aktivitám, podpora správných životních návyků a radosti z pohybu, k úloze školy patří vhodné využívání tělovýchovných chvilek ve výuce, motivace k pohybu o přestávkách, v kroužcích, na mimoškolních akcích, omezení výkonového hodnocení v tělesné výchově, podpora správného držení těla.

Klíčová slova: cvičení, dotazník, páteř, pohyb, prevence, škola, učitel, vada, záda, žák

TWO - FACTOR THEORY OF LEARNING: APPLICATION TO MALADAPTIVE BEHAVIOR

Michaella BUCK

Abstract: *Two-factor theory of avoidance remains one of the most influential theories of learning. It addresses a question of what works as a reinforcement of avoidance behavior, and proposes that: 1. an organism associates stimuli in the environment with aversive stimuli, and this allows these stimuli to evoke fear; 2. the avoidance response is reinforced by eliminating these warning stimuli or by escaping from them, and therefore causes fear reduction. The theory stresses interplay between stimulus learning (classical conditioning) and response learning (operant conditioning through fear reduction). In the article, the explanation of some clinical problems through two-factor theory is addressed.*

Keywords: *classical conditioning, operant conditioning, two-factor theory, psychopathology, natural phobias*

In the middle of the 20th century it seemed that behaviorists were so tied with the learning theories that they viewed Pavlov's and Skinner's laws as universal as Newton's law of gravitation. From the position of *militant environmentalists* (Seligman, 1993) they stated that all behaviors are learned under influences from the environment. However, due to the disagreement of their younger followers we can look at the learning from different perspectives, especially from the perspective of a third type of learning, and answer the question if the conditioning is more complex that it seems.

A critique of the learning theories stresses that neither classical or respondent conditioning (CC) nor operant or instrumental conditioning (OC) are able to explain from their positions the whole process of conditioning, especially *avoidance conditioning*. Representatives of OC outline this process by negative reinforcement which is studied during escape and avoidance conditioning. Laboratory experiments confirmed that escape avoidance is relatively simple. An animal learns to press a bar and thus switch off an electrical shock. Avoidance conditioning is more complex and from many aspects more important because it is „relevant for some aspects of human behavior" (Gross, 1992, p. 145). However, if OC will not overstep its boundaries and will remain focused only on observable behaviors it will prevent them to explain the whole process fully. Several theories tackled this problem. However, according to Walker (1984), only one theory succeeded in resolving it by implementing covert

behavior into the process of conditioning and thus explaining not only avoidance conditioning but also the role of avoidance in human pathology. It was a two - factor theory.

Two – factor theory

By observing someone the change appears also in our behavior. To learn a new behavior we need no rehearsals, no overt responses, and no reinforcement. We know it before we perform it. This conclusion was reached not only by Albert Bandura but also by Hobard Mowrer (1960) who introduced **two-factor theory** focused on the interplay of *classical and operational contingencies,* and on this basis explained *avoidance conditioning.*

H. Mowrer believed that under some circumstances there is a need to overstep boundaries of the observable and analyze the data which are not directly observable because stimuli from environment do not trigger the overt behavior directly, but they do it through **mediators** (thoughts and emotions). In contrast to overt behavior, emotions and thoughts are not directly observable and measurable. It is possible only to assume about them on the basis of overt behavior observations. Therefore thoughts and emotions are called covert behavior or covert responses. They function on the same principles as overt behavior.

Mowrer's experiments with animals represent a good analogy with human psychopathology (Stampl, (1987). In an experiment, rats got an electrical shock immediately after the sound of a buzzer. A buzzer was a warning stimulus (unconditioned stimulus, US), and evoked pain and an emotional response of fear or anxiety (unconditioned reaction, UR). After a few associations, a fear originally triggered by a shock was triggered by a buzzer. Even after the shocks were stopped, the rat responded by fear on originally neutral stimulus (a buzzer). A buzzer, in this case a conditioned stimulus (CS) evoked an emotional response of fear. So far everything was processed in the framework of CC. At this point Mowrer overstepped it and penetrated into the territory of OC. On the basis of OC, an animal learned to react differently. To avoid a shock and to reduce a fear, it jumped over a barrier and escaped. This behavior was *negatively reinforced* through the avoidance of shock before it acted. An animal learned *to avoid* a neutral CS (a buzzer). The process is called **avoidance conditioning.** Lets' summarize what has happened:

1. Based on the CC principles, an animal learns to fear a buzzer because it is paired with a shock. This conditioned fear is called anxiety.
2. Based on the OC principles an animal learns to avoid a source of fear. To avoid shock it runs away. Because a buzzer is paired with a shock, an animal learns to escape from a harmless stimulus, from a buzzer. It is called conditioned avoidance. Escape weakens fear and a response is reinforced by consequences.

At the beginning, Mowrer's theory changed only a view of the learning process. Later, it changed the view on psychopathology, and became a basis for various therapeutic interventions, and promoted H. Mowrer into a position of a leading researcher and theoretician in this area.

Before we move to applications of two-factor theory on clinical problems, we have to mention traditional behavioral models of psychological disorders. It will help us to pin point in which aspects a two-factor model is distinguished from them.

Behavioral models of psychological disorders

Behaviorists view all behaviors, adaptive and maladaptive, as gained according to the same principles of CC and OC. The medical model of psychological disorders is completely denied including the differentiation between stimuli and pathology lying beneath them. Opposite to psychoanalysts who emphasize the past, the focus is on *present behavior,* which should be first *operationalized,* i.e. defined in terms of observable and measurable behavior, and changed afterwards.

According to behaviorists, all types of abnormal fears are learned and gained through CC. Any neutral stimulus acting simultaneously with the fear reaction gains the ability to evoke consequently fear (Wolpe, 1962). For fear to grow into phobia, it should be generalized. Through generalization, the fear is shifted on stimuli similar to CS. A person learns to fear and avoid not only specific objects associated with US (for instance one crowded square) but a group of stimuli (crowded squares in general). Learning theories support this finding by numerous pieces of evidence. For instance: Many phobics suffering from the phobia of dogs reported that before the offset of phobia they were attacked by a dog. Laboratory experiments with animals and humans showed that if US is highly traumatizing only one-attempted trial is enough to make an association between UC and CC to produce long-termed UR. Despite a number of supporting evidence, there is a lot of counterevidence. CC cannot be applied to all phobias. A strong fear of snakes, bacteria or airplanes is experienced by many people who never experienced any direct contact with the object of their fear. On the other hand, not everybody who experienced trauma developed a phobia. It is possible that the learning process through CC is a part of the etiology of some phobias, but also different processes are involved, especially preparedness to learning (Ohman, 2000).

In a laboratory research, A. Ohman confirmed that some phobias are learned easier than other phobias. Those phobias which are easier learned are natural and more frequent. An example is represented by snake and rat phobias which occur more often than rabbits or ladybirds phobias. It seems that the basic perceptual qualities of the objects of these phobias as ugliness, speed and fast movement. These and similar findings are consistent with the *preparedness to learning* (Ohman, 2000).

Similarly, A. Rachman (1984) believes that direct conditioning plays a role only in a limited number of phobias. However, opposite to A. Ohman, he does not regard preparedness to direct conditioning as relevant but he views as possible the preparedness for observation and learning from instructions and information. His view is supported by Badelly (1990) who states that phobias are not required by a coincidental association between a stimulus and a worried situation but they can be learned through imitation, and they have a tendency to be associated with some objects and not others.

CC runs into difficulties when explaining the *offset* of phobias. However, the biggest difficulty it faces is when trying to explain *the maintenance* of naturally occurred phobias (snakes, heights), because it fails to explain the reason for of their *extinction.*

Exactly this point was pin pointed by H. Mowrer. By all means his two factor model can be labeled as a main theoretical attempt to explain maintenance and the extinction of phobias.

Explanation of phobias based on two-factor theory

According to Mowrer, fear can be defined as an inner response which is gained by the same principles as overt responses, through observation, or as an inner state which is evoked by avoidance behavior. This concept of fear makes it approachable to emotional analysis in the same way as overt behavior.

H. Mowrer viewed symptoms of fear as *learned avoidance responses* serving to reduce anxiety. A phobic avoids stimuli such as cats, lifts, tunnels. An obsessive – compulsive person avoids dirtiness, disorder, anger. A schizophrenic avoids close relationships with people, and a hypochondriac avoids illnesses. If they do not avoid them they face a fear. If they do avoid them they reduce fear.

The two-factor model reveals how people learn to avoid particular stimuli. Let us illustrate this process on an example which offers two findings (Prochazka, 2000): It shows that experiments with animals are useful in understanding how people learn to avoid particular stimuli, but it also shows that the conditioning of disorders is much more complicated than illustrated in experiments with animals.

A teenage boy was frequently punished in his childhood. When talking with enthusiasm and a full mouth at lunch about his football team victory, a mother slapped him because it is not permitted to talk during lunch. When he presented his ideas, his father ridiculed him. When he expressed his disagreements, his father reprimanded him and his mother slapped him. He started to fear talking to his parents. In the language of conditioning, the stimulus that triggered his fear was represented by his parents, and throughout generalization by all people to whom he spoke. Later, at school, when he was due to deliver his presentation, a conditioned fear was elicited. When he „got sick" and thus „unable" to come to school and deliver his presentation, his fear was reduced, and his avoidance behavior was reinforced. Even though his teachers had no intention to harm him, he responded with anxiety and avoidance as if a symbolic slap waited for him in any surrounding. He developed social phobia, an irrational fear linked to the presence of other people. This debilitating condition forced him to avoid any social situation in which he was supposed to present himself and consequently be evaluated.

It is obvious, that classically conditioned fear of an objectively harmless stimulus formed the basis of an operant avoidance response. But, in a contrast to the experiments with animals, the role in his fear was not played only by one stimulus as it is with animals (buzzer) but by the whole range of stimuli, and fear was triggered in relation to the whole context (parents, adults, presentations). The conditioning reveals one more difference between humans and animals. If more CSs are operating, the result is stronger avoidance which develops easier and is more resistant to extinction as if fear is associated only with one stimulus (Stampfl, 1987). In humans, the avoidance is conditioned not only by environment but also by what people *imagine or feel* in a given moment. The boy experienced fear at any imagination of emotional experience, and to avoid it he learned to avoid these images. It resulted into **avoidance repression** (Prochazka, 2003).

When he repressed his images, he was reinforced. His anxiety triggered by these images was reduced.

However, when people avoid the object of their fear they also avoid „reality testing". This is a key to understanding why phobias are outstayed (Mowrer, 1960). In our example, after a boy learned to avoid social situations, he could not test that there is no danger lurking in them, and his maladaptive behavior outlasted.

Two-factor theory is suitable for the explanation of the maintenance of phobias (Stampfl, 1987) as it points out that avoidance is negatively reinforced by the reduction of fear while a CS is not present. Growing empirical evidence supports two-factor theory's as explanation of other psychological disorders as well, e.g. post–traumatic stress disorder (Davison, 2004). The theory proved to be very successful in the therapy of enuresis where it is regarded as „one of the clearest and lasting gains of behavioral therapies" (Houts, 1991, p. 147).

Criticism of two-factor theory

Two-factor theory was criticized by behaviorists on one side, and by representatives of different psychological schools on the other side. According to Rachman (1984), the avoidance is not motivated by a reduction of anxiety declared by Mowrer, but by *positive feelings* in safe places. To support his opinion he uses an example of agoraphobia, the disorder which he views as motivated by the search of safety signals. He believes that *safety signals hypothesis* is able to explain more accurately than two-factor theory why an agoraphobic prefers to leave the house in a presence of a person he trusts, and why he uses particular roads. The reason is that people and streets he trusts, represent for him *safety signals.* This hypothesis is also able to explain why the loss of a close person triggers an offset of phobia.

Representatives of a *synthetic perspective on instrumental action* (Bounton, 2007) point out other shortfalls of a two-factor theory. They stress the organism's *evolution history,* and point out that especially this aspect was omitted by a two-factor theory. They believe that avoidance learning was taught to occur rapidly if the required response resembled a natural defensive behavior. In the opposite case, learning will depend more on a feedback. M. Bounton (2007) remains consistent with the core ideas that underlie the theory and views them as valid now-a-days, while simultaneously being argumentative that avoidance behavior should be approached more complexly and more synthetically, because the field has become more ethological as was assumed by Mowrer, and more Pavlovian, and more cognitive in the sense that what is learned is not necessary identical with that which is performed in overt behaviors.

Conclusion

Despite many critical words, two – factor theory contributes to a better understanding of avoidance behavior, proving that two factors are still better than one. The main theoretical attempt to explain the maintenance of naturally occurred phobias is a two factor model stating that fear is learned by CC (1.factor), but CC is not able to explain the outstanding fear. According to the 2nd factor (OC), fear is reduced by escape

or avoidance of the object of fear. As an escape or avoidance is negatively reinforced a person has a tendency to repeat this behavior (OC). Because the avoidance of the object of fear prevents reality testing, the phobias prevail.

H. Mowrer believed that the findings he gained by the exploration of overt behavior can be directly applied to studies of mental and emotional life. If it stands that repeated overt response is extinguished if it is not reinforced than it can be expected that the repeated fear response at simultaneous blocking of expected pain or punishment will reduce a fear. This is not a trivial finding by any means, because it represents a base for many behavioral therapy techniques which effectively help people to face their fears.

DVOJFAKTOROVÁ TEÓRIA UČENIA: APLIKÁCIA NA MALADAPTÍVNE SPRÁVANIE

Abstrakt: Dvojfaktorová teória naďalej zostáva jednou z najvplyvnejších teórií učenia. Adresuje otázku, čo posilňuje odpoveď vyhnutím, a odpovedá na ňu tvrdením, že sú to dva procesy: 1. organizmus asociuje podnety z prostredia s averzívnymi podnetmi, čo umožňuje týmto podnetom vyvolať strach, 2. odpoveď vyhnutím sa posilní oslabením týchto výstražných podnetov alebo útekom od nich, čím sa zníži strach. Teória zdôrazňuje interakciu medzi podnetom (klasické podmieňovanie strachu) a odpoveďou (operačné posilnenie cez redukciu strachu). V príspevku sa zameriavame na objasnenie niektorých klinických problémov prostredníctvom dvojfaktorovej teórie.

Kľúčové slová: klasické podmieňovanie, operačné podmieňovanie, dvojfaktorová teória, psychopatológia, prirodzene sa vyskytujúce fóbie

ANALYSIS AND COMPARISON OF FACTORS DETERMINING THE PROFESSIONAL ORIENTATION OF SCHOOLCHILDREN WITH PHYSICAL DISABILITIES AND HEALTH IMPAIRMENTS AT SECONDARY SCHOOLS IN THE SOUTH MORAVIAN REGION

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Abstract: *The subject of this article is the analysis of factors that influence students' decision-making and their expected successful entry into the job market, acceptance to university or to other schools. The students on which this article is focused are those students with special educational needs (with a focus on students with physical disabilities and health impairments) and nondisabled students at secondary schools in the South Moravian Region. A study, carried out in the 2007/2008 school year at selected secondary schools in the monitored region,.is presented in the article. Furthermore, this article also presents some evaluated hypotheses, selected results and formulated conclusions of the study, as well as recommendations for practice in special education.*

Keywords: *student with special educational needs, nondisabled student, adolescence, school-leaving exam, description of physical disability, factors influencing the successful school–career transition, continuing education, pre-career and career training, integrative and inclusive education*

Current state of the issues discussed

The Czech word *Maturita*, which stands for a school-leaving exam-according to *Akademický Slovník Cizích Slov* (Petráčková, Kraus and collective, 2000) "is an exam representing the passage to adulthood, the final exam at secondary school, a condition for attending university" – it is an important milestone in life for every student who has decided to pass this school-leaving examination. It is also the beginning of the next very important stage in the life of a young person. It is the key to the gate that leads to the unknown world of adulthood. It is not only healthy young people that will or have already passed their school-leaving exam, but also ones with health impairments. They have exactly the same desire and need to live according to their own vision despite

the fact that various health impairments, disabilities and other handicaps make their lives more complicated. Our society has been functioning under so-called "democratic conditions" for twenty years. Therefore, one of the aims of this research work was to map the current situation at secondary schools as well as the analysis of predictions that influence the decision-making process of students preparing for their final exams. The main focus here was given to students with health impairments and disabilities. The analysis included in particular the factors that affect their decision-making process when considering what type of school, career or other successive activity to choose. Every day we meet young people in the school environment with their own problems, successes and life stories that all have a significant impact on the further decisions they make in their lives. Concepts like the fact that there are people with disabilities, there is a right to an education for everyone and the other positive trends we can see (such as encouraging integration and that things are leading towards inclusion), all represent a prediction influencing the decisions young people make. The perspective of individual students who were preparing for the school-leaving exam and that had dealt with the question on which direction their subsequent career will take has been analysed in a separate research study. Other issues such as how students were facilitated to prepare properly for their future occupations or for getting accepted to universities and other schools, how they dealt with the problems encountered, who was helpful in these difficult situations, have been dealt with in another study. Students who took part in the study included those with physical disabilities, health impairments and nondisabled students. When preparing the study and stated goals to fulfil, we had to start from the following underlying fact. Students with physical disabilities are largely integrated today at ordinary secondary schools – in some cases they study without integration. This fact has also been confirmed by a pilot study carried out at ordinary secondary schools and at secondary schools for the physically disabled. Students at schools for the physically disabled, for the most part, have more serious forms of physical disabilities and their numbers are very few.

The results of the study served to compare and evaluate possible differences between disabled and nondisabled students in the area of the issues studied.

Theoretical starting point

Among the basic rights of every individual, and thus even individuals with physical disabilities or other impairments, is the right to an education, which is guaranteed here in the Constitution of the Czech Republic. In today's world an achieved education is a very significant factor and it is therefore a goal of the school system in our country to offer an equality of opportunity, to create an environment that enables all individuals to reach a commensurate level of education. An analysis of the needs of society shows the knowledge and skills an individual needs to acquire to successfully integrate into society. Learning and its diffusion among people and the resultant increase of its level is perceived as a condition for a free and nonmanipulable life that enables the social participation of individuals in social events, is a basic prerequisite for prosperity in one's personal life, and therefore for the prosperity of society as a whole (Rabušicová, 2002). It

is therefore very important to ensure that people with disabilities can also develop their individual prerequisites. Nowadays there is a large effort to integrate children, pupils and students with special educational needs in schools and common types of educational institutions. The principle of this type of education is to respect the special educational needs of every individual. A new law passed in the Czech Republic in 2004 brought certain changes to the education of pupils and students with special educational needs. The principles and goals of education are: Equal access to education, taking into consideration the educational needs of individuals, free primary and secondary education and, not least, the opportunity for lifelong learning. Legislatively the education of individuals with special needs is guaranteed on the basis of School Law no. 561/2004 Coll. at pre-school, primary, secondary, higher technical and other education. An amendment to Law no. 561/2004 Coll. is Law no. 58/2008 Coll., which changes Law no. 561/2004 Coll. in the wording of subsequent revisions. Another legal provision passed in the area of educating the health impaired is regulation no. 73/2005 Coll. from the Ministry of Education, Youth and Sports which deals with the education of children, pupils and students with special needs and children, pupils and students who are exceptionally talented. Among other things this provision also specifies the forms of special education for children, pupils and students with health impairments (Vítková, 2006). Most of the respondents participating in the study can be found in the developmental stage of adolescence. This stage begins with the ending of puberty and ends with the transition to adulthood. The journey to adulthood among most children starts at a lower limit of 15 to 16 years of age and ends at an upper limit of 18 to 21 years of age. Adolescents differ from children in that they are capable of formulating theories and engaging themselves in choices concerning the career that would correspond to their specialization and that would allow them to satisfy their needs and reform society, in addition to forming new opinions (Kuric, J., 2001). We can also characterize the completion of secondary school with the school-leaving exam as a "transition" from one of life's stages to the next; representing a bridge between two periods distinguished by change and movement. What notions and resolutions the study's respondents had, whether they decided to continue in their studies at university and other schools, whether they wanted to enter the job market, or even considered other activities, these were all the subject of the conducted research. Their decision-making was influenced by many factors, realities and circumstances. Due to the extensiveness of the issues studied, only some of them were selected. For example, a student's interest in continuing their studies at university and other schools, the influence of family and school in choosing either further education or entering professional life, the student's own performance, healthy life style, interests and likes that form the prerequisites for further studies or employment. It was also assumed that teachers or counsellors within the school environment have an important influence on the choice of either further studies or entering the work force. A large significance was attributed to the factor of self-image and the assessment of their educational results.

Determining research objectives and research questions

The objectives of the research were divided into two parts. The main objective in the theoretical part was to define determinant predictions during the transition

from school to occupation or further studies and the like for secondary school graduates with special educational needs when compared to non-disabled students. A special focus was given to individuals with a physical disability and health impairment. Factors influencing the passage of students in their fourth year of secondary school in the South Moravian Region into employment or into studying at university or other schools are described and analysed here. Detailed and empirically certified knowledge of predictions that significantly influence the decision-making of students in their last year of secondary school while choosing between further education or entering into employment can help future graduating secondary students prepare more effectively for this school–occupation transition, further studies, etc. The second objective of the study was to propose measures for special pedagogical preparation on the basis of the facts learned. The objective at the methodological level was to assess possibilities of the utilized research methods for investigating the factors influencing the students' decisions so that their transition from school to career or further studies is successful. The research questions that were asked in respect to the stipulated objectives were formulated thusly: Which factors influence students-graduates most when deciding on how to apply themselves further in life; what options the quantitative method produces while researching the successfulness of secondary school graduates with special educational needs to transit from school to career or to further education, with a focus on the physically disabled and health impaired; whether there are any fundamental differences among students with physical disabilities, health impairments and nondisabled students.

Methodology of the research and the method for collecting data

A statistical procedure was used within the scope of the research study. A quantitative approach was chosen for researching the given issues that, by using a quantitative method, enabled the carrying out of analysis on a numerous sample and the description of the current state of the researched problem.

Firstly, in September 2007 a pilot study with the objective of detailing and verifying the research strategy for a smaller target group was carried out in the first phase. It had the basic characteristics consistent with the sample on which the further study itself was carried out (Pelikán, 2004). It took place at selected secondary schools, with students, future secondary school graduates. An interview was carried out with selected students who answered questions included in a questionnaire. On the basis of the analysis of the answers and reactions obtained from the addressed prospective respondents, the wording of some of the questions was changed and one question was completely excluded from the questionnaire due to insignificant information. With the knowledge of these comments, the final version of the questionnaire for the respondents was conducted. Some secondary school directors were approached with the request to fill out the questionnaire. They were also asked if they had any comments about the formulation of the questions given. All of the given questions were evaluated by the directors as comprehensible, and gave no additional remarks. The directors, however, did point out the lack of time and large workload that would certainly influence the return time of the completed questionnaires. This fact was confirmed while

the study was being carried out. Twenty secondary schools in the South Moravian Region were randomly chosen for the research and the management of those schools were contacted during November of 2007. Letters were sent to the schools in which the directors were explained the essence of the research, its objective and method of execution. These directors had previously received a form to fill out whose aim was, aside from others, to find out the approximate number of students at their schools who were in their final year in school year of 2007/2008. In the end only fifteen secondary schools were interested in taking part in this study. In the research study concerning students, a questionnaire of special construction was used. The questions were also constructed on the basis of a study of technical literature (according to the methodology of Gavora, 2000) and on the basis of practical experience. The questionnaire was anonymous and contained 33 questions. It was accompanied by a letter explaining the objective of the research, the significance of the respondent's answers and also contained instructions for filling out the questionnaire. The return of the completed questionnaires was guaranteed by the secondary school directors who had been interviewed in the first part of the study.

Description of the surveyed group

The principal target group of the research was formed up of students who graduated from secondary school in the 2007/08 school year from selected secondary schools in the South Moravian Region. From the principal target group a representative sample (pupils with special educational needs with a focus on pupils with physical disabilities and health impairments) was obtained from the available selection. Due to their locality, their focus and their interest in taking part in the research study, 16 secondary schools in the South Moravian Region ultimately took part in the research study. The management of one of the secondary schools gave written notice that there were no students with special needs at their school and therefore their school would not take part. So 15 secondary schools in total took part in the study. 474 respondents (graduating students) participated, n = 474, from which N = 25 respondents with physical disabilities and health impairments made up the sampling unit. With respect to the way in which the sample was chosen (deliberate, respective to the available selection) it was not the point of the survey to make generalisations on the findings for the principle target group. All of the participating schools were located in towns. Of the total number of respondents n = 474, 327 (68.98%) were women, (31.01%) were men. Among respondents the 19-year-old age category was represented most often (294 of those addressed), 118 were 18 years of age, 38 were 20-year-olds, 11 respondents were 21, 4 were 22, 3 were 24, 2 were 33, and then 25-, 26- and 35-year-old categories claimed one respondent each.

Table 1: Composition of secondary schools whose students took part in the study

Types of secondary schools represented in the study:	Total number of students in their final year:		with PD:	
01. Ecclesiastical Secondary School	27	5.69 %	1	0.21 %
02. Secondary School and Pedagogical Secondary School	36	7.59 %		
03. State Secondary School	47	9.91 %	2	0.44 %
04. Private Secondary School	15	3.16 %		
05. Secondary School for Information Technology	115	24.26 %	4	0.84 %
06. Vocational School – Social Services	8	1.68 %		
07. Secondary School for Social Administration	4	0.84 %	6	1.26 %
08. Business Academy and Economic Lyceum (also for those with PD)	75	15.82 %	6	1.26 %
09. Pedagogical School	38	6.96 %		
10. Secondary School-Educational and Humanitarian Activity	66	13.92 %	6	1.26 %
11. Nondisclosed Type of Secondary School	43	9.07 %		
Total:	**474**	**100 %**	**5 5.27 %**	

From the total of **474** (100 %) respondents, **46** (9.70 %) stated that they are students with special educational needs and **428** (90.29 %) respondents stated that they are nondisabled. Furthermore, **25 (5.27 %)** respondents indicated that they have physical disabilities, **8** (1.68 %) of them admitted chronic illness, **5** (1.05 %) were visually impaired, **2** (0.42 %) were hearing impaired, **2** (0.42 %) had dyslexia, **1** (0.21 %) respondent stated that they had ADHD and **2** (0.42 %) students admitted multiple impairments (physically and visually impaired, and physically, visually and hearing impaired). Of the total number of 46 (100%) students with special educational, 29 (63.04 %) were integrated, 17 (36.95 %) were not integrated. Just 14 (30.43 %) of them studied according to an individual education plan (here on just IEP), 31 (67.39 %) did not have an IEP and 1 (2.17 %) respondent stated that he did not know whether he studied following an IEP. To the question of whether the students were satisfied with the special educational support provided, 36 (78.26 %) of the respondents answered favourably, 7 (15.21 %) respondents negatively and 3 respondents (6.52 %) did not express an opinion. Also notable was the fact that on the question of whether they would have chosen the same secondary school, from the total number of 474 students, 283 (59.70 %) of the respondents answered favourably, 152 respondents (32.06 %) negatively and 39 (8.22 %) responded that they did not know if they would choose the same school again. 75 (15.82 %) students stated that it was only during the course of their studies that they realized that their chosen school did not satisfy them. 63 (13.29 %) students answered that their school did not fulfil their expectations. Among other reasons for not choosing the same school for a second time, respondents gave answers such as that they did not originally want to study at their school, that their school did not prepare them for university, the selected field did not interest them, a low level of education, unqualified teachers taught them, dissatisfaction with the administration of the school, etc. It is interesting that when the students themselves evaluated their average school performance, just 51 (10.75 %) students evaluated their school performance as excellent. 160 (33.71 %) students evaluated their school performance as very good. The largest number of respond-

ents, 195 (41.13 %), evaluated their performance as good. 25 (5.27 %) students evaluated their performance as poor and 4 students (0.84 %) as very poor. 41 (8.64 %) respondents did not manage to answer this question. An important fact is that from the total number of 474 respondents, 382 applied to study at university, which represents 80.59 %. Just 24 (5.06 %) of students considered employment. From the representative sample of N 25 (students with physical disabilities), only 3 (12 %) considered entering the work force. Only some facts are shown here that emerged from the research (table 1).

Hypotheses

The hypotheses were set on two different levels. The first level, explored with the univariate analysis method (H1-H3), concerned all participating respondents - group N 474, on the second level the hypotheses (H4-H7) were evaluated with the bivariate analysis with respect to the students with physical disabilities and health impairments that make up the representative sample N 25.

These hypotheses were constructed

H1 The secondary school environment of the respondents has greater influence on their considered choice of occupation or subsequent study at university than their family environment.

H2 The majority of respondents will confirm the fact that their choice of secondary school was correct, than that their choice of school was incorrect.

H3 The opinion of the respondents that they will be successful in the labour market prevails over a negative opinion.

H4 The opinion of respondents that individuals with health disabilities are discriminated against in our labour market will prevail over a positive attitude to discriminating against the disabled.

H5 Respondents predominately have a positive attitude towards adhering to the principles of a healthy lifestyle, over a negative attitude.

H6 Respondents with physical disabilities and health impairments prefer continuing their education at university or other schools after finishing secondary school more than nondisabled respondents.

H7 Respondents with physical disabilities and health impairments ask for advice teachers and other experts at secondary school when deciding whether to continue their studies or enter the work force more often than non-disabled respondents.

Evaluation of selected hypotheses

With respect to the large amount of collected data and information, only selected hypotheses are shown here:

H4 **The opinion of respondents with physical disabilities and health impairments that individuals with health disabilities are discriminated against**

in our labour market will prevail over a positive attitude to discriminating against the disabled among the nondisabled.

Table 2: Discrimination against the disabled in the labour market

Is there discrimination against disabled graduates of secondary school in our labor market?	Number of students with PD	%	Number of students without PD	%	Total	%
Definitely yes	0	0.0	12	2.5	12	2.5
Mostly yes	9	1.9	100	21.1	109	23.0
Mostly no	9	1.9	217	45.8	226	47.7
Definitely not	3	0.6	34	7.2	37	7.8
Don't know	4	0.9	86	18.2	90	19.0
Total	**25**	**5.3**	**449**	**94.7**	**474**	**100.0**
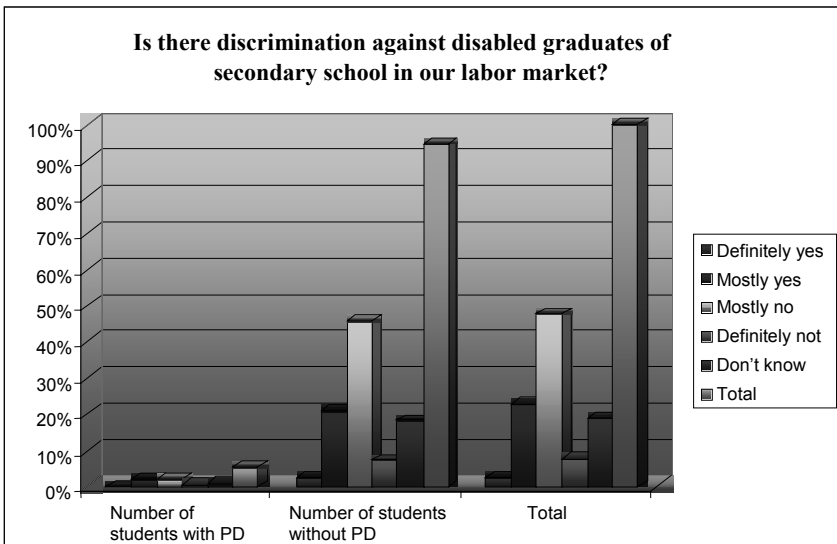
Graph 1: Discrimination against the disabled in the labour market

The table above shows the nature of the answers to the question of whether respondents believe that individuals with health disabilities face discrimination in our labour market. The hypothesis assumed that in most cases respondents would answer "mostly yes". As is shown in table 2 and in graph 1, from the total number of 474 (100,0 %) respondents only 109 (23.0 %) of them answered "mostly yes" - 9 (1.9 %) of them with PD. Only 12 (2.5 %) of those asked chose "definitely yes", of them no a single respondent with a physical disability chose this answer. "Mostly no" was chosen by 226 (47.7 %) respondents, only 9 (1.9%) of them with a PD. "Definitely no" was chosen as an answer by 37 (7.8 %) respondents, of which 3 (0.6 %) respondents had a PD. The "don't know" answer was chosen by 90 (19.0 %) respondents, of which 4

(0.9 %) of those respondents had a PD. In conclusion it is possible to establish that from the total number of 25 (100.0 %) respondents with a PD, only 9 (36 %) of them stated that the disabled face discrimination in our labour market. From the total number of 449 (100.0 %) nondisabled respondents, 121 (26.9 %) of them stated that they believe that the disabled face discrimination in our labour market.

Hypothesis H4 was validated.

H5   Respondents with physical disabilities and health impairments maintain the principles of a healthy lifestyle more than nondisabled respondents.

Table 3: Maintaining a healthy lifestyle

Do you maintain a healthy lifestyle?	Number of students with PD	%	Number of students without PD	%	Total	%
Yes	11	2.4	233	49.1	244	51.4
Mostly yes	4	0.9	58	12.2	62	13.1
Mostly no	8	1.7	125	26.4	133	28.1
No	2	0.4	33	7.0	35	7.4
Total	**25**	**5.3**	**449**	**94.7**	**474**	**100.0**
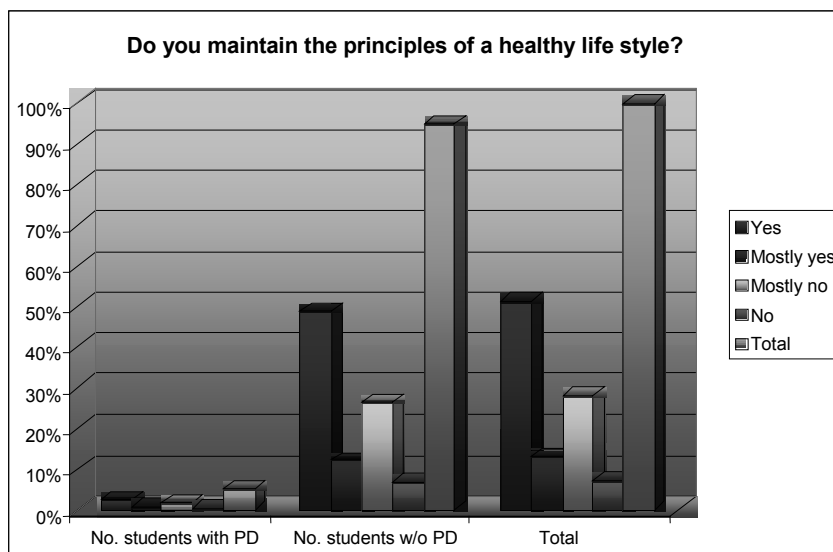
Graph 2: Maintaining the principles of a healthy lifestyle

Table 4: Engaging in sport activities

You do sport:	Number of students with PD	%	Number of students without PD	%	Total	%
Competitively	4	0.8	48	10.1	52	11.0
Regularly, recreationally	5	1.1	127	26.8	132	27.8
Only sometimes recreationally	9	1.9	228	48.1	237	50.0
I don't do any sport	7	1.5	46	9.7	53	11,2
Total	**25**	**5.3**	**449**	**94.7**	**474**	**100.0**
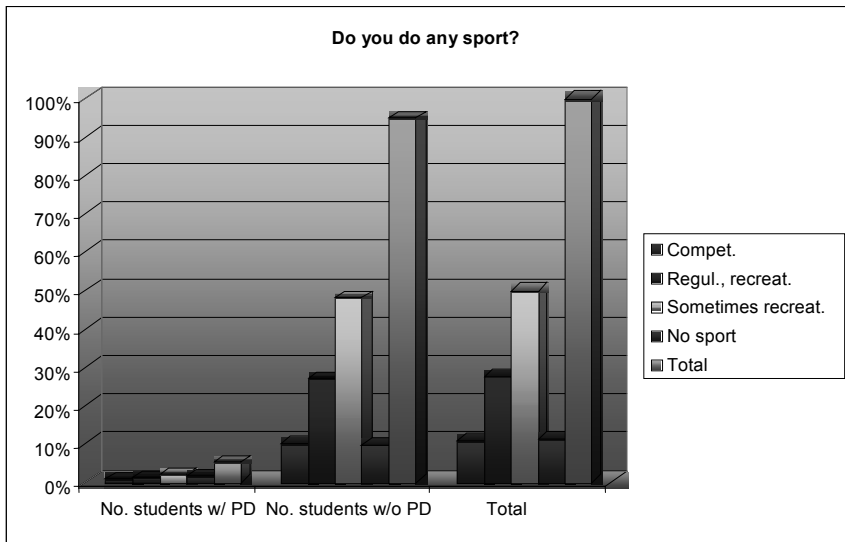
Graph 3: Engaging in sport activities

Table 5: Interests, hobbies

Do you devote yourself to any hobbies, interests?	Number of students with PD	%	Number of students without PD	%	Total	%
No	5	1.1	109	23.0	114	24.0
Yes	20	4.2	340	71.7	360	76.0
Total	**25**	**5.3**	**449**	**94.7**	**474**	**100.0**
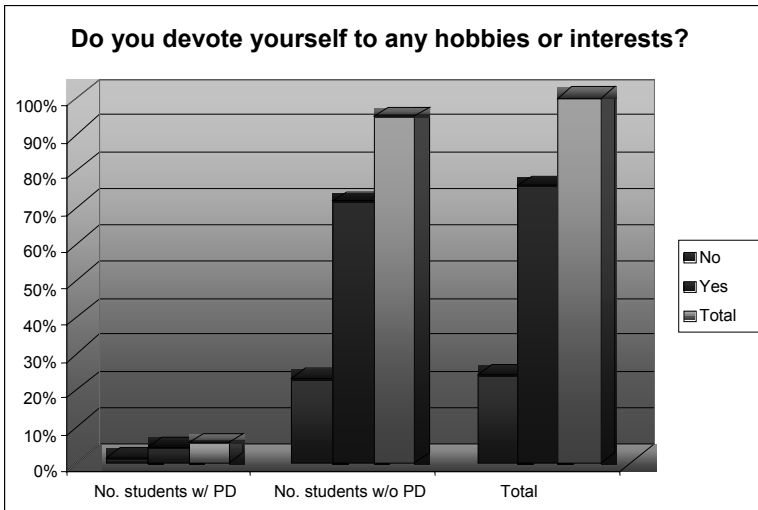
Graph 4: Interests, hobbies

To evaluate hypothesis H5 the responses from tables 3, 4, 5 and graphs 2, 3, 4 were analysed. Respondents' answers concerning how they adhere to the principles of healthy lifestyle are quoted in the corresponding item. From the total number of 474 respondents 133 (28.1 %) stated "mostly no", out of which 8 (1.7 %) were respondents with physical disabilities. "Definitely no" was chosen as an answer by 35 (7.4%) respondents, of which 2 (0.4 %) respondents had a PD. "Mostly yes" was chosen as an answer by the total of 62 (13.1 %) respondents, of which 4 (0.9 %) respondents have a physical disability. "Definitely yes" was chosen by 244 (51.4 %) respondents, of which 11 (2.4 %) were respondents with a PD. It is then possible to state that from the total of 25 (100.0 %) respondents with a PD 15 (60.0 %) of them adhere to the principles of a healthy lifestyle. From the total of 449 (100.0 %) non-disabled respondents 306 of them (68.2 %) claimed that they adhere to the principles of healthy lifestyle. Based on the data further collected the following statements were selected: The total of 52 (11.0 %) respondents do sport competitively, out of which 4 (0.8 %) respondents had a physical disability. 132 (27.8 %) respondents do sport for leisure on a regular basis, out of which 5 (1.1 %) with a physical disability. Doing sport occasionally was quoted by 237 (50.0 %) respondents, of which 9 (1.9 %) have a physical disability. To conclude, 53 (11.2 %) respondents, of which 7 (1.5 %) were with a physical disability, claimed that they never do sport. 360 (76.0 %) respondents spend some time doing a hobby or leisure time activity, of which 20 (4.2 %) respondents were with a physical disability. 114 (24.0 %) respondents claimed not to have a hobby or leisure time activity, out of which 5 (1.1 %) respondents were with a physical disability.

It is then possible to state that from the total of 25 (100.0 %) respondents with a PD only 2 (8.0 %) of them do not adhere to the principles of healthy lifestyle. From the total of 449 (100.0 %) non-disabled respondents only 33 (7.3 %) do not adhere to the principles of healty lifestyle.

Hypothesis H5 has been disproved.

H6 Respondents with physical disabilities and health impairments prefer, after they finish secondary school, going to university or college more than non-disabled respondents.

At the moment you are applying for:	Number of students with PD	%	Number of students without PD	%	Total	%
University	14	3.0	368	77.6	382	80.6
Tertiary vocational school	5	1.1	38	8.0	43	9.1
Language school	2	0.4	16	3.4	18	3.8
Other type of school	0	0.0	7	1.5	7	1.5
I want to start working	4	0.8	20	4.2	24	5.0
Total	**25**	**5.3**	**449**	**94.7**	**474**	**100.0**

Table 6: Prospective studies at university, tertiary vocational school, and other types of schools.
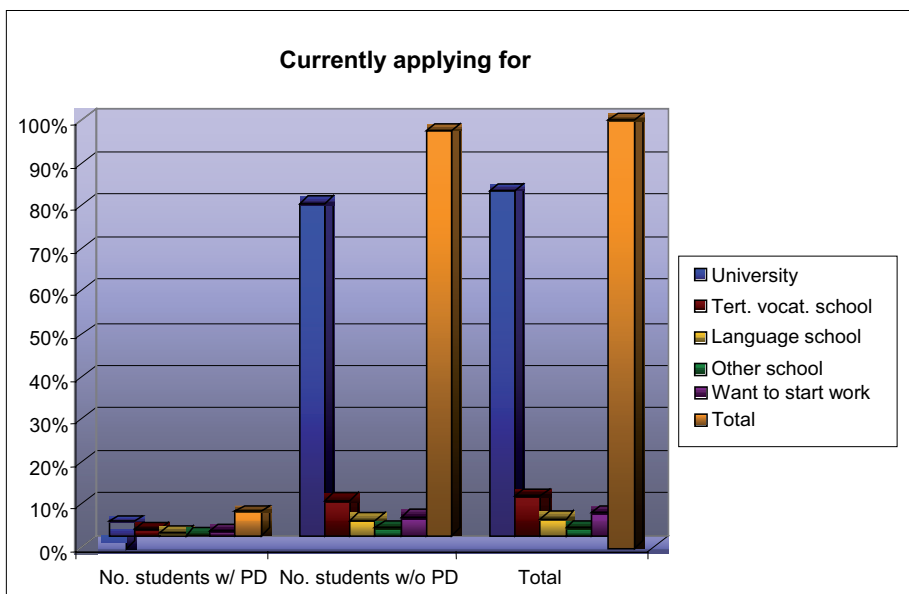
Graph 5: Prospective studies at university, tertiary vocational school, and other type of schools.

The evaluation of hypothesis H6 was carried out by analysing the respondents' answers shown in table 6 and graph 5. To the question of whether the respondent is applying to continue their studies at university, a tertiary vocational school, language school or other schools, 382 (80.6 %) respondents answered that they are applying to study at university, 14 (3.0 %) of them being students with a PD. 43 (9.1 %) respondents

stated that they are applying to a tertiary vocational school, 5 (1.1 %) of them being students with a PD. 18 (3.8 %) respondents preferred to study at a language school, 2 (0.4 %) with a PD. 7 (1.5%) respondents stated a preference for another type of school, none of them with a PD. Here respondents listed, among other different types of schools, examples such as police academy, law enforcement course, and private tertiary vocational school. 24 (5.0 %) of those surveyed said that they would like to start work, 4 (0.8 %) of them respondents with a PD. Only 24 (5.0 %) respondents from the total number of 474 (100.0 %) considered entering the job market. From the selective sample of N 25 (100.0 %) students with physical disabilities, just 4 (16%) considered entering the job market. 14 (56.0 %) respondents with a PD wanted to study at university, 6 (24.0 %) of them want to study at a tertiary vocational school, 2 (8.0 %) at at language school. From the total number of 449 (100.0%) nondisabled respondents, 368 (82.0 %) wanted to study at university, and just 20 (4.5 %) wanted to start working. While analysing the respondents' answers, it could be established that non-disabled respondents also prefer to continue their studies at university or other educational facility over entering into employment.

Hypothesis H6 has been disproved.

H7 Respondents with physical disabilities and health impairments ask the advice of their pedagogues and other experts at secondary school when deciding whether to continue their studies or enter the work force more often than nondisabled respondents.

Table 7: Opportunity to talk to a school counsellor

Did you take advantage of the opportunity to talk to a school counsellor at your secondary school when choosing between school and employment?	Number of students with a PD	%	Number of students without a PD	%	Total	%
Yes	4	0.8	49	10.3	53	11.2
No	21	4.4	400	84.4	421	88.8
Total	**25**	**5.3**	**449**	**94.7**	**474**	**100.0**
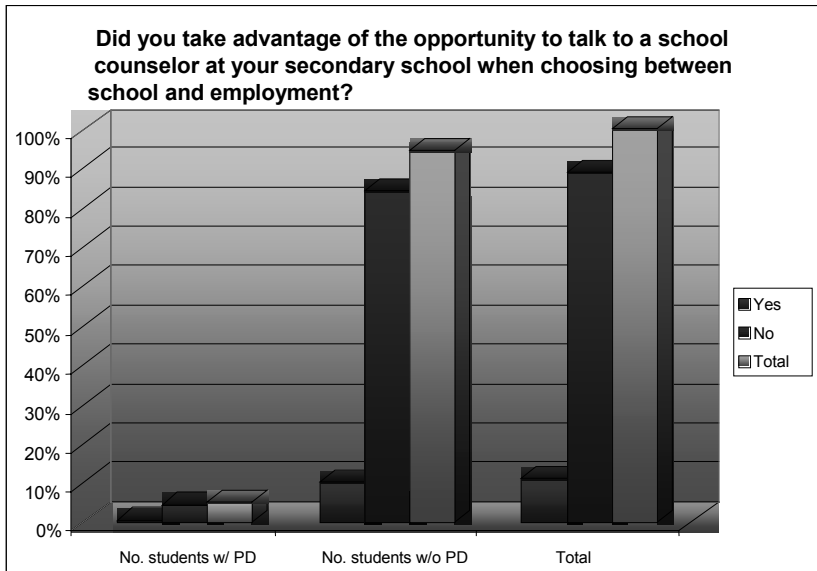
Graph 6: Opportunity to talk to a school counsellor

In order to verify the determined hypothesis, the answers of the physically disabled respondents and nondisabled respondents were compared and the results of the research study were analysed. In this case the respondents' answers shown in table 7 and graph 6 were taken into account. To the question on whether the respondents had ever taken advantage of the opportunity to talk to a school counsellor at their secondary school in regard to choosing between continuing their studies or becoming employed, from the total number of 25 (100.0 %) respondents with physical disabilities, 4 (16.0 %) answered "yes" and 21 (84.0 %) answered "no". With respect to their physical disability, it was assumed that these students would ask for advice their school guidance counsellor more than nondisabled students would. The latter mentioned answered as follows: From the total number of 449 (100.0 %) nondisabled respondents, 49 (10.3 %) answered that they took advantage of such an opportunity. 400 (84.4%) nondisabled respondents stated that they did not take advantage of the opportunity to meet with a school guidance counsellor. It is clear from the acquired data that the results are different than expected. It was shown that 84.4% of respondents with physical disabilities did not meet with a school guidance counsellor, as well as 89 % of nondisabled respondents.

Hypothesis H7 has been disproved.

Conclusion of the study and recommendations for pedagogical practice

The study into predictions influencing the decision-making processes of graduating secondary students at the transition from secondary school to professional life or

to continuing their studies at university and tertiary school verified or disproved the constructed hypotheses. With respect to the range and selection of the sample it is not possible to make generalizations on a wider number of physically disabled and non-disabled graduating students, even though the results indicate certain tendencies. The executed study was focused on physically disabled, health impaired and nondisabled graduating secondary school students in the South Moravian Region. The main objective was to obtain certain data, based on the answers given by the respondents in the survey about the factors that significantly influence the decisions they make during the process of transition from school to career or to further education. An important role in the preparation and elaboration of this survey must be also attributed to the conclusions that were brought by the "2007 Hearing" in Lisbon during September 16 – 17 2007. The presented suggestions and findings led to a document called the "Lisbon Declaration". The contents of this declaration implies that the problem the survey studied in the conditions of secondary schools in the South Moravian Region are similar to the situation of secondary schools of other EU member countries. A total of 474 (100 %) respondents took part in the research survey. 46 (9.70 %) of them stated that they were students with special educational needs and 428 (90.29 %) respondents claimed not to have any disability. Out of 46 (9.70 %) respondents stated that 25 (5.27 %) of them had a physical disability. The obtained data have shown that special needs provided have not always been properly executed. To the question on whether students are satisfied with the special educational support provided, from the total number of 46 respondents 36 (78.26 %) answered favourably, 7 (15.21 %) respondents negatively and 3 (6.52 %) respondents did not express an opinion. This fact makes clear that it is necessary to focus attention on further educating pedagogues in the area of educating students with special educational needs at secondary schools. In addition, it has not been confirmed that a large influence on the decision-making process on further studies or a professional path after graduating is the secondary school environment, consultation with pedagogues and other guidance workers. Such a fact was confirmed with both graduates with special needs and the nondisabled. It was shown that the family environment has a fundamental influence when graduates are deciding on their future. However, from interviews with the directors of participating secondary schools it is clear that there are advisory workers at schools such as guidance counsellors, school psychologists, special pedagogues and others, and they provide enough opportunities to their students to talk about future occupations or study at university or other type of school. From the data gathered so far it is possible to elicit the following suggestions for pedagogical practice. First and foremost it is indispensably necessary make sure that there is quality guidance throughout the entire period of secondary school education. The study has shown that this is not often the case. Further, the special needs of students should be sufficiently assured and pedagogues should be acquainted with them sufficiently and with proper time beforehand. Teachers should be sufficiently qualified, sufficiently motivated, should have good knowledge about the special educational needs of their students. At regular secondary schools greater attention should be given to the problem of "disabilities" and more information should be provided to teachers, students and parents. One positive fact is that a large number of students with physical disabilities and health impairments study at regular secondary schools; students with more serious forms of disabilities remain in schools for the physi-

cally disabled. Integrated and inclusive education of individuals with physical disabilities and health impairments is the best preparation for higher education or preparation for professional life. An advantage to this form of education is the fact that students gain more social skills and experience – they learn to control situations they encounter in the real adult world.

ANALÝZA A KOMPARACE FAKTORŮ DETERMINUJÍCÍCH PROFESNÍ ORIENTACI ŽÁKŮ S TĚLESNÝM POSTIŽENÍM A ZDRAVOTNÍM ZNEVÝHODNĚNÍM NA STŘEDNÍCH ŠKOLÁCH V JIHOMORAVSKÉM KRAJI

Abstrakt: Tématem článku je analýza faktorů, které ovlivňují rozhodování a předpokládaný úspěšný vstup na trh práce, přijetí ke studiu na vysokou popř. jinou školu u žáků se speciálními vzdělávacími potřebami (se zaměřením na jedince s tělesným postižením a zdravotním znevýhodněním) a žáků intaktních, na středních školách v Jihomoravském kraji. V článku je představen výzkum, který byl realizován ve školním roce 2007/2008 na vybraných středních školách ve sledovaném regionu. Dále jsou zde vyhodnoceny některé hypotézy, prezentovány vybrané výsledky, formulovány závěry šetření a doporučení pro speciálně pedagogickou praxi.

Klíčová slova: student se speciálními vzdělávacími potřebami, student intaktní, adolescence, maturita, charakteristika tělesného postižení, faktory ovlivňující úspěšný přechod škola – povolání, následné studium, předprofesní a profesní příprava, integrativní a inkluzivní vzdělávání

AUTISM – DISORDER OF EARLY BRAIN DEVELOPMENT EARLY DIAGNOSTICS OF AUTISM – THE COMMON MULTIDISCIPLINARY GOAL.

Hana OŠLEJŠKOVÁ

Abstract: Due to its high prevalence (60-70 in 10 000 born children) autism (also known as pervasive development disorders) belongs to the most frequently occurring neurodevelopmental disorders. The group includes disorders with extremely heterogenous clinical phenotypes of multiple complex cognitive-behavioral deficits with developmental specificities that are manifested during childhood by the age of 6 at the latest. The diagnostic process as well as subsequent care of the child and its family members are conducted by a multidisciplinary team of specialists, embracing physicians, university graduates with non-medical education as well as parents, relatives and the lay public in general. With regard to physicians, the pediatrist, pediatric neurologist, pediatric psychiatrist, ophthalmologist and otorhinolaryngologist are involved. The role of the pediatric neurologist is to participate in early diagnosing of a disorder, make the differential diagnostics and conduct therapy of the related neurological co-morbidities, mainly represented by epilepsy.

*Keywords***:** *autism, pervasive developmental disorders, neurodevelopmental disorders, pediatric neurologist, early diagnostics, epilepsy*

Introduction

The "autistic spectrum" (i.e. autism spectrum disorders - ASD, abbreviated as "autism", derived from the Greek word "autos") now also termed "pervasive neurodevelopmental disorders" - PDD, or "autisms" are currently classified as disorders of the developing brain (i.e. neurodevelopmental disorders - NDD). The group includes disorders with extremely heterogenous clinical phenotypes of multiple complex cognitive-behavioral deficits with developmental specificities that are manifested during childhood by the age of 6 at the latest. There are three dominant groups of clinical symptoms: deficits in social capabilities and interactions, deficits in verbal and non-verbal reciprocal communication and a limited stereotyped repertoire of activities and interests. As a result, the

disorder completely and deeply changes the cognitive-behavioral phenotype as well as development of affected children (Rapin and Tuchman; 2006). Within the spectrum of autistic children boys are affected more frequently, roughly at a ratio of 2-4 boys to 1 girl, and if a mental handicap is not present at the same time, such as in the case of Asperger's syndrome, the rate is higher (Fombonne; 2005). If, however, autism occurs in girls, its nature is more serious (Hirtz et al; 2006). Autism without an intellect impact and with good social functionality is known as "high-functioning" (De Mayer; 1981).

As there is still no unique or specific diagnostic biological marker known, the ASD diagnostics (except for the Rett syndrome) is established at the level of a clinical cognitive-behavioral syndrome (phenomenological classification). In the Czech Republic this is based on the diagnostic criteria of the International Health Organization, MKN-10th. revision (WHO; 1992, MKN-10; 1992) and in the U.S.A. on Revision IV of the Diagnostic and Statistic Mental Disease Manual (DSM-IV; 1994).

Epidemiology of autism

Autism has now become a widespread social problem and surely is not a rare illness. The incidence of children with autism (specifically I mean the complete spectrum of the pervasive developmental disorders = "autisms") is on the rise. Up until the 1980s the prevalence reported was 1 autistic child in 40 000, but according to more recent information it has risen to 1 in 150 children (Rapin and Tuchman; 2008, Baird; 2006). The mentioned increase in prevalence, called "epidemic of autism" by some, probably does not indicate any actual increase. The seeming is apparently caused mainly by the increase of interest among the professional public and an improved awareness among both professionals and laymen, but also by broadening of the diagnostic criteria and greater availability of diagnostics. There was not even the serious suspicion confirmed that the increase of autism incidence might be causally connected with vaccination (Fombonne et al; 2006), including, too, the case of autistic regression in toddlers (Woo et al; 2007).

The role of pediatric neurologist within the multidisciplinary diagnostic and therapeutic management of autism.

Although a child with autism frequently appears healthy at first sight, the disorder affecting them is in fact serious and "pervasive", with profound individual and social impacts both in childhood and adulthood (Anagnostou and Schevell; 2006). Within recent decades it was parents, family members and other laymen, who together with pedagogical and social workers, speech therapists and professionals in many medical as well as non-medical fields have pointed to it and, by joined forces, have achieved a significant broadening of awareness concerning autism among both professional and lay public. Physicians, further university-educated specialists and laymen now take part in the care of autistic children in the Czech and Slovak republics. Children with autism are placed in state and non-state schools with special pedagogical guidance after the diagnostic process completion, and social support is also enhanced by numerous parent organizations.

In the modern management of autism an important role in the multidisciplinary team belongs to the pediatric neurologist. The benefit of the specialism is particularly significant with regard to differential diagnostics of the broader context of "symptomatic or syndromic" autism, and further in its early diagnostics in the therapy of autistic children with associated epilepsy or EEG epileptiform abnormity and further neurological symptoms or associated disorders. They involve sleep disorders, quite frequent in autistic children and causing them considerable difficulties (Malow et al; 2006). In recent years, neurologists have also given great attention to the intensive stereotypes that represent a core symptom in autism and maintain the view that they should be considered and treated as movement disorders which have much in common with tics. A recent study has called attention to the association of tics and Tourett syndrome in some children with autism (Canitano and Vivanti; 2007).

In the diagnostics and care of autistic children mainly the pediatrist, psychiatrist, pediatric neurologist, geneticist, biochemist, otorhinolaryngologist, psychologist and educator from among the medical and university-educated specialists are involved in the long term. Most recently also the potential contribution of the immunologist has been discussed, as some literary information dealing with the immunological problems in relation to autism indicates that specific serum antibodies exist in mothers of children with autism, which identify prenatally expressed brain antigens (Zimmerman et al; 2007). Whether immunology plays a role in autism, mainly in autistic regression, and how important is positive family anamnesis of immunological disorders, however, still remains unclear (Singer et al; 2006).

The pediatric neurologist also has early diagnostics of autism in his hands

The pediatric neurologist is very frequently one of the first child-health specialists to be consulted on health problems of children with autism. Parents with a handicapped child typically seek his help for problems with speech development, atypical psychomotor development, frequently because of psychomotor retardation or central hypotonia (Ošlejšková et al; 2007a), and further for behaviour disorders, sleep disorders, atypical movement disorders and manifestations or epileptic and non-epileptic seizures. If the parent brings the child to our clinic for specialized examination, we carry out the complete neurological and psychological diagnostics and differential diagnostics, as the Pediatric Neurology Clinic at the Faculty of Medicine of MU and the University Hospital, Brno, serves as a "Diagnostic centre for children with pervasive developmental disorders". Our experience shows, however, that children with autism are referred for examination at our centre late, even in the cases where parents repeatedly called the attention of physicians, teachers and other professionals to "something wrong" happening. For most disorders of the autistic spectrum the diagnosis can realistically be established as early as 36 months of age and for Asperger's syndrome at about 72 months (Allen; 1988; Baier; 2000, Kurita; 1985, Trillingsgaard; 2005) while identification of early warning signals is already possible within the first year of life (Maestro; 2005, Zwaigenbaum; 2005, Baghdadli et al.; 2003, Charman; 2003). The reliability of early diagnostics is high,

namely 88% in a work by American authors who evaluated its reliability 7 years later, i.e. at the age of 9 of the children who had a disorder of the autistic spectrum diagnosed already at the age of 2 (Turner; 2006). At our clinic we have completed, in collaboration with the students of the 5th. year of the Faculty of Medicine at Masaryk University, a study focusing on identification of the time delay between the first symptoms of autistic disorder as noticed by parents and making the diagnosis. Another aim of the study was to establish the number of contacts with professionals (physicians, teachers, speech therapists), when parents described some odd traits in their child's behaviour, and still the child was not sent to a specialized centre. Retrospectively, we assessed 204 children (59 girls and 145 boys; 126 children (39 girls and 87 boys) with child autism (CHA), 57 (17 girls and 40 boys) with atypical autism (AA) and 21 children (3 girls and 18 boys) with Asperger's syndrome (AS). Firstly, the data on the ages of first symptoms was traced back in records for 201 children, the resulting mean age being 29.7 months (a range of 0-72, median 30 +- 17.0) and the mean age of establishing a diagnosis for 204 children was 81.5 months (a range of 13-276, median 69. +-45.). The mean time delay of establishing a diagnosis for 201 children amounted to 51.3 months (a range of 0-246, median 39 +- 40,9). The length of delay until establishment of diagnosis is the shortest in patients with AA (mean time of 44.4 months = 3 years and 8 months), longer in patients with CHA (49.5 months = 4 years and 2 months) and the longest in patients with AS (80.8 months = 6 years and 9 months). Statistically relevant was the difference in the lengths of time to establishing diagnosis between the patients with CHA and AS (P = 0.023) and the patients with AA and AS (P = 0.019). We managed to determine the average number of visits made to physicians and other specialists before referral to a specialized centre for establishing diagnosis for 133 children, equalling 2.4 (a range of 1-5, median 2+-0,9) (Ošlejšková et al; 2007b). Based on the study results we realized the continued need, despite all the diagnostic achievements, to call attention to the early symptoms of autism and recommend that complaints by parents are not underestimated as they very often intuitively uncover the disorder in its early stage. Putting the accent on early symptoms and possibility of identifying the disorder we have published two guidance articles for practical purposes (Ošlejšková; 2008a, Ošlejšková; 2008b). Early interventions and plasticity of the child brain give some hope that with a very early diagnosis there is some chance to positively affect in part the weight and scope of the core symptoms (Dawson and Zahnili; 2003, Howlin; 2003).

The main clinical initial manifestations of autisms in very young children, important for early diagnostics

The most frequent identifiable clinical manifestation of autism in the social sphere during the first months of life and early childhood is the stagnation of the common mother-child interaction, i.e. emotionally positive and generally "happy" response when cuddled, with accompanying laughter when teased. To the contrary, a child tends to keep to themselves and impresses their surroundings as living in their own world. They are withdrawn, distant, social smile is missing, they do not wave back bye-bye. A child does not calm down when mother takes them in her arms crying and soothes them, which is

the commonest response in healthy children as well as those with mental retardation. A child does not make mutual empathic eye contact, although it is capable of "eye contact". When looking at us, we sometimes get the feeling as if they gazed through us into the distance. They are typically characterized as quiet, obedient to passive and unassuming. At about two years of age they may be very self-reliant, prefer self help and may even learn some skills sooner than other children of the same age. Winning their "shared attention" is difficult, i.e. we are not able to direct the child's attention toward things that we are pointing out and showing to them. "Declarative pointing" is missing completely, which means that the child does not make us give attention to things around them that catch their interest. They do not show them to us and do not demand our thoughts about them or our interest in them. Their games do not include imitation because they are not able to play "at something" (such as the symbolic game to impersonate a family – the dad and mummy game, the school game). On the other hand, they prefer some activities which they very enjoy and do them with speed and dexterity, tirelessly over and over again, for example arranging building blocks in lines based on colour, turning on water, turning the light on and off, closing the litter-bin lid. They greatly enjoy playing with mechanical toys, parts of household things and items of "everyday use of rather technical character", such as washing machines with a rotating drum, radio sets, grinders or alarm-clocks. Autistic children clearly prefer them to the softness of teddy bears and other cuddly toys, i.e. to "soft" toys. Children frequently make unusual and atypical movements and take to motor stereotypes. They walk on tiptoes, shake or twist their arms without emotional context, make tap sounds. They rarely cry, sometimes are even described as "tearless", and may create an impression of not feeling pain. On the other hand, they are rather attracted to "sound-making" toys. Autistic children very much like to listen to simple tunes time and time again, which has a calming effect on them. In the development of speech we can observe a wide range of deviations. The most frequent in this age category, however, is the retardation of speech development and absence of babble. In approx. 30 % of cases regression of speech is observed. Speech regression typically occurs from 1.5 to 3 years of age, the time when children are typically placed in kindergartens and the regression is then erroneously attributed to adaptation to the new environment of the social facility or is considered as its unhappy consequence. The regression often involves only a very small number of meaningfully used words. The child stops using them, but at the same time there is no effort made to develop some kind of substitute communication e.g. with gestures or facial expressions, as is usual with completely deaf children without autism. Other autistic children seem to not understand or hear because they do not react to instructions, but mainly when called by their names. The family even sometimes suspect they are deaf. Here the syndrome of verbal auditory agnosia may even be involved and such children are usually non-speaking whole their lives. Autistic children may have a very good mechanical memory. In some speaking autistic children we can observe inexhaustible pleasure in memorizing rhymes, fairy tales and long stories that they remember with incredible ease and sometimes are even mentioned as prodigies in this connection. Even after the second year of life immediate or delayed echolalia persists. The children often with great skill incorporate into their speech complete parts of texts they have memorized from TV commercials, videos or radio, the so-called "scripts". They have difficulty with pronouns or words that change

the meaning according to context. They confuse pronouns and very often talk about themselves in other than the 1st, usually the 3rd. person, or they use their names to refer to themselves.

Differential diagnostic contribution of the pediatric neurologist

Autism represents a complex multidisciplinary area of problems primarily relating to childhood, but at the same time involving a lifelong disorder, as in certain form it lasts until adulthood (Howlin et al.; 2004, Anagnostou and Schevell; 2006). Specialists engaged in its diagnosing know that a number of other disorders may occur alongside autism. Up to 70 % of these patients are stated to have mental retardation with IQ 70 and lower, further frequently occurring problems include associated motive disorders, vision and hearing disorders, speech problems untypical of autism, sleep problems and other gastrointestinal and internal, neurological and psychiatric comorbidities. It is essential to understand, however, that autism itself can only be part of a broader clinical picture of an etiopathogenetically identifiable disorder or illness. And that is where one of the important roles of the child neurologist rests. Based on his knowledge, neurological and diagnostic paraclinical examinations he can recognize the broader context of this "syndromic (symptomatic) autism". This terminology used by Coleman is easily comprehensible to a neurologist. The idiopatic autism, by contrast, is one where a dominant genetic share is expected and the disorder is isolated (Coleman; 2005). To summarize in other words, the clinical behaviorally cognitive syndrome of autism may be part of another illness that can be etiologically diagnosed. This may include monogenically determined diseases or chromosomal aberrations (Angelman syndrome, Prader-Willi syndrome, Rett syndrome, Down syndrome, fragile X syndrome, Williams – Beuren syndrome, Tuberous Sclerosis Complex, Sotos syndrome and others) or hereditary disorders of metabolism, which can be diagnosed at enzyme or metabolite levels (such as Smith-Lemli-Opitz syndrome, mitochondrial disorders, *adenylosuccinate* lyase deficiency and the like). Autism can also be one of the effects of prenatal infectious diseases such as rubeola, cytomegalovirus, herpes simplex virus and others. Modern imaging methods (CT and MRI of the brain) may detect focal structural lesions in the CNS of the frontal or temporal lobes or the cerebellum (Amaral et al; 2008). In recent decades the brain structure of autistic people has been studied post mortem (Autism Tissue Program, USA). The brains of autistic people are somewhat larger and frequently testify to disorders of neuronal migration*,* which may in turn cause development of epilepsy. With regard to differential diagnostics established by the pediatric neurologist a subgroup of *"autistic children with regression"* is of interest. Regression can be observed in about one third of children with autism, taking the place of their originally normal development. During early childhood, regression or stagnation of speech, communication and game appears. Regression takes place early, typically between the 18th. and 24th. months and is not progressive. Usually a stabilized period of different lengths follows and may last for months or even years. After that some amount of improvement takes place, however not recovery. The pediatric neurologist always considers Rett syndrome

and searches for genetic or rare neurometabolical disorders, but the specific cause of regression often remains unknown (Caronna et al; 2008).

Management of epilepsy therapy in autistic children

There is a high level of coexistence of epilepsy and/or epileptiformous specific abnormity in EEG with autism, in literature specified as a very broad range of 5-38.3 % (Wrong; 1993, Tuchman; 2002, Kelley and Moshe; 2006, Canitano; 2007, Hara; 2007). In our cohort it amounted to 44 % (Ošlejšková et al; 2008a). About one third of children with autism will have epileptic seizures in adulthood (Volkmar and Nelson; 1990). Incidence of epileptic seizures is distributed bimodally. The first peak is recorded at an age of about 5 years and the other one then during adolescence (Tuchman and Rapin; 2002). Incidence of cases with epileptic seizures rises in children with mental retardation.

At present it is not recommended to only therapeutically influence with antiepileptics the subclinical epileptiform discharges, but it is also appropriate to carefully treat the clinically manifest epileptic seizures and at the same time reliably monitor and record the behaviorally cognitive and emotional outcome of the child. Full compensation of epileptic seizures is important and especially regarding the mentioned atypical cases it may, too, have the general positive influence on the autistic and further cognitive manifestations. At the same time, it is necessary to readily and flexibly respond to behavioral and cognitive expressions and any negative responses in a child's mood and behaviour, which during the therapy with antiepileptics cannot be fully ruled out in children with autism (Matson and Dempsey; 2008, Peake et al; 2006, Canitano; 2007, Kagan Kushnir et al; 2005). Further detailed observations are necessary. The complexity of the problems in question is even enhanced by the fact that autism with epilepsy distinctly presents a multidisciplinary field and such cases can only be evaluated correctly by the creatively collaborating pediatric neurologist, psychologist, psychiatrist and pediatrist.

Conclusion

Autism represents a very frequent and serious disorder of early brain development and falls in the group of neurodevelopmental disorders. The management of diagnostics of "autisms" requires a day-to-day close multidisciplinary cooperation of many university-educated professionals (both physicians and non-physicians) with parents and the lay public. The role of the pediatric neurologist on the multidisciplinary team is irreplaceable. He mainly participates in early diagnostics of autism, differential diagnostics of symptomatic autism, in the therapy of epileptic seizures in autistic children and of further associated neurological disorders such as sleep disorders. Despite the whole significant progress in medical research achieved during the last decades, pervasive development disorders continue to present a serious individual, social and medical problem. In many respects we are able to help children with autism and their families, but in its core symptoms, the disorder unfortunately continues to be untreatable.

AUTISMUS – PORUCHA ČASNÉHO VÝVOJE MOZKU

Abstrakt: Autismus (alias pervazívní vývojové poruchy) patří díky své vysoké prevalenci (60-70 / 10 000 narozených dětí) mezi nejčastější neurovývojové vady. Skupinu tvoří poruchy s extrémně heterogenním klinickým fenotypem mnohočetných komplexních kognitivně behaviorálních deficitů s developmentálními specifiky, které se manifestují v průběhu dětství nejpozději do 6ti let věku. Diagnostický proces i následnou péči o dítě a jeho rodinu realizuje multidisciplinární tým odborníků, kam patří lékaři, vysokoškolsky vzdělaní nelékaři, ale i rodiče, příslušníci rodin a další laická veřejnost. Z lékařů je to pediatr, dětský neurolog, dětský psychiatr, oční lékař a otorinolaryngolog. Úkolem dětského neurologa je podílet se na včasné diagnostice poruchy, realizovat diferenciální diagnostiku a řídit terapii přidružených neurologických komorbidit, což je především epilepsie.

Klíčová slova: autismus, pervazívní vývojové poruchy, neurovývojové vady, dětský neurolog, včasná diagnostika, epilepsie

PREPARATION FOR TEACHING PSYCHOLOGY: THE EXPERIENCE OF BEGINNING UNIVERSITY TEACHERS IN EUROPE

Aleš NEUSAR

Abstract: *This exploratory study focuses on the experience of beginning university teachers (both students and faculty members) with their preparation for teaching. Data were collected by online questionnaires in June 2009 in several European countries both from the point of view of beginning teachers (in particular) and department heads, all under the auspices of EUROPLAT - European Network for Psychology Learning & Teaching. Most of the respondents were PhD students. Teaching is usually not compulsory for them, but it is very common that they do at least some teaching. Results show that majority of beginning teachers in our sample do not receive enough training or support for carrying out their teaching responsibilities.*

Keywords: teaching psychology, beginning teacher, teacher preparation, support, higher education, Europlat

Introduction

A beginning teacher has to learn many things, e.g. lecture preparation, assessment, dealing with large groups, and acquisition of these competences require a lot of knowledge, effort and practice. Nobody is a good teacher straight away.

Anecdotal data suggest that many teachers have not received any formal training or have received a very poor formal training at the beginning of their career. Some of them became good teachers anyway, through their own effort and simply doing the job for a long time. Nevertheless many authors (e.g. Goss Lucas, Bernstein, 2005; Park, 2004) argue that, with some training and support more teachers could do a better job sooner, could avoid so many "hard knocks", could feel better about their teaching, and offer greater benefits to their students, too.

After exploring the literature on support and preparation of beginning teachers (further just "BT"), it quickly became obvious that most of the authors come from the United States (e.g. Buskist, Davis, 2006; Griggs, 2002; Meyers, Prieto, 2000) and very few from Europe (e.g. Park, 2004; Lantz, Smith, Branney, 2008). The reason may be

that authors write more in their national languages and their resources are thus not available to English (or Czech) speaking researchers or the topic is simply not in a focus of current research interest.

Because of the lack of research on this topic in Europe, several members of the recently established European Network for Psychology Learning and Teaching (EUROPLAT - www.europlat.org) decided that there is a need of exploratory research of the current state of the art in teacher preparation in order to get the broader view necessary for future development. Another reason was the personal experience of the members of EUROPLAT (including mine) from their countries which generally said that BTs do not receive enough attention.

According to Buskist (2009) the "ideal" preparation and support should include 1-2 semester-long courses on university teaching which would primarily focus on effective course design (how to create and manage a course); effective classroom management and interpersonal skills; effective public speaking skills and giving feedback (immediate and assessment). The course should be interactive and include discussions, the opportunity for beginning teachers to deliver lectures and be observed etc. After the course, beginning teachers should be observed several times during their first teaching experience and receive feedback from a mentor or other colleague.

The "ideal" preparation described above is offered at about 40% of US universities (although enrolment is not usually required, or required only for BTs who will be teaching their own courses soon), and about 60% of good quality higher education institutions offer at least a one-day seminar program (Buskist et al., 2002; Meyers, Prieto, 2000).

The present exploratory study aims mainly to a) explore teaching and teaching related activities of beginning teachers (PhD students, new faculty members and MA students) in Europe and to b) find out how beginning teachers are being prepared for and supported in carrying out their teaching responsibilities.

Method

Procedures and participants

In June, 2009, emails were sent containing Internet links to online questionnaires (one for beginning teachers and one for department heads), along with instructions for completing them, to all EUROPLAT country representatives (one or more people from each European country & Turkey) and to all departments of psychology in the Czech Republic. The EUROPLAT representatives were asked to contact all psychology departments in their countries and to try to motivate people to answer the questionnaires. If there were too many institutions (e.g. in UK), a representative sample of departments (e.g. big, small, various quality rankings) was requested. Our goal was to gather as much data as possible from various psychology departments across Europe. Addressed departments were only those that teach future psychologists e.g. clinical, social, cognitive, and educational. All answers had to be submitted in English.

Table 1: Sample characteristics

gender		age				focus mostly on			degree studied			type of PhD	
fem.	male	M	SD	min	max	research	teaching	half	PhD	MA	finished	employed	not em.
111	39	30	6,7	21	59	68	8	20	109	27	12	78	11

A total of 151 responses of beginning teachers from 73 institutions in 16 countries were valid (+ 28 from department heads or deputies). Several respondents did not finish the whole questionnaire, but finished at least some of the non-demographic questions (I counted these as valid responses). The majority of respondents were from the UK, Norway, the Czech Republic, Portugal, Belgium, Sweden and Turkey. Several respondents were from Slovakia, Slovenia, Spain, Austria, Ukraine, Liechtenstein and Iceland. Approximately 50 % of those who clicked on the LOGIN of our online questionnaire filled it out.

The timing of the data collection was not ideal because of the exam period at many departments. This was probably one of the reasons for our relatively low response rate. Another reason was certainly the online data collection format, which usually leads to lower response rates (Birnbaum, 2004).

Instrument

There were two versions of the online questionnaires. The beginning teacher questionnaire had 37 questions (both open-ended and closed). Several questions were inspired by the "Postgraduates who Teach Survey" which was conducted in the UK (Lantz, Smith, & Branney, 2008). The department heads (or deputies) version had 16 questions (both open-ended and closed). Apart from demographic questions, both questionnaires focused mostly on teaching (face-to-face, seminars) and teaching related activities (e.g. marking; correcting). The results presented here focus on teaching (exclude teaching related activities) from the perspective of beginning teachers themselves. Each participant in the survey automatically received an anonymous ID number. Participants were assured that survey results will be presented in summary form only and that the names of institutions will be anonymised after data collection. Participants did not have to respond to questions they did not want to answer and they could select an answer from a pre-established list of response options or could generate their own answer.

Results

Cumulative and relative frequencies were counted only from those respondents who answered a particular question. Results thus present only a valid percent and a valid N.

In relation to the question about their general teaching experience, a total of 56 % of participants (N = 61) chose the response option that said: *"I had to do everything by myself. Nobody guided me and nobody observed me during lectures. When I asked I received some advice."* A total of 36 % (N=39) chose the option that said: *"*

I got some advice, but mostly had to do most things by myself. I was observed once or twice during lectures. I was guided but not very much. If I asked I was helped." Only 9 % (N=10) of the participants chose the third option, which said: *"I received valuable advice from other people. I was continuously observed during lectures as well. I was continuously guided and offered advice."*

Table 2 shows that at various departments it is very common that "most of students" teach or "some students teach and some do not teach". (MA students teach exceptionally and faculty members do teach because it is their job to do so – that is why they are not included in the table.) Nevertheless, this does not mean that they have to teach. A majority of ph.D. students reported that teaching is not compulsory for ph.D. students (65 %; N = 46). We can see that department heads' answers are slightly higher, but we have to be careful interpreting this result because of the small sample and varied number of students from each department.

Table 2: Estimated frequencies of ph.D. students who teach at various departments (students' and department heads' answers)

How many PhD students teach	%		N	
	students	dep. heads	students	dep. heads
most of students	37	48	40	12
some students do, some don't	32	28	34	7
it's exceptional	11	12	12	3
no students	6	-	6	-

Most of the BT's have never (or just once or twice) been observed in a teaching role (see table 3). A total of 66 % of those who were observed (N = 38) reported they have received a valuable feedback after observation.

Table 3: Observation of BT in teaching role (students' and department heads' answers)

Observed in teaching role	%		N	
	students	dep. heads	students	dep. heads
continuously	4	4	4	1
sometimes	15	38	15	9
once or twice	26	8	26	2
no	55	50	56	12

Many BT's report they had to learn everything by doing it and from occasional advice given by colleagues. Systematic guidance and advice or a worthwhile teaching course was reported just couple of times (see table 4). Each respondent could choose more than one alternative. A total of 43 % of those who had attended a teaching course reported that it was very valuable, while 44 % said it was somewhat valuable (44 %) and 13 % said it was not very valuable.

Table 4: What helps BT improve teaching skills?

What helps students improve teaching skills?	Percent	N
Nothing. I had to learn it myself by doing it.	31	49
Reading books about this topic	16	25
Occasional advice given by other colleagues	34	54
I was systematically guided and received advice by others (e.g. lecturers)	7	11
I absorbed a lot from a whole teaching course	12	19

As for the value of teaching, BTs said that if they did not teach they would miss a lot of knowledge about psychology (32 %, N = 62), enjoyment (30 %; N = 58), a good break from research (16 %; N = 30) and extra money (12 %, N = 24). On the other hand they also noted that there would be some benefits of not teaching, e.g. more time for their own research or less stress (details in Table 5). Each respondent could choose more than one alternative.

Table 5: What would be better if BT did not have to teach?

Better if BT did not have to teach	Percent	N
I would have had more time for my own research	45	68
I would not waste my time with t. and preparation	5	8
I would not be so stressed	21	32
I would not have to read so much	2	3
I do not think it would be good if I do not teach	25	38

To the question "Is there any training in teaching you feel that you need? (tick as many you want)" quite many BT's reported to have "need of training" in at least some of the areas (see Table 7). Each respondent could choose more than one alternative.

Table 6: Training in teaching BT feel they need

Training needed	Percent	N
lectures and lecture preparation	20	46
dealing with difficult students	19	42
working with large groups	8	17
working with small groups	15	34
assessment and marking	14	17
improving motivation of students	25	31

Most of the BT's were either quite satisfied or not very satisfied with the available trainings and courses in teaching. This could mean that courses were not available or not very high quality (see Table 8). Each respondent could choose more than one alternative.

Table 7: Satisfaction with available trainings and courses in teaching

Level of satisfaction	Percent	N
Very satisfied	6	9
Quite satisfied	21	32
Not very satisfied	25	38
Dissatisfied	11	16

Finally I would like to illustrate some of the major problems BTs have to deal with by quoting from some open-ended questions. These three illustrations focus on quality and quantity of the courses and receiving feedback and I don't think they need any commentary.

„There is a teaching course required for PhD students. It's by far the worst course I have ever taken in my whole life! But I did get a very clear impression of what NOT to do and how I DON'T want to be as a teacher.“ (40, female, PhD student)

„Very often there is no real feedback from teaching activities. It would have been good to have had a structured learning and specific feedback on how and if the work was improving. Also, the relationship with students doesn't provide an accurate feedback, thereby, the first years of teaching can be a very isolated learning process, highly dependent on the social network and the abilities young teachers have to seek help and information in these networks.“ (31 years, female, PhD student)

"I enjoy teaching very much, but I feel disappointed at the lack of training provided for post grads who teach. I think the students that we teach would be shocked if they knew how little training we had!" (52, female, PhD student)

Discussion and Conclusion

As the results show, most of the beginning teachers report they were not guided (or not guided enough), received just occasional support when they asked for it, did not attend any training in teaching, had only poor training. Department heads' reports were slightly more optimistic, which is quite common in similar research (e.g. Myers, Prieto, 2000) but we have to be careful interpreting it, because of the small sample and varied number of students from each department.

If we take the results as they are, those could be very upsetting findings. However we have to be cautious in evaluating these findings. First, even if majority of BTs do not receive sufficient training and support, we do not know if the situation is getting better or worse, because we do not have any data to compare our findings with. Secondly, because it was a non-probability sample and we have mixture of responses from various countries and various departments (and various numbers of answers from them), it may happen that our respondents come from those departments who do not "care" about teaching preparation so much. That may indeed have happened, but on the other hand, we now know (or at least have a strong belief) that at least a large portion of BTs will probably be in very same situation. We can also expect that those who responded to this questionnaire will probably be those who are more motivated to answer and maybe more motivated about their teaching as well.

The results also show that teaching seems to be quite beneficial for BTs. They say that they would miss a lot of knowledge about psychology, enjoyment, a good break from research, and extra money. On the other hand there would be also some benefits of not teaching, e.g. more time for their own research or less stress which corresponds with findings from UK (Lantz, Smith, Branney, 2008). I think that the majority of drawbacks

could certainly be reduced if there would be more systematic approach to BT's preparation and engagement (especially the amount of teaching) of PhD's in teaching (Hickson, Fishburne, 2005; Park, 2004).

If we try to compare our findings with USA findings (with all limitations in mind), we find, that the situation in the USA seems to be generally somewhat better (e.g. mentoring programmes, offer of courses) and the "ideal" preparation and support is quite rare in the USA as well as in Europe (Buskist, 2009; Buskist et al., 2002; Meyers, Prieto, 2000).

The good thing is that we can learn a lot from many good examples and do not have to invent what are the efficient ways how to prepare BTs for their task (Park, 2004). This situation gives us a great opportunity to do something and make things better.

What are the possible consequences if we continue to allow BTs to have no preparation, or inadequate preparation, for teaching? According to Wimer and Prieto (2004) these consequences include a) a decline in future faculty development, b) impaired teaching effectiveness (undergraduates may be less well-prepared) and c) a loss of interest in teaching among BTs. These are serious consequences, so the obvious question is why there is so little interest in and efforts to support beginning teachers in psychology?

The survey's results do not offer an exact answer, but we can speculate about some of the reasons:

1) Nobody cares. Neither BTs nor their students protest, and department heads have other things to do that they feel are more important.
2) Nobody is aware of this problem. Many teachers do not have own experience with training and support and many potential mentors do not have any experience with mentoring.
3) Lack of teacher preparation is not a real problem because each BT has the opportunity and right to develop his/her own teaching style and may ask for help if he/she needs it. (This is a Darwinian argument that, in light of the consequences listed above, does not seem to be a strong one.)
4) There is strong pressure for students to develop excellent research (which is certainly desirable) and nearly no pressure to develop excellent teaching skills (Hickson, Fishburne, 2005). I hear this argument from many people from different countries across Europe, and it applies in the USA, too.

I hope that these research findings might serve to stimulate discussion of how we can all help to change the BTs preparation situation. Even if the situation is not as bad as we fear it is, and if we missed learning about some really great departments that provide high quality teacher preparation (I am happy to see more and more of these across Europe), there are undoubtedly many beginning teachers who get too little, or no, support and training and we should think more about how to help them, and how that help can indirectly satisfy their students who desire and deserve good teachers. Just as in business and industry, departments of psychology must invest into their workers. If not, we know what happens...

PŘÍPRAVA NA VÝUKU PSYCHOLOGIE: ZKUŠENOSTI ZAČÍNAJÍCÍCH UNIVERZITNÍCH UČITELŮ V EVROPĚ

Abstrakt: Tato explorativní studie se zabývá zkušenostmi začínajících univerzitních učitelů (studentů i členů katedry) s přípravou na výuku. Výpovědi z pohledu začínajících učitelů (zejména) i vedoucích kateder byly sbírány online dotazníkem v několika evropských zemích pod záštitou EUROPLAT - European Network for Psychology Learning & Teaching v červnu 2009. Většina respondentů byli doktorští studenti. Učit je pro tyto studenty velmi běžné a obvykle není povinné. Výsledky ukazují, že většina začínajících učitelů z našeho vzorku neprošla dostatečným tréninkem a neměla adekvátní podporu pro plnění úkolů spojených s výukou.

Klíčová slova: výuka psychologie, začínající učitel, příprava učitelů, podpora, vyšší vzdělání, Europlat

THE CONTRIBUTION OF UNIVERSITIES OF THE THIRD AGE TO SENIOR CITIZENS' QUALITY OF LIFE

Petr ADAMEC, Jiří DAN, Barbora HAŠKOVÁ

Abstract: *U3A courses are intended for people no longer in full time employment. The concept was first developed in France in the early 1970s. Masaryk University has been organizing U3A courses since 1990. In order to qualify for a U3A course, applicants must be retired and have A levels. Various analyses of the motives and the rising interest in studies indicate that the courses increase the quality of life of the senior citizens involved. This paper aims to interpret the results of our survey as well as thoroughly discussing the motives and reasons leading senior citizens to participate in U3A courses. A comparison drawn between our results and other scientific studies points to the conclusion that U3A courses present an agreeable and dignified means of sustaining a reasonable quality of life for a part of the elderly population. Among other benefits, senior citizens appreciate the opportunity to actively engage in social life, create new social relations and participate in voluntary work.*

Keywords: *quality of life, university of the third age, seniors' motivation in education*

Quality of life is universally accepted as comprising a multidimensional phenomenon. From an individual's point of view, the term is first and foremost a personal and subjective one, closely linked to notions of well-being and mental health. It is linked to both physical and mental activity throughout the stages of an individual's life while also associated with existing or potential work activity. Last but not least, it is constantly influenced by an individual's integration in society, his/her social standing and place in the immediate family as well as a wider social context.

In recent years, more and more attention has been devoted to issues surrounding the quality of life of senior citizens. This is associated with the rising life expectancy in the Euro-Atlantic cultural space. As noted by Vaďurová (2005), quality of life (QOL) has proven to be an extremely difficult term to define with the corresponding measuring methodology being no less challenging. She considers quality of life a key area in research focusing on the behavioural and social aspects of the life of the elderly.

The quality of life of senior citizens is influenced by a number of factors, among

them e.g. health, lifestyle, social surroundings, available material means, work activity, medical care, social services, accommodation, education, ethical principles applied in society, etc.

A number of documents deal with issues associated with sustaining the quality of life of senior citizens: the International Plan of Action on Ageing (Vienna 1982), UN Principles for Older Persons (1991) and the International Plan of Action on Ageing (2002) from the Second World Assembly on Ageing (Madrid 2002).

These are mirrored in a document published by the Government of the Czech Republic entitled "National Programme of Preparation for Ageing for 2003–2007". The document lists measures in support of ensuring a high-quality and dignified ageing environment as well as senior citizens' active participation in social life. The Programme of the Government of the Czech Republic includes the following suggestions in the area of education:

  – Promoting the implementation of the lifelong learning concept according to the "*National Program* for the *Development* of *Education*", "Long-term Plan for the Development of Education" and within the framework of the "Memorandum on Lifelong Learning",
  – Preparing the "Concept for lifelong learning", supporting lifelong learning development programmes,
  – Supporting the establishment of universities of the third age (U3A) as well as developing their educational programmes,
  – Supporting the formation of "academies of the third age" on national, regional and local levels,
  – Supporting the establishment of "Educational Centres" and ensuring access for senior citizens,
  – Participating in the integration of the Czech Republic into European as well as world-wide structures dealing with the education of senior citizens (AIUTA, LiLL, EFOS, EURAG),
  – Creating educational, informative and retraining programmes for senior citizens,
  – Raising senior citizens' awareness of educational opportunities and forms.

Providing persons no longer in full time employment with lifelong learning opportunities is one of the key goals defined therein.

The education of senior citizens may be said to encompass a number of important functions. It contributes to a sense of dignity, helps preserve an individual's knowledge base and contributes to maintaining one's place in society. It exerts positive influence on the senium, helps adapt to lifestyle changes and contributes to preserving one's physical and mental energy. Participating in educational activities may be one of the factors in attaining the so-called wisdom of old age.

In operational terms, quality of life is defined by means of the content of questionnaires used in expert studies on the quality of life, as mentioned by Vaďurová (2005). One of the possible techniques of structuring the areas falling under the comprehensive umbrella term of quality of life is subdividing them into e.g. the following categories: existence, i.e. the physical aspect, the mental aspect, fellowship, i.e. a sense of place

among fellow citizens and in society, and adaptability, i.e. daily life, leisure time, plans for the future.

The leading position among the various forms of senior citizen education in the Czech Republic is currently occupied by universities of the third age. While the notion was first implemented in France in the 1970s, Masaryk University has been organizing such courses since 1990. In order to qualify for enrolment in a U3A course, applicants must be retired as well as being at least secondary school graduates with completed A levels. Analyses of the motives and rising interest in studies indicate that the courses contribute to increasing the quality of life of the senior citizens involved.

A comparison between the findings established in our research and in similar studies allows us to conclude that – at least for some of the elderly population – U3A courses comprise a means of maintaining the quality of life of senior citizens in an agreeable and dignified manner. A sense of participation in social life and various events, acquiring new contacts and the option of taking part in voluntary tasks are also considered important.

Analyses of the makeup of U3A participants have repeatedly confirmed that more interest is generally generated among women than men and that people with backgrounds requiring lifelong education, e.g. primary and secondary school teachers, medical doctors, public administration officials, etc, are more likely to enrol.

There are at least two reasons for assessing the motivation for studies in U3A courses:

a) on a general level, such an assessment comprises a report on (a part of) the current senior population,

b) on a course organization level, the findings may contribute to reaching an agreement between the existing offer on the part of the institution in question and demand on the part of course participants.

The survey presented here was conducted among a group of first-year U3A participants in courses organized by Masaryk University in the 2006/2007 academic year prior to the beginning of instruction. The results presented here are relevant to the motivation for attending such courses. They are part of a wider research scheme which is conducted regularly and includes – among other things – an assessment of the courses as such as well as an evaluation of individual lectures.

Method: A pilot study, consisting of guided interviews with course participants, was used to define a total of 11 possible positive study motives. Respondents were asked to rate these on a five-point Likert scale. The individual points were labelled as follows: strongly agree, agree, neither agree nor disagree, disagree, strongly disagree.

This scale was chosen for a number of pragmatic and practical reasons, with full awareness of the potential distortion which may occur when this method is utilized.

Unlike in the case of open-ended questions, the results thus allocated to scales are relatively easy to quantify and subsequently facilitate meaningful computer processing. Senior citizens were likewise able to indicate their answers without any difficulty. Of the 143 questionnaires administered, 11 were eliminated due to incomplete data; the results are thus based on a sample comprising 132 individuals. The analysis took place in October 2006, i.e. at the beginning of course instruction; the questionnaire was distributed at the end of the lecture and handed in on completion by individual respondents.

Results: The individual points were each allocated a value: strongly agree – 1, agree – 2, neither agree nor disagree – 3, disagree – 4, strongly disagree – 5. The closer the mean value is to 1, the stronger the motivation.

An example of one of the 11 motives in question is listed in table No. 1 detailing the frequency of occurrence of the individual points with respect to the desire to maintain and improve knowledge in one's field of professional expertise.

Mean, median (numeric value separating the higher half of a sample from the lower half) and mode (most frequently occurring value) were calculated for all motives. These level characteristics respect all possible point values, both positive and negative.

The most cited motive was "[the desire to] acquire new knowledge and information" (mean of 1.14) while acquiring a certificate formed the weakest study incentive (4.08). A comparison of the motives relevant to maintaining and improving one's knowledge yielded some interesting results: while maintaining and improving knowledge in one's field of interest reached a mean of 1.30, maintaining and improving knowledge in one's field of professional expertise ranked among the weaker motivating factors with a mean of 2.69.

Table No. 1: *Absolute and relative frequencies of motive assessment points: **maintaining and improving knowledge in one's field of professional expertise***

motive assessment points	frequency	relative frequency	cumulative frequency
strongly agree	35	26.5	26.5
agree	42	31.8	58.3
neither agree nor disagree	7	5.3	63.6
disagree	25	18.9	82.6
strongly disagree	23	17.4	100
total	132	100	

Table No. 2: *Numeric characteristics of the intensity of individual motives*

motive	mean	median	mode
I wish to acquire new knowledge and information	1.14	1	1
I want to maintain and improve knowledge in my field of professional expertise	2.69	2	2
I want to maintain and improve knowledge in the field of my own interest	1.30	1	1
I would like to utilize my free time in a meaningful manner	1.29	1	1
I want to verify whether I am still fit	1.74	1	1
I wish to remain in good mental health	1.23	1	1
I want to study as I did not have time to do se before	2.54	2	1
I would like to learn something for use later on	2.24	2	2
I wish to acquire a certificate	4.08	5	5

n = 132

374

The following table and graph show the combined cumulative frequencies of "strongly agree" and "agree" for individual motives. Motives have been arranged according to intensity.

Table and graph No. 3: *Cumulative frequencies of "strongly agree" and "agree" of individual motives for studies in U3A*

motive	cumulative %
I wish to acquire new knowledge and information	100
I wish to remain in good mental health	99.2
I want to maintain and improve knowledge in the field of my own interest	98.5
I would like to utilize my free time in a meaningful manner	98.5
I want to maintain social contact with other people	88.6
I want to verify whether I am still fit	86.4
I wish to spend my time with people who have similar interests	82.6
I would like to learn something for use later on	68.2
I want to study as I did not have time to do se before	64.4
I want to maintain and improve knowledge in my field of professional expertise	58.3
I wish to acquire a certificate	14.4
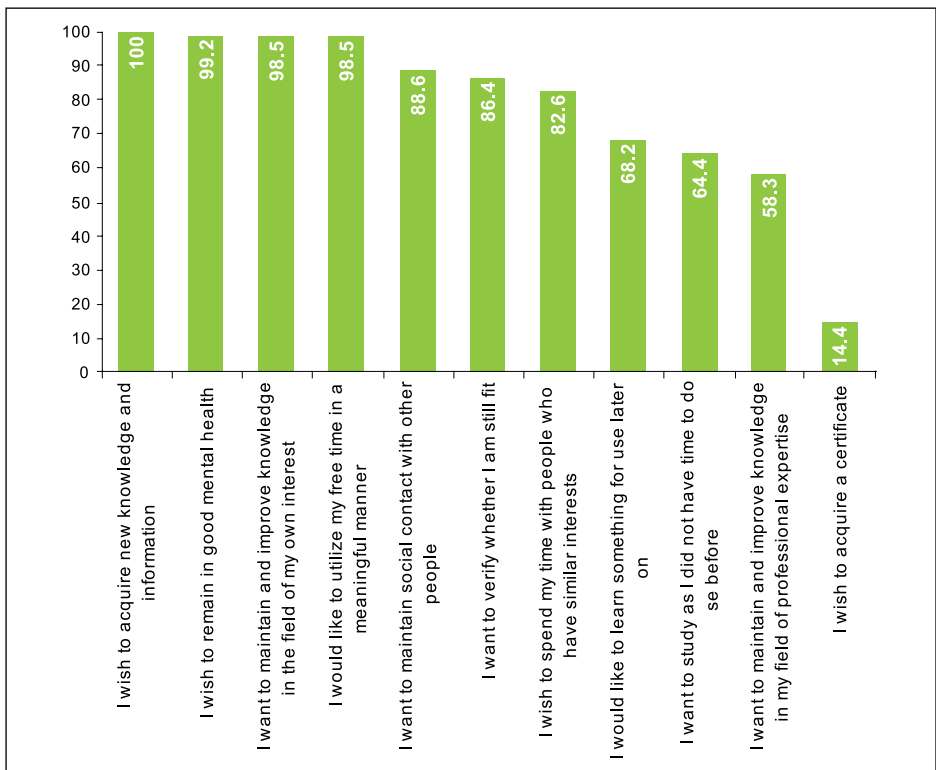
The results show that the intensity of individual positive motives for studies in U3A courses is considerable. The cumulative frequency of answers relevant to individual motives directly associated with the experience and subjective aspects of senior citizens' quality of life always rated over 60 % and while the professional expertise-related motive was slightly weaker, the cumulative frequency relating the certificate acquisition motive remained far behind.

A comparison between the findings established in our research and in similar studies allows us to conclude that – at least for some of the elderly population – U3A courses comprise a means of maintaining the quality of life of senior citizens in an agreeable and dignified manner. A sense of participation in social life and various events, acquiring new contacts and the option of taking part in voluntary tasks also play an important part.

PŘÍNOS UNIVERZIT TŘETÍHO VĚKU KE KVALITĚ ŽIVOTA SENIORŮ

Abstrakt: Vzdělávání v kurzech U3V je určeno osobám v postproduktivním věku. Myšlenka byla poprvé realizována po roce 1970 ve Francii. Masarykova univerzita organizuje kurzy od roku 1990. Podmínkou zařazení do kurzu je dosažení důchodového věku a alespoň středoškolské vzdělání s maturitou. Analýzy motivů ke studiu a zájem o studium, který se neustále zvyšuje, dokládají, že kurzy přispívají ke kvalitě života seniorů. V příspěvku budou interpretovány a diskutovány motivy a důvody účasti v kurzech, zjištěných v našem výzkumu. Porovnáním našich zjištění s údaji z literatury lze dospět k závěru, že kurzy U3V pro část populace seniorů představují jednu z možností, která významnou měrou napomáhá k udržení kvality života pro účastníky vzdělávání U3V seniorů přívětivým a důstojným způsobem. Důležitým aspektem je pro seniory i pocit účasti na společenském dění, navazování kontaktů, možnosti voluntaristického uplatnění.

Klíčová slova: kvalita života, Univerzita třetího věku, motivace seniorů ke vzdělávání

THE CHERNOBYL DISASTER
AND HUMAN HEALTH

Vladislav NAVRÁTIL

Abstract: The accident at the Chernobyl nuclear power plant in 1986 was a tragic event for its victims, and those most affected suffered major hardship. Some of the people who dealt with the emergency lost their lives. About 200 000 people ("liquidators") from all the former Soviet Union were involved in the recovery and clean up of destroyed region. The plants seem to be protecting themselves from radiation ^{137}Cs and other radioactive elements. Similar conclusions as to the plants can be set also as to the animals. New generations of them is more tough against radiation damage in comparison with the first generation survived in Chernobyl

Keywords: Chernobyl disaster, nuclear power, radioactive elements, contamination, human health

1. Chernobyl disaster (history and reasons)

The Chernobyl disaster was a nuclear reactor accident in the Chernobyl Nuclear Power Plant in Ukraine, at that times part of the Soviet Union (The Power Plant was situated nearby small city Pripyat, at about 100 km from Kiev, capital of Ukraine – Fig.1). It is considered that the Chernobyl disaster was the worst nuclear power plant disaster in the history (nō 7 according to International Nuclear Event Scale)

Fig.1 The surrounding of Chernobyl
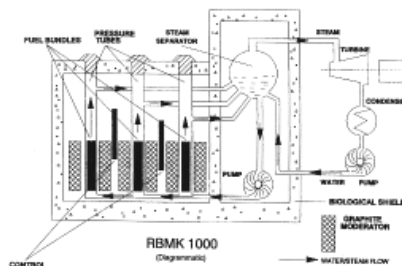
Fig.2 Scheme of RBMK nuclear reactor

Fig.3. Nuclear power plant after
the explosion.
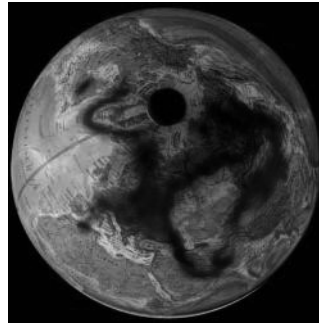
Fig.4. The radioactive cloud a week after
the disaster.

On the April 26, 1986, the reactor crew at Chernobyl – 4 nuclear power plant was been preparing for a test to determine how long turbines would spin and supply power following a loss of main electrical power supply. Such experiment was proposed to test a safety emergency core cooling feature during the shut down procedure. The reactor RBMK (Fig.2) is consisted of about 1600 individual fuel channels and each operational channel required huge amount of cooling water (at about 28 tons per hour). There was concern that in case of an external power failure the power station would overload, leading to an automated safety shut down in which case there would be no external power to run the plant´s cooling water pumps. For this purpose there were three backup diesel generators, required 15 seconds to start up and at 60–75 seconds to attain full speed and required power (together 90 seconds so called "power blackout"). This more than one minute power gap was considered to be unacceptable and it was suggested that the mechanical energy of the steam turbine could be used to generate electricity to run water pumps, while they were spinning down. Because generator voltage decreases with this spinning down, a special device (voltage regulating system) was to be tested during the simulated blackout. Every nuclear reactor is designed in such a way that in case of an failure, the reactor would be automatically scram. For this purpose control rods would be inserted and stop the nuclear fission process and other generators. According to detail analysis, the Chernobyl experiment was performed at the most dangerous point in the reactor cycle. For the experiment the reactor was set at a low power setting (50 %) and the steam turbine run up to full speed. At this low power output a phenomenon called xenon poisoning by which high levels of ^{135}Xe absorb neutrons and thus inhibit nuclear reaction, become predominant. To increase power, control rods were pulled out of the reactor core, automatically control system was switched out and staff had to use manual control.

The result of these very unstable conditions was the first steam explosion. It blew the 2000 ton heavy cover damaged the top of the reactor hall. Second, more powerful explosion occurred about two second after the first. It was caused by the hydrogen which had been produced by steam – zirconium or hot graphite – steam reaction. Very hot parts of ejected material caused a fire and the smoke arising from the burning radioactive graphite blocks contaminated great areas (Fig.4). In order of high irradiation most of the staff of the reactor died within three weeks.

Fig.5 Dropping a material

Fig.6 Firemen on the roof of the power plant.
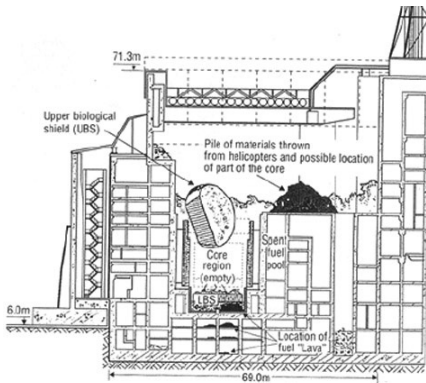
Fig.7 Reactor after the disaster (scheme).
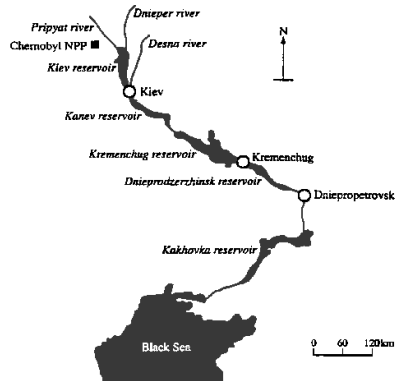
Fig.8 Water and radioactivity

The first priority for firefighters was to extinguish fires on the roof of the station. Many of the firefighters received high doses of radiation because they thought that the fire was only regular electrical fire and did not use any protective gear. The fire was extinguished by a combined effort of helicopters dropping over 5000 tons of materials like a sand, lead, clay and boron onto the burning reactor and injection of liquid nitrogen (Fig.5). The explosion and fire threw particle of the nuclear fuel and dangerous radioactive elements like ^{137}Ce, ^{131}I, ^{90}Sr into the air. The molten core (high radioactive uranium and metals) melted down the Earth surface and there was a danger to reach water rich layer (underground sea) below the reactor. To reduce the possibility of catastrophic steam explosion it was decided to freeze the earth beneath the reactor. Using oil drilling equipment, injections of liquid nitrogen were used (25 tons of liquid nitrogen per day kept the soil frozen at -100 ^0C).

At about 30 hours after the catastrophe the evacuation if inhabitants began. In order to reduce the baggage the residents were told that the evacuation would be temporary, lasting approximately three days. As a result, Pripyat still contains personal belongings (Figs.13–20).

The reactor was covered with bags containing sand, lead and boric acid and large concrete sarcophagus had been erected o seal off the reactor and its contents (Fig.5). Many of vehicles used by the liquidators remain parked in a field of Pripyat area (Figs 27-29) over 20 years after the disaster (their initial radioactivity was 0,1–0,3 Gy /hr).

About 200 000 people ("liquidators") from all the former Soviet Union were involved in the recovery and clean up of destroyed region. They received high doses of radiation from 100 to 500 mSv (predominantly from ^{131}I and ^{137}Cs). About five million people lived in areas contaminated above 37 kB / m^2 by [137]Cs. In this years 210 000 people were resettled into less contaminated areas.

After the accident all work on the unfinished reactors 5 and 6 was halted three years later. However the disaster in reactor 4 was followed by the fire in the turbine building of reactor 2. In 1991. Reactor 1 was decommissioned in the year 1996 and on December 2000 president of Ukraine personally turned off Reactor 3 and this act represented end of Chernobyl Nuclear Power Plant. Workers and their families now live in a new town Slavutich, 30 km from the plant (built following the evacuation of Pripyat).

The Chernobyl reactor is now enclosed in a large sarcophagus. A new safe confinement structure will be built by the end of 2011 by help of the Chernobyl Shelter Fund which is organized by the European Bank for Reconstruction and Development and funds from donors and projects are gathered by this institution.

2. Health and Environmental Effects of Chernobyl disaster.
2.1. Plants.

Trees, bushes and vines overtake abandoned streets in Pripyat, near the Chernobyl nuclear power plant (Fig.10). Despite the devastation, local flora did not change or improved its property. According to Martin Hajduch, a plant biologist at the Slovak Academy of Sciences in Nitra, soybeans, planted inside of 30-kilometer restricted zone have three times more cysteine synthase, then soybeans, planted on 100 kilometers remote field. Cystein synthase protect protects plants by binding heavy metals. Chernobyl soybeans also have 32 % more betaine aldehyde dehydrogenase, compound found to reduce chromosomal abnormalities in human blood exposed to radiation.

Fig.9 Restricted zone

Fig.10 Abandoned house overgrown by vine

Fig.11 School building

Fig.12 Pripyat today

What is the conclusion? The plants seem to be protecting themselves from radiation (^{137}Cs and other radioactive elements), but nobody knows how these proteins changes translate into survival, i.e. if future generations of soybeans (and generally also their plants) will have the same amount of proteins. It can be expected that also other plants mobilized evolutionary mechanisms enabled them higher level of radiation.

Fig.13 Russian wheel

Fig.14 School library

Fig.15 The inkpot

Fig.16 Soviet politicians

Fig.17 No comment

Fig.18 Very sad figure

Fig.19 Teachers room

Fig.20 Room in hospital

Fig.21 Pripyat today

Fig.22 Pripyat today
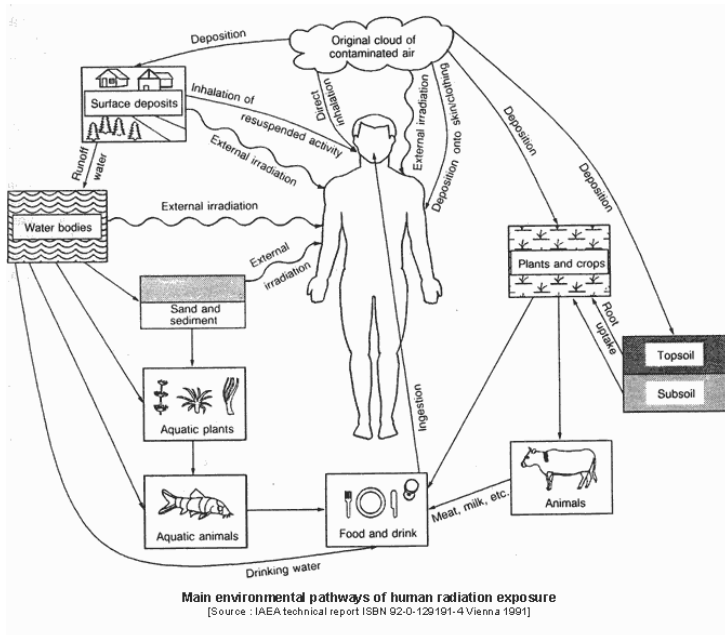
Fig.23 Human radiation exposure

2.2. Human and animals health damage.

For the last two decades , attention has been focused on investigation of relations between irradiation caused by radionuclides and thyroid cancer in children. Particularly dangerous are highly radioactive compounds that accumulate in the food chain, such as some isotopes of iodine and strontium. Of 600 workers present on the site during the early morning of April 26, 134 received high doses (0,7–13,4 Gy) and suffered from radiation sickness. Of these 28 died in the first three months and another 19 died in 1987–2004 of various causes not necessarily associated with radiation exposure. In addition, according to the UNSCEAR 2000 Report, during 1986 and 1987 about 450 000 recovery operation workers received doses of between 0,01 Gy and 1 Gy. That cohort is at potential risk of late consequences such as cancer and other diseases and their health will be followed closely. More than 4000 thyroid cancer cases had been diagnosed in the group of children. It is expected that the increase in this type of cancer due to Chernobyl disaster will continue for many years.

Among workers (liquidators) exposed by high doses of radiation (more than 150 mSv) there was emerging some increase of leukemia. But it is expected incremental decrease of these type of cancer. No other increase of other cancers were not observed.

Similar conclusions as to the plants can be set also as to the animals. New generations of them is more tough against radiation damage in comparison with the first generation survived in Chernobyl. As a result, at present time the 30 km "forbidden zone" seems to be an "animal paradise" for deers, wolfs, rabbits, hares, foxes, beavers, wild Převalsky horses, many kinds of birds and fishes (Figs 24–26). New generation of these species are more resistant against radiation.

The radioactive contamination of aquatic systems became a major issue immediate after the accident. In the most affected areas level of radioactive elements ^{131}I, ^{137}Cs and ^{90}Sv in drinking water was some months relatively high. But after this period the radioactivity decreased below guideline limits for safe drinking water.

Accumulation of radioactive elements in fish were significantly above guideline maximum levels for consumption (which is 1 kBq / kg). For example in the Kiev reservoir in Ukraine it was at about ten times higher. Similar situation can be expected also as regards of animals.

Fig.24 Wild Převalsky horses

Fig.25 People living in restricted zone

Fig. 26 Fish in Kiev lake.   Fig.27 Irradiated helicopter in Pripyat.

Fig 28 Pripyat „parking site"   Fig.29 Pripyat „parking site"

3. Conclusion

The accident at the Chernobyl nuclear power plant in 1986 was a tragic event for its victims, and those most affected suffered major hardship. Some of the people who dealt with the emergency lost their lives. Great arrangements to avoid similar disasters have been made. All of the RBMK reactors have now been modified by changes in the control rods, adding neutron absorbers and consequently increasing the fuel enrichment from 1,8 % to 2,4 % ^{235}U, making them much more stable at low power and also automatic shut – down mechanisms now operate faster together with automated inspection equipment which has been also installed. Since 1989 over 1000 nuclear engineers from the former Soviet Union have visited Western nuclear power plants and other mutual visits have been realized. The IAEA (International Atomic Energy Agency) safety review projects for each particular type of Soviet reactor and consult it with the aim to focus on safety improvements. The Nuclear Safety Assistance Coordination Centre database lists western aid for more than 700 safety – related projects in former Eastern Block countries. According to a German Nuclear Safety Agency report a repetition of the Chernobyl accident is now virtually impossible.

KATASTROFA V ČERNOBYLSKÉ JADERNÉ ELEKTRÁRNĚ A JEJÍ DOPAD NA PŘÍRODU A LIDSKÉ ZDRAVÍ

Abstrakt: Černobylská jaderná katastrofa, ke které došlo v roce 1986, se stala tragickou událostí s mnoha oběťmi, z nichž některé nesou následky dodnes. Její materiální škody jsou obrovské a jejich odstranění znamenalo pro Ukrajinu značné zatížení. Likvidace škod jaderné exploze v Černobylské elektrárně se zúčastnilo asi 200 000 osob ("likvidátorů") z celého tehdejšího Sovětského svazu. U rostlin, vystavených záření došlo k mobilizaci evolučních mechanismů, které je chrání proti účinkům záření od ^{137}Cs a ostatních radioaktivních prvků. Stejné závěry jako pro rostliny platí i pro živočichy. Jejich nové generace jsou odolnější proti účinkům záření ve srovnání s těmi, kteří jí byli zasaženi v době katastrofy.

Klíčová slova: černobylská katastrofa, nukleární energie, radioaktivní prvky, kontaminace, lidské zdraví

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