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DEATH OF GRANDPARENTS IN CONTEMPORARY PICTUREBOOKS FOR CHILDREN – 8 YEARS OLD. SUGGESTIONS ON USING THE BOOKS IN THE ELEMENTARY CLASSROOM.

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Abstract

Children's literature is one of the most suitable means of presenting the concept of death to children. This article aims to examine the ways mortality is presented in contemporary picture books for preschool and elementary school aged children (4-8 years old) and also to suggest some activities that teachers could use in class with young children.

The books chosen for this purpose are reviewed in terms of child development, a child's understanding of death and literary quality. The study concludes that death is a natural part of life's cycle and that children should learn to get on with their lives after a loss of a loved one.

Key words: *death in children's literature, picture books, activities for the primary classroom*

1.INTRODUCTION

Death and loss are a natural part of people's life. Children are not immune to loss and like adults they have to confront change, loss and death in their lives. Their experiences may range from the separation of a friend, their parents' divorce, the death of their favourite cartoon character, or the death of a pet to the loss of a friend or relative.

All these are significant losses for the children involved and must be grieved. Many adults would like to protect children from the pain and hurt that accompanies loss and death, but they cannot do so. Life's experiences inevitably confront children with these spectres. To live involves loss and dying, and these experiences affect every part of children's lives. That is, school work, play, relationships with friends and family, and thoughts about themselves (Baum, 2003 klingman 1980, Papadatou 1991).Consequently, parents should be supportive and eager to answer the questions children pose as honestly as possible, as this helps them to understand and confront death, although it is never easy (Ledezma, 1994).

In the same way children can express their questions in an open and supportive classroom environment. Discussing death in the classroom can help a child realize that others find it equally difficult to deal with, experience similar thoughts and feelings, and share the same uncertainties.

Nevertheless, many educators raise objections concerning the appropriateness of discussing death in the classroom, as teachers themselves may feel uncomfortable to discuss the subject and children are considered to be too young to deal with such personal and anxiety arousing issues. The answer to this dilemma could be the use of literature to deal with death and bereavement indirectly and in a non threatening way. Literature and especially the short story, offers children one of the richest

opportunities to explore in a classroom setting what death is and what it means to them. It also enables teachers to respond to their students' needs in a pre-emptive manner, rather than remedial to prepare them for their encounters with death as they grow up (Klingman, 1980).

Taking into consideration all the above, this article attempts to present the ways death of grandparents is depicted in contemporary picture books and also to suggest some activities on using the books in class.

2. BIBLIOTHERAPY: THE THERAPEUTIC ROLE OF LITERATURE.

The effect of children's literature on their personal development is considered to be indisputable. A consistent body of research argues that children's literature is effective in helping children resolve problems.

Bibliotherapy is the process of growing toward emotional good health through the medium of literature and its broad goal is to assist young people with the challenges of developmental tasks through a responsive interaction with literature (Davis & Wilson 1992, Schlichter & Burke 1994). There are two main types of bibliotherapy. Clinical bibliotherapy can occur in a clinical setting where it is implemented by a trained counselor or therapist. Developmental bibliotherapy can occur in a classroom setting where a teacher tries to promote positive attitudes toward life's challenges. This second form of bibliotherapy anticipates student needs and focuses on prevention of problems or crisis. It is this form of bibliotherapy that is the focus of this article because it is more appropriate for teachers to use and does not require extensive training.

Bibliotherapy can also help relieve stress, provide successful coping strategies, and help an individual be able to express both feelings and ideas about a problem or difficulty. When topics such as death are included in the curriculum everyone benefits because all children become more aware of the needs of others as they learn to handle these situations in a sensitive and supportive manner. Pardeck (1994) concurs and adds that bibliotherapy also promotes awareness of new values and attitudes.

Dreyer (1985), described bibliotherapy as a three-stage process. In the first stage, universalization, children recognize they are not alone in their situation.

When children read or listen to stories about characters with problems, they realize that others have faced similar problems. It is somewhat comforting for children to hear about other children who are undergoing similar challenges. During the second stage, catharsis, children identify with the characters and the characters' ways of coping. Coleman and Ganong (1990) state that good fiction often provides readers with models to help them handle situations they encounter and escape into new roles and identities vicariously. The final step in the process of bibliotherapy involves insight, where the reader grows in self-knowledge about the world (Dreyer, 1985).

Just reading a book to children may allow them to progress through universalization and catharsis, however, by adding activities, teachers and caregivers can help better ensure that the final stage (developing insight, self-knowledge, and knowledge about the world) occurs for all children in the group. The use of activities enables children to more effectively construct their knowledge about these issues rather than just hear about them and is more developmentally appropriate and aligned with what we know about how children learn.

3. DEATH OF GRANDPARENTS IN CONTEMPORARY PICTURE BOOKS FOR AGES 4-8.

This article aims to present and analyze children's picture books with death of grandparents as their main theme, for children aged between 4 and 8 years old.

During our search for relevant titles in the book market we found that there is a quite large number of picturebooks concerning mortality on the Greek book market, both native and translated. Nevertheless we noticed that most picture books for children 4 to 8 years old present the death of grandparents (either grandfather or grandmother) and for this reason we decided to examine the particular ones. Picturebooks employ both visual and literal aspects correlating to achieve complete comprehension. Neither pictures nor words are self-sufficient but are symbiotic in telling a story. (Nodelman,1988, Mitchell, 2003, Nikolajeva & Scott, 2000). For this reason they are more interesting for children than textbooks and can be a valuable addition to a student's learning experience as they present a single topic in depth (Martinez, Roser & Strecker, 2000).

In an attempt to keep the literature current, the books were limited to those published between 2000 and 2008. After the final list was compiled, we conducted a content analysis on each book to determine how death topics were portrayed.

The books' analysis is based on Sadler's (1991) research and investigates the way that death is presented in the texts and also, to what extent this presentation is educationally and developmentally appropriate for children of this age range.

According to Sadler (1991), almost all books about dying grandparents present, in one way or another, four distinct stages:

i) The relationship between the child and the grandparent
ii) The illness of the grandparent
iii) The death of the grandparent
iv) The mourning and recovery of the child.

In this paper seven picture books about the death of grandparents were examined and they are presented briefly below:

Dentro apo agapi [A Tree Made of Love], by T. Tsilimeni:

The book presents the story of Stephanos, a young child, who planted a cut tree with his grandfather's help. Years later Stephanos found out accidentally that the tree had rooted again and this reminded him of his beloved grandfather who had already passed away. The young boy at the end of the story has realized that the power of love can perform miracles and can even "beat" death. The story presents death as natural part of life's circle focusing on the young protagonist's feelings.

O Pappous tou Roko [Roko's Grandfather] by V. Zorba-Rammopoulou:

The story presents the illness and death of Roko's grandfather and the events that follow. Grandfather's death occurs in the beginning of the story and then the text describes Roko's mourning and final acceptance of the new reality.

To Louloudopaido [The Flower Kid] by L. Petrovits-Androutsopoulou:

The book presents the story of little Anthi whose grandmother died and she makes a lot of desperate efforts to bring her back to life. Finally the girl realizes that death is final and her grandmother is not coming back, so she accepts it and goes on with her life with the love and support from her parents.

An t'agapas xanarhontai [If you love them they come back] by V. Nevrokopli:

The story describes the relationship between a child and his grandmother until the moment that grandmother dies. The story goes on with the child's expectation for his grandmother's return that will signal the child's death too, who has turned old waiting.

Le grand-pere de Petit Ours, [Melenios' Grandfather has gone away], by N. Gray and V. Gabban:

The story presents the feelings a small child has when his beloved grandfather dies. The protagonists of the story are anthropomorphized animals, a devise that attracts children's interest and passes on to them ideas and messages easily.

Grossvater Heb ab,[Grandfather flies], by S. Laube:

The story describes an imaginary, surrealistic journey that Valentin and his grandfather have which lasts all day and ends with the sunset and Grandfather's death.

Opa duurt ontelbaar lang,[Grandpa I'll always remember you], by R. Broere:

The story is about the death of Nicolas' Grandfather and describes the child's reactions and feelings as well as the mourning process he goes through.

After reading the books chosen, we concluded that they follow more or less Sadler's (1991) model presenting the four stages described above:

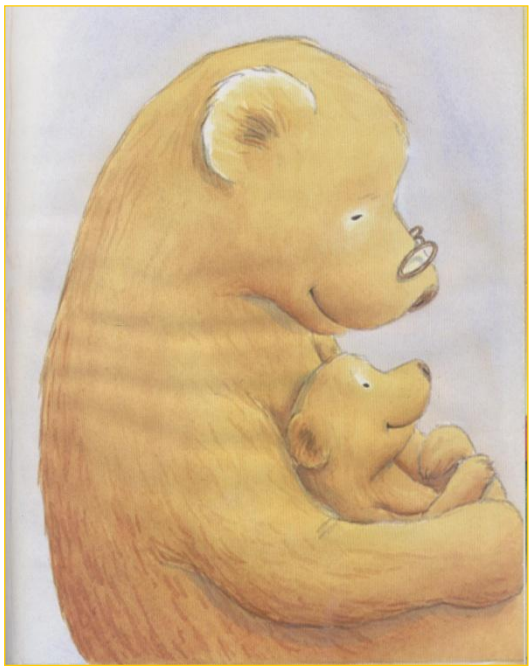
3.1. Relationship between the child and grandfather

The books – *Dentro apo Agapi*, *O Pappous tou Roko*, *Le grand –pere de Petit Ours*, *Grossvater Hebt ab* and *Opa duurt ontelbaar lang* present the relationship between a grandfather and his grandson.

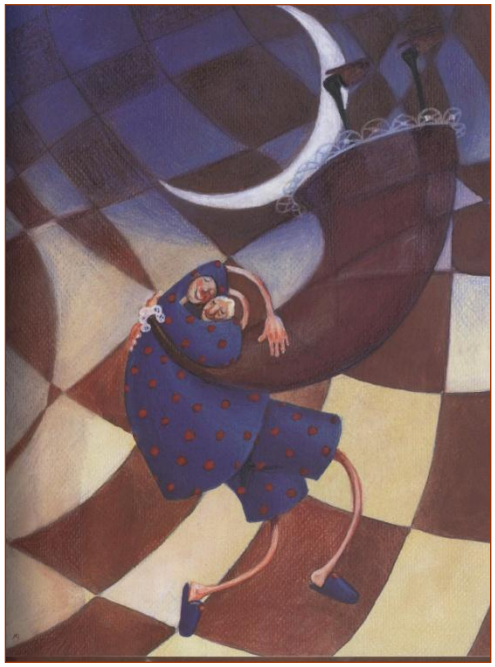
In *Dentro Apo Agapi*, [A Tree Made of Love], Grandfather and Stephanos seem to have a very strong relationship. The author stresses the quality of their good relationship by depicting both Grandfather's and Stephano's feelings and thoughts. Grandfather looks after him when his parents are at work, answers all his questions and fulfills all his wishes.

In the same way in *O Pappous tou Roko* [Roko's Grandfather], the relationship between the grandfather and little Roko appears to be very close, as the grandfather lives in the same house with him, tells him fairy tales and also transfers to his grandson his family's tradition. Once again, the quality and intimacy of their relationship is enhanced by the fact that Roko is an only child and, as the text implies, the only grandchild.

In *Le grand –pere de Petit Ours*, [Melenios' Grandfather has gone away], the relationship between the child and his grandfather is a permanent value in the child's life as he visits Grandfather every Friday and enjoys spending time there very much. Grandfather not only loves and takes care of the little child but also transmits his wisdom about life to him: "Life is a gift, my boy" Grandfather used to say. "Don't waste it". Nevertheless, Grandfather has always warned indirectly his grandson about his oncoming death reminding him that he is old and there is always a possibility for him to get ill and die: "And how are you my beloved Grandfather?", "As good as an old man can be", Grandfather would always answer smiling.



Melenio's grandfather has gone away



If you love them they come back

In *Grossvater 8eb tab*, [Grandfather flies], the relationship between the child and the grandfather is depicted in their last imaginary journey. The story begins in a crisis atmosphere as Grandfather is seriously ill, actually dying. Valentin, who loves his grandfather very much, decides to offer him an imaginary journey so as to heal his pain. Through it, the reader becomes acquainted with the love and affection they feel for one another. Both Grandfather and Valentin cherish the last moments they have together and it seems that not even death can break the bond of their relationship.

Finally, in *Opa duurt ontelbaar lang*, [Grandpa I'll always remember you], the relationship between Nicolas and his Grandfather is presented through the child's memories because Grandfather is already dead at the beginning of the story. The reader realizes that their relationship was the usual, stereotyped one between grandchildren and their grandparents: "Nicolas remembers that Grandfather would spoil him by fulfilling all his wishes. He would buy him sweets, ice-creams and other things. And of course he would always answer all his questions".

On the other hand, in both *To Louloudopaido* and *An t'agapas xanarhontai* the story is about the death of grandmothers.

First, in *To Louloudopaido* [The Flower Kid], the depiction of the relationship between the grandmother and her granddaughter Anthi is given through Anthi's memories. This is due to the fact that grandmother has already passed away when the story begins and the reader observes Anthi's intense sorrow and mourning as she makes numerous efforts to bring her back to life.

Secondly, the picture book *An t'agapas xanarhontai* [If you love them they come back], presents the loving relationship between a young boy and his grandmother. The reader gets acquainted with the two protagonists at the cover of the book where they are shown in a warm and tight embrace which predisposes the reader about their loving and close relationship. Once again the grandmother is not

given a name but this time we notice that neither the child is named, as the author chooses to use the generalized terms "child" and "grandmother" instead of their names, emphasizing a common and panhuman experience.

As in the previous books, Grandmother has undertaken the typical and stereotype role of grandparents as conveyors of knowledge (Sadler, 1991) answering all the child's questions. Through their dialogues we are given the elements that constitute the good quality of their relationship: love and attention for one another, Grandmother's care for the Child and the Child's deep emotional commitment and affection to her.

3.2. The illness and death of grandfather

The illness and death of the grandfather is presented in only three of the seven books. The books are *O Pappous tou Roko, Grossvater 9eb tab,* and *Le grand –pere de Petit Ours.*

The story *O Pappous tou Roko,* [Roko's Grandfather], right from the start prepares the reader for Grandfather's illness. There is a big picture in the first pages of the book, which shows him obviously ill and frail. Consequently, he is transferred to hospital and his medical attendance there is described in details. The reader observes Grandfather's suffering but also Roko's agony and sorrow: "small and big tubes that start from the hands, chest and nose of Grandfather and finish up to machines where red and green numbers flash". Grandfather's illness is not defined or described in detail and death is not presented as imminent or painless: "Don't all these rubbers hurt my grandpa?" Roko asks his parents" – "Yes, Roko. Pray hard that Grandfather won't suffer and won't be in pain" (His parents answer).

In *Grossvater 9Heb tab,* [Grandfather flies], the story begins in a crisis atmosphere as Grandfather is seriously ill, actually dying: "Mom says that your heart is tired and you shouldn't worry. Does worry hurt you?"(Valentin asks), "Sometimes it hurts" (Grandfather answers).

Grandfather's death is symbolized by his closed eyes in every picture of the book and particularly in the last one. There this symbolism is reinforced by his hands hold crossed and the flowers on his chest that refer to a funeral. At this point the story is very subversive and presents Grandfather dying while Valentin is holding his hand.

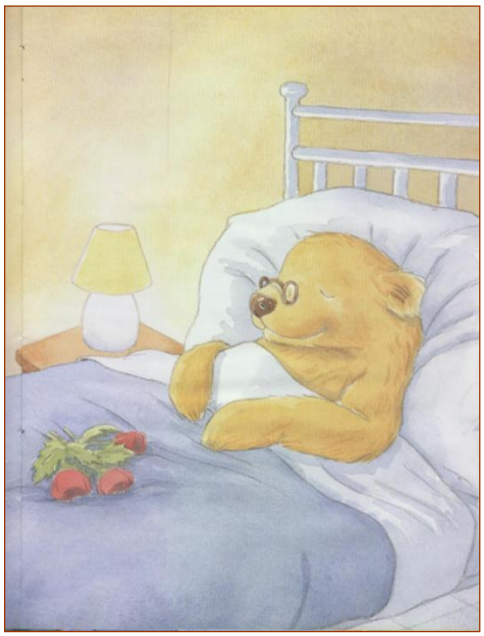
Likewise, the picturebook *Le grand –pere de Petit Ours,* [Melenios' Grandfather has gone away], presents the illness of grandfather showing him at the hospital, but there is no other information about it. The writer chooses to present Grandfather's death as imminent and painless so as to focus more on the child's feelings about the loss.

In the same way, the picturebook *An t'agapas xanarhontai,* [If you love them they come back], describes Grandmother's exact moment of death "One night Grandmother fell asleep before the Child. The Child felt her breath going away. And the Child was left alone". Nevertheless, the death is due to Grandmother's old age and not the result of an illness. The author chooses to depict death as a natural part of life's circle that's common for all creatures when their time has come.

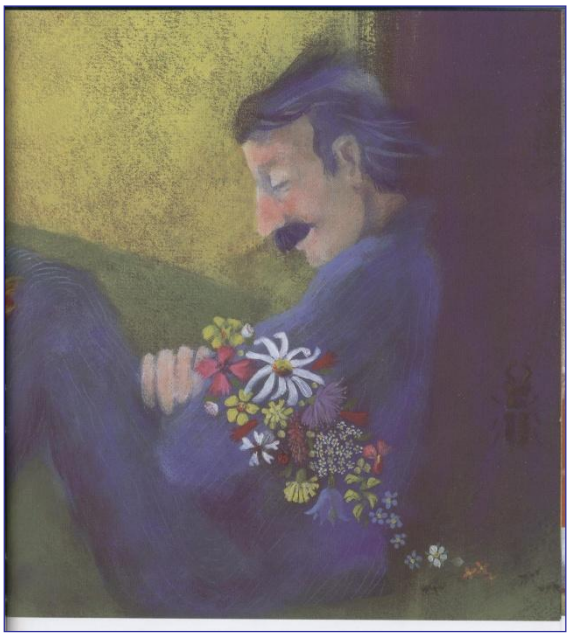
On the contrary, in the other three books *To Louloudopaido, Dentro Apo Agapi* and *Opa duurt ontelbaar lang* there is no mention of illness and death of the grandparents at all.

In *To Louloudopaido* [The Flower Kid], the reader is informed that Anthi's grandmother "has gone away forever". This verbal euphemism is the only reference to grandmother's death. Similarly, in *Dentro Apo Agapi* [A Tree Made of Love], grandfather's death is deduced by the sentences "he went up to the clouds" and "they said goodbye to him forever". Finally, in *Opa duurt ontelbaar lang* [Grandfather I'll always remember you], there is no reference to an illness or the cause of

grandfather's death. The child is informed that his grandfather died unexpectedly while lying on the couch: "he was lying still, very quiet and calm".



Melenio's grandfather



Grandpa flies

3.3. The mourning and recovery of the child

In the book *Dentro Apo Agapi* [A Tree Made of Love], the writer chooses to focus on the child's emotions and not on grandfather's death. The reader observes the child's feelings when he sees his grandfather's figure shaped in the clouds and can sympathize with the pain, the grief and sorrow Stephanos feels about his beloved grandfather's loss. Although the story implies that Stephanos-the young protagonist- has overcome his grandfather's death an accidental incident reminds him if his grandfather and the child is overwhelmed by memories that cause him a lot of pain and sorrow. The child's silent mourning comes back as little Stephanos is at that stage of grieving during which the mourning person tries to adjust in an environment where he misses the deceased person (Worden, 1996:15).

Nevertheless, this is quite different for Stephanos due to the important role Grandfather played in his life. The story ends presenting the child to have accepted Grandfather's loss and also to have realized that he will live in his heart forever. Love, symbolically, beats death.

Love that conquers death is the main idea in *To Louloudopaido* and *An t'agapas xanarhontai* as well. In the first, the reader becomes acquainted with Anthi's grief for her grandmother's death and also with her anguish efforts to bring her back. The girl gradually accepts the fact that her grandmother won't come back because death is final and irreversible.

A tree made of love

Life finds its balance again and the parents offer stability and continuity to the child. The story stresses the idea that death is a natural part of life's circle and life goes on after a loss, provided that the children are ensured that there always be someone to stand by them and take care of them.

In the second, *An t'agapas xanarhontai* [If you love them they come back], the acceptance of Grandmother's death leads the Child to continue his life which includes feelings like love, joy and sorrow but also the expectation of death which is inevitable and applies to all living creatures. The Child's picture is quite typical, as he is depicted with white hair and a walking stick standing by the long staircase that leads to heaven, waiting for the moment that his Grandmother will come back "even a slight different".

On the contrary, in the picture book *O Pappous tou Roko* [Roko's Grandfather], the mourning period for grandfather's death is presented to be quite long and the child goes through all the stages of grief: sock and denial, anger, negotiation, depression and finally acceptance of the death (Kubler-Ross 1985, Bowlby 1995, Ward 1996, Worden 1996).

In *Le grand –pere de Petit Ours* [Melenios' Grandfather has gone away], according to the restrained treatment of the subjects of Grandfather's illness and death, the story also presents in brief this stage, too. The writer chooses to describe only the phase of mourning after Grandfather's death and not all the stages of grief a person goes through after a loss. The coping strategy which the story suggests is the love and support Melenios gets from his mother. As in *Dentro Apo Agapi* the illustration follows the cliché of the twin pictures at the beginning and at the end of the book. In the first one, the reader sees Melenios and his Grandfather on the tree house, whereas in the second Grandfather has been replaced by Melenios' mother. This replacement, after Grandfather's death, symbolizes Melenios' new reality. Also, it is important to note that the colour of the background setting has now changed from the depressing brown to an optimistic light blue and the balance is restored as Mother stands by Melenios providing support and stability in his life.

In the picturebook *Opa duurt ontelbaar lang* [Grandpa I'll always remember you], the child is presented sad about his Grandfather's death, but not grieving. Indisputably though, his sorrow is highlighted but the story focuses more on his anguished efforts to tell his Grandfather that he's dead. Nevertheless, his agony and sorrow are not expressed by crying or some other kind of intense emotional reaction. In the beginning, Nicolas denies accepting his Grandfather's death and gets angry, but then he calms down and feels relieved by writing a letter to him. The child starts to feel even better when he dreams about his Grandfather who gets the letter and this means that Nicolas has finally accepted the loss.

In the picturebook *Grossvater Hebt ab* [Grandfather flies], the story ends without making clear to the reader if Grandfather has passed away. Consequently, there is nothing mentioned about the mourning and recovery of his grandson, Valentin.

Nevertheless, the illustration in the last pages continues the story in a pictorial way –as there is absolutely no text- and grandfather's death is signaled through symbols: The open window in the picture of the first page is now closed, symbolizing the "closing" of lifecycle, the black bird stands for death, the faint figure of an angel and the complete absence of human beings in the two last pictures. Finally, the reader infers through this pictorial narration that Grandfather has died- he's depicted on a star up in the sky with closed eyes- and that Valentin has accepted his death, as he's shown down on earth waving goodbye to him.

4. CONCLUSIONS ON THE STUDY OF THE BOOKS

The books presented in this article have a lot of similarities and also differences as far as plot, style of writing and the presentation of the main idea are concerned.Most writers choose to emphasize on certain aspects of death and not to stress some others. As a result, almost all of them present death as a brief and painless experience, whereas they avoid expressing any particular religious beliefs about afterlife.

The stories that refer to grandparents' death usually describe a close relationship between them and their grandchildren (who most of the times are the only grandchildren, as the text implies). In the

books presented above, the grandparents and the child either live in the same house or the children visit them at their house where they act according to the stereotyped roles of grandparents: they prepare food for their grandchildren, take care of them when their parents are at work, answer all their questions and teach them lessons about life. As far as the grandparents' illnesses are concerned, some books do not mention them at all. Instead, they focus exclusively on the children's feelings and mourning.

Grandpa flies

On the whole, the authors stress the quality of the relationship between the grandparents and their grandchildren, highlighting the power of love that can go beyond the boundaries death sets. Despite their differences, all the books presented in this paper have as their main keystone the idea that death is a natural part of life's circle and children can and should go on with their lives after the death of a beloved person.

Consequently, these books belong to the most suitable means for children to approach the concept of death and explore their feelings about it in the context of a developmental and emotional appropriate way.

5. SUGGESTIONS ON USING THE BOOKS IN CLASS

This part of the paper includes the planning of some suggested teaching activities on using the picture books presented above, in class. Teachers could use the books mentioned during Death Education Programmes or a literature reading session.

At this point it is crucial to point out that the activities which follow are designed in order to highlight the emotional aspect of learning more than the cognitive one. Therefore the activities will not hold back only to elements of style, structure or expression. On the contrary, they may start with the understanding of the text or with the recognition of its structure, then pass on to its reformation and finally should relate it with the child's life and reality.

In this way, the reading experience is connected to life's experience. Moreover, this kind of activities poses crucial issues for discussion in class, enhances the social nature of the literary text and finally, places the text among the child's world.

As we have already mentioned before the role of literature in education is, among other things, the approach of social and personal issues that concern children. Loss and bereavement as well as the emotions they cause to children belong to those issues and it is up to teachers how they are going to deal with the information and the messages the books contain.

After teachers have selected, evaluated and procured the books that treat emotionally charged topics like death and bereavement, then they can design a lesson plan based on questions on the story they are going to read in class and some other activities too. The lesson plan aims to create the atmosphere which will facilitate the emergence of the students' aspects on the book's main idea, in order to connect the book's story with the children's experiences.

The planning of the suggested activities, which are presented below, is based on a basic keystone which consists of two parts:

Reading a book as an opportunity for discussion.

Discussion on the story which was read as an occasion for communication between the students and the teacher.

First of all, the teacher has to decide on the number of the children he is going to read the story to: a small group of students or the whole class? Which place is the most comfortable for children to sit? Many adults and also many children associate reading with a cosy place. Every classroom for young children should have an area with a rug and large cushions or a comfortable couch and armchairs where teachers and children could read their stories in a comfortable, secure and familiar environment (McNamee, A. & De Chiara, E. 1996:20).

The presentation of the book can be done in a lot of ways. The teacher can simply introduce the book saying "This is a story about…" or give the children only the title or the cover of the book and let them connect it to their experiences or make assumptions about its content. In addition, the teacher could make some brief comments relative to any naturally occurring situations which have prompted him/her to use the book at this particular time (Jalongo, M.R. 1983).

After the reading of the story, the teacher can suggest that the students should look at the pictures again asking them "What's going on here?...and here?.... and listen again carefully to the students' answers to see if they understood the story or if there are any signs of their own experiences. Based on the students' comments the teacher decides what to focus on in the next questions. That is, he/she can make questions about the characters in the story and then relate the children's answers to their experiences, bearing always on mind that the lesson is not about vocabulary or learning to read or any other cognitive objectives. It is rather an opportunity to share with children their impressions from the story which could help them cope with stressful experiences in their lives. Besides that, this kind of stories gives children accurate and appropriate information for their age, shows them that other children have experiences similar to theirs and finally sends them the message that their feelings are acceptable (Jalongo, M.R. 1983, McNamee, A. & De Chiara, E. 1996).

By giving children the chance to relate the story to their own feelings and life they are allowed to fathom to the issues of a book. Moreover, the possibility to assimilate elements of the texts in terms of values, behavior, attitudes etc, is reinforced (Baum, 2003).

Children answer the questions the teacher has planned and through the discussion that arises they can focus on the main idea of the story, they can argue, ground their ideas, develop critical thinking and shape their point of view. After that, the teacher could go on with some other activities as well and connect the text with the arts and drama. However, it is crucial to point out that the aim of these activities is to foster empathy to children and also to help them express their feelings and thoughts. Consequently, drawing, role playing and creative writing are techniques that facilitate the children's self expression.

More specifically, dramatization (role playing, puppet show) allows children to project on its material (dolls, puppets) their beliefs, attitudes and the characteristics of their personality, as well as those of the important people in their environment. Through the puppet show the child is involved directly and connected personally with the story he plays so as to associate easily his feelings to the ones of the characters in the story. This indirect approach of stressful issues protects children from pain and teaches them to talk about them more confidently. Additionally they are gradually encouraged to confront these subjects when they are ready (Gerald & Gerald, 2004:243).

On the other hand, painting is a "therapeutic" mean because it offers children the opportunity to express their inner thoughts, feelings and experiences using their imagination. Through the symbolic language of art children can experience and confront different feelings and also proceed to changes recognizing and modifying their attitudes (Gerald & Gerald, 2004: 211).

Apart from this, another activity which promotes empathy includes the writing of the story from another hero's point of view. In this way, the children involved in the activity can find out that reality has got a lot of perspectives.

Finally, creative writing is an activity that aims at the free expression of children's thoughts, at the practice of their fictional skills and the creative blending of their personal experiences and imaginary inventions (Kalogirou, 2003:87).

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THE EFFECT OF COOPERATIVE LEARNING METHOD ON ACADEMIC SUCCESS

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Abstract

This research is planned in order to analyze the effect of cooperative learning method on the academic success of the students studying in the Department of Elementary Education regarding the lesson "Teaching Technologies and Material Design". The aim of the research is to reveal the effects of group research technique in cooperative learning method on the teaching process of the unit "material types" of the lesson "Teaching Technologies and Material Design" of the third grade students in Elementary Education Department. The research is designed according to the experimental type. There is an experimental group and a control group in the research. At the end of the research, it is found that there is a significant difference between the academic success of the students in experimental group in which cooperative learning method is used and the academic success of the students in control group. The findings show that this difference is for the benefit of the students in experimental group. Through the interviews with the students in experimental group, it is established that the students have positive views regarding cooperative learning method.

Key words: *Cooperative Learning Method, Group Research Technique, Academic Success*

1. INTRODUCTION

When the history of the education is analyzed in general, it is seen that the education has been teacher centered for a long time. With the scientific research in the field of education and with the educational theories, it can be said that the concept "teacher-centered education" started to give way to "student-centered education" in 1985 and this understanding became widespread after that (Yanpar, 2007). It is seen inevitable that the intended human qualifications will change depending on the rapid developments in science and technology. Therefore, it is found that the teacher candidates should be brought up with the student-centered education concept.

The instructors' conducting the lessons in the faculties of education considering the student-centered techniques will help the teacher candidates use the methods which make the pupils active during the teaching process. The fact that the most effective teaching technique is "learning by doing" should also be used during the education of the candidate teachers. We can expect the teacher candidates to bring up their pupils with active methods if the teacher candidates are trained through the same methods.

Most of the researches show that the methods which make the students active not only affect the academic success and attitudes in a positive way but also help the students to socialize (Slavin, 1980; Artut, Tarım, 2002; Avşar, Alkış, 2007; Yıldırım, 2006; Tok, 2008). At the end of the socialization process, the students will have been ready for their social life.

The inadequate number of cooperative learning practices in the institutions which educate the candidate teachers and in the universities is an important issue which shows deficiencies in this field. The fact that the lesson "Teaching Technology and Material Design" has both theoretical and practical content played an important role in choosing Group Research Technique of Cooperative Learning Method.

2. THE AIM OF THE RESEARCH

The main aim of the research is to reveal the effects of Group Research Technique in Cooperative Learning Method on the teaching process of the unit "Material Types" of the lesson "Teaching Technologies and Material Design" of the third grade students in Elementary Education Department.

3. THE METHOD

The research is designed according to experimental model. Experimental models are the research model in which the expected data obtained under the researcher's control in order to determine the cause and effect relations (Karasar, 2009). The effects of the independent variables (such as Cooperative Learning Methods, Lecture Method, Question-Answer Method and traditional Group work) on dependent variable (Academic success) are examined. The research is designed according to experimental method with pre-test and posttest control group. In this model, there is an experimental group which is exposed to the experimental operations and a control group. The pre-test before the experimental process and the posttest after the experimental process are applied to both groups. In the research, there is one experimental and control group. The practices of "Group Research Technique" in Cooperative Learning Method is used in the experimental group while the practices of Lecture Method, Question-Answer Method and Traditional Group work are used in the control group. Throughout the research the lessons are conducted by the researcher herself in both experimental and control groups. "Achievement Test" developed by the researcher for the lesson "Teaching Technologies and Material Design" whose validity and reliability is checked and reliability level is found .82 by the researcher is applied to both the experimental and control group before and after experimental process. In obtaining qualitative data, "Semi-constructed Interview Form" developed by the researcher in order to measure the qualitative data. Qualitative research is a research model in which data collection tools such as participant observation, interviews and document analysis are used and in which a process enabling the attitudes, phenomena and issues to occur in a realistic and integrated way in the natural environment is adopted (Şimşek, Yıldırım, 2008). While the interview form is prepared, nonfunctional questions are omitted and experts' opinions are asked in order to provide validity and reliability. The interview form is composed of 14 questions. After posttests are applied, the interviews are made with the 6 participants (randomly chosen) in the experimental group in which the cooperative learning method is used. An interview with one participant lasts 20 minutes. For the data analysis, qualitative data acquired from the interview form are written separately for each student; after the obtained text is read line by line, coding is conducted and categories are made up.

4. WORKING GROUP

The work group of the research consists of 87 third grade students (33 female- 54 male; 45 for experimental group- 42 for control group) studying in the two branches of the Department of Elementary Education in the Faculty of Education of Adnan Menderes University in Aydın in Turkey.

The fact that there are two branches for third grade classroom has an effect on the choosing process of experimental and control groups students from these classrooms. Hence, the groups are tried to be equal with each other. Experimental and control groups are established by drawing lots. The lessons in control and experimental group are conducted by the researcher according to daily plans prepared by the researcher.

5. DATA COLLECTION

In order to collect data regarding research hypothesis, the procedures are followed as below:

1) The research is applied to 87 third grade students studying in the two branches of the Department of Elementary Education in the Faculty of Education of Adnan Menderes University in 2007-2008 education fall term through 4.5 weeks. In the experimental group, the cooperative learning method is used for the unit "Material Types". In the experimental group, the classroom is organized according to cooperative learning activities. In the control group, the lessons are conducted according to lecture method, question-answer method and traditional group work method.
2) Before the study, two weeks course for the experimental group has been conducted with integration techniques of cooperative learning methods and the students are provided with the experiences concerning the method. Necessary explanations concerning the cooperative learning methods are made to the students before the study. Because the study is limited to one unit, one week is allocated for preparatory work. During these works, brain storming technique, cluster name, cluster slogan cluster song activities are also included in the process.
3) Before starting the teaching process, the achievement test for the unit called "Material Types" is applied to both experimental and control group.

The figurative appearance of the experimental model with experimental and control group used in the research is as follows:

Table 1: The Figurative Appearance of Experimental Model

G1	O1.1	X1	O1.2
G2	O2.1	X2	O2.2

G1 : Experimental group 1

G2 : Control Group 2

X1 : Cooperative Learning Method, The implementer :The researcher

X2 : Lecture Method, Question-Answer Method,

Traditional Group work The implementer: The researcher

O1.1,O2.1 : Pre-tests scores

O1.2,O2.2 : Posttest scores

5.1.Experimental Process

The study is conducted through 4.5 weeks in 2007-2008 education years.

6. TEACHING METHODS AND THEIR APPLICATIONS

In experimental group, group research technique is included. In the control group, lecture method, question-answer technique and traditional group work is included.

6.1. Group Research Technique

Group Research Technique depends on the communication among the individuals and student-centered learning activities are highlighted. Affective and social aspects of the learning in the classroom are emphasized (Açıkgöz, 2002). Students make researches by planning a subject, implementing the plan, collecting data, and using the data in solving multi-dimensional problem, synthesizing and combining their works. This technique has got 6 main stages:

1. To clarify the subject about which is investigated and organize the students in research group
2. Planning and researching within the groups
3. Making the research
4. Preparing the final report
5. Presenting the report
6. Evaluation (Sharan and Sharan, 1990; cited by Gömleksiz, 1997).

The implementation process regarding the technique takes place as follows:

Before the study, the properties and the implementation stages of Group Research, the importance of sharing and cooperation are explained to the students in experimental group with all the details. Each of the questions asked by the students is answered.

The duration of the application and the distribution of the subjects in this term are announced to the students. Seating in the classroom during the cooperative learning studies is of great importance. Group with 2-6 should be formed so that it can contribute to the cooperation and interaction (Johson, Johson, 1991). Therefore, in the experimental group, the lessons are conducted in the classroom where chairs with armbands are put instead of the one which they generally used. The chairs are organized according to cooperative learning by the students under the instructor's control.

Before the experimental works, previous unit are taught through Integration Technique which is one of the Cooperative Learning Method with aim of making the students gain experience related to cooperative learning.

The activity of forming the chain of names is carried out within the preparatory works. The activities of defining the identity of the group (establishing the subjects, organizing the group) are implemented during the first stage of Group Research Technique.

6.1.1. The Application of the Technique:

After the preparatory works, with the unit "Material Kinds" the application of the technique starts. The thing asked the students is to form interest groups. The students are expected to think about the subject with intriguing questions asked by the instructor's guiding the pupils to make research. Sources related with the subject are brought to the classroom and analyzed by the students. Providing students with different sources, they are expected to look at the same subject with different point of views and their

attentions are tried to be drawn. The pupils analyze the sources with interest and make the question into subgroups suitable to the research. After all these preparatory works, the students' ideas are obtained through brainstorming activity. Each of the suggestions is listened carefully and the suggestion list is formed. Working on the list, the subjects are combined in a way that can be research problems in this research which will be carried out together with the students. (Because the number of the group is 12, the subjects are organized under 12 subtitles.) The groups are formed according to the latest version of the list. In forming the groups, each student writes the number of the subject on a paper and gives it to the instructor. In the process of forming the groups, the students' interests are also taken into consideration. The students are grouped according to their interests, pretest scores and their genders and the fact that there should be four students in each group is also considered.

What is expected from each group is to plan their research, to prepare research plan and to conduct their research according to this plan. After the works, each group is explained that they will prepare a final report. This report is presented to the whole class. In the evaluation of the group these presentations are also taken into consideration. The presentation of each group is assessed by the instructor. Post-tests are applied to the experimental group in the afternoon after which all the presentations are over.

6.2. The Application and Methods Used in Control Group:

In the control group of the research, lecture method, question-answer method and traditional group work take place. The lessons are carried out by the instructor. There are no changes made about the traditional seating of the classroom. The subjects in the unit are taught by the instructor with the support of CD; during the lesson, questions are asked to the students and the lesson continues with the answer taken by the students. The time allocated for the lesson is the same with the one allocated for experimental group (4.5 weeks). 1.5 weeks is allocated for theoretical part of the subject explained by the instructor; 1 week for the students' group works and 2 weeks for the students' presentations. The forming of the group is up to the students and they organize the group with the ones they like. Each group composes of 4-6 students. The presentation of each group is evaluated by the instructor. Posttests are applied to the control group in the lesson after which the presentations are over.

7. THE ANALYSIS OF THE DATA

The data obtained from data collection tools are analyzed with the help of SPSS 11.5 packet program. The statistical techniques used in the research are as follows:

When the pretests and posttests of the students regarding the lesson "Teaching Technology and Material Design", whether there is a differentiation between pretests and posttests is measured with covariance analysis and in order to determine the direction of the differentiation, Benferroni Comparison test for two samples is utilized. In the evaluation of the result, significance level is accepted as .05 (p=.05).

8. FINDINGS

8.1. Findings Regarding Achievement Test

Table 2: The Mean, Standard Deviation, Corrected Posttest Mean and Standard Error of the Achievement Pre/Posttests Scores of the Students in the Experimental and Control Group

			Total Scores		**Corrected Mean Posttest Scores**	
Groups	**N**		**X**	**SS**	**Xd**	**Std. Error**
Experimental	45	Pretest	18.54	3.32		
		Posttest	25.52	3.53	25.55	.453
Control	42	Pretest	17.97	3.38		
		Posttest	23.25	2.99	23.30	.469

It is seen that the mean of posttests of the control and experimental group achievement test increase compared to pretests' mean. The posttest mean of the experimental group is X=25.55 which is higher than the posttest' mean of the control group. In order to determine whether there is significant difference between the groups' means, covariance analysis is used and the results are shown in the table.

Table 3: Covariance Analysis Results of the Post Test Mean of Ac,hievement tests of the Students in the Experimental and Control Group

Source of the variable	**Sum of squares (KT)**	**Sd**	**Mean Square (KO)**	**F**	**P**
(Pretest) Controlled variable	145.032	1	145.032	15.729	000
The main effect of groups	109.830	1	109.830	11.912	001
Error	774.517	84	9.22		
Total	53133.000	87			

When the covariance analysis results are looked into, it is seen that there is a meaningful differentiation in terms of corrected posttest's mean of the groups (F=11.912. p= .001).

Depending upon this, the achievement levels of the students in experimental group (X=25.55) is higher than the achievement levels of the students in the control group (X=23.30) according to Benferonni test carried out for the corrected achievement test means. The findings obtained from the achievement test show corrected posttest scores have a meaningful difference in favor of experimental group that when the pretest scores of the control and experimental groups are controlled.

9. DISCUSSION AND COMMENTS

When the findings of the research are taken into consideration, it can be said that cooperative learning method has a more positive effect on the academic achievement of the students compared to the traditional methods. When the achievement scores are analyzed, meaningful differences are found in favor of the experimental group between the control and experimental group. This result is consistent with the findings of the previous researches conducted regarding cooperative learning method. This result has also matched up with the findings of the research conducted by Gömleksiz and Yıldırım (1996) on the university students utilizing cooperative learning method. Moreover the findings of this research correspond to the findings of the study conducted by Yılmaz (2007) on which the effects of Group Research Technique on academic success of Science and Technology lesson.

The students' willingness and participation actively in the lessons may have an effect on the results' being in favor of the experimental group. This issue is expressed by a girl student as follows "We know our friends better and we have found the chance to study together with our friends whom we have never studied before. We search the subject on the internet and in the library. The way the lesson conducted has really increased our research desire."

When the answers to the interview questions are analyzed in terms of qualitative methods, 6 of the students (6 is the total number of the students who participate in the interview) talked about the positive sides of the technique. These positive features can be listed such as working in cooperation, providing socialization and positive effect on the academic success. These results match up with both the theoretical quality and practice studies of cooperative learning. The duration allocated for the group research technique is found inadequate by two of the students in the interview. In fact, if group research technique is applied by limiting the time 4.5 weeks, there can be problems. Therefore, making the application lasts throughout a term can affect the success of the technique in the following researches.

Consequently, the findings of the research show that cooperative learning method is more effective than the traditional method in term of the academic success of the students studying in the Department of Elementary Education regarding the lesson "Teaching Technologies and Material Design"

10. SUGGESTIONS

- The same method can be used in the lesson of Educational Science for undergraduate level.
- The applications of Cooperative Learning Method can take place in every level of the institutions from preschool period to high school level.
- Scientific research can be conducted regarding the applications of Cooperative Learning Method in every level of the institutions from preschool period to high school level.
- The primary school teacher and candidate teachers can be taught about Cooperative Learning Method.
- This researched can be carried out in larger samples and in longer terms.
- The effect of this teaching method on different variables can be investigated.
- This teaching method can be compared with different methods from the ones used in this research.

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PROFESSIONAL SOCIALIZATION OF STUDENTS OF THE RUSSIAN HIGHER MUSIC EDUCATIONAL SYSTEM

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Abstract

The socialization of personality is one of the interesting subject in sociology. The professional socialization is as indicator of successful professional activity in future. The institution of higher education is very important in the process of professional establishment of musicians – performers, because musical education is unique in Russia and it does not have analog abroad.

Key words: *Socialization, professional socialization, students, musicians–performers, higher education.*

1. INTRODUCTION

There are many different definitions of socialization, but all of them tend to describe it as a process through which people learn to comply with social rules, adopt "the rules of the game" accepted in a particular society, socially approved norms, values, behavioral patterns. Socialization is learning social roles. The measure of socialization success is the degree of meeting the criteria of modern human sociality, of using personal abilities in practice, of self-assertion as member of the society.

2. SOCIALISATION

The socialization process covers all the most significant aspects of vital activity: work, life together, human interaction, leisure. The purpose of socialization is shaping a socially active personality contributing to the society's stability, and the transmission of culture to following generations. An important role in a person's socialization belongs to pedagogical socialization: education, learning, intellectual development. An individual forms the notion of "role knowledge"[3] of the connection between roles and the division of labour.

The term "professional socialization" was introduced in the late 1990s. It was first mentioned by N.Perinskaya[11], who suggested to understand "professional socialization" as on the hand a process of a person's entering a professional community, acquiring professional experience, accepting the professional community's, standards and values, and, on the other hand, a process using actively in practice the accumulated experience, in which various patterns of adequate behavior show themselves not as implicit obedience to external orders, but as a choice of the optimum behaviourinal pattern

implying continuous professional self-development". The first researches into the process of professional socialization were done by V.Nechayev[10] and N.Perinskaya[11] ("Professional socialization as a process of appropriation and realization of accumulated experience"), and Yu.Chernova [4](The problem of transition from learning to professional activity). Music education as an institution of secondary socialization exercises effective emotional influence on an individual, which is more characteristic of primary socialization (the family).

3. PROFESSIONAL SOCIALIZATION OF MUSICIANS

The problem of musician's self-identity and professional psychology has been investigated since the 1990s (A.Kazurova [6], D.Kirnarskaya [8], I.Tsypina [14], V.Yakonyn)[15]. In the recent years there have been a number of articles written by music teachers studying professional orientation and socialization of the Russian students of music (V.Kartashov [7], L.Kobina [9], E.Sizova [12]). The researchers point to the most general stages of professional socialization: professional orientation, professional selection, professional adaptation, a person's integration into professional activity, specialization, qualification environment, the end of professional activity, and retirement.

P.Sorokin [13] reviews the development of the music art at the end of the XVIIIth century, the social and professional effects of this process, and its influence on the formation of higher music education. Music was getting more complicated with the appearance at new instruments, the number of musicians was growing, concert hall were opened. Public musical organizations and the first "unions of musicians" were set up, including the Vienna Association of Musicians (Austria, 1771), the Concert society (Paris, 1772). Higher music education established in Europe at the end of the XVIIIth century provided professionalization, musical socialization, contributed to the development of creative potential, organization of methodological and enlightening activities. Professional music education became, to a certain degree, an innovative form of socialization. In the early XIXth century the first choral society in Liedertafel was founded in Germany (Berlin, 1809). The Stl.Petersburg Philarmonic society was established in 1802, followed by The Russian Music Society (St.Petersburg, 1852) which later opened branches in many towns, aiming to develop and spread professional music education in Russia. In 1871 the National music society was set up in France (Paris, 1871). The music arts occupied a niche among other professions and was expanding beyond purely inner development into the professional arena with its own specific features of professional socialization. The Moscow Philharmonic Society was founded in 1883 followed by the St.Petesburg Society of Music teachers and other Musicians(1899). All those developments paved the way for the opening and development of higher music educational establishments (Higher Music School in Paris, 1795), Conservatory in Vienna (1819), Conservatory in St.Petersburg (1862), Conservatory in Moscow (1866).

4. SYSTEM OF MUSIC EDUCATION IN RUSSIA

A system of multilevel music education was taking shape in Russia. At present there is a 3-level system of professional music education in Russia, featuring close continuity ties of 3 structural links: school, special secondary school, higher school. This system of multilevel professional education was formed in 1920s when all music schools were divided into 3 level: school (the first level), music college (the second level), and conservatory (the third level). The school-college-higher school (institute) system was established in 1922 as a result of the work of special commission, which consisted of the leading musicians including M.Ippolitov-Ivanov, K.Igumnov, A.Goldenveizer, M.Gnesin, B.Yavorski [16], S.Kozolupov and others. The principles formulated by B.Yavorski in

1921, and the first music college curricula (1922 to1927) are in general use up to the present day. It is characteristic of professional music education that it begins at an early age. For the main performing specialties (piano, string and wind instruments) studies at school may start at five to eight years of age. Besides early professionalism the Russian music education is different in its essence which is priority of practical skills over theoretical knowledge, of great importance is a student's work on his won, which takes a much longer than studies in class. A specific feature of music education is also individual work with the speciality teacher as a necessary condition for the development of personal skills in the music art. During individual classes with the teacher the musician learns to reveal his performer and to produce own interpretations, develops precise motive coordination, the capability of multi-aspect concentration, , of remembering material, of performing in public. It is early professional training combined with individual classes and continuity of methods elaborated for over 100 years that ensure high artistic results. It is in the course of early professional orientation that a contingent of future students of music colleges and higher educational establishments is formed. Applicants to a higher educational already have special secondary music education, basic professional knowledge and skills, appreciable experience of school and public performances, some of the applicants being prizewinners of Russian and International competitions. In such a situation the task of a higher music educational establishment is to improve the professional qualification and mastery of musicians.

The highest of the system of music education is a postgraduate course (assisting, training) in creative and performing specialties or a postgraduate research course, on the completion of which a musician is given a degree of Master of Arts in education or art criticism. In due course education becomes the key factor of successful socialization understood as a process of modeling social personality, a person's integration into the system of public relation. In the XIXth century the Russian system of professional education of music performers, composers, criritics was based on the principles of integration and continuity. As a rule, all levels of education were combined within one educational establishment. In addition to content continuity, music education featured the gradual expansion of curricula complicating. Of activities, individualization and consideration for a student's individual capabilities, targeting at the creative and practical use of knowledge and skills. In the Soviet time the multilevel system of professional music education broke up into its constituent parts – school, college, higher education, which became autonomous. The weakening of the system's structural links resulted in a decline in content coordination and continuity. In the late 1980-s the methodological panels were transformed into structural units of the education boards. The task was to assist in the quality improvement of general education (including children's special and supplementary education) within the framework of the education modernization program. Besides research and methodological work, analysis of the results of the educational process, participation in drawing up curricula and inspection of their fulfillment and certification of teachers[2], on the 1990-s the methodological panels were give additional powers such as the power to bring up proposals concerning improvement of the educational process, the power to correct curricula of educational establishments, the power inspect the certification process a change in the main activity of methodological panels from research work to inspection and appraisal resulted in the weakening and subsequent breaking of links between the elements of the school-college-higher education structure. The achievement of the Russian music education are acknowledged all over the world. The high level of teaching at the Russian higher music educational establishments is a result of the development of the historically including established traditions among other things, principle of continuity between the 3 level of education. Listning the specific features of the Russian music education one should underline the principles reflecting the uniqueness of this process, such as integrity, complex

approach, continuity, synthesis, early profilization, individualization. Now we see a gradual return to the robust system of multilevel education on effective multiphase process which is considers to be the long system of professional socialization of personal development: at first upbringing and teaching, next professional targeting, then professional self-identification. Having gone through all the phases of professional educational, a performer of music is to

1.Accumulate a large solo repertoire including pieces of music of different epochs, genres and style, such as large-size compositions (sonata, variations, concerts); virtuoso plays and etudes; small-sized compositions; works by classical, XXth century and modern composers by representatives of different nations and nationalities (home and foreign);

2.Have the experience of public performances with solo programmes;

3.Be skilled in playing at sight and modulating;

4.Be skilled in rehearsing as an accompanist with instrumentalists, vocalists, ensembles;

5.Know the specifics of ensemble performing;

6.Know the theoretical fundamentals of the performing arts;

7.Have extensive knowledge of special literature including works on the theory and history of the performing art; teaching procedures and textbooks;

8.Be able to analyze and learn pieces of music selected for acquaintance, as well as for performance as a pedagogical demonstration[1].

Since performance is a practical aspect of the professional activity, the ability to exercise full professional potential, knowledge and skills in practice in learning a piece of music, a programme, and in the performing activity – is of the most importance to a perform. A necessary condition for the development musicianship is a performer's knowledge of the performing patterns, the deep understanding of their substance and the ability to apply them to the performer's individuality is not narrow but intellectual professionalization is in higher education, which demonstrates itself as the birth of new knowledge in the form of an original style of artistic performance, continuation of the traditions of classical music education in Russia and educating on their basis new talented performers. It is prestigious for the graduates of a Russian high educational establishment to be invited to work at their institute, developing the traditions of the Russian music pedagogy and polishing up their performing skills. In contrast to the above, the highest acknowledgement in the West is an invitation to work at another institute. Successful professional socialization of an individual at a higher educational organization increases his mobility in the sphere of labour relations and attractiveness to employers. Here professional socialization is perceived as the social designing of reality. The ability to develop and implement one's life project is becoming a measure of socialization. The rapidly changing social and professional environment, modern cultural organizations demand universal specialists who can show their worth in various aspects of musical activity. However, the organization the professional training of a musician is not adequate to the task of ensuring such qualities. At present the graduates of music institutes show little professional purposefulness. The content of education, aimed primarily at the development of academic performing skills is not sufficient for a professional musician's multifunctional activity in modern society (solo performer, ensemble performer, accompanist, a musician in an orchestra, teacher, director of an art-group, administrator. However, the present system of higher music education fails to teach student all the skills required in the modern professional arena, preparing student for work only in the sphere of classical music. The labour market is oriented towards competence universality, i.e. to the command

of all skills necessary to play both classical music and light music (musicals, variety bands, jazz bands, modern music). The academic market is represented today by a small member of state orchestras including:

1.The State Academic Symphony Orchestra of Russia, named after Ye.Svetlanov;

2.The Moscow State Academic Symphony Orchestra directed by Pavel Kogan;

3.The State Big Academic Symphony Orchestra named after P.Tchaikovski;

4.The Symphony Orchestra of Russia;

5.The State Symphony Orchestra "Novaya Rossia";

6.The National Philharmonic Orchestra of Russia;

7.The Russian State Symphony Orchestra of the Cinema;

8.The Russian State Academic Chamber Orchestra "Vivaldi-Orkestr";

9.The State Academic Russian Concert Orchestra "Boyan";

10.The National Academic Orchestra of Folk Instruments of Russia, named after N.Osipov;

11.The State Orchestra of Wind Instruments of Russia;

12.The State Chamber Jazz Orchestra named after O.Lundstrem;

13.The Russia State Academic orchestra of Folk Instruments.

The number of small municipal orchestra has been quickly decreasing year after year because of a lack of financing. Every year the number of graduates from each of the Russian higher music education institutes (Academy of music, conservatory), numbering 140 to 180 per institutes are faced with the problem of employment and further professional development in pedagogy or performance. It total there are over 30 music institutes and institutes of culture and arts, including:

1.Moscow State Conservatory named after P.Tchaikovski;

2.Russian Academy of Music named after The Gnesins;

3.St.Petersburg State Conservatory named after N.Rimski-Korsakov;

4.Astrakhan State Conservatory;

5.Kazan State Conservatory named after N.Zhiganov;

6.Novosibirsk State Conservatory named after M.Glinka.

The inflow of graduates with a diploma in music performers to the labour market rises every year, but the number of academic orchestras and classical music groups is decreasing. It should be pointed out that applicants to music institutes are concentrated in Moscow and St.Petesburg, where they arrive from the whole of Russia. The labour market for music performers is oriented to a musicians universality, i.e. not only to the skills of playing in an academic manner, but also to proficiency in variety jazz music performance, to command of improvisation, and arrangement techniques "light music" promoted by mass media creates demand for musicians professionally adapted both to the academic performance school and to new western techniques. Describing the art of the XXth, century, P.Sorokin [13]emphasizes its market orientation forcing musicians to adapt to the public's tastes. The tendency of the music act to continuous changing, diversity, rapid changes in techniques,

fashionable music, longing not only for beauty, but also for "striking, exotic, grandiose", the increasing number of musical comedies, musicals are all products of the XXth century market, brought about by the world social, political and economic processes, such as revolutions, political modernization (Germany, Austro-Hungary, Russian Empire), industrial growth and the consequent inflow of able-bodied people to urban areas, and democratization, which echoed in all the arts with the development of mass genres understandable and accessible to ordinary people (operetta, musicals, jazz, light music) and revived interest in the national culture. According to H.Combarieu[5], music lags behind other arts in changes of style. This can be seen in a musician's professionalization. The experts profiling the traditional Russian pedagogical system of music education, are quitting, one after another, the pedagogical activity because of age. Their knowledge, experience, pedagogical talent are invaluable for the future of the Russian music pedagogy. The continuation of the tradition of classical music education is vital for the development of the next generation of musicians. However, the musicians specializing in "light music" dominate the sphere of education and draw students, including future performers, with promises of employment in jazz and variety groups spring up in numbers in line with increasing demand for innovative western musical styles. As a result, the professional orientation is to mass art, classical music, together with the Russian methodics and academic educational system, being relegated to the background. The problem is exacerbated by the fact that the number of applicants to music institutes decreases from year to year, the competition for admittance is rather low, the professional qualification of academic music performers, taking examinations for admittance to the higher music educational establishments, is rapidly declining. This tendency is a result of the loss of the profession status and prestige, unstable financial position of musicians, the demographic gap of the 1990s in Russia, the consequence of which are felt today. The mass turn of performers to the western music culture, study of is laws, learning its performing techniques, reproduction of the foreign culture copying foreign styles and neglect of the Russian music school will sooner or later result in the disappearance of professionals, the loss of national culture and identity.

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THE PROCESS OF IMPLEMENTATION OF BOLOGNA DECLARATION CONCEPTS AT FEDERAL STATE EDUCATION INSTITUTIONS OF HIGHER PROFESSIONAL EDUCATION "KRASNOYARSK STATE AGRARIAN UNIVERSITY"

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Abstract

Bologna process is a natural development of integration tendencies of European and world education. It implies the establishment of all-European integrated system of higher education based on common principles of organization and quality standards of higher education. At present Bologna process combines 46 countries including Russia. The concepts of Bologna declaration have been implemented at Federal State Education Institutions of Higher Professional Education (FSEI of HPE) "Krasnoyarsk State Agrarian University" since 2006. The implementation of Bologna declaration concepts and introduction of quality management system at the institute of higher education allow to ensure the high quality of education and competitiveness at the education market.

Key words: *two-level education, test units, quality of education, mobility, competence.*

INTRODUCTION

The interest of Russia to European education systems has both political and historical roots. The first Russian universities appeared in the middle of the 18th century. They were established "after the image and likeness" of European universities with their long history. That is why the system of Russian higher education is close to European university tradition in its roots, structure, activity and modern tendencies of development of Russian universities. Interest in modern experience of European universities that appealed to common historical roots increased due to political process. The change of principles of Russian foreign policy, intention to enter European political, economic and culture area as a full partner made Russia accept and adopt European experience. This process was forced also by some economic reasons. The issue of commercialization of personnel training both for Russia and foreign countries became topical because of Russia transition to market economy. Russian higher school faced the necessity to take a good place at the international education market. It can be realized within the bounds of Bologna declaration.

BOLOGNA PROCESS

Bologna process is a process of common education area formation by European countries. It originated in signing the Bologna declaration in Bologna (Italy) in 1999. The declaration contained the main objectives leading to the achievement of comparability and eventually to the coordination of national education systems of higher education in European countries. The foundations of Bologna declaration were laid by the Great Charter of Universities (Bologna, 1988) and by Sorbonne

declaration (Paris, 1998). It is supposed that the main objectives of Bologna process are to be succeeded by 2010.

Bologna declaration includes 6 main principles of formation of European system of higher education:

1. Introduction of two-level higher education;
2. Introduction of credit system (test units);
3. Quality assurance in education;
4. Expansion of students and teachers mobility;
5. Students employment assistance and extension of European education competitiveness (Diploma Supplement);
6. Formation of European approach to the development of higher education.

The main objective of Bologna process is the formation of "the most competitive and dynamic economy in the world based on knowledge and able to ensure the sustainable economic growth, large quantity and the best quality of work places, and social unity".

This problem cannot be solved without the perfection of education quality and the expansion of mobility and competitiveness of graduating students. It demands a number of institutional (intersystem) transformations which include [18]:

- **formation of the two-level system** of higher education **in such a way that** degrees of both levels could ensure not only different individual and academic needs but also needs for labour-market;
- **improvement of the system of comparability** of national education systems by means of improvement of recognition procedures of degrees and terms of study, and by means of a single definition of qualification that takes into account the volume of academic load, level and results of education process, **competence** and the type of education programs;
- assurance of higher education quality by means of **effective quality systems development at the institutions of higher education** and at the national and all-European levels, also by means of efficient combination of academic quality and applied nature of education programs;
- **development of the system of transfer** and accumulation **credits** and its consistent use in increasing all-European area of higher education.

DESCRIPTION OF FSEI OF HPE "KRASNOYARSK STATE AGRARIAN UNIVERSITY"

FSEI of HPE "Krasnoyarsk State Agrarian University" (hereinafter referred to as the University) is a legal successor of Krasnoyarsk Agricultural Institute founded on April 29th, 1953 (order of the State committee of Council of Ministers of USSR on food and purchase dated January 11th, 1991 № 5-к). Founder of the University is the Ministry of Agriculture of the Russian Federation (licence A № 164954 dated May 17th, 2005).

Krasnoyarsk State Agrarian University has 2 branches (in Abakan and Achinsk), 4 representative offices (in Kansk, Minusinsk, Shushenskoe, Dudinka). The University consists of 13 Institutes which include 74 chairs.

At present Krasnoyarsk State Agrarian University trains 16700 students, 278 post-graduate students, 2600 participants in courses and has 1298 teachers and employees.

538 members of teaching staff conduct scientific and educational work at the University. Among them are 100 doctors and professors – 18, 5 % and 420 teachers who have academic degrees. 78 % of the staff is teachers. The average age of teachers is 46 years. Many employees of the University are included in the book "The best Russian people".

Krasnoyarsk State Agrarian University trains post-graduate students in 34 specialties and has 101 scientific supervisors.

5 Doctor Councils of the University offer an opportunity to defend a thesis on 8 scientific specialties. A variety of education programs together with the two-level system of education allows to react quickly to the changes on the education market.

THE PROCESS OF IMPLEMENTATION OF BOLOGNA DECLARATION CONCEPTS

The University has been implementing the concepts of Bologna declaration since 2006. The order of the implementation of Bologna declaration concepts at Krasnoyarsk State Agrarian University № O-518 dated October 16th, 2006 was issued on the basis of the order of the Ministry of Education and Science of the Russian Federation dated February 15th, 2005 № 40 "Implementation of Bologna declaration concepts in the system of higher professional education of the Russian Federation" and on the basis of Academic Council decision dated November 25th, 2005 (record № 3). This order includes a list of activities aimed at the implementation of Bologna declaration concepts at the University during 2006-2010.

Concept of introduction of two-level higher education

At present there are two models of higher education in Russia. The first one provides 5-year professional training programs (the most widespread model). The second one includes 4-year bachelor training programs. This model gives an opportunity to continue education and get a professional degree (+ 1 year) or a master degree (+ 2 years). The model (4 years of undergraduate study + 1 year of professional study) fixed in Russian education legislation does not correspond to the European system of education.

That is why Russia tends to go over to the Federal State Education Standards of "the third generation" which differ from so-called "standards of the second generation" developed in 2000-2005. Federal State Education Standards provide further development of multi-level higher professional education taking into account the demands of labour-market and imply the following system of education: bachelor degree (no less than 4 years) – master degree (no less than 6 years). Standards of "the third generation" have strongly marked competence character, their fundamental parts are combined on the basis of community, component structure is absent, and labor intensiveness is represented as test units.

The first bachelors on 9 Bachelor Degree programs of training graduated from Krasnoyarsk State Agrarian University in 2004. The first master-degree students on 9 Bachelor Degree programs of training entered the University that year. They finished the University in 2006. Five new programs of bachelor training have been opened for the last 5 years.

At present Krasnoyarsk State Agrarian University trains students on 14 Bachelor Degree programs, 9 Master Degree Programs (27 programs), 33 specialties of higher professional education, and 2 programs of secondary professional education.

Concept of introduction of credit system (test units)

Education process with the use of the system of test units is characterized by the following peculiarities:

- each student takes part in working out his or her personal curriculum due to the freedom of choice of subjects; involvement of academic advisers into the education process who help students to work out their personal curriculum;
- provision of the education process with all necessary print and electronic methodical materials;
- rating system application for the estimation of students progress.

Time equivalent was replaced by credit units within the bound of the concept implementation in the curriculums of Krasnoyarsk State Agrarian University which were developed according to the standards of "the second generation". Now two models of labour intensiveness are used at the University. Because of transfer to the Federal State Education Standards of "the third generation" labour intensiveness in curriculums is represented only by test units.

Concept of quality assurance in education

State Education Standards of "the second generation" were introduced in 2000-2005 in order to guarantee the quality of higher professional education and post-graduate education, to unite the education area of the Russian Federation, and recognize diploma equivalence of foreign countries. These standards differed from "the standards of the first generation" developed in 1992-1996. But they also do not meet the concepts of Bologna declaration. That is why Russian institutions of higher education including Krasnoyarsk State Agrarian University go over to the Federal State Education Standards of "the third generation".

At present high quality assurance in education is not possible without the introduction of quality management system into the institutions of higher education.

European standards and guidelines for internal quality assurance i.e. demands for the internal quality management system of institutions of higher education are as follows:

1. Policy and procedures of quality estimation.
2. Approval, monitoring and repetitive control of programs and qualifications.
3. Students rating.
4. High professionalism of academic staff.
5. Means of education and students support.
6. Information systems.
7. Public information.

Krasnoyarsk State Agrarian University started to introduce the quality management system in 2002.

Development and introduction of the quality management system at institutions of higher education include 6 steps:

- preparatory period;
- planning;
- documentation;
- introduction;
- certification;

- inspection control.

Academic Council of Krasnoyarsk State Agrarian University accepted the education quality policy of Krasnoyarsk State Agrarian University on February 22nd, 2008.

International quality standard ISO – 9001:2008 "Quality management system. Guidelines" allows developers to choose the way of creation of the quality management system. So they can define the whole network of processes which are necessary for quality management system in an organization. The list of processes and activities of Krasnoyarsk State Agrarian University includes:

1. Governing body activities in the field of the quality management system of Krasnoyarsk State Agrarian University
2. Main processes of the quality management system at Krasnoyarsk State Agrarian University
3. Ensuring processes of the quality management system at Krasnoyarsk State Agrarian University
4. Estimation, analysis and improvement within the bounds of main and ensuring processes.

The network of processes is a base for development of the guideline on quality and documentation of the quality management system.

Organizational structure of the University was changed due to the introduction and perfection of the quality management system. Internal audit and staff training in the field of technologies and method of education quality estimation are conducted. Informational integrated automated system of university management is introduced and developed. This system was developed by Petrozavodsk State University and includes the following elements:

- Selection company
- Contingent of students
- Management of education process
- Human resource management
- University administration

Krasnoyarsk State Agrarian University was certified (also at the world level) by the quality management system in educational and scientific research in 2008. It was confirmed that the University met the requirements of the standard ISO 9001-2001 (ISO 9001:2000) and ISO 9001-2008 (ISO 9001:2008).

Krasnoyarsk State Agrarian University got such Russian and international quality systems certifications as "Sibiria - certifika" (K №11050), I-NET "International Certification Network" (2008-11-27, AT07509/0) and Evrocert (№1374/00).

Concept of students and teachers mobility expansion

Academic mobility of students successfully develops at the University. From 36 to 45 foreign students studied at the University from 2007 till 2009. From 35 to 129 students studied according to interuniversity agreements in the period from 2007 till 2009.

30 students studied and trained practically in the USA and Europe. 116, 46 and 84 Chinese students were prepared for entering Krasnoyarsk State Agrarian University in 2007, 2008 and 2009.

12 education programs are partly carried out in English at Krasnoyarsk State Agrarian University. It helps students to study and train practically abroad.

Annual mobility of university teachers is 11-13 persons. Teachers of Krasnoyarsk State Agrarian University underwent trainings in Czech Republic, Great Britain, Japan, Germany, Sweden and People's Republic China in 2006-2008. Teachers from China, Yugoslavia, the USA, Cyprus and Germany come to Krasnoyarsk State Agrarian University every year.

Students employment assistance and extension of European education competitiveness

According to this concept diploma supplements have been awarded at Krasnoyarsk State Agrarian University since 2004. 44 diploma supplements on “Management”, “Law”, “Agrochemistry and agrology” and “Food technology” were awarded during the last 6 years. Cooperation with European universities is strengthened in order to award graduating students double degrees. Students of the Institute of international management and business (Nicosia University), the Institute of land cadastre and environmental engineering (Royal Institute of Technology, Sweden), the Institute of law (Lapland University) awarded diplomas in 2006-2008.

Concept of formation of European approach to higher education development

- European cooperation development in the sphere of quality assurance in higher education within the bounds of comparable criteria and methods, introduction of decentralized mechanisms of accreditation of educational institutions and programs.
- According to Bologna agreement Krasnoyarsk State Agrarian University integrates into the world education system and cooperate with foreign educational institutions within the following areas of educational activities:
- development of international cooperation in the field of agrarian education; improvement of programs and curriculums taking into account the world experience; development of teaching aids and textbooks on the problems of world economy, information and advisory services, new information technologies and systems of sustainable development of the country, world economic and production technologies; implementation of technical re-equipment of education process with the use of new education technologies; foreign study courses for Russian students and post-graduate students, advanced training for teaching staff at foreign universities and agricultural enterprises in countries with the developed agro-industrial production;
- creation of necessary conditions for students of the institutions of secondary and higher professional education to learn foreign languages;
- organization of study courses and advanced training for foreign citizens at the institutions of higher education and agricultural enterprises of Russia due to quotas assigned by the Ministry of Education of the Russian Federation and by contract basis;
- realization of joint projects aimed at the development of efficiency of agricultural production;
- promotion of education, consulting services and scientific and technical products to the world market; preparation of promotional materials, academic and scientific publications, participation in exhibitions and fairs; support to Russian agro-education institutions in the field of international education, scientific and technical cooperation; information and technical

support to scientific and education activity of employees and members of teaching staff of Russian agro-education institutions.

Krasnoyarsk State Agrarian University together with some foreign universities has developed 9 joint curriculums for students training at foreign universities: Management, Marketing, Finance and Economics, Computer Science, Computer Engineering, Management Information Systems, Human resources management, Law – Cyprus, Land management – Sweden, Royal Institute of Technologies, Law – Lapland University, Finland. Master-degree course curriculum on animal breeding was developed (Hungary, Kaposhvar University).

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From the one hand Bologna declaration brought to a conclusion the process of consolidation of the European education area which lasted 50 years. But from the other hand it started the process of formation of the single European education area.

Single education area will allow the national education systems of European countries to accept the best concepts of their partners' education systems. It will be possible due to the expansion of students, teachers and management staff mobility, consolidation of cooperation and relations between European Universities and so on. As a result Europe will become very attractive on the world education market.

The systems of higher education should become "clear" and comparable in order to ensure coordination. It can be achieved due to the wide spread of education models of the same type (bachelor-degree course – master-degree course), introduction of the single system of education credits (test units), similar ways of qualifications detection, mutual recognition of academic qualifications, developed structures of quality assurance in specialists training and so on.

It is emphasized in all documents of Bologna process that coordination should combines with the preservation and respect of cultural and academic traditions of different countries.

Implementation of Bologna declaration concepts and introduction of the quality management system at Krasnoyarsk State Agrarian University make it possible to guarantee the high quality of education and competitiveness at the education market.

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NEW OPPORTUNITIES IN HIGHER AND FURTHER EDUCATION – LEARNING IN MULTI-USER VIRTUAL ENVIRONMENTS

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Abstract

Education is one of the fundamental human rights. In Slovakia this right is guaranteed by the Constitution of the Slovak Republic. The completion of compulsory education, however, does not exhaust this right. People must be aware of the need for further education. Today, constant learning is not required just of teachers and doctors but concerns all people from all walks of life.

Intensive and targeted education is the most effective way of ensuring the good quality of human capital. All employers must therefore aspire to encourage and enable their employees to learn.

The constant development of ICT presents the field of education with new opportunities. One such opportunity is learning in a multi-user virtual environment. Virtual worlds offer new approaches to learning and managing teams and projects. Virtual learning environments overcome obstacles and surpass the distance between continents. In Slovakia there is much uncharted territory in this area waiting to be explored.

Key words: *education, multi-user virtual environments, virtual worlds, higher education.*

1. INTRODUCTION

Education can be defined as a process of deliberate transmission and active acquisition of knowledge, practical experience and skills. As a process of personality formation, education is a part of socialization. Linhart J.[1] defines education as follows: "Learning is the form of activity in which individuals change their behaviour and their attributes under external circumstances and depending on the results of their actions." Another definition of education focuses on the aspect of knowing how to fully realize one's potential and take the best possible decisions in life.[2]

1.1 The right to education

Education is a fundamental human right. This right is listed among human rights in the Constitution of the Slovak Republic. Article 42, paragraph 2 of the Constitution of the Slovak Republic says:

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[1] LINHART, J.: Psychologie učení, SPN Praha, 1967, p. 8

[2] *Four Types And Stages In Education.* [online]. [Quoted 2010-03-15]. Available on the Internet: <http://www.onediy.com/education/four-types-and-stages-in-education.html>

Citizens shall have the right to free education at elementary and secondary schools and depending on the abilities of the individual and the potential of the society also at universities. [3]

Every person's right to education is also enshrined in the Universal Declaration of Human Rights. The European Social Charter speaks of the right to education in the context of work: the right to vocational training, the right to lifelong learning. In spite of all those rights we are often faced with the fact that people do not take advantage of the opportunities for further or higher education. Issues concerning the competitiveness of businesses, regions but also states are related to the need for education, which is essential both for an individual and for society as a whole. Today, as the economic crisis is culminating and the labour market is fiercely competitive, education can be vital to success. Students must bear in mind that completing final examinations at an educational institution (secondary school or university) does not end the learning process for them. Employers are also under considerable pressure as their success depends on educated employees. This is why employers should aspire to encourage their employees and enable them to learn – to gain new theoretical and practical knowledge, growing into better staff members.

2. E-LEARNING

Traditional education under the guidance of a teacher has a long history. The development of society led to changes in its forms. This type of learning is the most widespread not just in Slovakia but all over the world. We are living today in what is called an information society where information and communication technologies are making impressive progress. This trend is reflected also in the field of education. Current learning technologies are supporting advances in the development of teaching tools for educational purposes. They are generally characterised by:

- integration,
- multimediality,
- interactivity (student is actively participating in the teaching process),
- increasing importance of the relationship between hardware and software,
- increasing autonomy for the participants in the learning process (greater autonomy mainly for the learner),
- introduction of essentially new learning models. [4]

Secondary schools and universities in Slovakia are offering mainly traditional face-to-face teaching. Blended learning, a combination of electronic and traditional learning, can often be found in higher education. There is however no ambition of supplanting traditional forms of education as they will remain indispensable in certain fields also in the future.

The advantages of electronic learning (reduction of costs, reduced absence of employees from the workplace, the possibility of studying whenever, wherever...) make it an excellent choice for further education. E-learning presents also employers with an excellent way of educating their employees. It

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[3] *Všeobecná deklarácia ľudských práv*. [online]. [Quoted 2009-09-22] Available on the Internet: <http://www.vop.gov.sk/ochrana_prav/legislativa/deklaracia/>

[4] PRUCHA, J. *Pedagogická encyklopedie*. Praha : Portál, 2009. ISBN 978-80-7367- 546-2

is a modern learning method that overcomes the shortcomings of traditional education. The concept of e-learning is variously defined in professional literature. Definitions vary among companies, the academic field but also among individuals. E-learning may be very simply defined as Computer Based Training (CBT).

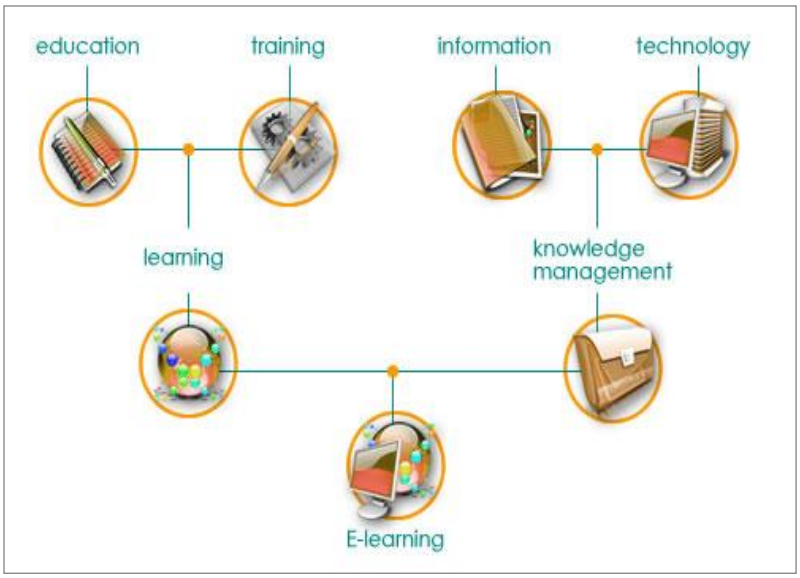

Fig. 1. The e-learning strategy (Source: Knowcbmores Weblog. [online]. [cit. 2010-04-02]. Available on the Internet < http://knowcbmore.wordpress.com/2008/02/25/the-elearning-strategy-easylearning/>)

2.1 New possibilities offered by Computer Based Training

CBT is today one of the most significant areas of development in the fields of higher and further education. Information and communication technologies are among the most important aspects of CBT. ICT can be used as a means of allowing spatially separated users to learn and teach in one virtual environment. Such creation of communities is one of the basic ways of working in the virtual world also known as Web 3D [5] (Fig.2).

3. MULTI-USER VIRTUAL ENVIRONMENTS (MUVE)

Multi-user virtual environment (or Virtual World) is a place where one can reside simultaneously with millions of others. Virtual Worlds should not be seen as just games – they are not structured into levels, there are no scores and the concept of "game over" does not exist. As in the real world, people interact, work together and help each other – all this in real time. [6]

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[5] MAREŠOVÁ, H. E-learning v multiužívatelském virtuálním prostředí. In *Journal of Technology and Information Education* [online]. 2009, vol. 1, no. 1 [Quoted 2009-09-06]. Available on the Internet: <http://www.jtie.upol.cz/clanky_1_2009/maresova.pdf>. ISSN 1803-537X.

[6] *User Acceptance of Virtual Worlds.* [online]. [Quoted 2009-09-15]. Available on the Internet: <http://www.fetscherin.com/2007-06-05-SecondLifeReport1.swf?POPUP_ENABLED=true>.

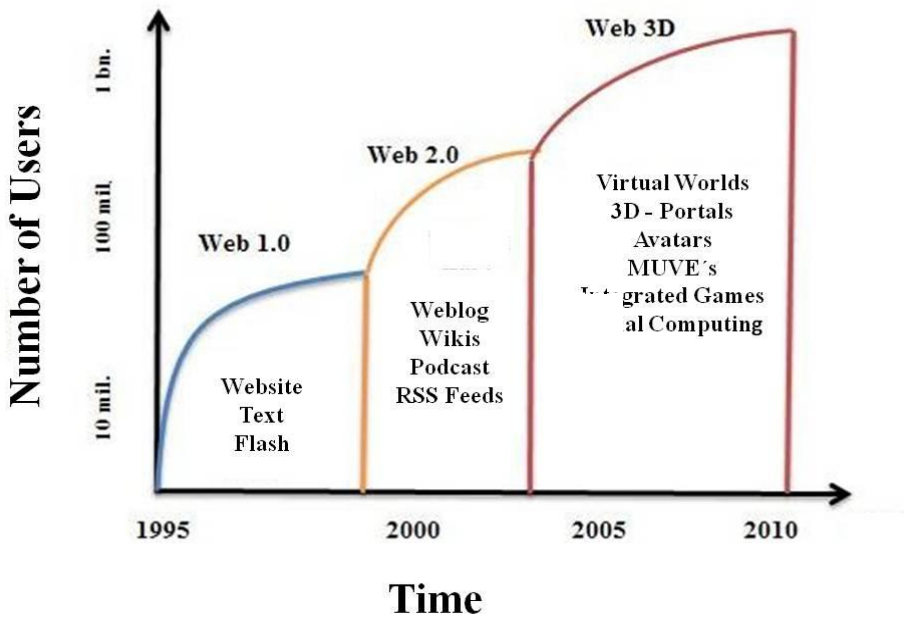

Fig. 2. Evolution over time from Web 1.0 to Web 3D (Source: *User Acceptance of Virtual Worlds.* [online]. [Quoted 2009-09-15]. Available on the Internet: <http://www.fetscherin.com/2007-06-05-SecondLifeReport1.swf?POPUP_ENABLED=true>)

MUVE is defined as a virtual 2D or 3D environment that simulates reality.[7]

Six Features of Virtual Worlds

1. ***Shared Space****:* the world allows many users to participate at once.
2. **Graphical *User Interface***: the world depicts space visually, ranging in style from 2D "cartoon" imagery to more immersive 3D environments.
3. **Immediacy***:* interaction takes place in real time.
4. **Interactivity*:*** the world allows users to alter, develop, build, or submit customized content.
5. **Persistence*:*** the world's existence continues regardless of whether individual users are logged in.
6. ***Socialization/Community***: the world allows and encourages the formation of in-world social groups like guilds, clubs, cliques, housemates, neighbourhoods, etc. [8]

[7] BRDIČKA, B. *Víceuživatelské virtuální prostředí* [online]. [Quoted 2009-09-16]. Available on the Internet: <http://it.pedf.cuni.cz/~bobr/MUVE/>.
[8] BOOK, B. *Moving beyond the Game: Social Virtual World*. [online], 2004, [Quoted 2009-09-03]. Available on the Internet: <http://www.virtualworldsreview.com/papers/BBook_SoP2.pdf>.

3.1 Learning in MUVE

Virtual worlds are becoming a popular environment not just for entertainment but also for new approaches to education and to the management of virtual teams and projects. MUVE corresponds to current didactic theories that stress the social aspect of learning. Education is not just a source of information but is also dependent on contact with others. MUVE can be used in the field of e-learning to simulate real situations, for lectures, exercises, virtual meetings, conferences, etc.

MUVE differs from traditional e-learning in the following aspects:

- immersion – total involvement of the user in the action, typical of virtual worlds,
- avatar – virtual representation of the user, increasing the efficacy of teaching,
- increased interactivity,
- teleport – the possibility of transferring from place to place,
- the possibility of more flexible and efficient communication: “face to face” in real time via text messages or voice communication – voice over Internet protocol (VoIP) ,
- the possibility of simulating reality through 3D graphic objects,
- the possibility of working with diverse teaching tools with real physical properties,
- the possibility of simulating a real situation (work with objects in a virtual environment, participation in activities that would not be possible in real space),
- wide application – trainings, meetings, conferences, presentations, seminars, etc.,
- executing and managing projects that require the cooperation of people who are far away from one another – their collaboration would often be very complicated and expensive in the real world.

The use of virtual worlds in the field of education offers numerous opportunities as well as a few challenges. Perseverance is rewarded by enduring and ever-evolving social interaction. This in turn

can be a foundation for coordinated learning. Virtual worlds allow an increase in student participation and enable users to perform tasks that are rendered burdensome by cost and various organizational constraints in the real world. Another advantage of virtual worlds is their ability to adjust to the changing needs of users. The availability of user feedback is also an important aspect. The drawbacks of traditional paper-based resources are thus overcome by virtual worlds.

Whatever the specific needs of the user, virtual worlds enable them to access from their home the same materials they would be given in a classroom. In spite of the advantages offered by virtual worlds in the area of communication and interaction between students and teachers, they cannot replace face-to-face contact. Body language and other intimate aspects are inevitably lost in virtual worlds. Another downside is the amount of time spent behind the computer that may lead to a number of health problems – from sore eyes to back pains. A user runs the risk of developing an addiction to the virtual world. There is also the danger of inappropriate behaviour (vulgar expressions, the harassment of users, etc.) which is the result of anonymity. However, students of higher and further education may be assumed to be capable of overcoming such negative aspects and to derive only the best from the experience of learning in a virtual world.

3.1.1 Language Education

The most common type of education offered in virtual worlds is language education. Many universities, established language institutes and private language schools take advantage of 3D virtual environments in their language learning programmes. Some language courses are free of charge. However, caution is required while choosing among such courses. Teaching may be carried out by a native speaker but not necessarily by a qualified teacher. For this reason a paid course may prove to be a wiser choice. Instructors are certified teachers from the United Kingdom or the United State who teach English also in the real world.

3.1.2 Business education

Virtual worlds offer today's businesses excellent settings for the training of employees. The emergence of the Internet has provided employees with new opportunities for learning and undergoing online trainings. This important advance is the key to surmounting such difficulties as distance, infrastructure or appointment. The most widespread instrument is probably video conferencing that enables people to attend a live conference or a recorded meeting from their office.[9]

3.2 MUVE projects

TappedIn (Teacher Professional Development Institute) is one virtual environment that falls in the category of MUVEs using 2D graphics. The environment enables users to work in a purely text-based mode. The uniqueness of TappedIn lies in its users being exclusively teachers (sometimes together with their students). One of the first virtual environment projects in the 1990s was **Palace**, which is located somewhere between 2D and 3D graphics. Advances continued in the direction of 3D simulation. The essential difference from 2D projects is the use of three-dimensional (usually animated) characters in addition to traditional text description. 3D simulation is used by projects like **DIVE** (The Distributed Interactive Virtual Environment) and **InterSpace**, developed by the company

[9] *Virtual world language learning*. [online]. [Quoted 2010-04-12] Available on the Internet: <http://www.answers.com/topic/virtual-world-language-learning>

NTT. Projects functioning today are **Active Worlds** with more than 2 million active users, **Onverse**, **IMVU** and **Entropia Universe**. **IMVU** is a virtual world where users may meet, shop and communicate with people from all over the world. **Entropia Universe** is a virtual world with a real market economy. Other virtual world projects are **HiPiHi™**, **Kaneva** and **Moove.**

One of the main areas where virtual environments can be used is, as already mentioned above, education. Listed below are some of the MUVE projects concentrating on basic and secondary school students:

- **The River City Project** (RCP) – a 3D computer simulation for middle grades that looks like a video game and incorporates standards developed by such strategic documents as National Science Education Standards, National Educational Technology Standards and 21st Century Skills.
- **Quest Atlantis –** an international educational project for children aged 9 to 16 that uses a 3D virtual environment for teaching.

The following MUVE educational projects can be applied in the field of higher and further education:

- **MUVEnation** – a European project financed by the European Commission since 2007 under the Lifelong Learning programme's Comenius school education sub-programme. It seeks to develop a European educational programme for the further education of teachers.
- **Active Worlds Educational Universe** (AWEDU) – this application was created under the initiative Vlearn for virtual education. The project is dedicated to research on virtual education, involving more than 80 educational institutions from all over the world. One possibility is the creation of an entire virtual university.
- **Second Life** (SL) – among the best-known and most accomplished virtual world projects. This three-dimensional virtual project has the most sophisticated graphics. Many institutions such as universities, other institutions of higher education, libraries and government bodies use SL as a platform for education. This environment is popular among teachers and researchers as it is more personal than traditional distance learning. Through their avatars users can attend lectures and conferences in the virtual building of an educational institution. Many universities from various parts of the world are teaching courses or carrying out research in this environment. The New Media Consortium (NMC), a not-for-profit consortium, created a virtual project in SL called NMC Campus that combines the activities of about 225 academies, universities, museums and other organizations dedicated to education from across the world. There are also attempts to integrate virtual worlds with virtual learning environments – like the Sloodle project that aims to merge Second Life with Moodle.[10]

[10] KIESEL, M. *Projekty vzdělávání v MUVEs.* Inflow: information journal [online]. 2009, vol. 2, no. 6 [Quoted 2010-05-06]. Available on the Internet: <http://www.inflow.cz/projekty-vzdelavani-v-muves>. ISSN 1802-9736.

Fig. 3. Learning in Second Life. (Source: Vzdělávání míří do Second Life. [online]. [cit. 2010-05-27]. Available on the Internet <http://www.secondlife.cz/vzdelavani-miri-do-second-life>)

4. CONCLUSION

We can conclude by saying that education in virtual environments crosses borders and overcomes obstacles. MUVE offers an environment that is suitable for learning, exchanging information and managing teams. Today it is crucial to find new ways of providing students with information. Students are looking for teaching that involves greater interaction and is closer to reality. This need is answered by virtual environments that bring an incredible dynamism to teaching. ICTs can give education a new dimension: teaching is no longer limited by physical space, students can learn regardless of time and the need to move in real space. Virtual environments present the opportunity of meeting with experts on various fields, participating in conferences, running projects, etc.

Virtual worlds like Second Life have enormous marketing potential that is exploited by many major international companies for advertising their products. Many large computer companies, politicians, universities, churches and embassies have seats and representatives in SL.

SL is a promising application also for the educational institutions in Slovakia. Even though all the material presented above concerned mainly the level of universities, SL is an application that can also be used by diverse organisations that decide to adopt SL as a learning platform for the education of their employees. Educational establishments in Slovakia are lagging behind in this respect and there is much uncharted territory that is waiting to be explored.

The constant progress in the field of information technologies has pushed education to a new – virtual – level. Electronic education in the virtual environment is today a major challenge for educational institutions. This issue is much researched in the world. We are of course not claiming that education in a virtual environment is the only way forward for education but it is necessary to see this as another opportunity to make education better, more appealing and efficient. Education is a constant

process that shapes society's progress. It is up to us to use all the opportunities offered by higher and further education.

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THE EFFECT OF ICT ON EDUCATION AND THE ROLE OF EDUCATION IN CREATING AN INFORMATION SOCIETY

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Abstract

Information and Communication Technology has become a common and many times also unavoidable part of education. It has a significant impact on curriculum form and delivery and influences the quality of education. Because technology, education, and society are interrelated, the usage of technology for academic purposes directly influences creating an information society. The purpose of this study is to point out the importance of knowing the information technology preferences, using habits and perceptions of students, in order to ensure their effective and premium learning. This article mainly reports the results of a questionnaire-based survey of Slovak high school and university students' purpose, frequency and effect of using the Internet and suggests possible improvements of Information Technology and curricular strategies that would enhance the process of education in the Information Age.

Key words: *Information and Communication Technology, ICT, Internet, education, Social Networks, electronic sources*

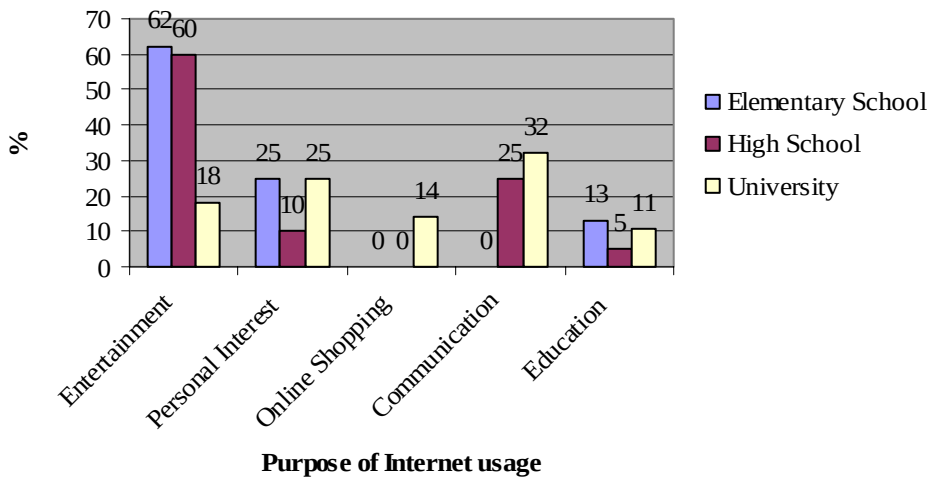
1. INTRODUCTION

Over the last couple of years, we have witnessed an explosive growth in the power and speed of computing, as well as rapid development in the sphere of data communication methods and information systems' functionalities and capabilities. Besides, it can be claimed that sophisticated information systems and fast and powerful computer technologies have become an unavoidable part of business, political, cultural, and social life almost in every part of the world. Also, Information and Communication Technology (ICT) has become a significant tool to support, or even the means to enable education in many countries. The above mentioned exponential developments, vast utilization of ICT and the vision of the Information Age suggest that the trend of "going digital" will continue also in the near future and will affect the process of education. The aim of this article is to briefly describe how ICT and latest trends in computer technologies affect students and education in Slovakia in both, positive and negative manner, and, at the same time, how proper usage of technology in the academic sphere may lead to improved quality of education and creation of information society. Besides, the purpose of this study is to point out that both, education and information society, are closely related to ICT and that all these components mutually affect each other.

2. STATISTICS ON COMPUTER LITERACY AND ICT USAGE IN SLOVAKIA

By the end of 2000, there were 26.4% of computer literate Slovak citizens (Benka 2001). Five years later, Eurostat carried out a survey, aim of which was to find out the level of ICT usage by individuals

and households in countries of the European Union. The survey has shown a positive increase in the number of computer-literate Slovak citizens. According to the Eurostat statistics, in 2005, there were 29% of Slovaks, who have never used a computer, while the average of all the EU countries was 37%. Also, it is necessary to point out that the majority of the computer-illiterate Slovaks were aged 55 to 74 years. On the other hand, 97% of the approached Slovaks aged 16 – 24 were computer literate. In this case, the EU average was 10% (Demunter 2006). Another survey, done by the Statistical Office of the Slovak Republic (SUSR) in the second quarter of 2009, shows that 64% of Slovak households own a PC and 62.2% of them have access to the Internet. The statistics also demonstrates that 80.09% of those households are families with children aged up to 16 years (TASR 2009). Another Slovak national study, which was executed and interpreted by TNS SK agency in February 2009, says that more than one half of Slovak citizens regularly use the Internet and 9.9% use the Internet less than once a month. On the other hand, 36.4% of the approached respondents do not have any experience with the Internet. The same study also interprets the results of the purpose of the Internet usage. In Slovakia, 55.8% of people actively use the Internet for information searching and job purposes, 48.1% for e-mail communication (mainly at work), 44.4% for fun and playing online games and 41.6% participate in chats, online discussion, blogs, or are members of social networks (SITA 2009). These statistics prove that ICT have been continuously becoming a common part of a professional and personal life in Slovakia. It is more than probable that the process of ICT infiltration into the everyday life of people in Slovakia will continue also in the near future, and that gradually more and more people will use the ICT and the Internet on a daily basis not only for work purposes. It is also possible to claim, that the same assumption may be applicable on the international basis.



Purpose of the Internet usage by Slovak students

2.1 Statistics on purpose of ICT usage by Slovak students

In February 2010, I have conducted a brief study, purpose of which was to find out the main reason of the Internet usage by students in Slovakia. I have distributed questionnaires to 72 students, out of which 8 were elementary school, 20 high school and 44 university students. The results of this survey, which was structured and offered only five options of the Internet usage, show, that 35% of students

use the Internet mainly for fun and entertainment, 26.4% for communication, 20.8% for personal interest, 9.7% for educational purposes and 8.3% for online shopping. Generally said, the majority of approached students (61.4%) perceive the Internet as a means of entertainment and communication. This particular interpretation, however, does not consider the classification of students based on the level of education. The more specific and accurate interpretation is shown in the following chart (Česalová 2010).

3. ICT AND EDUCATION

Information and Communication Technology has been used as a part of the educational process not only in classrooms for more than 30 years. The usage of computes in the sphere of education, however, has changed from teaching the fundamentals of computing and information processing in the 80s, through implementing the computers into the actual teaching process of other subjects, to using ICT as a tool of teaching/learning in e-Learning and combination of all previously mentioned roles (Oyaid 2010). This means that ICT have significant impact on education and that is why they're gradually becoming a crucial, central part of the learning and teaching processes. M. Demirbilek in his article published in IJEDICT in 2009 claims that technological developments brought new challenges in the educational processes and influenced the way of teaching, learning and designing and delivering the curriculum. Besides, he states that "schools and lifelong learning centers are trying to keep up with the developments in ICTs by increasingly allocating more money towards ICT and related tools" (Demirbilek 2009). Studies that have been conducted in order to find out the impact of investments into and usage of ICT in schools prove the positive results of increased effectiveness and efficiency of teachers and other staff, improved quality of their work and the educational processes in general, possibility to facilitate individual as well as cooperative learning, which consequently leads to attracting more students (Demirbilek 2009). This example suggests that schools should invest into the acquisition of ICT and support and motivate both, teachers and students to use the advanced technology in the teaching/learning process. At the same time, however, it is necessary to continuously monitor the students' attitudes and perceptions regarding the ICT usage for educational purposes as they are the most important stakeholders in the educational process. Afnan A. Oyaid, a specialist in Educational Technology at the Exeter University states that "being aware of and understanding students' perceptions will assist in improving the quality of education provided" (Oyaid 2010). In other words, besides investing into and using ICT in teaching, educational institutions should be familiar with the students' abilities, preferences, perceptions, purpose and frequency of ICT usage and adjust the usage of technology, course concepts, assignments, activities and curriculum to meet the needs and abilities of students, and, at the same time to increase the quality of education.

4. SURVEY

4.1 Goal, Methodology and Structure

The goal of this study was to find out the purpose, frequency and effect of using the Internet and its applications by Slovak high school and university students. Besides, the aim of the survey was to find out the students' opinion about what improvements in ICT would positively affect the quality of education. The statistical interpretation of results was based on analysis of mainly structured answers in questionnaires that were distributed to Slovak high school and university students. Also, it is necessary to state that in this particular study, mostly the quantitative methodology of research was utilized. The survey was conducted in April and May 2010 and consisted of 16 questions that were

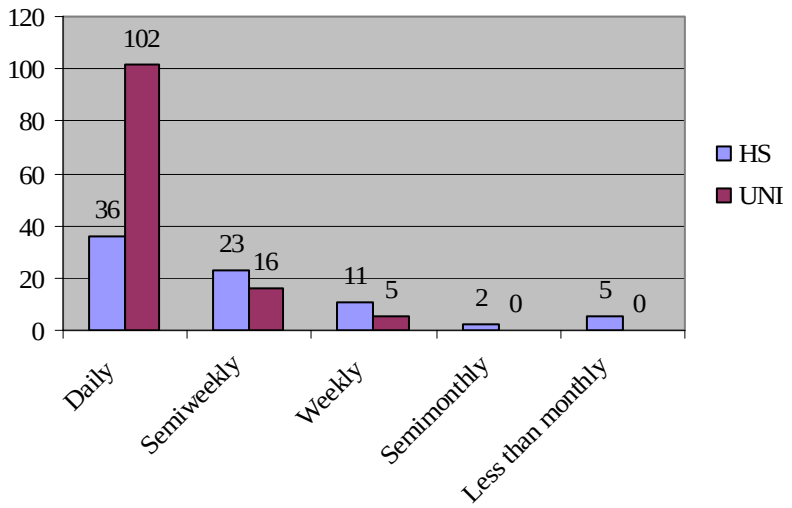
divided into five logical sections – 1) General Information, 2) Frequency of the Internet Usage, 3) Using Social Networks, 4) Using the Internet for Academic Purposes, and 5) Improvements in ICT that would affect the quality of learning. Sections 3 and 4 consisted of subcategory questions that could be answered only after answering the major question. Three out of 16 questions were open-ended. Students were asked to select only one option and, in case of open-ended questions, write just one reason that best answers the given question. The survey was anonymous, and the participating students were properly informed about its purpose by their teachers.

4.2 General Information

The survey questionnaires were given to a total of 200 students, 80 of whom (40%) attended high school (represented as HS in graphs and charts) and 120 (60%) were university (represented as UNI in graphs and charts) students. The feedback form was filled out by 112 males (56%) and 88 females (44%). As to the age range, 74 participants were aged 15 – 19 years (37%), the majority – 98 students were aged 20 – 24 (49%), 23 students were between 25 and 29 years old (11%), and finally, 5 partakers (3%) were older than 30 years. All the participants properly and correctly answered all the questions, and that is why the response rate for this study was 100%.

4.3 Frequency of the Internet Usage

The following chart summarizes the amount of selected options in question – *How often do you use the Internet?*.



Frequency of the Internet usage by Slovak students

The results show that the majority (69%) of all questioned students use the Internet on a daily basis. To be exact, 47% of high school students use the Internet daily, 30% semiweekly, 14% weekly, 3% semimonthly and 6% monthly. Significant part (83%) of the university students accesses the resources and applications of the Internet and the World Wide Web on a daily basis, 13% twice a week and 4%

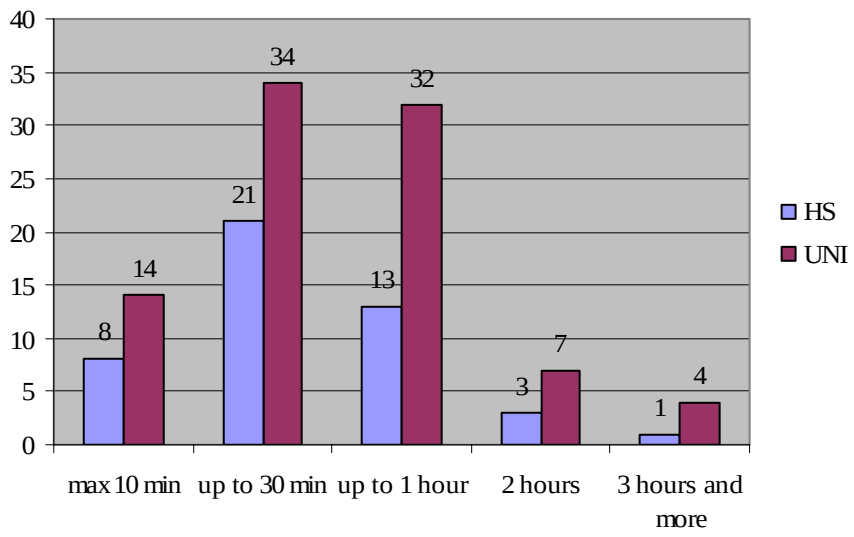
every week. None of the university students uses the Internet less often than once a week. These findings confirm the statement that ICTs are becoming a common part of students' life and that gradually more students use the technology each and every day.

4.4 Using Social Networks

Questions in the third part of the survey were cross-sectional. The main question was asked to find out whether the students are members of any or some Social Networks, which are generally considered very popular among young people. The students' answers to this question and its subparts only proved this statement. 178 respondents are members of some Social Networks, while only 21 students are not. To be more specific, 84% of high school and 92% of university students utilize the applications of a Social Network and 16% of high school and 8% of university students don't. This result only proves the previously mentioned conclusion of a survey, conducted to find out the main purpose of using the Internet by students (see chapter 2.1). Social Networks, which provide the interface and applications for both, communication and entertainment, are used by 89% of approached students.

4.4.1Frequency and Time Spent on a Social Network

The two subsections of the second question should help to asses how often the students access the Social Network and how much time they actively spend logged in. 137 out of 178 respondents who use the Social Networks, eventually, in other words, 68.5% of all the approached students, access their account every day and none of them logs in less frequently than once a month. The percentage of students, who access their account daily, is, however, higher in case of the university respondents. This pattern may be connected with the more frequent usage of the Internet resources by the university students as described in section 4.3. Another subsection of the second question should help to find out how much time students spent actively using the resources of a Social Network. The following chart provides the summary of the amount of time that students, who log in to their account every day, actively spent online.



How much time do you actively spend on a Social Network daily?

The majority of both, 46% of high school and 37% of university students who access their Social Network account daily, spend online up to 30 minutes, followed by 28% of high school and 35% university students, who are actively using the applications of Social Network up to one hour per each day.

4.4.2 Effect of Using Social Networks

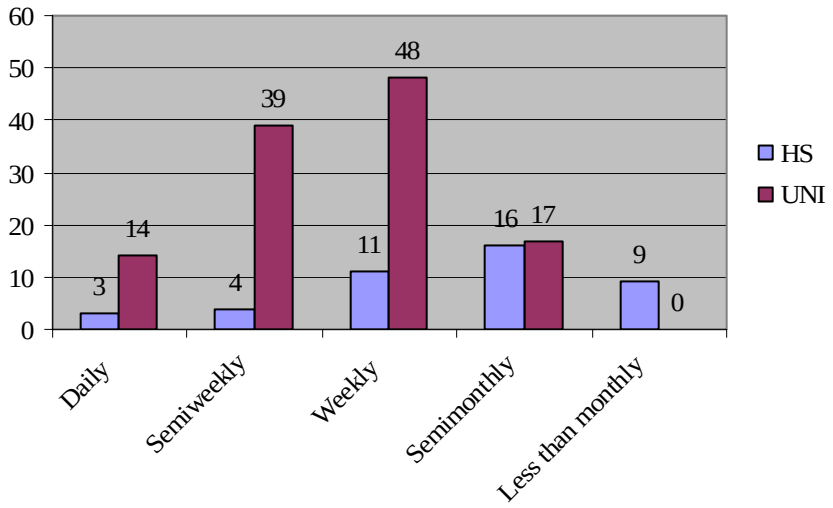
The last questions regarding the usage of Social Networks were asked to find out the effect of the Social Network service on students' academic pursuits. Out of 178 students, 145 answered that the possibility to use such service positively influences their studies, while 33 chose the opposite answer. To interpret these findings by the educational level, 91% of high school and 76% of university thinks that usage of Social Networks has a positive impact on their studies, while 9% of high school and 24% of university respondents believe that the impact of using such applications negatively influences their academic pursuits. This particular question continued with an unstructured open-ended subsection to find out why the usage of the Social Network positively or negatively influences students' learning. Among the majority of answers that justify the positive impact of Social Networks on studies belong the following: Social Networks provide environment that may help students relax (31%), communicate also about school-related topics (22%), and effectively share class information among the group members (12%). On the other hand, majority of students, who claim that services of Social Networks negatively influence their studies, mention as a number one reason waste of time that could be dedicated to studies followed by loss of concentration on learning.

4.5 Using the Internet for Academic Purposes

The fourth part of the questionnaire was designed to asses the usage of the Internet to support the education. Answers to the first, major question of this section – *Do you use the Internet to support your studies?* – vary by the level of educational institution. In spite of the fact that 161 respondents (80.5%) answered yes, 37 of high school students chose the negative answer to this question. To be more specific, 98% of university students use the internet for educational purposes and so do only 54% of high school respondents. This means that 46% of high school respondents do not use the Internet to support their studies. If this percentage is compared to 16% of high school students who do not use a Social Network, it is possible to assume that high school students perceive the Internet as a means of entertainment and communication rather than a tool to support or enhance their education. Another possible assumption that might justify the high percentage of high school students who do not use the Internet for educational purposes is that they are not asked or required to do so. In other words, the usage of the Internet is not incorporated in the high school curriculum, eventually, the teachers do not ask or motivate the students to use the Internet as a means of educational process. On the other hand, the low percentage (2%) of the university students, who do not use the Internet for school purposes, suggest that the usage of this network's sources and applications is required or somehow found convenient. This claim is supported also by the students' answers to the subsections of the third question.

4.5.1Frequency and Time Spent on the Internet for Academic Purposes

The following chart displays the amount of selecting the options in a question *How often do you use the Internet to support your studies?*.



Frequency of using the Internet for study purposes

The more specific interpretation of this subsection question says that 12% of the university students use the Internet to support their academic activities daily, 33% semiweekly, 41% weekly, 14% semimonthly and none less than monthly. As to the high school students, 7% use the Internet for the educational purposes daily, 9% semiweekly, 26% weekly, 37% semimonthly, and 21% less than once a month. Again, if the daily usage of the Internet for educational purposes is compared to daily usage of the Social Networks, the entertainment and communication prevails. Due to the low percentage of using the Internet on a daily basis by both, high school and university students, the interpretation and comparison of the subsection question – *How much time do you spend on the Internet per day?* -would be insignificant. However, the survey findings again prove that the Internet is more often used as a means of entertainment and communication than a tool for education. Therefore, it's possible to claim that the usage of the Internet for academic purposes should be promoted or incorporated in the curricular activities already in the high schools or even better elementary schools.

4.5.2 Purpose of Using the Internet in the Learning Process

Another subsection question of the fourth part of the questionnaire was included to find out the purpose of the Internet usage for school activities. 0% of the high school students, who use the Internet for academic purposes use the technology during in-class activities, 34% use the Internet to search for resources and 9% use the ICT for other purposes. Similarly, the majority (93%) of approached university students uses the Internet to find electronic resources needed to support their scholarly activities, 14% use the technology in class and 11% mentioned some other utilization of the Internet and ICT. These findings prove that the primary reason of using the Internet for academic purposes is searching for resources.

4.5.3 Effect of Using the Internet on Education

The aim of the study was also to find out the effect of using the Internet on students' academic pursuits. 100% of university students, who use the Internet for school purposes, in other words, 98.3%

out of all questioned university students claim that the usage of the Internet positively influences their studies. The same opinion is shared by 41 out of 43 high school students who use this technology for academic purposes. 4.7% of this group believed that the Internet somehow negatively influences their studies. Again, just like in case of the effect of using Social Networks, this question continued with the unstructured open-ended subsection to find out why positively or negatively. Among the majority of answers that justify the positive impact of this technology on studies belong: the Internet is a source of credible resources or information (38%), resources are easy to find (19%), searching for resources is fast and saves a lot of time (14%), the Internet may be used to facilitate class-related online discussions (5%). As to the negative influence, one student finds the Internet overfilled with information and that is why relevant sources are hard to find, and the other respondent thinks that searching for information is not user-friendly.

4.6 ICT improvements and Education

The very last question, which was, again, open-ended, was asked to find out what improvements in technology should be done to positively affect or enhance the quality of learning. Among the most common suggest belong: increased availability of broadband connection to the Internet, user-friendliness and simplicity of applications that enable searching for credible resources on the Internet, and using the Social Network – like environment to facilitate course-related discussions.

4.7 Discussion

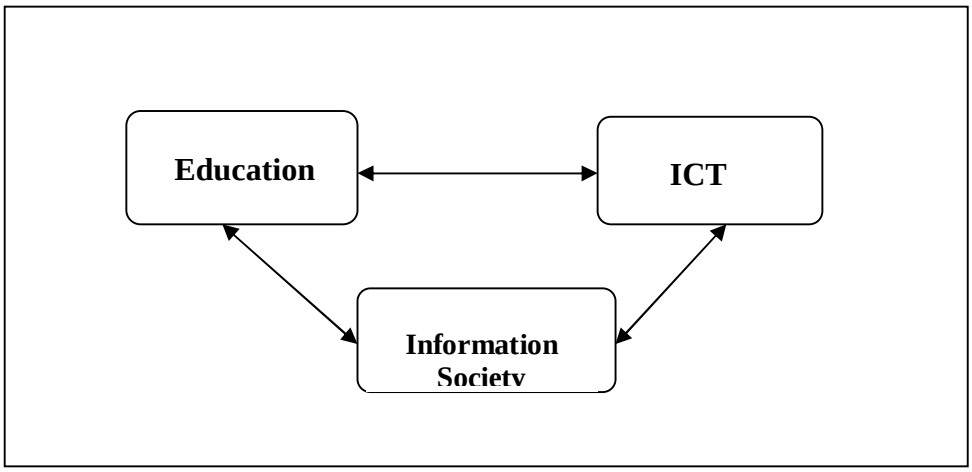
The survey results show that the ICT, more specifically the Internet, became an ordinary part of students' lives. 69% of Slovak high school and university students access the Internet daily and 19.5% twice a week. Besides, the survey findings prove that the main reason why students use the Internet is most probably entertainment and communication or, to be exact and to interpret the results of this study correctly, utilization of Social Network services, which, however, combine applications for both, fun and interaction. The study reveals that 89% of all questioned students have a Social Network account and 68.5% of the 200 respondents log in to that account every day, compared to 8.5% of all students who daily use the Internet to support their education. This high percentage only emphasizes the popularity of these applications. Besides, an interesting fact is that 34% of students who use the Social Network see the direct, positive impact of this service on education, because it enables them to communicate the school-related topics and share classroom information among classmates. These findings, together with suggestion for ICT improvement to facilitate effective learning "Using Social Network – like environment" indicate success of using Web 2.0 applications for education purposes.

Another significant survey finding indicate, that in spite of the fact that Slovak students use the Internet for social networking activities more than for educational purposes, searching for electronic resources is considered the most common role of ICT in students' learning process. The results from my previous study indicate that students started to use mainly the electronic resources to support their studies and mainly academic writing, however, were not always able to select the best possible, credible and relevant information (Česalová 2010). That is why it is necessary to emphasize the importance of implementing courses on how to effectively search for and select the high quality sources into the study plan of high school and university students.

6. EDUCATION, ICT AND INFORMATION SOCIETY

It can be claimed that education, ICT, and information society are mutually related and directly influence each other. A development in technology definitely affects the way of teaching/learning and

changes the process of communication, collaboration, information usage, decision-making and knowledge sharing in business and society as such. Also, it is possible to state that the educational system and the information society, that have accepted and are using ICT, have continuous suggestions and demands that, on the other hand, lead to changes or developments in technology, which are aimed to improve the quality, effectiveness and efficiency of related processes and activities. Finally, the improved quality of education, including the usage of ICT for direct or supporting academic purposes, leads to building, improving or to positive changes in the information society. This scheme suggests that any improvement or decline in the quality of any of the involved components has direct impact on the other ones.



The mutual relationships among Education, ICT and Information Society

6. CONCLUSION

Recent happenings and findings suggest that ICT plays an important role also in the sphere of education. The usage of ICT has not only modified the process of teaching and learning, but also opened the door to new educational approaches and methods. The statistics regarding the usage of the Internet and ICT suggest that computers and the Internet have become a common or even unavoidable part of students' lives. Besides, due to progressive developments, availability and affordability of ICT, it is reasonable to assume that the amount of students and their frequency of ICT usage will keep on increasing. The results of this survey, however, point out that the main purpose of students' ICT usage is communication and entertainment, eventually usage of the Social Networks. Majority of questioned students, who access the Internet daily, check out their Social Network account, compared to only a few, who daily use this medium to support their learning. In order to increase the frequency and quality of using ICT in the process of education and consequently build information society that would be the means to continuous improvement and development on a global basis, it is necessary to incorporate the ICT usage into the high school or even elementary school curriculum. In addition, it is necessary to stress the advantages of using ITC for academic purposes to both involved parties, students and teachers, and increase their awareness regarding the quality and efficiency of ITC usage

during the teaching/learning process, including searching for and selecting relevant and credible electronic resources. Besides, the results of this survey suggest, that usage of the popular Web 2.0 applications, eventually Social Network – like environment, if used properly, could possibly become a favored tool to support communication between or among teachers and students, or enhance or even enable education not only in Slovakia. And that is why such educational applications should be incorporated into Slovak eLearning systems and started to be properly used in schools and universities.

7. ACKNOWLEDGEMENT

I am very grateful to the teachers, who were willing to participate in this survey by distributing and collecting the questionnaires and explaining the purpose of the study to their students. Besides, I would like to thank to all the students for agreeing to participate in this study and correctly filling out the survey forms.

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STRATEGY CHOICE AND PROBLEM IN EDUCATION REFORMS

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Abstract

The modern World need new educational strategy choice. In spite of all the differences, there is a certain similarity in the content of the reforms: the compulsory education period decrease; the private and other types of education permission at all levels; the educational fees gradual introduction; abolishment of the high school graduates allotment. While generally reforming education, it is necessary to create the programs that will survive various reforms. The most pressing issue is raising the educational standards at all levels. At the background of the continuous changes, the role of the earth science integrative course is strengthening. Without replacing traditionally strong high and higher school subjects such as physics, chemistry, biology, the earth science focuses on the core of all subjects – the planet Earth, defining cause-result relationships of the nature processes in time and space.

Key words: *educational strategy, various reforms, earth science, nature processes, time and space.*

Geoscience itself has rather a high prestige in Russia. In comparison with Western Europe, our country is not sufficiently explored from geological point of view. There is enough space within the vast territory of Russia for young people to apply then-energy. The interest of school children to Geoscience is certainly strong, as is proved by numerous pedagogical research works. The trouble is not the lack of interest in the subject on the part of students. The majority of school teachers of Geography and Biology seem to think that Geology should be taught as a separate discipline. We will never be able to improve Geoscience education if Geoscience does not occupy a proper place in the course of training teachers in colleges. Without that we cannot even speak of any improvement in school education.

One of the ways may he to make Geoscience an interdisciplinary subject after fusing the departments of Natural Science of teacher-training colleges into specialised institutes. Geoscience can easily unite at the first stage physicists, chemists, biologists and geographers, at least. The idea of training teachers of Geology on the basis of university departments of Geology is also of interest. Such teachers will be equally able to teach in secondary schools and in recently instituted grammar schools, lyceums, etc.

The geological environment marked out by geographers, and biosphere in biology are significantly narrower spatially than the space of the earth system as a whole, but the narrowing of space can have a number of advantages, as, for example, possibility of functioning and, hence, analysis of "unified" biological -geographical - geological system in the frameworks "of the landscape sphere" consolidating in itself the notions of the earth's crust, hydrosphere and troposphere. Within the framework of the system of landscape sphere various social processes take place. They are subordinated by the same laws of nature as geology, geography, biology. This reality is masked by incorrect application of methods of mathematical processing of social sphere materials. Social

variables have non-additive character, that is they are arithmetically non-additive. Using Gaussian distributions that work well in natural sciences is incorrect in analysis of social phenomena as well. Mathematically correct processing of a social data package makes collateral subordination of various phenomena in the landscape sphere to the same laws apparent.

In the Russia of today it is life itself that determines the transformation of the whole educational system, and it is of vital importance for Geoscience to occupy an important place in it, as it is a science that creates a certain world view, a certain historical vision of Nature: it is a science that reconstructs the past, regulates the present and forecasts the future of the Earth.

Of late there has been a lot of criticizm of the educational system in the Russia. Some of its most severe critics want to change absolutely everything. we personally have not so critically minded and we think that there is nothing in our education to be ashamed of, though there are certain imperfections in it.

Russian school and university students have et won leadering positions in different international competitions. Soviet and Russian science in general and natural and exact sciences in particular have been recognized world-wide. 1 am not going to analize here what is wrong with our education, but 1 will try to show the dynamics of development of Science and, in particular, Geoscience education in Russia.

The drastic change is undergoing now could perhaps be compared to the changes during the epoch of Perter the Great. The changes in our educational system are brought about not only because of the old educational system being so bad-as 1 have said, it had its weak points, but on the whole it worked-but for some other reasons.

During the last two decade school and college education crisis has spread all over several highly developed countries. Japanese are anxious about the situation in their school education(Janke, 1988). Germans, Italians and the French are also discussing this problem and trying to find a way out. As for Americans, they sometimes regard their situation in school education as a national tragedy. The first day of the new school-year 1991 president Bush declared that American schools were in trouble. We don'1 what president Abama thinks about it, but in nany articles and investigations regarding American schools the situation is considered as a total failure of the system, especially in the field of science education. American students often occupy last positions in international evaluation for different subjects(Moore, 1990);their interest in natural and exact sciences has been decreasing(Aldridge, 2002);they find themselves insufficiently prepared for college education(Kelly, 1989);and so on and so forth.

We mentioned Americans not because wanted to say that their school system is bad. Not at all. Just because it presents a good example of a world-spread crisis in educational system.

As for the great reconstruction of the whole educational system in Russia and in the CIS, this was not caused by crisis of Soviet school, but by fundamental changes in both political and economic systems in the states which used to be parts of the USSR. This is not the appropriate occasion for discussing the reasons and the character of the above mentioned changes, во 1 will switch on to the main ideas regarding the reconstrution of our educational system.

Ideas of reconstruction of Russian educational system

— to face the West system of education, both in schools and colleges;

— to free schools which a surveillance of the state, both in didactic programs and financial questions;

— to introduce a multy-level structure of higher education-something 'which has never existed in Russia, and to grant bachelor and magister academic degrees;

— to provide a choice between free and paid education, both on school and college levels.

School education

The strong point of the system of public education in Russia in the beginning of our century consited in the fact that there existed different types of secondary schools: so- called "gymnasium", or grammar schools with the accent on humanities and classic languages in particular; non-classical secondary schools with the accent on natural and exact sciences; cleric seminaries, military schools called "kadetski corpus" where military subjects were taught; law schools and others. All of them provided a general secondary education, though the subjects taught and the amount of knowledge obtained were considerably different. The best training was provided by grammar schools where candidates were chosen on the basis of a meticulous competitive entrance examination. The total number of secondary schools in Russia was rather small. For example, in 1910 there were only 124б secondary schools which provided general education for the population of 152, 2 million of people. Among 1082 towns of the country only 408 had their own grammar schools and non-classical secondary schools.

Iп all types of Russin schools the subject called "Natural History" was taught since the first half of the 19-th century. It included Botany, Zoology and Geology. In 1861 in Kiev the first Congress of Naturalists and Teachers of Natural History took place. Together with scientific items, the problem of teaching Natural History at school was discussed there. In non-classical secondary schools and especially in commercial schools founded at the end of the 19-th century Geoscience was a subject of really great importance. 1 would like to refer to the program of the course taught in the (ЬIопп of commercial schools 3 hours per week :

— Earth as a spacial body and its general characteristics; — Atmosphere, Hydrosphere, Biosphere;

— Lithosphere — fundamentals of Crystallography, Mineralogy, Petrography and General Geology;

— Brief review of historical development of the Globe and its contemporary relief.

"The importance of such a course which is a synthetic conclusion of all the preceding training and which gives the students an harmonic and integrated notion of the earth' s crust is so obvious that по one could argue with its necessity on the list of subjects taught in secondary schools."(Kolomogorov, 1916).

The first decades after the October Revolution of 1917 were a sort of "Golden Age™ in the history of Geoscience education in Russia. The country energetically undertook the opening up of the Far North, Siberia and the Far East. The USSR Academy of science was headed at that time by the distinguished geologists Vernadski and, later, Karpinski. The word "Geology" was on everybody' s lips. Geology became a compulsory subject in the school curriculum. It is the time when there appear textbooks of Geology for schools, methods of teaching Geology, geological museums and special classrooms.

In the fifties the situation in school Geoscience changed greatly. It disappeared from school curriculum as an inependent discipline, and some of its items were integred into the course of Science(4-th and 5-th forms) and Physical Geography(6- th and 7-th forms). By the end of fifties:

— Geology almost absolutely disappeared from the curriculum of secondary schools;

— Geology was taught a fewer hours in the courses in which it was integrated;

— The study of geological subjects, as a rule, was finished in incomplete secondary school, that is, in the 8-th form;

— Teaching of geological items was often did by teachers without basic, geological background;

— school teachers and administrators underestimated the importance of Geology: in school education and the range of its problems.

American school Geography faced by that time similar problems(Mayo K., 1965). But Americans realized fact earlier than we did and brought Geography back on the list of strategic disciplines which determine a long-term development of school education. As for Russia, the role of Geology as a school discipline is still losing its importance. It is true that in the school courses of Natural Science and Physical Geography students are given some idea of geological processes, minerals and rocks, tectonic movements, mineral raw materials, foundation and structure of the Earth. But these pieces of information are dotted here and there in different texbooks as 3 separate fragments, so it is difficult for students to unite them in a whole system in their minds. This fact is explained by falling-off in the geological training of future teachers.

Higher education

Geology has always been one of the directions of basic higher Science education in Russia. According to the resolution of the Committee for Higher Education issued in March, 1992, regarding the introduction of multi-level structure in higher education of Russia, there are ten main directions: Mathematics, Applied Mathematics and Informatics,, Mechanics, Physics, Chemistry, Biology, Soil Science, Geography, Hydrometheology and Geology.

Specialists in Geology are trained at the departments of Geology of the universities and at mining colleges. The network of these higher schools is rather large and they train students in almost thirty different geoscience specialities. Graduates from most of these institutions are highly qualified specialists, their qualification corresponding to international standards. Geologists who were trained in Russia now work in most countries of the world.

But in recent years the fall of social demand for specialists in geology caused "overproduction" of the latter. This is one of the problems of contemporary higher geological education in my country. But the most complicated problem is the problem of transition to the multi-level educational structure. The leading higher schools have the right to correct the model proposed by the state, that is why it makes no sense to talk about a unified scheme. As an example we can take the version suggested by the Department of Geology of St-Petersburg University; In the nearest future they propose, on the one hand, to maintain the old system of five-year training and, on the other hand, to introduce in parallel a two-degree model: 4+2. That means that in the first 4 years a bachelor is trained who then graduates without defending any graduate paper. Two years more are given for obtaining a masters' degree with the obligatory defence of masters' thesis. During the first year all the students study upon the same curriculum.

There also exists a number of colleges where geology is taught, but which do not train specialists in geology. These are building colleges, agricultural colleges, training colleges and universities and some others. In most of these colleges Geology has not lost and seems not to lose in future its important position because it provides basis for other disciplines and helps to reveal relations between the studied phenomena.

Unfortunately, most teacher-training colleges are an exception from this general rule. Reduction of Geoscience in secondary schools curriculum brought about a similar process in colleges which train teachers for them. Faculties of Geology were closed, number of students who studied geological courses diminished.

Such a tendency is observed, we would repeat, in most teacher-training colleges of the counry. As a result, teachers who graduated from the above mentioned departments for whom Earth Science has not only a world-view importance, but also a basic professional background, show still poorer knowledge of fundamentals of Geoscience. In its turn it makes school education still worse.

Geoscience education of the society

In the Russia there existed a wide network of organizations called "Znanie"(which means "knowledge" in Russian). It organizes lectures and courses, different seminars and conferences, it publishes popular-science literature and arranges a lot of other activities for public education. To my mind, Geoscience occupies a deserving place in the activities of this organization.

In the Houses of Young Researchers and Artists(former pioneer palaces) there are clubs of young geologists which for decades have been educating future students for departments of Geology. Young Geologists Clubs still exist in most big cities of the CIS.

The national(forth) TV channel and some local channels work as didactic television. This is one of the most efficient methods of teaching, but it is not < enough developed in Russia due to the lock of high quality video and technical) equipment. The didactic Television Laboratory of Herzen State Pedagogical University of Russia in co-operation with St.-Petersburg Television have issued about

300 didactic programs during the last *5* years, while the American "Agency for Instructional Technology" only in 1990-1991 made 2435 recordings. The quota af Geoscience in our didactic TV programmes is not sufficient.

In the nearest future, due to the development of video-recording in our country, we may expect reinforcement of the role of the didactic TV in our education. Despite comparatevely low quantity of didactic programmes, the potential of didactic TV laboratories of Herzen University and other similar institutions is rather high because the best faculty stuff carries this work out.

By all means, the main problem to be solved in the field of Geoscience Education is to change the situation of this discipline in secondary schools.

Geoscience itself has rather a high prestige in Russia . In comparison with Western Europe my country is not sufficiently explored from geological point of view. There is enough space on the enormous territory of Russia where young people can apply their energy. The interest of school children to Geoscience is certainly strong, and it is proved by numerous pedagogical research works. So, the trouble is not the lack of interest to the subject on the part of students. The majority of school teachers of Geography and Biology seem to think that Geology should be taught as a se

parate discipline. Ucranian teachers of Geography declared the necessity of teaching Geology.

The strategic aim would be returning of Geology back to schools as an independent discipline or, at least, as an independent part of a general course of Earth Science.

It is also important to organize teachers' refresher courses in the field of Geoscience. The existing system of institutes for improving teschers' qualifications proved to be inefficient. Ycan mention an interesting experience of our Western colleagues who made a sort of alliances between professional

geologists and school teachers with the aim of improving Geoscience education in their countries. Summer courses(institutes) like the program "PLEASE" (Mayer, 1990) can not envolve all the teachers, but every graduate of this type of school, after obtaining a diploma of a specialist in methods of teaching, becomes a source of information for his colleagues.

We should also work with state institutions of public education. In Russia, education has always been under tutelage of the state. And, paraphrasing the classic aforism, we can say: "The state dictate is dead. Let live the state control!" Whether we like it or not, a lot of thing in my country will still be decided by the state. That is way the task of convincing the state education authorities in the necessity of returning Geoscience into the curriculum of public schools means to bring Geoscience back to its deserved place.

But we will never be able to do anything good to school Geoscience education if Geoscience do not occupy a proper place in the course of training teachers in colleges. Without it we cannot even speak of any improvement in school education. One of the ways may be making Geoscience an inter-disciplinary subject aften fusing the departments of Natural Science of teacher-training colleges into specialized institutes. Geoscience can easily unite at the first stage physicists, chemists, biologists and geographers, at least. The idea of training teachers of Geology on the basis of university departments of Geology is also of interest. Such teachers will be equally able to teach in secondary schools and in recently appeared grammar schools, liceum, etc.

In the Russia of today it is life itself that determines the transformation of the whole educational system, and it is of vital importance for Geoscience to occupy an important place in it, as it is a science that creates a certain world view, a certain historic vision of Nature; it is a science that reconstructs the past, regulates the present and forecasts the future of the Earth. In general, every society is worth of its knowledge of using its own mineral resources. When Man took the flint and used it as an instrument he immediately found himself in the stone Age. But without Geoscience education he would stay there forever.

What will tomorrou bring us?

The new social and economic and political conditions which have developed in Russia have put forward geology in number of the important subjects in educational strategy of the real future. Studying of bases of geology is an obligatory, fundamental component of any formation, allows the person to receive objective representations about a structure of the Earth, world around, the planetary, regional, local natural processes defining safe ability to live, wildlife management, realisation of contract designs and actions of ecological character. Presence of geological knowledge considerably raises professional competence of experts of many not geological specialities, including humanitarian directions of development of a society. Thereof the problem of geological formation of all population of the country has nation-wide value.

Realisation of innovative projects in humanitarian sphere also requires attraction of ekologo-geological technologies, forms and methods of interaction of the Science about the Earth with consumers of services in the field of environment monitoring, wide use of means of information and telecommunication technologies for the organisation of a feedback with consumers of educational services in system of the general, base and additional vocational training.

Geology as a whole and ecological geology, in particular, are in the field of mainstreams of development of Russia. It both the decision of environmental problems, and development of geoinformation systems, and нано technologies as prospects of development of geology and

geoecology lie in area нано particles in the conditions of a disperse condition of many minerals and загрязнителей environment.

Bolonsky agreements and болонский process have opened ample opportunities of integration of a Russian education in the European space. At the western universities (including pedagogical profile) chairs and geology faculties are an everyday occurrence and provide fundamental nature natural-science, exact and arts education. It is traditional for European (American, Asian, etc.) universities preparation of bachelors and masters of natural-science formation in the field of geology. And only in Russia teachers of geology until recently did not prepare anywhere. Since 2004 in.Herzen Univercity (Sankt-Petersburg? Russia)preparation of bachelors of natural-science formation on a profile of geology and the master of natural-science formation in the field of ecological geology since 2004 has begun for the first time in Russia and it is a serious step to a formation humanisation.

By consideration of a place of geological knowledge in the general structure of formation and problems of development of the general erudition of pupils it appears that the geology more than any other science is connected with many natural-science, technical and humanitarian directions of formation. At the same time studying of geological disciplines is an indispensable basis of fundamental formation since allows the person to receive objective representations about a structure of world around, the planetary, regional and local geological processes defining ecologically safe ability to live wildlife management, realisation of contract designs (V.I.Vernadsky, 1991). Presence of fundamental knowledge on geology allows to raise essentially professional competence of experts of many not geological, including pedagogical, specialities.

Preparation in the field of the Science about the Earth also has lines of similarity to training in the field of arts. Two basic lines, present both in art, and in geological formation, is a necessity to think in three measurements and to learn the student to see those things which were always, as though for the first time. Probably, for these kinds of activity the right hemisphere of a brain answers. It is proved that short listening of music of Mozart raises ability of students to spatial perception.

Importance of existence of geology as a general educational subject is provided by circle of questions solved by it:

- The geology forms scientific thinking in the course of studying of multi-billion history of the Earth;

- Field and laboratory researches in geology have exclusive importance and have no analogues in other educational disciplines;

- Time and space covers in geology processes from subnuclear level before Universe formation;

- An exclusive interdisciplinary role of geology for sciences of a natural number;

- The geology plays the major role in ecological formation of a society;

- Geological sciences consider very different levels of a concrete definition and abstraction of knowledge.

All it allows to use successfully geology in educational life long process.

Geology – a science of the exclusive practical importance that defines also a special place of geological formation of a society.

Other not less important problem directly connected with first, is formation of ecological literacy of a society at all steps of formation. In Russia to this problem the smallest attention is paid. As a result we have almost illiterate in the geological and geologo-ecological relation the population.

The society regulates behaviour rules – morals. Morals, becoming general, it is made out in the form of the Law. Such Law is most comprehensible by the Society.

The ecological legislation of the majority of the countries of the world (including Russia) corresponds to level of environmental problems.

The main task university and school ecology – educational. This formation of representations about character of processes in environment and formation of morals of behaviour this environment.

Objectivity of representations about an inhabitancy of the person without geology in general and without ecological ecology in particular is hardly possible.

We are not born eternally to live in crisis. Crises and fears recede before optimism of Knowledge. It is not necessary to struggle with Nature laws. It is necessary their nobility and to consider in the course of ability to live.

Environmental problems of Caspian sea, Arala, Mediterranean sea is a part of a shared problem connected with closing of extensive ocean Paleotetis. And Mediterranean sea, in the near geological future, will turn to a chain of the isolated lakes and the desert Sahara will reach walls of Paris. Only that it: tragedy or an occasion to optimism? In any case is an outlook

According to the Norwegian philosopher Arne Neessa, ecological disciplines stimulate more profound and more spiritual approach to the Nature (Naess A, 1973).

Ecogeology is one more attempt of mankind to find answers to eternal philosophical and pragmatical questions, to reflect on a human life and a society.

In ideas and existing concepts of geological formation the theoretical prospection is put. Professional geological formation lags behind market requirements. Here it is a lot of problems. Geology – one of the most expensive kinds of formation. But business by money is not limited. The science develops, and to the modern expert ecological knowledge is required, and it is essentially new sphere.

If professional geological education makes a start from problems purely pragmatical nonprofessional – it is directed on development of the person. Geology – a science world outlook, closely connected with scientific natural sciences and humanitarian sphere. To study it it is necessary at all steps of formation, and the first knowledge of a place of the person in an environment to give to school.

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THE DIDACTICS WORLD: FROM KNOWLEDGE TO ACTIVITY EXPERIENCE

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Abstract

The didactics prosecutes subjects of training and preparation of the person for a life in quickly varying world. The modern didactics has saved up huge volume of knowledge which is reflected in conception "didactic culture". Conceptual direction of development of modern didactics is its further humanization. A modern didactics does a transition from "school of knowledges" to "school of competence". This transition is provided the use of humanitarian technologies of teaching for a social sphere. Here considerable experience is already stored. It is connected with realization of the unique program Herzen University «Creation of innovative system of preparation of experts in humanitarian technologies area for social sphere»».

Key words: *didactic culture, knowledges, competence, humanizing of education, pedagogical education, humanitarian technologies of training*

Didactics how «universal art to teach» a long ago and firmly found status of science of large-scale synthesis and deep academic analysis. It decides various questions, requiring from the teacher of the special predilections and ingenuity, endless cogitative work and absolute liability. The maximal level of cognition of the world of didactics is incarnated by a *didactic culture* which reflects logic of development of pedagogical idea, summing up all experience of teaching (7).

Training as pedagogical process is directed on acquisition of knowledge, and also development in the person of qualities of practical character and activity experience. The basic mechanism of realization of these purposes is the school showing all nature of a didactic reality. The school invention as training systems is connected with deep processes of social development. Arisen during an industrialization epoch mass formation initially included not only "obvious", but also "hidden" the curricula, called to provide preparation of generations for a new technogenic life. General formation, thus, became a step forward on a way of progress of mankind, «the greatest blessing granted to people along with a life and freedom» (9, p. 65-66). Followed from the middle of XIX century formation expansion as a result has generated a modern information society.

In the present world a social development basis is manufacture of knowledge and their realization. A power source of knowledge there is a formation which should be continuous. Formation provides the public use of reason by the person with which help comprehension of a current reality surpasses instinctive impulsiveness of the person. Thereby it is necessary to consider formation good as the capital answering to an expense of time, work, human wisdom and experience. Therefore the school makes the enormous force defining a life and destiny of the people and the states.

Formation always should remain vital and real. Classics of pedagogics deeply argued on it in due time, and also many representatives of the world of culture, art, a science and a policy. Among our compatriots here it is necessary to allocate following names: K.D. Ushinsky, N.A. Korf, V.P. Vahterov, V.G. Belinsky, A.I. Herzen, N.A. Dobrolyubov and N.G. Chernyshevsky. They supported original scientific character of formation, against vulgarization knowledge, saw in training means of perfection and success of the person. Development of the theory of formation and training was promoted also by Russian scientists M.V. Lomonosov, N.I. Lobachevsky, A.G. Stoletov, K.A. Timirjazev, N.E. Zhukovsky, D.I. Mendeleyev, etc.

Activity of Dmitry Ivanovich Mendeleyev in sphere of education (1834-1907) is especially considerable and many-sided. It is possible to speak with good reason about system of pedagogical sights of this outstanding scientist (3, p. 78-80). It is interesting to notice that it occurred from a teacher's family and itself in 1855 has finished the Petersburg main teacher training college. The future great chemist has begun the labour activity in Odessa the senior teacher of a grammar school both subsequently with enthusiasm and excellent taught in higher educational institutions of the Russian capital, having devoted to business of national education more than 35 years of the life. Through D.I. Mendeleyev's all pedagogical works pass ideas of continuous formation and harmonious development of the person of the person in the course of training and education. Especially insistently the scientific spent thought on indispensable communication of school with a life and its requirements. He said that pupils should give such sum «… to a life of suitable data from which the pupil would appear ready to accept definitive formation» (3, p. 79). Also that the valid advantage of formation directly depends on quality of teachers, that is from their influence on pupils Never was subject to doubt. Here necessarily it is required, that teachers watched science development, moreover, directly were engaged in it. Only the teacher, «which itself is strong in a science, it possesses and loves» can «influence fruitfully the pupil by means of any subject of teaching» (3, p. 79). However special pedagogical preparation is thus necessary.

Thus, as the main maintenance of the world of didactics the research and creative consciousness of the teacher is obliged to act. To be the teacher in full and universal understanding of this word - all variety of human existence means with to see deep positions of principle. Therefore the true teacher is compelled to address constantly to complicated plan of a reality connected with condition of the validity. That is, the present teacher not only excellent owns a subject domain, but always surpasses its own reference to universal idea of an all-around development of the person.

Science and education interfere in a life not only through material sphere, but, first of all, through outlook of people. The modern society, is tenacious captured by tool intelligence, still submits to logic of technical thinking and the engineering decision of any problem. Therefore thoughts and behaviour of people are obliged to be correlated by the naturalistic mind concerning factors of humanitarian life. For formation it means necessary «spirit penetration that such knowledge» (5, p. 23). Thereby, as the valid subject of didactics the world of the person for the world out of the person is not meaningful acts.

The specified imperative sets absolutely position in which the world studied by the person is considered as nontight for the person and possessing necessary axiologos density. This world has own pressure, capable to bring indignation in the field of a human act. Such world becomes transparent for the individual. This axiologos basis are that in each decision the person chooses all world.

Hence, a conceptual direction of development of modern didactics is its further humanization. The essence of humanistic representations here consists that the studied validity refracts through

culturological and personal sensus of the individual. Thereby, knowledge turns to the integrator of the light and sound world with mental representations of the person. In new humanistic didactics the accent is put on a parity of object of knowledge and subjective consciousness through which filters the vital reality is embodied. As a result the formation humanisation will provide the valid personification of training for successful social formation of the person. Thus, the modern didactic culture should answer the set public norms.

Society and civilization existence is defined now by "human resources». Therefore any technologies (whether it be manufacture, politics, a science or the finance) require in morally-ethical standards, that is conformity human to a measure, intrinsic requirements and aims of people. These purposes – life and corporally-spiritual well-being of the person which become instance of moral responsibility of our acts in the nature and the social world. Thus, the success of human practice and possibility of progress entirely depend on quality of consciousness, from erudition of a society. The education system will mobilise scientific knowledge and converts them in development of human abilities. It means that any modern professional sphere is obliged to become the public use of reason by the person. Though the rationality admits intrinsic property of any person, nevertheless the person always grows out of piece manufacture. Means, modern formation should be developing and individual focused. Then riches of mankind will grow cultural wealth and knowledge, and science and education remain the main human event.

Differently, modernization of education is aimed at maintenance new contents preparations of the person to civilization conditions. It is a question about basis substantiation human component, of world outlook preparation of the modern professional.

The formation humanization is basic to consciousness of the person, its spiritual forces, feelings, reason and will, to abilities to be guided in quickly varying world, to understand it and adequately to operate. The subject field of a humanization settles down "between" the person and world: not so much person and even not so much its products of material and spiritual activity, but sphere of relations between them are the humanization purpose (4, p. 3-4).

The primary pedagogics said that the basic maintenance of formation are a knowledge and scientific subjects. The modern philosophy of formation puts this question in another way: science training should give way to the techniques, passing on pupils, first of all, social experience. That is, the traditional educational ideology "knowledge-abilities-skills" is replaced with the accented formula "skills-abilities-knowledge". In other words, the present education system aims at transition from «school of knowledge» to «to school of competence».

However old and new model of school should not be perceived in an uncompromising struggle context. In this sense it is important to acquire that competence has doing character of the generalised abilities in a combination to knowledge (8, p. 9). Hence, acquired knowledge is put in specialised the competence, concerning a subject domain. Therefore to imagine the competent person who is not possessing system of ordered knowledge, it is impossible. Thus, at the heart of modern formation there is a principle of indissoluble unity of practice and the theory, showing symbiosis of competence and knowledge.

In a real life of "school of knowledge» and «school of competence» in the pure state do not exist. Knowledge is always obliged to "cover" certain kinds of activity while readiness of the person to solve professional problems is provided with level of the got knowledge, skills. Here it is necessary to specify that only the unity competence and knowledge can be considered as an indicator of quality of the got education (6).

In a context of competence approach the knowledge is necessary to transform to an intellectual product of vital need of use of the world. It will be a condition for a manipulation vital objects, reproducibility of actions, modelling and development forecasting. As a result it will be possible to hope that individual activity of "the competent person» will not be doomed to senselessness.

So, any knowledge requires radical deepening on a trajectory of humanitarian development of the person. In an education sphere there should be a complete person as unique and authentic riches which the world actually possesses. Hence, new perusal of senses of formation and the educational activity, reflecting modern representations about a reality is required. Thus overcoming of human limitation, transformation of the person, its transformation into something more, rather than he should become essence of didactic innovations.

In a modern society as it has been told, as a basis of human success act the competence and knowledge. Knowledge as a resource is accessible to overwhelming quantity of people. At the same time not all people appear capable to the same extent effectively to use the saved up intellectual values. Therefore it is necessary to consider as criterion of social productivity of the person display of certain specific qualities in the form of a set of carefully verified and scientifically well-founded technologies of social behaviour.

In the decision of these problems especially important role is played by a pedagogical education. On our belief, the pedagogical education is obliged to answer the revolutionary call made a modern civilization. The teachers are now necessary, capable to see the person as unique integrity and to develop it on the basis of laws of a science and technics, culture and art, a public life and work. Moreover, there was a new function of the teacher - to be the reliable guidebook trained in an information field, to help them to comprehend and put into practice the received knowledge.

One of burning issues in this direction is overcoming of the rupture which has arisen during the last epoch, between objections in preparation of the teacher (and all system of the general education) and requirement humanize and to harmonize relations of people to each other, to public duties and work, to a family, to the nature and a national resource, cultural-historical traditions and values. In other words, today for successful development of a society the people of high cultural level freely owning modern information and communication technologies are required (1, p. 3). It speaks about necessity of achievement of new quality of the formation providing possibility of the maximum self-realization of the person and corresponding to the purposes of advancing social development.

Key making preparation of modern teachers should become humanitarian technologies. They are based on effective and all-round use of such public resources, as ethics, values, ideas, interdisciplinary knowledge, solidarity, interaction, trust, tolerance, responsibility, etc. which become target problems and the projects, capable to reprogram human space. For their decision competent experts, able to develop and realize innovative programs are required, and also is material-financial assets also modern information-communicative base. The creative thinking and professional competence are the basic line of humanitarian technologies. Humanitarian technologies represent the major toolkit, as a matter of fact, any expert as are aimed at harmonization of the person and a society. In this quality humanitarian technologies provide creation of the steady scientifically-educational and vital environment, promote development of social communications and organic solidarity of people.

Here considerable experience is already stored. It is connected with realization of the unique program Herzen university «Creation of innovative system of preparation of experts in humanitarian technologies area for social sphere». Our project differs that we undertook the decision not private, narrow special problems, but for the system decision of the whole complex of challenges which,

unfortunately, are poorly included till now in priority directions of development of science and education of the Russian Federation but without which decision our society and our formation cannot develop. These are humanitarian problems of the person living and working in the difficult vital environment during an epoch of global changes, mentioning all vital space of the individual, its consciousness, style of thinking, behaviour, values, family and posterity reproduction, translation of national culture etc. Actually it is an education system problem as a whole.

Our innovative project is a timely and productive answer to calls of the global world, requirement of a modern society and a labour market. Total results of the project can promote the effective decision of acute problems in formation and society as it has initially been focused on development of system of social relations and an education system. Today we can already offer a society system and original technology of preparation of experts of new generation, including the teachers possessing major humanitarian competence, understanding person in system of the communications capable on the basis of modern knowledge competently to build communication of the person with the varying vital environment, to harmonize its relations with other people, social processes, to assist development of human resources, professionally to accompany sharp processes - zones of risks, crises, deviations etc. Socialization, adaptation, social orientation, humanitarian examination and social diagnostics, preventive maintenance of offences, family values and education - here it is far not a cycle of problems on which decision our efforts are directed. Successes are connected with the decision of this circle of questions or failures of innovative development of Russia, formation of the civil consent, tolerant relations, institutes of a family and the childhood, health and safety of the separate person and the nation as a whole. In it uniqueness of our project and its fundamental sense consists. It means that the modern teacher owning humanitarian technologies, should solve on their basis professional problems not only in formation, but also social sphere (2).

The system of preparation of such experts has demanded creation of some modular learning-methodical complexes which can be combined and combined with educational programs of various level and an orientation. Moreover, the new technology can be applied with success in all system of continuous formation. Thereby universal character and high effect of the developed project is underlined.

Thereupon on the basis of humanitarian technologies it is necessary to consider as the major quality of preparation of experts the social importance of new educational system. It is a question of long-term tendencies of development of a modern labour market and requirements of a society. The new approach meets the requirements not only the employer, but also to requirements of the trained. The maintenance of concrete curriculums and formed competence is focused not only on a pedagogical trade, but also on other specialities involved in system "person-person". It is Enough to specify, for example, in such technologies as formation of political, ethnic and religious tolerance, technology of adaptation of migrants, technology of interaction of the person with the hi-tech educational environment, technology of management in social sphere, health technology and others, to see their high urgency.

Technological innovations have caused requirement for updating of the developed learning-methodical structures. The accent began to become on competence principle of construction of educational programs, on doing approach. There was a necessity to increase a share of independent work trained, to enter new systems of test units and control and measuring materials. In such conditions professional functions of teachers essentially vary. More demanded and perspective there are roles of the adviser, the tutor, the designer. They in turn lean against interactive technologies – technologies of reflective

training, technology of consultation, support technology, moderator, collective research, technology of public discussions, public reports.

Basic principle of achievement of qualitatively new pedagogical results there is an integration of science and education, fundamental knowledge and social practice. Here the most interesting results are reached. Experience of application of scientific and pedagogical workings out in development of social practice already becomes today widely claimed. Thanks to it the real base of formation of the humanitarian educational environment and new research directions is created.

Together with scientists of Herzen university colleagues participated in scientific researches under the specified project from high schools-partners. It is the Moscow city psychological-pedagogical university, the Russian state humanitarian university (Moscow), the St.-Petersburg state university, the Samara state pedagogical university, Omsk state pedagogical university, the Russian institute cultural science (Moscow), Russian Christian humanitarian academy (St.-Petersburg), etc. the important experience of cooperation which interaction of high schools and to transition to practical realization of idea of high school consortia will help development network Is received.

Results of realization of the innovative program became attractive and to foreign partners. The Herzen university had new foreign partners from among leading high schools and the research centres of Europe, among them: Institute of innovative researches of the Netherlands royal academy of sciences, Institute of innovative researches of the Edinburgh university (Great Britain), the Center of innovative researches of Scientific library of the duke of August (Germany), the European centre of researches of problems of transfer and the international communications (Denmark), the Center «Advanced studies» university of Basel (Switzerland). We actively realize joint projects with such elite universities, as the Geneva university in Switzerland, university Tjubingena, university Constance to Germany, universities Paris IV - Sorbonna, Paris V, Paris VIII in France, etc. The report on intentions with one of world leaders of a university education - Princeton university of the USA is signed. Powerful development has received cooperation with the international organizations - UNESCO, the Commission of the European community, the United Nations and variety of others. Essential development was received by programs of the academic mobility of students and teachers.

However, maybe, it is necessary to consider as the most important result of a humanization of formation influence possibility on human consciousness and reason. Concentration of efforts in development of intellectual resources here is capable to transform "the traditional" teacher in competitive, socially and professionally mobile teacher. Certainly, for achievement of new human "quality" creation of the hi-tech educational environment from a powerful information component is required. Today it became an indispensable condition of preparation of the modern expert.

In the meantime the basic advantage of humanitarian technologies of training consists that they are focused on search of ways of overcoming of the developed stereotypes and those barriers which teachers in innovative activity face. Now we live in conditions of deep public changes which involve enormous pressure for the person and social institutes. Intensity is so considerable that possibility to make competent decisions is often lost. At the person the forecasting effectiveness decreases, fear of risk amplifies, transition to creative thinking is at a loss. It is necessary to carry out one reboot of the canonised reason in new humanitarian forms.

The modern world finds not so much answers to the put questions, how many reason which should serve as a compass of a human life. Old and new by us it is not perceived in itself as independent таксоны. They are merged in a uniform stream of time, united by the main subject of the validity – the person. Therefore not events and the facts define character of arrangement of the social validity, but

the person persistently imposes the logic to an event. The physical world exists irrespective of will of the person, but the world social is completely created by us. As people possess the strongly pronounced spiritually-moral beginning, this reality should be considered. Therefore the decision of the majority of world problems now lies in a plane of use of humanitarian technologies in social sphere.

So, we consider that modern expert of formation must to prepare on principles of humanitarian determination. Humanitarian technologies in social sphere are important public resource which will be always claimed.

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INTERRELATIONS BETWEEN PHILOSOPHY AND EARTH SCIENCE

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Abstract

Difference between historical and "exact" sciences in the field of interrelations between philosophy and science is evident. Representatives of "exact" sciences, in some problems, sometimes overestimate empiricism and underestimate significance of historical development and genetic ties, where not only physical and chemical, but also structural laws act. Searching for an objective relationship and unity of the parts of the system chosen by us within the landscape sphere allows defining common educational space for geology, geography and biology. Modern education, especially pedagogical, should provide a double lead with regards to requirements demanded of experts now, for now it is characterized by a double backlog. Forming a general theory of evolution of the Earth is not a matter of too far future. As a consequence, we should expect a real integration of natural sciences in educational process as well.

Key words: *philosophy and science, the Earth, theory of evolution, geoscience, education.*

INTRODUCTION

Forming a general theory of evolution of the Earth is not a matter of too far future. As a consequence, we should expect a real integration of natural sciences in educational process as well. Studying of geological disciplines is an indispensable basis of fundamental formation, since geology: forms scientific thinking; field and laboratory researches in geology have exclusive importance; covers processes from a subnuclear level before formation of the Universe; is a basis for studying other natural sciences; plays the major role in ecological formation of a society. The mechanism of the successful decision of a problem of increase of geological literacy of a society consists in realization of continuous geological formation. Advancing of educational process beyond the topic of the day lies now in the range of uniform educational space of geology, geography and biology, where searches for the general prevail above an essence of discrepancies.

Difference between historical and "exact" sciences in the field of interrelations between philosophy and science is evident. Representatives of "exact" sciences, in some problems, sometimes overestimate empiricism and underestimate significance of historical development and genetic ties, where not only physical and chemical, but also structural laws act. The geographical sciences are specific and research a complex geographical environment. Their system has also interrelated sciences such as biogeography, country studies etc.

GEOGRAPHICAL ENVIRONMENT

Increased interest in defining the object and subject of research has always been characteristic for geography as a whole. It is explained not only by the change of the self-image of geography during its

development, but also by complexity of the issue itself. As I.V.Krut' remarked (Krut' I.V., 1978, page 248), "the history of geography appears in many respects as a chain of doubts in specificity of its object and subject. The problem of comprehension of objects of a science has appeared for geography almost as the most complex in all natural sciences". According to A.G.Isachenko (Isachenko A.G., 1971), "the grounds on which the system of geographical sciences is based have not been disclosed so far". G.N.Maksimov claims categorically that different concepts put forward in different times with regards to the "core" of geography (country studies, the chronological concept, the idea of the geographical shell, geographical regionalism, study of dynamic processes, geographical demarcation) have come "either unsatisfactory in themselves", "or represent a special case" (Maksimov G.N., 1997). He is a supporter of "the territorial concept", which, despite of a wide spread occurrence, can hardly aspire to be a complete and final solution to the problem.

The content of geography does not coincide completely with the specificity of the object under study also in the way that it depends, apart from this, "on the needs of material production and society, and finally on the history of geographical knowledge" (Lyamin V.C., 1978). If something does not have a common base and has essentially many objects, it relates already to competence not only of one science or one type of science, but to some set of different sciences aggregated with each other by a purely outward way. In the history of natural sciences geography influence was especially showed during an epoch of Great Geographical Opening. Expansion of arena of supervision over the modern phenomena, occurrence of new objects of research has huge value. Without opening, for example, двоякодышащих fishes and the fishes adapted for experience of long droughts, representation about a consecutive gain organisms of a land would lose essential substantiation. It is necessary to name dependence of scientific representations on the geographical environment geographical aspect of an actualism.

Geographical environment does not define evolution of productive forces in a developed society but influences it. The question of influence of geographical environment on evolution usually invokes bewilderment, in our view, ungrounded. Geographical environment has played a significant role for geology. It is clear for it enters the subject under study. The indication of influence of geographical environment on development of geology have quite often occurred in the literature, but, in our view, it is insufficiently developed and evaluated. V.V.Lamakin (Lamakin V.V., 1955) emphasized such dependence for geology and biology.

The geographical environment marked out by geographers, and biosphere in biology are significantly narrower spatially than the space of the earth system as a whole, but the narrowing of space can have a number of advantages, as, for example, possibility of functioning and, hence, analysis of "unified" biological -geographical - geological system in the frameworks "of the landscape sphere" consolidating in itself the notions of the earth's crust, hydrosphere and troposphere. The given system completely covers the field of application of geography, almost wholly of biology, takes into account also major interests of geology. Though the system has no "either bottom or top", it well allows to estimate problems of interaction and integration of sciences in the field of natural sciences and social sphere.

FRAMEWORK OF THE SYSTEM

The tendencies of divergence, movement of sciences away from each other, probably explained by the loss of a uniform pattern of the world plus subjective and corporate interests. But searches of fundamental laws and series of brilliant discoveries (especially in biology) condition existence of

another trend: unification. A good illustration to the problem is the inverse phase of a geosynclinal cycle: at the background of an ongoing plunge of the earth's crust there are risings forming insular arches, and as a consequence, insular biocenoses (geology, geography, biology are rigidly interdependent in the common subsystem of the system that we have chosen at the tendency of sciences divergence proceeding in the theory).

One may not discuss relationships between geology and geography (especially physical). They are so closely linked in their object base that they are actually one and the same science. Traditions of this separatism do not have deep roots connected with laws of nature. Biology, rather seemingly isolated, follows the same laws as geology and geography.

Mountain Kilimanjaro as well as a cheetah at its foot consist of the same chemical elements. Both living cell and a grain of sand sinking to the bottom of the ocean pick up and retain information of the magnetic field of the Earth. And during photosynthesis and exogenous destruction of rocks solar energy is condensed. Metabolic processes in biology have analogies to metabolic processes in the earth's crust during circulation in its water solutions.

The presence of the axis of the fifth order in the world of the animate nature helps to overcome the law of growing entropy (tendency to simplification). Destroying the world's strict crystal structure, the axis of the fifth order sharply simplifies and accelerates the course of biochemical processes based on potential difference. By the way, the treatment of entropy as a measure of disorder, and connected with it conclusion about thermodynamic death of the universe (most famous idea of the 20th century), contradicts both the results of biological evolution and complicating of the geological structure of the Earth during repeated cyclic tectonic processes. Nevertheless, the modern physics still insists today that, though the evolution is irreversible, it goes on towards universal and ever increasing growth of entropy. Actually, there are some ideas that entropy might not be a measure of disorder, simplification and destruction (Haitun S.D., 1998). In this case everything is not so gloomy. In the same way as it is in ecology, it is necessary to know and correctly use the laws of nature but not struggle with them.

Within the framework of the system of landscape sphere put forward by us (Nesterov E.M., 2000, 2004), the position of geology in natural sciences is perfectly clear, if we consider cause-effect relations between natural processes. During long geological evolution the earth's crust, hydrosphere and lithosphere have formed. Ongoing processes of volcanism, degassing and dehydration of the bowels of the Earth make the system stable, replenishing material losses connected with openness of the system. Life emerged only when geology had created acceptable conditions for it. Geological processes changing physical geography of the planet define in many respects also the general course of evolution of life. Certainly, there is also a feedback, but the fundamental character of geology for evolution of geographical and biological spheres is immutable.

Within the framework of the system of landscape sphere various social processes take place. They are subordinated by the same laws of nature as geology, geography, biology. This reality is masked by incorrect application of methods of mathematical processing of social sphere materials (Haitun D.C. 1998). Social variables have non-additive character that is they are arithmetically non-additive. Using Gaussian distributions that work well in natural sciences is incorrect in analysis of social phenomena as well. Mathematically correct processing of a social data package makes collateral subordination of various phenomena in the landscape sphere to the same laws apparent.

GEOSCIENCE

The majority of people lives in cities, we are surrounded with buildings, and we are deprived contact to the nature. Traditionally teachers are badly prepared for teaching natural-science disciplines. Knowledge presented by them запутанны, is deprived communication with the Earth and are difficultly applicable in an ordinary life. Besides, there is no also a complex sight at the nature world. As a rule, scientific knowledge of people is sketchy and incoherent that can cause growing mistrust of the public to a science. Widespread representations about stories of the Earth often simply shock – approximately half of population of the Earth believes that the planet is not more senior 10 000 years; only 48 % realise that the most ancient people and dinosaurs did not live in at one time; and only 44 % recognise that people have occurred from animals. In 19 century the archbishop Ushersky (England) has counted up, god has created the Earth on Tuesday in the afternoon for 6004 years B.C. The modern church is not engaged in such calculations under the Bible and agrees to accept the natural-science data.

But today such sciences as physics and biology (entering as base "Natural sciences" in all variants) are in deep crisis on understanding of a natural-science, materialistic picture of the world. Presence in the physicist «the beginning and the end» the Universe and нерешенность in biology of a problem of an origin of a life leave a place to "Creator" and the creative certificate. And, probably, as consequence of loss of "materialistic definiteness», sharp growth of number of the people more and more tightened in a captivity of religious fundamentalism of various sense, including is aggressive-terrorist is marked. Number of representatives of this group constantly increases, its political influence grows also, and after all they anathematize the most part of that, than we are engaged (geological time, environment and the ecology, renewed and not renewed resources etc.).

In geology there is no crisis of materialistic outlook. At it process of creation of own geodynamic theory comes to the end. The geology creates conditions for Life occurrence on the Earth and, forming the geographical environment, operates a course of biological evolution. These cause and effect characteristics also define fundamental nature of geology in system of modern natural sciences. Time of Spenser when our science finished a chain of natural sciences (the mathematician – geology) has passed.

In the thirties V.I.Vernadsky foretold the XX-th centuries that the mankind becomes solving geological force. Today for a year we move in the course of ability to live of more substance, than take out in ocean all rivers of the world, and it nearby 1 500 000 км3.

The concept of "infinite border» (endless frontier) Vannevar Bush was logic continuation of saying of Francis Bacon «should be subordinated the nature to operate it» the bible manual saying was which source in turn that the mankind should aspire to domination over the nature. Kuhn considers that we really are in a crisis condition if the old paradigm of interaction of a policy and a science has sputtered out, and new just it is necessary to create (Kuhn, 1970). "Sustainable development" or "the stability" defined as «satisfaction of modern requirements of development without damage to ability of the future generations to satisfy the needs» (Sarewitz, 1996) could become a new paradigm. In other words, it is necessary to live within the means, remembering future generations.

If we agree that the population should be competent in the scientific relation, to sciences about the Earth the central place in culture, so and in arts education, in the decision of the political dilemmas facing to the world community today, in development of scientific literacy belongs. For this purpose it is necessary to organise natural-science formation formation, since level of kindergartens. During trips to the United States me has amazed, how much children already in Preskul well know elements of

history of the Earth. They could tell with delight about a life of dinosaurs and their problems rather long and scientific.

It is necessary to learn to explain utility of basic researches for a society. It is uneasy. For this purpose it is necessary to be able to condense universal scientific descriptions, having released them from professional сленга, in capacious and accessible formulations. Besides, it is necessary to eliminate зашоренность a pure science, trying to explain potential benefit for a society from realisation of new scientific projects.

10 000 years ago in the end of last glacial age and number Homo sapiens has sharply increased in the beginning of development of agriculture. Today influence of it, the extremely successful from the point of view of kind evolution, is unprecedented. Activity of the person leads to air pollution, ocean and a land, to reduction of a biodiversity and climate change of the Earth. Nobody knows, than this history will end. People have enough abilities to provide a sustainable development, but for this purpose they should make common cause. In global human community to which all of us we aspire, stability and potential capacity of ecological system of the Earth are pressing questions. The society needs to find a way of prosperity without a damage to environment with a smaller loss for resources of the Earth. Sciences about the Earth can and should take the central place in the XXI-st century!

The geology has a concrete major place in system of scientific knowledge and an education system. Geology – fundamental science in natural sciences. Its place can be defined as secondary (or equal) in relation to physics and chemistry and as primary in relation to geography and biology (at level of relationships of cause and effect). Geological laws (processes) are not reduced to simple laws of physics and chemistry that predetermines existence of the geological form of movement of a matter. Exclusively world outlook value of geology (from an atom structure in nuclear geology to the Universe in geochemistry). The geology has general scientific and practical value. Ecological geology – its major component as a system component «the person – environment».

At the same time, there is no concept of modern natural sciences known to us where the geology would take a due place. In numerous textbooks and methodical grants in the list of sciences of modern natural sciences geology as the discipline simply is absent. After physics and chemistry the biology at once strides. Though and it is obvious that without historical methodology of geology the biology sags between the past and future, the chemistry of natural processes becomes abstraction, the ecology not in a condition to predict the future and to appeal to the past, and the geography without the geological base turns out to be consequence without the reason.

In the history of mankind there was "Stone Age". Then there has come shining «a century of bronze». In III millenium хетты, inhabitants of Asia Minor, have transferred ойкумене a secret железоделания, and on the earth there has come «a century of iron». Time of scientific and technical revolution has come, and we have entered «a century of atom». In other words: the mankind costs exactly so much, how much it has seized mineral resources, and historical stages of evolution of mankind are stages of its geological expansion.

Regulate decision-making the Earth Science cannot. But in maintenance with ecologically focused geological information the people (society), making decisions, one of its main problems consists. For example, summer sea ice of Arctic regions was reduced to record-breaking low level. By September, 2007 its area has made 4,28 million км2, having blocked the previous absolute minimum of 5,32 million км2, registered on September, 20-21th, 2005. Is, the truth, the data that warming, at least, has temporarily stopped. Informing of a society on a problem condition is a humanitarian problem of the Science about the Earth. Presence of good system of the notification about a tsunami in the USA

minimises consequences of this natural accident. The unwillingness of some the countries of pool of Indian ocean to agree about creation and maintenance of such system has resulted in 2004 in destruction of 500 000 persons and huge material losses. Though the tsunami reason – earthquake at coast of Indonesia – was insignificant on magnitude.

GEOECOLOGY

The relations existing from the beginning coevolution of the biological and bioinert environment, it is possible to name permanent (constant) ecological crisis conditionally. Permanent ecological crisis of biosphere of our planet, stimulates the reference to history of ecological crises of the past. They happened in the history of the Earth even long before occurrence of the person and conducted to extinction of set of regular groups. Crisis in the end of the cretaceous period, caused extinction of dinosaurs and accompanying them биоты мезозоя and the opened way to development покрытосеменных, the higher insects, mammals and birds in кайнозое is most known.

In a course the qotenery period sharp climate changes, alternation of glacial and interglacial epoch, fluctuations of level of world ocean, the seas and lakes, plant and animal life transformations, with especial force shown in high widths are accelerated. Holocen– the current piece of geological history has followed the termination of last freezing, covers the last of 12 thousand years and is the most dynamical time of ecological evolution. And we should live in it.

Last decades the keen interest is caused by system problems of ecology of the person — environments of its dwelling and mutual relations of the person with it. The considerable part of this circle of problems is occupied with geoecology – the part of ecology investigating interaction of the person and биоты as a whole with geologo-geographical aspects of environment. Geoecological conditions of existence of mankind develop of a background environment to which we have adapted, and their changes. The last can be result, both natural variations of an environment, and our influences on it, and is frequent combinations of that and another. Changes of parametres of environment can influence the person as directly, and indirectly: through changes of its objects social and economic activities (a construction, a plant and animal life, including cultivated, soil, water, etc.) . We mean such influences, when we tell about deterioration of ecological conditions or its improvement in frameworks noosphere concepts.

The majority of modern publications and discussions of geoenvironmental problems is devoted negative influences of socioeconomic activity on an inhabitancy and to return influences of the environment transformed thus on the person. Giving due to these aspects, we will notice that frequent revaluation of similar influences, just as strategy of large-scale alteration of the nature dominating in former years, — anthropocentrism displays.

It is much less given attention to research of influences on ability to live of actually natural processes, especially what are expressly or by implication connected with internal activity of the Earth. Among them short-term catastrophic natural influences – earthquakes, a tsunami, landslips, flooding, etc. became objects of serious researches and the protective actions which are carried out at different levels, up to state and international. But other aspects of modern geodynamic processes shown not so obviously, but it is long, and their integrated influences on the person are studied much worse.

For development of strategy of behaviour of a society in expectation of natural accidents it is important to mean that along with such almost instant accidents as earthquakes, a tsunami or flooding, exist the latent accidents – the natural phenomena developing slowly and leading to catastrophic

events through tens and hundreds of years. A freezing concerns number of the latent accidents, liftings (transgressions) and falling (regress) of a sea level and the big lakes, desertification, bogging, erosion and abrasion, smooth tectonic movements. Certain critical episodes — imposing of more frequent fluctuations of the natural phenomena (for example, imposing of a droughty season on is long developing иссушение) that the latent accident became obvious are required. Still the big intervals of time are necessary for investigating to establish periodicity of earthquakes in active zones (seismotectonic cycles), i.e. average repeatability of events or epoch of frequent strong earthquakes. Presence of the latent accidents and importance of an estimation of laws of repeatability of the catastrophic phenomena oblige to consider geoenvironmental problems in a historical retrospective show. Without such direction of researches it is impossible to understand a role of geoecological factors in a modern life and to do any forecasts in this area. Necessity of the historical approach is defined also by that variations of geodynamic parametres of environment rendered on a life of people not only negative, but also positive influences. To realise their value it is possible besides only in a historical context.

Consideration of climatic changes among the geodynamic phenomena demands the explanatory. The geodynamic phenomena partly cause a cold snap of last millions years. So, the high area of continents, an abundance of a land and mountains increases теплоотдачу planets and strengthens contrast of climatic ash value. However during голоцена (last 12 000 years) direct influences of geodynamics on a climate were not defining. For last 100 years average temperatures of climatic system of the Earth have increased on 0,6 0C. On the scale of a planet as a whole it much also serves as the main argument of apologists of global warming. The important certificate of such warming reduction of the areas of polar ices admits. But for last three years their volumes were restored. With end of a current cycle of activity of the sun warming can appear time anomaly – the predecessor of a global cold snap.

Almost all discussed phenomena and structures are opened systems through which borders the exchange of energy and substance is carried out. The system approach to research of influence of geodynamics on human communities allows to avoid "a geodynamic" determinism.

The world conference of 1992 in Rio de Janeiro on problems of development of a human civilisation has entered into use concept "sustainable development" where concern in an environment condition has been designated. That on less, it is possible to ascertain that though environmental problems accrue, ecology today is far not a social development priority.

Features of transition of Russia to a sustainable development are defined by its natural parametres, historical development, a social and economic condition and features of mentality of Russians following from them. For maintenance ecologically a sustainable development Russia has favorable conditions. Their number concern: high percent of territory with not broken natural ecosystems, an abundance of woods and fresh water stocks, low population density at its considerable concentration in cities. Now concern is quite often expressed by reduction of a population of Russia. However as a whole this process is not the negative factor of a sustainable development. It occurs in the majority of the developed countries where stable number is supported for the immigration account. In essence, for maintenance of a sustainable development of Russia growth, and population stabilisation is necessary not. Remaining extensiveness of the Russian economy creates additional pressure on environment, but it is rather insignificant because of low population density.

The share of Russia in the general issue CO2 makes now 5,7 % and approximately as much absorb woods of Russia (Losev, 2001). If to it to add that role which plays a conclusion of carbon from atmosphere the World ocean the issue made by Russia, almost twice concedes its admissible share

partially used by other countries. Judging by cost of the actions which are carried out in the USA for decrease of issue CO2, such use of the Russian share saves it billions dollars, and Russia has the right to bring an attention to the question on compensation to it of this ecological rent. V.G.Gorshkov (Gorshkov,1995) has counted up that completely to stop modern technogenic changes of global circulation of carbon, it is necessary to reduce twice the part of a land mastered by mankind which in that case should make about third of its area. Such optimum for preservation of biosphere to a variant there corresponds percent of the mastered territory of Russia.

It is not necessary to Russia to be afraid and global warming if that is. The revealed Arctic ocean will open access to oil and gas resources, and loss of a part of the territory which has been filled in with water, is compensated by resolute expansion of a zone of steady agriculture. Unfortunately, Russia is not lonely on geoecological space. Lifting of level of world ocean only on 5 metres, in a maximum possible on 66 metres, will result, for example, in flooding almost 90 % of territory Bangladesh.

In a science the principle of incompleteness of the information (an uncertainty principle) according to which information on natural processes and actions of the person on nature transformation is known is always insufficient for aprioristic judgement about all possible consequences. Having extrapolated principle action on society, we will come to a conclusion about that, as decision-making in political, social and economic sphere, as well as in sphere of preservation of the environment quite often occurs in the conditions of uncertainty. One of conditions of such uncertainty is occurrence of system of fears. In area of a policy decision-making has the extremely subjective character, and politicians quite often completely are deprived the intuition allowing at ignorance of laws of development of a society to foresee a consequence of accepted decisions. Непрогнозируемость behaviour of the political ship gives rise to system of the fears daily and prolonged in the future. We are afraid to go out of doors in a night-time, we are afraid to get acquainted with strangers, we are afraid for the future of children. We live in the Great Country during Brilliant Time, but we are afraid also of the country and time as we understand in an event not all (if at all something we understand). All it substantially, is consequences of insufficient understanding us of laws of evolution of the Nature and mechanisms of natural processes regulating (compensating) environment development. Not seldom, ecological horror stories have speculative character (in this case the purpose justifies means) caused by necessity of attraction of attention and means to an ecological problematics.

Variety of mutual relations in the nature, polilevel relations between the nature and техногенно the transformed environment, difficult processes in социосфере predetermine also a variety of approaches as in definition of a place of ecology in system of sciences, and its structure. Probably, it is possible to give preference to the uniform geoecological approach, but it does not have still sufficient theoretical and methodological base. Regulate decision-making geoecology cannot. But in maintenance with ecologically focused geoecological information the people (society), making decisions, one of its main problems consists.

Preparation of the population to any to negative natural events has great value. The knowledge got in the course of education and ability allow the person to react to dynamics of changes of environment adequately. Modern formation, especially pedagogical, should provide a double advancing in relation to requirements shown to experts now for now it is characterised by double backlog (Bordovsky , 1994). The advancing of educational process over topic of the day lies today in the field of uniform within the limits of geoecology of educational space of geology, geography and biology where searches of the general prevail over a being of distinctions. In the theory of an anthropogeny without geoecology it is impossible to plan ways of the decision of modern environmental problems – planet climate change, decrease in a natural biodiversity, desertification; metallization of landscape sphere

(biosphere) and others. In the theory and formation practice to exclude a circle of questions of geoecological character it is not represented today possible (Solomin V.P., Nesterov E.M., 2005).

Education many-sided, continuously also proceeds during all human life. To tell that our activity in this direction is absolutely original, it will be wrong. The world community is excited with the same problems, and it uses similar receptions for increase of erudition of a society. The major problem of geoecology in whole and ecological geology in particular is formation of ecological literacy of a society at all steps of formation. In Russia to this problem the smallest attention is paid. As a result we have almost illiterate population in the geoecological relation. To prevent accidents of natural and anthropogenous character not in a condition and geoecological formation. But to minimise consequences and even to avoid them, having armed the person with knowledge and the forecast it is possible and it is necessary.

The society regulates behaviour rules – morals. Morals, becoming general, it is made out in the form of the Law. Such Law is most comprehensible by the Society. Ecological norms of behaviour of the person should become the law.

EXTERNAL AND INTERNAL FACTORS OF DEVELOPMENT OF A SCIENCE

Among factors of development of a science we will concern the most important. The public superstructure in general influences science development, is the strongest on sciences historical. In this case there can be, in particular, a resonance of ideas – occurrence in any branch of a science of hypotheses, ideas or methods, "conformable" to political ideas or ideas of absolutely other area of the science, appeared approximately during the same epoch. The resonance of ideas, as well as other forms of interrelation between different areas of a science, is the external factor only in relation to separate branch of a science. We will result examples. Occurrence of companions of the Earth has recovered "resounding" idea about a Tungus meteorite as a spaceship. Representations about natural selection, correlation, etc. in Darvinism were transferred to area of inorganic processes. The Resonance of ideas – is far not the paramount factor of influence, but sometimes is characteristic enough.

Especially it is necessary to consider communication of philosophy with concrete sciences. It is possible to consider philosophy and as third "floor" or "the roof" of a scientific building crowning area of scientific search. The philosophy influences search area in a science in historical pauses more considerably. In the field of philosophy and science parities distinction between historical and "exact" sciences visually affects. Revaluation of empiricism and insufficient understanding of value of historical development and genetic relations at which operate not only physical and chemical, but also structural laws is sometimes peculiar to representatives of "exact" sciences in some problems.

The natural sciences philosophy covers the most general results of a science as a whole, dialectics of its development and puts the problems following from a current state of a science. To carry out these problems without science history it is impossible, therefore it is also one of the important bases of philosophy of natural sciences. The question on immanent (internal) laws of development of geology is insufficiently developed. More often in the general form it is underlined its dialectic development, on display of laws of transition of quantitative changes in qualitative and «negation negations» This theme is is short considered by V.V. Tikhomirov (Tikhomirov V.V., 1963), to it and V.E.Hain (Tikhomirov V.V., Hain V. E, 1956), D.I.Gordeyev (Gordeev D.I., 1973), etc. However, understanding of essence of internal logic of development of a science not unequivocally.

Under internal logic of development of a science means, first of all, continuity and logic communication of ideas. Therefore the internal logic, in its opinion, more all «is inherent in mathematics» and in general ostensibly is more strongly shown in the sciences having «the most accurately outlined axiomatic basis» which «gives the chance to receive new knowledge a deductive way». This position односторонне also is based on research of mainly mehaniko-mathematical and physical and chemical sciences. We will notice that the basic dialectic laws in development of such historical science as geology, are shown not less accurately, than in "exact" sciences.

As it is known, contradictions – the basic motive power of development. The major contradictions, probably, contradictions between the nature and its knowledge, between experience and the theory are. The growing quantity of supervision does not keep within frameworks of existing hypotheses, enters with them the contradiction, there are new, often polar hypotheses. In it it is possible to see also reflexion of the law of transition of quantity (scientific supervision) in quality (new generalisations). Not the most true hypothesis, and that which at the given stage explains the greatest quantity of supervision usually dominates. Internal contradictions between various theories, between a level of development of geology and other sciences (and their methods) etc. are even more numerous

The internal logic of development of geology is essentially defined by process of gradual disclosing of various properties of studied object. Though the object investigated by geology – the Earth – is rather constant (except biosphere which rather quickly changes), but the geology subject develops. If not to approach formally экзогенные and эндогенные processes which differed with observers from antiquity, became a subject of special attention of a science in essence only in second half XVIII century But a geology subject changed and it is absolute – in it appeared палеомагнетизм, median oceanic ridges etc.

Relative and absolute change of an object of research for geology is characteristic. It causes progress of methods (and it is caused by it), generates new hypotheses, changes science structure. In essence, statement of a new problem if it is not "pseudo-problem" and is formulated correctly, quite often is change (addition) of an object of science. Therefore problem promotion – a high-grade and important part of scientific process. Expression «correctly to put a problem – half it to solve» has the bases.

In a science the principle of incompleteness of the information (an uncertainty principle) according to which the information on natural processes and actions of the person on nature transformation is always insufficient for aprioristic judgement about all possible consequences (Rejmers, 2004) is known. Having extrapolated principle action on society, we will come to a conclusion about that, as decision-making in political, social and economic sphere, as well as in sphere of preservation of the environment quite often occurs in the conditions of uncertainty. One of conditions of such uncertainty is occurrence of system of fears.

In area of a policy decision-making has the extremely subjective character, and politicians quite often completely are deprived the intuition allowing at ignorance of laws of development of a society to foresee a consequence of accepted decisions. Not прогнозируемость behaviour of the political ship gives rise to system of the fears daily and prolonged in the future. We are afraid to go out of doors in a night-time, we are afraid to get acquainted with strangers, we are afraid for the future of children. We live in the Great Country during Brilliant Time, but we are afraid also of the country and time as we understand in an event not all (if at all something we understand).

The nature of ecological fears is same also. As an example wide display of a radio phobia can serve. We in panic are afraid at all of a being of the phenomena (as we have rather vague idea about their), and simply such concepts as the Radio-activity, Radiometrija, etc. Narrow-minded representations

about a radio-activity it is possible to destroy the Ionizing radiation only acquaintance to radio ecology.

Formation of system of ecological fears is connected, basically, with representations about Global Ecological Crisis. In our opinion, global ecological crisis-it in many respects subjective, instead of an objective reality:

- Threat of a population explosion and the predictions of Maltus connected with it about limiting food resources;

- A hotbed effect because of the strengthened emission in atmosphere of carbonic gas with the promise of global warming;

- Representations about irreversible environmental contamination;

- Representations about a fast exhaustion of power resources;

- And many other things.

All it substantially, is consequences of insufficient understanding us of laws of evolution of the Nature and mechanisms of natural processes regulating (compensating) environment development. Quite often, ecological horror stories have speculative character (in this case the purpose justifies means), caused by necessity of attraction of attention and means to an ecological problematics.

Actually, it and many other things the Earth for the almost five-milliard history passed all repeatedly. Took place and radial increase in large populations of live organisms, and global warming, including with hotbed effect participation, owing to strengthening of volcanic activity. As in the past, and processes of natural regulation of birth rate (we will not be more than can be) today joined, and surplus of carbonic gas stimulates formation processes карбонатных the rocks connecting carbonic gas. Consumption of hydrocarbonic raw materials grows in an arithmetic progression, and it frightens. But the gain of stocks goes on a geometrical progression. The prediction and opening by the Russian geologists condenced gas deposits has removed a problem of an exhaustion of hydrocarbonic resources for 5-6 centuries during which there will be alternative energy sources.

CONCLUSION

Searching for an objective relationship and unity of the parts of the system chosen by us within the landscape sphere allows defining common educational space for geology, geography and biology. Modern education, especially pedagogical, should provide a double lead with regards to requirements demanded of experts now, for now it is characterized by a double backlog. Appearance of institutes of natural sciences in the system of teacher training universities allows solving of the problem of this backlog. But creating of educational systems within the framework of all-level preparation does not go out of the frames of formation of blocks of disciplines so far. The blocks remain the same almost independent geography, biology, chemistry, and geology. Russia had approximately these natural sciences at the beginning of the 20th century. This is inherent today in the western school (Aldridge B., 2003). Advancing of educational process beyond the topic of the day lies now in the range of uniform educational space of geology, geography and biology, where searches for the general prevail above an essence of discrepancies.

Forming a general theory of evolution of the Earth is not a matter of too far future. As a consequence, we should expect a real integration of natural sciences in educational process as well. Comeback of a

Jules Verne type optimistic belief in science and education is not the worst consequence of such integration. Anyway, it is a good route away from constant stresses of uncertainty, which is the main scarecrow of the nearest decades.

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GEOECOLOGY OF URBAN AREAS

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Abstract

With diagnostics of the geosystems it is possible to estimate a condition of an environment and a degree of technogenic loading in the environment. Coastal industrial cities have a big impact on geosystems. Studying "city- waterbodies"-systems is important for complex ecology-geochemical research of urban areas. During our research it was confirmed that the influence of different technogenic objects of a coastal zone (a city, settlement, industrial sites etc.) causes accumulation qualitatively similar geochemical associations. Generally qualitative and quantitative parametres of technogenic pollution of water objects in a greater degree depend on economic structure of a water basin, rather than on their morphology and hydrodynamic conditions.

Key words: *environment, urban areas, technogenic pollution, ecology-geochemical research economic structure.*

The aim of this research is to compare sediment geochemistry of two waterbodies at the northern coast of the Gulf of Finland. They have different origins and histories. Lahtinsky Rasliv had a connection with the Baltic sea during the Holocene. Sestroretsky Rasliv is man-made. The focus of this article are the geochemical events connected with the influence of Human evolution on natural history. The actual material for analytical research is collected during field seasons 2004-2008. Analytical has been done at the Laboratory of Environment Geochemistry named after A.E. Fersman which is part of Herzen State Pedagogical University of Russia. The samples were analyzed using X-Ray fluorescence method to assess concentration of Pb, Zn, Cu, Ni, Fe, Co, Mn, Cr, V, Ti, Sr and As.

Cluster analysis of the samples has allowed to determine that the strongest link is between Ni-Zn (Sestroretsky Rasliv) and Cr-Fe (Lahtinsky Rasliv). Negative values of correlation between Sr and other elements are typical for sediment samples of Lahtinsky Rasliv. Similar interrelation isn t observed in Sestroretsky Rasliv.

Results of the factorial analysis allow to allocate the following factors. The factor 1 has 45,5 % (Sestroretsky Rasliv) and 73 % (Lahtinsky Rasliv) total variance. For Sestroretsky Rasliv the factor 1 for Zn, Ni, Fe, Cr, V, and Ti is negativ. For Lahtinsky Rasliv the factor 1 has the strongest link with Zn, Cu, Ni, Co, Fe, Cr, V, and Ti; the factor 1 is negativ for Sr. The factor 2 has 16% (Sestroretsky Rasliv) and 8% (Lahtinsky Rasliv) total variance. For Sestroretsky Rasliv the factor 2 has the strongest link with Pb, and Sr, the factor 2 is negativ for Cu, and As. For Lahtinsky Rasliv the factor 2 has the strongest link with Mn, the factor 2 is negativ for Pb.

As you can see on table, absolute concentrations of elements in most cases are similar with typical concentrations for water objects with a low and average degree of pollution.

During our research it was confirmed that the influence of different technogenic objects of a coastal zone (a city, settlement, industrial sites etc.) causes accumulation qualitatively similar geochemical associations into which structure practically always enter Pb, Zn, As, Cd, Ag, Cr, Sr. Generally qualitative and quantitative parametres of technogenic pollution of water objects in a greater degree depend on economic structure of a water basin, rather than on their morphology and hydrodynamic conditions.

There is a possibility of an estimation of degree of technogenic influence on the city environment through studying of geochemistry of ground adjournment.

Most strongly technogenic influence on an environment and the population is shown in large industrial cities which on intensity and the area of anomalies of polluting substances represent technogenic geochemical provinces [1]. One of such cities is St.-Petersburg.

In city boundaries the considerable quantity of sewage of industrial and household use which arrive in water objects in city boundaries and near to it is formed. Besides, the considerable quantity of polluting substances arrives with a superficial drain with city territories and with an atmospheric precipitation. Constant anthropogenous influence leads to the accelerated accumulation of polluting substances in ground adjournment [2].

Ground adjournment are traditionally used as the indicator for revealing of structure, intensity and scale of technogenic pollution. Being a final link of local landscape interfaces on a chemical compound it is possible to allocate technogenic streams and to estimate degree of technogenic loading on a waterway. Especially brightly similar dependence is shown in pools of the small rivers [3,4]. Anthropogenous streams of dispersion in ground adjournment of water currents полиэлементны, are presented by a wide set of heavy metals, and each source of pollution is characterised by the association of chemical elements-zagrjaznitelej different both a set of elements, and a parity of their concentration [5]. Proceeding from the above-stated there is actual a question on geochemical research of ground adjournment and the analysis of the received geochemical associations on an example of the river the Sink in Petersburg. Object of research is the small river passing through the centre of industrially-urbanised area. In total it has been selected more than 300 samples.

Measurements were made рентгенофлюоресцентным by a method. The method allows to define the total maintenance of heavy metals Pb, Zn, Cu, Ni, Co, Cr, V, As, Sr and оксидов Fe2O3, MnO, TiO2. As analytical base the laboratory of Geochemistry of environment РГПУ of a name of A.I.Herzen was used.

For convenience of creation картосхем the rectangular model of the river the Sink with preservation of scale of an arrangement of profiles and sampling points has been constructed. All картосхемы have been constructed by means of software Surfer Mapping System (Version 7.04).

On sediments to characteristics the river the Sink is characterised by the primary maintenance of ilisto-clay adjournment to 20-40 sm with a small amount gravijno-galechnyh inclusions, 40-60 sm - тонкоилистыми sand, 60-90 sm – sredne - and coarse-grained sand.

Difficulties of interpretation consisted in the following:

Absence of maximum permissible concentration for ground adjournment;

Absence of the data on background values for ground adjournment of the river the Sink;

Considering the received results on all investigated site from the point of view of anthropogenous pollution, it is possible to allocate some groups of elements:

-Pb and As with high factor of correlation both under the superficial data, and on a cut. Which behaviour it is possible to explain as follows:

- High value of concentration Pb and As in a layer And on a site of a profile №7 is connected with a hydrodynamic barrier in which quality the channel the Winter flute and navigable movement on it, and the contribution of motor transport passing through the Singing bridge acts. Rather raised maintenance on this site in layers and In speaks about migration of these elements downwards on a cut;

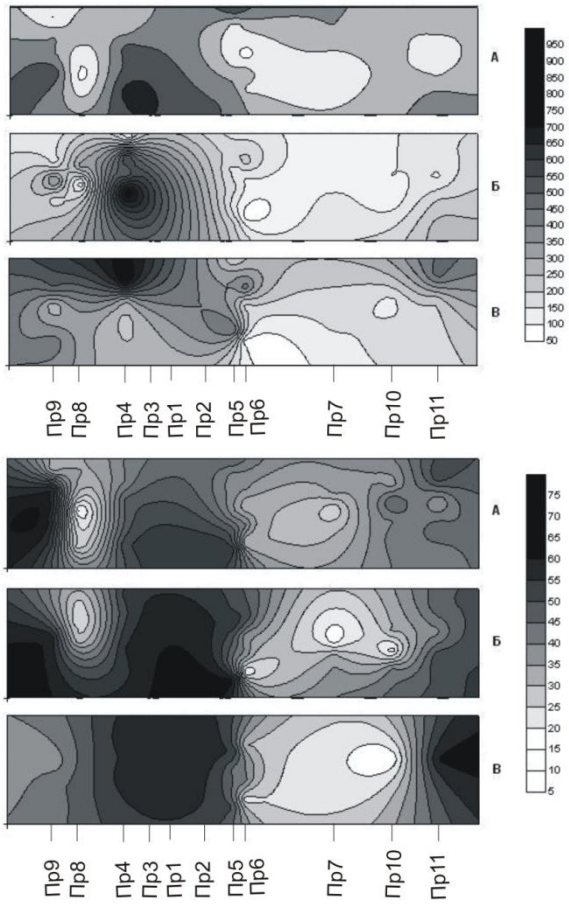
- The relative increase in values of concentration to a profile №4 is caused: first, presence of a mechanical barrier (the Green and Red bridge); secondly, the contribution of a considerable quantity of exhaust gases of motor transport concentrated to this site.

- High correlation between lead and arsenic speaks about unity of a source of their receipt.

Elements as Zn, Ni, Cr, V, Fe, Mn, Ti, Sr, Co are observed high concentration both in a blanket, and on a cut that is caused by high anthropogenous influence on these sites (presumably automobile and navigable movement, or dump of sewage);

- On a cut the tendency to accumulation on these sites that speaks or about migration downwards elements on a cut, or about presence of a long-term source of pollution remains;

- Rather weak pollution on separate sites, probably, is caused by watercourse strengthening on this site owing to narrowing of a channel of the river.



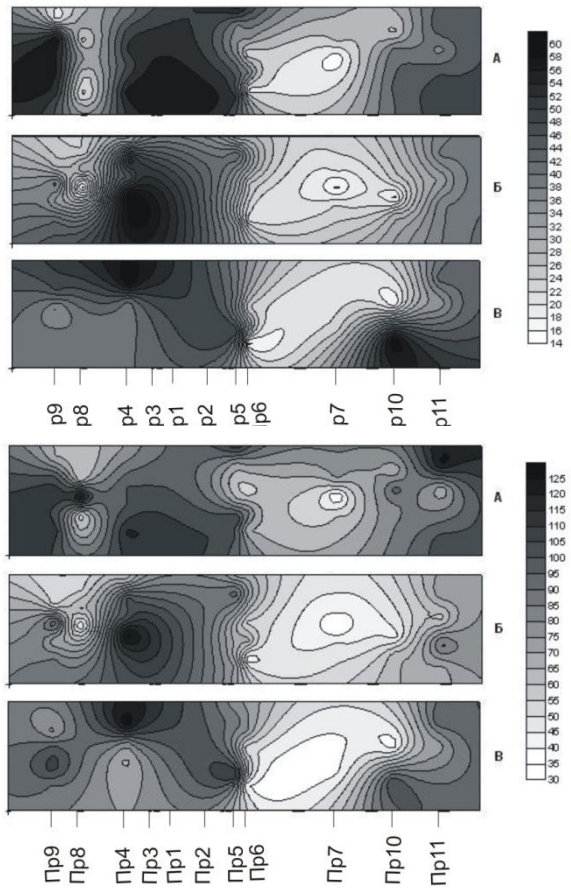


Fig. of 1 Kartoshemy of distributions of concentration zinc (mg/kg) (at the left in the top corner), vanadium (on the right in the top corner), nickel (at the left in the bottom corner), chrome (on the right in the bottom corner) in ground adjournment of the river the Sink

Concentration Cu remains to a constant as on a cut so on all extent of the river the Sink that speaks or about a finding of a source of pollution above on a current, or is a natural geochemical background.

Concentration factors on each element for all object of research have been counted up and the geochemical association for the river the Sink (tab. 1) is made. In connection with absence of background values the data on background values for soil of this region [6] was used.

Calculations of an indicator of Ms of % show that leading elements of geochemical association in ground adjournment of the river the Sink are Pb, Zn, As and Cr which intensively collect at technogenic influence. The general estimation shows that for the given object the average level of technogenic pollution and simultaneously moderate degree of sanitary-toxicological danger are characteristic.

Comparing the received results to maximum permissible concentration (maximum concentration limit) for soil, the high maintenance of the arsenic which maintenance on the average exceeds maximum concentration limit in 10 times is established. Rather high maintenances are characteristic

also for zinc and lead (Pb-2,5 time, Zn-1,8 time). Value Cu, Ni, V and Mn (indications which above background, but there is less than maximum concentration limit) says about possibility of the further pollution of the river of the Sink these elements that also it is visible from table 1.

Speaking as a whole, the river the Sink is subject to rather low anthropogenous pollution. Places of the highest accumulation of elements are dated for sites of active influence of automobile and navigable movement, and also plum of sewage. But during too time, research on a small site of the river shows considerable enough migration of elements on a cut that the Sink can lead to secondary pollution of the river.

There is a necessity of carrying out of similar researches on other water objects of St.-Petersburg for qualitative and quantitative comparison of results. To adhere the data to industrial targets and to construct geochemical associations for these enterprises for the purpose of revealing of elements-indicators of pollution. To carry out long-term geochemical monitoring of adjournment, thus, to track migration of elements and degree of influence of concrete sources of pollution.

With diagnostics of watergeosystems it is possible to estimate a condition of an environment and a degree of technogenic loading in the environment. Coastal industrial cities have a big impact on watergeosystems. Studying “city- waterbodies”-systems is important for complex ecology-geochemical research of urban areas.

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MODERNIZATION OF THE RUSSIAN SYSTEM OF HIGHER EDUCATION [11]

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Abstract

The goal of our research was to analyze changes that took place in higher education in the last decade and evaluate efficiency of its functioning. This paper was prepared according to data of sociological survey conducted in 2007-2008 in Novosibirsk region at 20 institutions of higher education (1945 questionnaires of undergraduate university students and materials of 46 interviews with experts - universities representatives). The obtained data were compared with one of first (initial) research conducted in 2001. Results of the study show that in observed period positive changes in higher educational system took place, it develops in a mainstream of modernization. Universities changed their strategies from survival to active behavior on the market of educational services according to their comparative advantages and goals. However considerable problems are still remain. Data obtained from students' survey showed that real change of quality of education is not so noticeable. There is still low part of students (34% of the sample) who have research competence (experience of participation in a scientific research).

Key words: higher education, modernization, students, experts, university, survey, competence

1. INTRODUCTION

Russian higher educational system of 1990-s was characterized by extensive growth in conditions of insufficient resources (financial, physical and personnel ones). This fact has predetermined low effectiveness of the system functioning and poor performance of tasks that were expected by society to be fulfilled by education (basic of which were high quality of education and competitiveness of trained specialists, and in the more general sense - keeping up competitiveness of domestic higher school, its economic and social efficiency in new social and economic conditions. Currently system of higher education encounters two types of interconnected challenges. First type concerns problems caused by radical political and socio-economic transformation that the country has undergone within 2 last decades. This type of problems appeared due to the fact that initially domestic higher school in soviet years was constructed for implementation of specific goals and tasks (mostly for industrializing the country). Second type is problems connected with post-industrial tendencies of development in the world economy and world society, ongoing informational revolution, coming era of economy of knowledge. Both types of challenges address the competitiveness of Russian higher education.

[11] The article was prepared in the frames of project №30 Presidium' SB RAS Programme "The role of knowledge economy in development of innovation sector of Siberia".

We consider that national higher educational system should not develop aside of world tendencies of postindustrial transition in education in order to stay competitive. Here are some manifestations of this process known from world experience:

- "Massovization" (popularization) of higher education (widening of sphere for professional application of higher education, shift of social functions of higher education);
- Increase of paid education share (broadening of private universities sector and nonstate forms of financing in education, shift from mostly state financing to support by private investors and corporations);
- Transition to "flexible" university specialties, forming of individual life-long learning strategies, using "competence" approach in education;
- Internationalization of higher education, forming of common European educational space (Bologna process, intra- and interstate educational mobility);
- Appearance of new educational forms ("virtual" universities, "corporative" universities, business-schools, world "open" universities, etc.);
- Alteration of educational technologies: decrease in share of "processual" forms (explanation), increase of "procedural" ones (education through active experience – trainings and case studies); usage of IT; "flexible" learning process (individual choice of educational programs); inclusion of research into learning process;
- Universities obtain commercial function in addition to research one (that is implementation of research results in commercial products, licenses, patents etc.);
- Up-to-date educational infrastructure (laboratories, campuses etc.);
- Business participation in development of higher educational system and scientific research at universities;
- "Second academic revolution" – integration of academic and entrepreneur sectors;
- Construction of university complexes that unite educational organizations and structures of various levels that provide wide spectrum of educational services (including retraining and qualification increase), scientific departments (research centers, centers of innovations, information centers), elements of implementation and industrial engineering (techno parks, pilot-scale industry), other structures that widen links of a university with its environment [Galushkina, Kniaginin, 2005].

In the 2000-ies new state policy in educational sphere in Russia was characterized by a huge wave or reforming that was guided by an idea of educational modernization lasting for now. Governmental interpretation of goals and tasks of Russian educational system modernization can be seen in a row of documents. One of key documents is "Conception of Russian education modernization till 2010" (Concept for modernization…,2002). This document claims a ground for reform program: "today the role of education is determined by the tasks of Russia's transition to democratic and legal state, market economy, necessity to overcome dangers of lagging behind the country from the world tendencies of economic and social development". Another document called "Federal goal-oriented program of education development for 2006-2010" says that "goal of education modernization policy in mid-term

perspective is to provide competition of Russia on the global scale" (Federal destination program…, 2005).

Goal of empirical research [12] presented in this paper is to study and assess direction of changes that took place in system of domestic higher education in the last years. This assessment is to be conducted from the viewpoint of ability of this system to react to tasks of today.

We believe that Novosibirskaya oblast (region) is a good ground for sociological research of processes in higher education. This region is a large educational and scientific center in Asian part of Russia. Last decade there was accepted the course towards innovational development of economy and it is realizing now.

Key tasks of our sociological research were:

a) Analysis of national higher school development tendencies in comparison with world processes;

b) Dynamic tracing[13] of changes in system of higher education of the region (Novosibirskaya oblast) happened in the last years;

c) Study of students' demand for obtaining of general and specific competences required today at labor market and corresponding to the needs of innovational development of the region's economy;

d) Gathering students' opinions on quality of their professional training.

Our research was based on a hypothesis that training process in higher educational system should be based on competence approach in order to be effective in informational era (Baidenko, 2006). Therefore one of research tasks was to assess the scale and form of usage of this approach and its perception in higher school. Another task was to determine obstacles and stimuli for its implementation.

In this research we define innovative potential as a set of features and competencies necessary for implementation of innovative activity. Innovative activity is understood as an activity to create, use and develop of novelties and innovations.

Several indicators of creative and non-standard thinking, experience (in different forms) of participation in scientific research (researcher competence) were defined as indicators of innovative potential. These indicators were considered in the context of wider circle of other constructive forms of activity such as success in education, encouragements for success in education and research, all kinds of activity devoted to increase personal creative potential, creative and sport achievements, activity on labor market, leadership features etc.

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[12] The research had financial support from the Russian Humanitarian Scientific Foundation (RGNF) in alliance with Administration of Novosibirsk oblast - Project # 08-03-65301 a/t "Requests of regional labor market to competences of graduates of the system of professional education" and from Presidium SB RAS - Expedition Project of 2007 (both guided by I.I.Kharchenko).

[13] In comparison with 2001, when IEIE SB RAS conducted (by) research of educational behavior of student youth and processes in the higher education system. There were 1000 students surveyed and expert interviews with universities' representatives conducted in Novosibirsk region. In second survey of 2007/08 comparable methodology and questionnaires were used. All comparisons were made between weighed data arrays.

Research methods: questionnaire for students at place of study (or at place of practical work); formalized interview with experts. Students' were questioned either with paper questionnaires or through the Internet.

Empirical base of the research: questionnaire (1947 respondents) of graduate and undergraduate students of daily (full-time) education in 10 state and 3 non-state universities of Novosibirsk city along with 6 subsidiaries of universities in Novosibirsk region. The research was conducted by IEIE SB RAS in 2007-2008. Sample was quoted by basic groups of specialties in higher education. The sample is representative for universities and their subsidiaries in Novosibirsk region. In universities formalized interviews with experts – heads and representatives of universities' departments were also conducted (46 respondents).

The experts were: pro-rectors in charge of scientific and educational work, directors of subsidiaries, deans, heads of chairs, lecturers, professors, heads of re-training and qualification advance departments, heads of job placement and students' practical work departments, directors of international cooperation centers and departments of quality of education etc.

The following branch groups of higher education specialties are presented in the sample: 1) natural sciences; 2) humanities; 3) education and pedagogy; 4) public health; 5) economy, management and law; 6) energy, automatics, electrical engineering; 7) technological machinery and equipment, material processing; 8) IT; 9) building and architecture; 10) agriculture; 11) geodesy and land management, personal and social safety; 12) transportation and communication; 13) service sector and trade, production of food and consumer goods engineering.

2. SOME STATISTICAL ILLUSTRATIONS

Within the 1990-ies quantitative proportions of system of domestic vocational education have changed notably. The reduction of a primary vocational education (PUs) was overlapped by growth of higher education (VUZes). The expansion of a system of higher education is notably noticed in Novosibirsk region as well as in the Russian Federation in whole (fig.1,2).

In the first years (1992-1993) of market reforming in economy the number of students at universities has reduced because of insufficient financial resources from the budget. Almost the whole period of 1990-ies was characterized by more and more shrinking financial support from the state. Another reason was inevitable period of adaptation in society to new conditions and goals. After a deep full (by the beginning of the 1990-ies) of prestige of education in consciousness of population the value of education revives. Mostly it was connected with estimation of benefits of individual investments in education. So it was seen starting in the mid-1990-ies extensive development of higher educational sphere in Russia in whole and in Novosibirsk region especially (figure 1, figure 2).

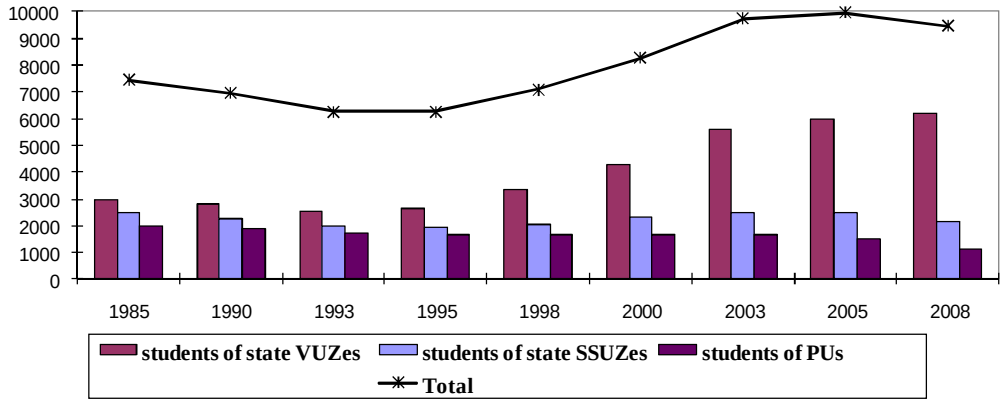

Figure 1. Number of students in the state higher (VUZes), secondary special (SSUZes), and primary (PUs) professional educational institutions in the Russian Federation (in thousands)

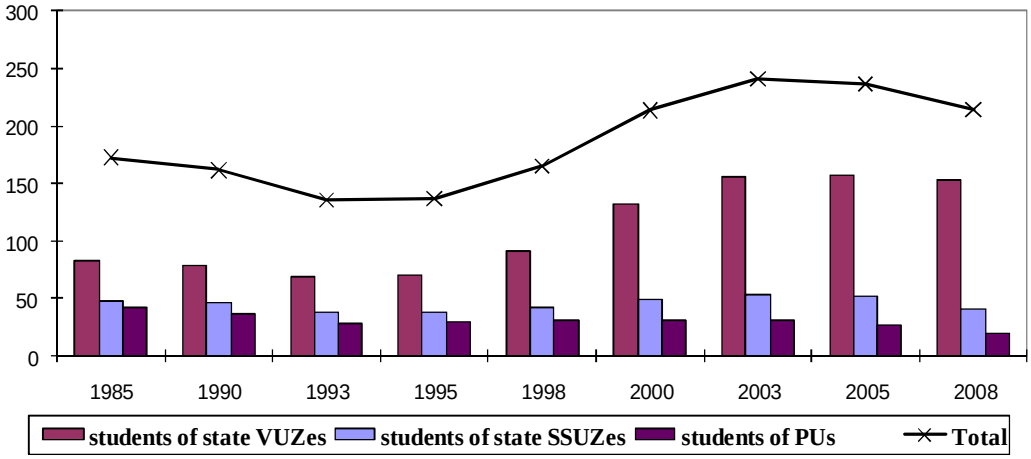

Figure 2. Number of students in the state higher (VUZes), secondary special (SSUZes), and primary (PUs) professional educational institutions in Novosibirsk region (in thousands)

The peculiarity of modern situation is that young people now have an expanded choice of higher educational institutions (including paid education in state and non-state universities). And on the contrary to the Russian Federation in the whole in Novosibirsk region almost all graduates from complete secondary school could continue their education in higher educational institutions in one of the possible form of study (full-time, part-time or correspondence courses, night courses) – of course if we abstract from their plans and all limitations of real life. In recent years the influence of

demographic factor was noticed – the number of secondary school-leavers become reducing (figures 3,4).

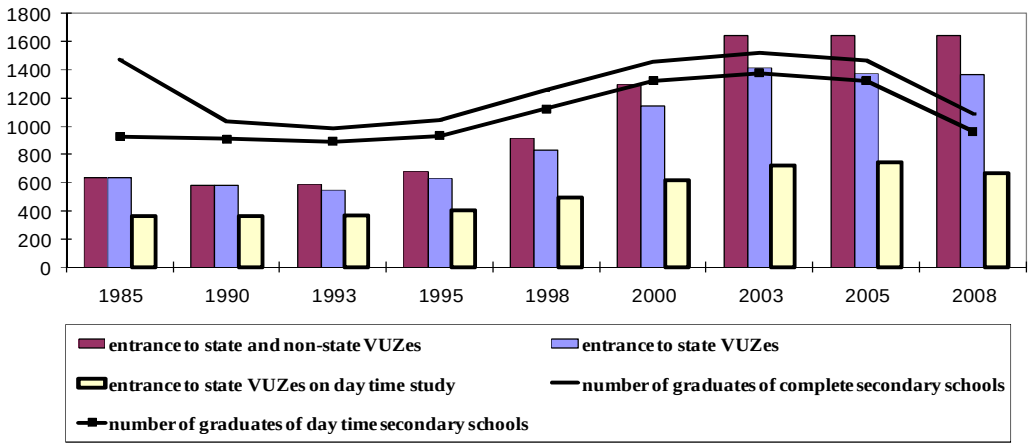

Figure 3. Entrance of students in higher educational institutions of all forms of ownership and graduation from state complete secondary schools in the Russian Federation (in thousand)

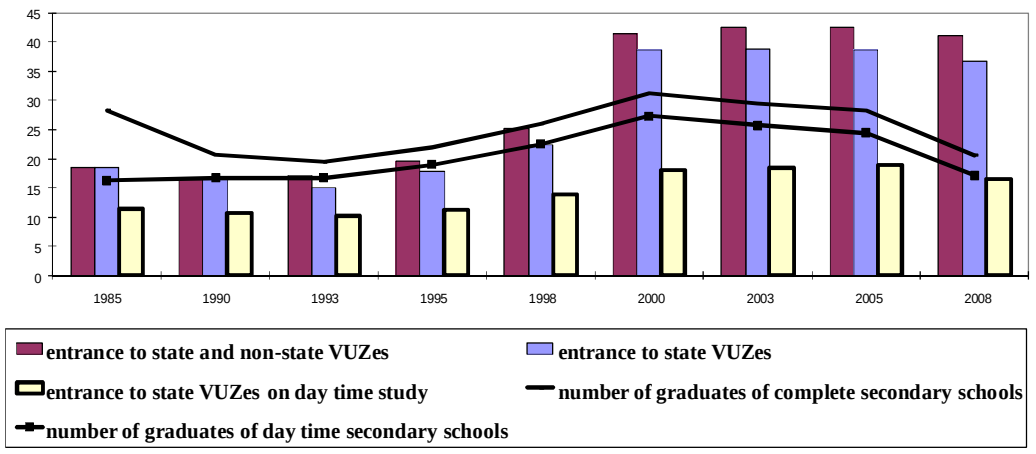

Figure 4. Entrance of students in higher educational institutions of all forms of ownership and graduation from state complete secondary schools in Novosibirsk region (in thousand)

The reviewed years are characterized by widening of payment in Russian system of vocational education especially in higher one. A share of paid education grew from year to year. So, in Novosibirsk region in higher educational institutions in 1996 - 24,9 % of new students were enrolled for payment (including 18,2 % on a daytime departments), in 1998 – already 45,1 %, By the beginning of 1999/2000 academic year 26,7 % of all students of state SSUZes (technical schools, colleges) were studied for pay , in state VUZes — 41 %. Besides there was a tendency of increasing these indexes in years to come. Later in 2009 in VUZes- 63,7%, in SSUZes 30,7% of students (at all forms of training) were studied for pay (according to official statistical data) (fig. 5).

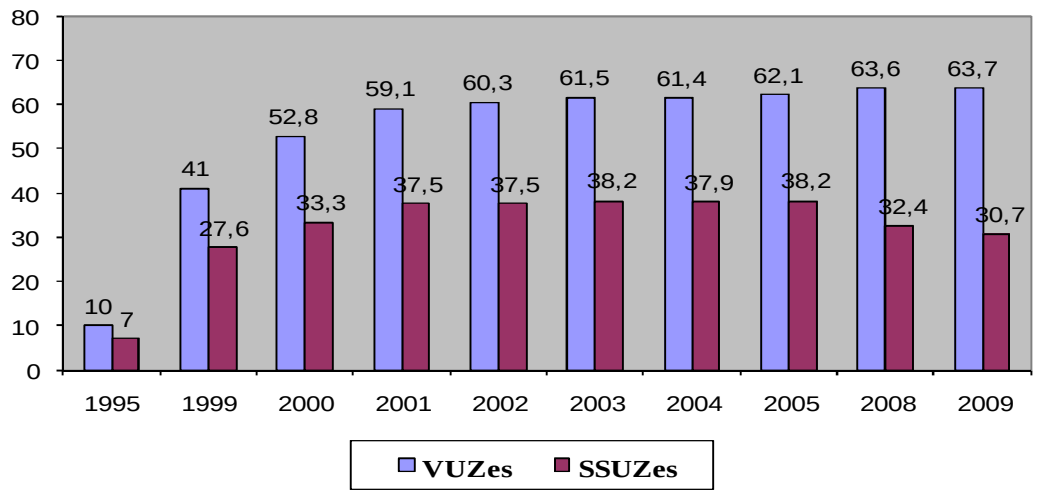

Figure 5. Share of students paying for their study in state professional educational institutions (all forms of training) in Novosibirck region, % to total number of students

3. CHANGES IN ACTIVITY OF UNIVERSITIES

Outcomes of our research demonstrated that in all Novosibirsk region the system of higher education had considerable positive changes in the last 6-8 years. Directions of these changes reflect tendencies of the whole country higher educational system:

1) In recent years system of higher education goes through significant changes. Universities and their large subsidiaries have changed their behavior: from survival to active behavior on the market of educational services by exposing their relative advantages and by basing on these advantages their strategies of behavior and development. Mostly universities still raise paternalistic financial expectations to the state, but it doesn't prevent them to obtain relative financial independence and to finance development from their own budgets.

2) Universities have transited from structures acting by laws of a "command economy" into active players of educational services market, into peculiar educational (more rarely scientific-educational) corporations with adequately developed management, marketing and PR structures, with partners (employers, regional administrations, educational organizations of different levels, scientific organizations, foreign universities etc.). Universities develop there own as well as "invited" educational structures that provide for students additional opportunities to obtain specific competences. Cooperation between universities of the same specialization and between universities and colleges has strengthened on the level of Siberian region and on the level of Russia in whole. International cooperation in forms of students and professors exchange, joint conferencing and researching also has widened. A number of universities have started international educational centers, where students can study a foreign language and a country culture, can undergo testing for partaking in international students exchange.

3) Government strictly controls universities activity; sometimes it imposes “innovations” by administrative measures. It is necessary to tell that irrespective of quality of provided educational services all higher schools have succeeded in marketing activity, - learned how to look well, how to convincingly present the achievements both significant, and modest, to react on-the-fly to all external influences (checks, certifications, public attention etc.). Majority of universities manage to show good results being assessed by official indicators but often this is not connected with factual increase in quality of educational services. The state from time to time imposes new "rules of game" to higher schools by administrative methods (in organizational, economic and financial activity, educational process and so forth).

Universities actively resist to a number of innovations, coming from above, accepting such kind of “innovations” only formally, and emasculating the very essence of them. Other innovations are being successfully adapted to universities’ notions, preferences, goals and resources.

4) As the purposes of activity (from words of experts) different universities carried out the different purposes: elite education; a professional training for a local labour market; adaptation of youth to life; growth of quality of education (to give students a basis of strong knowledge in obligatory subjects and to develop their educational interests); providing of the educational services stipulated by working state educational standards.

5) In whole the existed positive changes in the system of higher education of Novosibirsk oblast have prepared good ground for innovational activity in it. Overwhelming majority of the interrogated experts believe, that their university operates as innovatively active one last years, - introduces new educational and organizational technologies, widely uses information technologies, conducts scientific researches more actively etc.

6) Process of integration of education with scientific research and invention is successfully in progress. This is the process that on the West, first of all in the USA became an outcome of the “first scientific revolution” (started in XIX century with integration of research and teaching at universities). Some universities already undertake certain steps to integrate academic and entrepreneurship sectors and commercialize scientific knowledge that is acting towards “second scientific revolution” that is under way in the West (Stuart, 2007). Although existing scientific schools at universities mostly are scanty and yield to academy ones (functioning in state academies of sciences).

7) Qualitatively new social mechanisms in sphere of interaction of educational system and labor market were not noticed (at least on the basis of obtained regional data), even though new ways and social practices have appeared. Interaction takes place mostly through different agreements (both official and unofficial): on students’ practical work, on involving in teaching scientists and practicing experts, on advertising about vacancies for graduate students, on “targeted” form of training of students (under employer’ agreement) etc. Example of Novosibirsk oblast shows that Regional Administration actively joins interaction of educational system and labor market. Regional Administration suggests financial resources (including competitive offers) for development of universities material facilities – e.g. research labs, centers for “innovation competences development” etc. Moreover, the Administration performs as a customer of “targeted” form of education for specialists who will work in socially important spheres of rural economy (education, public health, agriculture, cooperative trade etc.).

8) Urgent problem is insufficient and sometimes even openly low* quality of higher education (*mostly ordinary teachers, not managers gave such appraisals). Experts have mentioned following internal problems that impede education quality from increase:

- Low motivation of students to study and absence of culture of independent learning;

- Degraded level of university entrants (applicants), gaps in school knowledge;

- Habit of majority of teachers to work in old way, using principle: "I teach what I know, I examine what I have taught";

- Low cognitive interest and low self-motivation of students to obtain knowledge;

- Opportunities of students to check their competencies in active practice and, more important – to check their responsibility for this activity are limited;

- Absence of employers' criteria for specialists' education. This impedes correction of pitfalls in university education.

9) Experts have mentioned external problems that hamper education quality growth:

a) Low wages in many sectors of economy (agriculture, science, education, public health, partially service sector etc.), which does not motivate graduates to work in them.

Low wages in system of higher education. Frequently target grants given out by the state for development of universities forbid to spend this money for salaries. A number of university departments and chairs do not provide for professors additional payments from non-budget sources;

b) Low scholarship. A number of universities don't have opportunities to provide financial motivation of students' achievements. Opportunities for compensation of treatment on a health resort, recreation, sport, leisure have decreased. Part of finances for these goals was transited to the category "improper usage".

c) Material resources of universities are scarce and do not answer contemporary demand of classes. The most easily implemented task for universities was to computerize and equip with office machines. Only two universities (Novosibirsk State University that recently got a status of Research University and Novosibirsk State Technical University) that obtained considerable financing from government (so-called "Innovational educational projects") have up-to-date equipment and technology for labs. The rest of universities suffer severe difficulties with this equipment and have few opportunities to use such equipment collectively.

d) Imperfection and inflexibility of State Educational Standards of the second generation. The following estimations were noted: "we lack necessary hours of practical classes", "lecture classes are cut too much thus many topics are taught only superficially", "depth is overlooked, minor issues are underscored", "matter is duplicated in different courses", "too many general disciplines and too few special ones… under the guise of humanitarization hides degradation…", "amount hours of classes for practical training and practical work (trainee job) is decreased, amount of practical classes for Bachelors is extremely low…".. Nevertheless, under common State Educational Standards in the surveyed universities different quality of education and a level of teachers' requirements to students were observed (this conclusion is confirmed with opinion of ordinary teachers, many of which teach in combination in several higher schools for resident and extramural students). Different higher schools also have different quality of innovational activity. We estimate that some innovations mentioned by experts are adapted practices from the past, other refer only to managerial and organizational decisions etc. Therefore change in real quality of education is often insignificant. This can cause considerable difficulties if "competence" approach is implemented (that was mentioned by experts).

Feature of the situation revealed in research is that the concept of modernization of the higher school, based on realization of requirements of Bologna process, is not supported (was not supported at that time) by a significant part of educational community, and is estimated as poorly connected with challenges facing the transition of economy on innovational type of development (this is the opinion prevailed at the moment of interrogation). Much attention was made that employers are afraid to employ bachelors and call them « half-taught less specialists». Experts also marked, that the Western education system has own problems, and it can not be mindlessly copied. We shall notice in this occasion, that western professors do not approve everything in Bologna requirements, in particular, their discontent is caused by increased loading on the teacher at the “modular system”, not compensated by increase of a payment, the tendency to pursuit of “accounting points” system to the detriment of knowledge and research activity etc.

Experts considered, that now for Russia is more actual not to prepare "flexible" (in Bologna understanding) experts in two-level system but to provide needs of domestic economy in engineers, technologists, agriculturists, scientific and other experts. Thus they reminded, that the Soviet educational system was based on principle of wide theoretical preparation which further allowed the expert to fill up the knowledge including related areas of activity.

4. EDUCATIONAL BEHAVIOUR AND PROFESSIONAL PREPARATION OF UNIVERSITY GRADUATE STUDENTS

1) Higher education became more accessible for school-leavers, who live out of regional center – their share among students who study in Novosibirsk city is 10 percent more than it was in 2001. Also interregional educational mobility has increased – number of students graduate from schools in other regions has increased by 7 percent (figure 6).

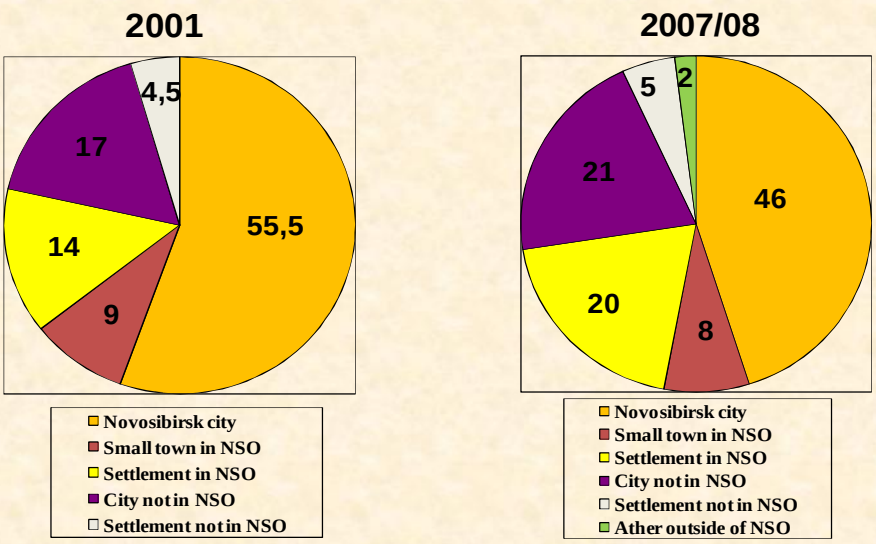

Figure 6. Structure of Novosibirsk city universities’ students by place of school graduation, %

(*NSO- Novosibirskaya oblast, Novosibirsk city is regional center of NSO).

2) Students became more satisfied with their educational choice (table 1).

Table 1 – Change in estimations of choice made by students (in % to answered respondents) *

Share of those who said that:	*2001*	*2007/08*
- choice of university was correct (answer **«yes»)**	47	52
- choice of university was not correct (answer **«no»** + **"rather no, than yes")**	15	12
- I like to study at the chosen profession now **(**answer **«yes»)**	38	48
- I don't like to study at the chosen profession now **(**answer **«no»)**	3	2
- choice of profession in whole was correct **(**answer **«yes»)**	41	46
- choice of profession in whole was incorrect (answer **«no»** + **"rather no, than yes")**	16	14
- I'm going to work according to obtained specialty **(**answer **«yes»)**	46	49
- I'm not going to work according to obtained specialty **(ответ «нет»)**	6	6

*) We don't give statistics to such positions as: "do not know", "rather yes, than no", "as happens"

Relative number of "yes" answer to the question "Do you like to study now by chosen profession" and "Was your choice of profession in whole correct", "Was your choice of university correct" have increased (in comparison with 2001 survey) to 10, 5 and 5 percent correspondingly. Somewhat increased share of students firmly intended to work in sphere of obtained profession (from 46 to 49 percent).

Students' preferences towards "economy sector" for future work have also slightly changed. Share of students who do not exclude sectors of material industry (industry, construction, agriculture, transportation, communications) from their potential job choices have increased by 8 percent, service sector (besides trade) – by 9 percent, managerial structures – by 3 percent, media industry – by 2 percent. Remains the same share of those who plan to work in scientific and scientific-implementing organizations (15 %). Share of students orienting towards financial and commercial structures and to social sphere sector has decreased (by 7 and 5 percent correspondingly) (table 2). This fact can be logically explained by enhance in education conditions (change in dynamics of students' opinions shows that) and, probably, by positive change in state of labor market in observing period. On the contrary, we are not inclined to explain this tendency by improvement of professional orientation in schools. This conclusion is supported by the data we have: share of senior pupils who don't make decision about their future profession persists on level about 40 percent.

Table 2 – Economy sector preferences by students towards future job (percent of respondents who gave an answer to this question)

	2001	2007/08
Material industry (industry, construction, agriculture):	23	31
Service sector	18	27
Social sphere (education, public health, culture)	21	16
Science, research organizations, implementation organizations	15	15
Financial and commercial structures	40	33
Trade	12	14
Managerial structures	25	28
Media industry	12	14
Military, security and policing branch	6	5
Other branches	2	2

3) Urgency of education quality problem is demonstrated also by students' survey data. Students are more satisfied with material supply of educational process and with organization of practical work (trainee job). Level of satisfaction with content of educational process and level of theoretical and practical classes have insignificant changes (in comparison with 2001) (table 3).

Table 3 – Dynamic of students' appraisals of different elements of educational process (average on 5-grade scale, where 1 is the lowest grade, 5 – the highest one) *

	2001	*2007/08*
Professors' professional level	4,2 (0,8)	4,25 (0,76)
Lectures level	3,7 (0,8)	3,82 (0,85)
Practical classes level	3,6 (0,9)	3,81 (0,87)
Practical work organization	2,8 (1,2)	3,33 (1,27)
Material supply of education process	2,5 (1,1)	3,33 (1,16)
Provision with educational literature	2,7 (1,2)	3,54 (1,16)
Provision with scientific literature, reference books, periodicals	2,8 (1,2)	3,49 (1,14)
General correspondence of education to demands of job and life	3,2 (1,0)	3,55 (0,99)

*) In brackets standard deviation is given

Similar conclusions were made by analyzing answers of the questionnaire question: “What would considerably enhance quality of education on your department?” (table 4). We compare answers to this question in dynamics. Students less often mention shortage of material and technical provision of educational process and of educational and scientific literature (though in last survey share of students unsatisfied with this element was over one third). Picture of dynamic of indicators characterizing content of education is not obvious. On one hand, slightly decreased number of students dissatisfied with educational programs, content of courses and discipline taught (from 47 to 40 percent), and duration of practical work (30 against 24 percent). On the other hand, there were a lot of claims towards everything connected with content and methodology of education: share of students who believed in necessity of increase of amount of active methods increased (38 and 42 percent accordingly), 40 to 43 percent were unsatisfied with content and organization of practical work as well as with structure and content of courses and disciplines taught, one third was unsatisfied with curriculum. Along with this, one third of respondents were displeased with quality of classes (33 percent) – whereas at the last survey (as well as in previous survey) students were less strict to professional level of professors (22 percent were dissatisfied with it). The mostly critical students were to themselves and their group mates. 44 percent of respondents considered that the quality of education would significantly improve if students become more responsible in studying. Other data also show that for now change in students’ attitude towards education does not necessarily follow positive changes in material and technical provision of education. As it was already spoken above experts also named a problem of quality of education as one of the most actual, allocating among factors of educational behaviour of students.

Table 4 – Estimation by students of necessary changes to enhance quality of education (percent of respondents who gave as answer to the question)

	2001	*2007/08*
Professional growth of professors	25	22
Improvement of teaching quality	н/д	33
Change in educational program, review of courses and disciplines taught	47	40
Increase of active methods of education share	38	42
Increase of self-contained learning share	6	7
Increase of amount of practical work	30	24
Change in organization and content of practical work	n/d	43
Intensification of feedback	20	16
Increase of educational process provision with material and technical resources	70	44
Provision with educational literature	58	33
Provision with scientific literature, reference books, periodicals	45	30
Optimization of curriculum	н/д	34
Improvement of students’ attitude to education	н/д	44
Increase of number of years of education	2	3
Other (increase in wages, scholarship etc.)	6	
Nothing must be changed	н/д	2

n/d – no data available

4) Change in students' attitude towards education does not ensue from satisfaction by conditions of education. Stimuli to education have not changed significantly. One tenth of students still don't have any special stimulus for education. Half of students consider that they could easily study better. 44 % believe that quality of education would significantly increase if students change attitude to education.

From answers to another question (table 5) we see that positive changes in conditions of educational process were not followed by considerable changes in the universities system of encouragement.

Share of students encouraged for achievements (higher or personal scholarship, bonuses for participation in student or creative conference or sport competition etc.) have remained almost the same. The same situation is with students who had additional opportunities (practical work in another city or abroad, summer schools, international student exchange). Exception is double growth (from 5 to 10 percent) of students' share who got a present, bonus or document for good studying. Share of students who had no encouragements for the whole period of education have decreased only by 3 percent (from 59 to 56 percent).

Table 5 – Additional motivation and encouragement connected with education (% of answered respondents)

Share of students who sad that they got at university the following:	*2001*	*2007/08*
Earned higher scholarship	28	27
Earned personal scholarship or grant	3	5
Was a laureate of student conference or competition of scientific works	7	6
Was a laureate of creative competition	н/д	3
Was on practical work in another city	6	7
Partook in international student exchange	1	1
Was on practical work or training course abroad	1	2
Participated in inter-universities competition	н/д	6
Was a participant of a summer school	1	1
Was encouraged for good education (by present, bonus or document)	5	10
Other kinds of encouragement	2	2
Had no encouragements	59	56

5) Idea of what skills, abilities, features students have got by the time of graduation is shown in table 6.

As we see, most of students believe that they will have a set of competences necessary to fulfill a demand to basic competences of a specialist today (qualitative professional education, wide mental outlook, sufficient for mastering in different kinds of activities, for life-long and independent learning, analytical skills, teamwork ability, communication skills, managerial skills, tolerance, free use of

computer and IT). Over a half (58 %) of students believe they are competent in an "out-of-the-box" skill (that is ability of creative thinking). Besides, answering to additional question on ability of non-standard thinking 40 % of students claimed that they are able to solve non-standard tasks that require unassisted search for decision algorithm. However most (60%) can solve only standard problems for which algorithm of solution is clearly described.

Table 6 – Distribution of responses to the question "What skills, abilities, features will you obtain by the time of graduation?", 2007/08 (% of respondents who gave an answer in every row)

	Will obtain (have already obtained)	Doubtfully will get but would like to	Don't have such a goal
1. Qualitative professional education that is in accord with contemporary demands	71	26	3
2. Wide mental outlook, education sufficient for mastering in different kinds of activities, for life-long and independent learning	73	22	6
3. Fluent speaking a foreign language	14	61	25
4. Non-standard and creative thinking	58	30	12
5. Perfect skill of computer use and IT	58	34	8
6. Teamwork ability	71	18	12
7. Communication skills	76	9	5
8. Managerial skills	60	32	7
9. Analytical skills	68	25	8
10. Tolerance	64	13	24

At the same time from one fourth to one third of graduates (by self-esteem) hesitate that they will not get competences necessary for a specialist with higher education: from 27 to 40 percent of graduate students gave a low assessment of their grounding in this "standard" set of competences.

In particular, 34 % of students have noted, that they could not receive the sufficient computer competence (8 % even do not feel the need in it). And, under the answer to other question it is revealed, that 18 % of students had no access to the Internet at all.

Alarming factor is knowledge of foreign languages. Only 14 percent of respondents consider that they can fluently speak a foreign language.

All in all answers to this question (table 6) show that students have a significant request for obtaining competencies that are necessary for a specialist with higher education in informational era.

6) We should note that responses to the previous question (table 6) give a self-esteem that reflects, on one hand, quality of obtained education (as compulsory as additional), on the other hand – level of individual request to this quality (the lower this level is the easier is to satisfy it).

In order to smooth over this factor (different requests) we have used the following approach. In the questionnaire a respondent was suggested a hypothetic situation, when he/she should have demonstrated different features and competencies in teamwork. We consider that in this case there is an implicit competition and external assessment from other members of a team. The question (closed and non-alternative) was: "What personal features and competences could you display in a team for achieving a goal or tackling a problem?" Distribution of answers (table 7) has shown that significant number of respondents believe to have general competences demanded in contemporary society: leadership potential and skills in organization of a collective work (46 %); can easily orientate themselves in a difficult situation (57 %); sociable, can lead negotiations, make contacts (51 %); can easily cope with and use last attainments of progress (44 %). Even more respondents (as they said) have such features as diligence, laborious (63 %), tolerance, well-wishing character (53 %). These features are traditional, but still valuable. Along with this, rare features are initiative and business experience (12 %), foreign language knowledge (20 %), non-standard thinking, ability to innovate (27 %).

At the same time, if we compare data of two tables (6 and 7) we can suggest that, having a high self-esteem of *obtained* set of key competences, students have much lower self-esteem in *ability to use* such competences in a practical situation. In other words, though in whole students have given high enough self-estimation of their level of received general and special competences, but the problem of using them in practical activities has come to light.

Table 7 – Personal features and competences that students can demonstrate in a team to achieve a goal or solve a problem, 2007/08 (% of answered respondents)

Can use for practical task in teamwork:	*%*
leadership potential and skills in organization of a collective work	46
can easily cope with and use last attainments of progress	44
wide mental outlook	37
can easily orientate themselves in a difficult situation	57
foreign language knowledge	20
sociable, can lead negotiations, make contacts	51
tolerance, well-wishing character	53
initiative and business experience	12
non-standard thinking, ability to innovate	27
efficiency	63
I doubt I am able to work in a team, I prefer to work individually	3

Further this question was used as a goal indication for assessing innovative potential of students. We've made a factor analysis on its basis. All space of answers was grouped into 3 factors:

First: leadership potential, sociability, orientation in a difficult situation; initiative and business experience; preference to work individually (with negative value);

Second: non-standard thinking, ability to innovate; can easily cope with and use last attainments of progress; wide mental outlook; foreign language knowledge

Third: diligence, tolerance.

In the space of this factors we've made a cluster analysis (by fast clusters method). The most interpretable was an option with 5 clusters. We've got a typology that has 5 clusters (types, groups) of students that differ by a notion of their personal features and competences that they could demonstrate in a team for achieving a goal or tackling a problem. Statistically ascertained reliable connections of the clusters with other objective and behavioral indications (using Z-criterion) allow to characterize every cluster group from the standpoint of presence (or absence) of inclinations, skills, types of behavior and attainments (results) that we have attributed to characteristics of innovative potential (table 8).

Representatives of the *first cluster (type)* are characterized by high innovative potential, high activity potential in different spheres, have proved leadership claims (22 % of the sample). The *second type* are individualists who are sociable but don't want to work in a team (3 % of the sample). The *third type* representatives have high (but weakly grounded) leadership claims along with low innovation, creative and activity potential (27 % of the sample). The *fourth type* is characterized by diligence, traditional job stereotypes; their innovative potential is minimal (39 % of the sample). The *fifth type* has a high innovative, activity and creative potential in science, but has no leadership claims (8 % of the sample).

We have obtained the following typology of students notions of personal features and competences that they can demonstrate in a team to achieve a goal or solve a problem.

Table 8 – Cluster structure (typology) of students depending on prevalent features and competencies from the viewpoint of their innovative potential (2007/08 data array)

Cluster #	Prevalent features and competences	Number of objects	%
1	High innovative potential, high activity potential in different spheres, well-grounded leadership claims	433	22%
2	Individualists	53	3%
3	Weakly-grounded leadership claims	537	27%
4	Diligence, traditional job stereotypes	768	39%
5	High innovative, activity and creative potential in science, no leadership claims	156	8%

7) An important indicator of innovative potential of students is researcher competence. Its presence/absence is shown in table 9.

Table 9 – Students' participation in scientific researches, 2007/08 (% of answered respondents)

Forms of participation	%
1. Lead an independent scientific research	12
2. Participate in scientific research of university (at a chair, department or in a lab etc.)	8
3. Participate in scientific research of their scientific advisor or a professor	13
4. Participate in scientific research at a place of their practical (tentative) work	4
5. Participate in scientific research at a place of their part-time job	4
6. Other (mostly answers like "while writing students' or qualification papers")	2
7. Do not participate but would like to	32
8. Do not participate since they have lack of time, wish or interest	34

Thus, researcher competence (demanded in coming informational era) is obtained only by every third graduate (34 %), and among those who have not such competence a half of respondents don't see any necessity of it. Novosibirsk State University (NSU) significantly and positively differs in this realm due to collaboration with Siberian Branch of the Russian Academy of Sciences. In NSU most of graduate students (76 %) partake in researches. A year after our research had been finished NSU has obtained a status of national research university. Obviously, level of education considerably differs in "elite" and "popular" segments of higher school.

After graduation some students want to devote themselves to scientific research or to take part in it (not necessarily in scientific organizations): 13 percent of respondents want to be engaged in scientific research unconditionally, plus 11 percent would like to be engaged under certain conditions. NSU is university with the biggest share of students who are oriented towards scientific research in future (19 percent unconditionally and 31 conditionally) and on the second place is Novosibirsk State Medical University (36 and 13 percent accordingly).

Answer to the question "Would you like to work in Novosibirsk Industrial park after graduation" on average of data array 9 % of responses said "yes" and 28 % do not exclude for themselves such opportunity (answer "by chance").

8) Despite abovementioned weaknesses, student youth is a very perspective social environment where innovative models of behavior can appear. First, as we've already mentioned, students request to obtain key competences of a highly-educated specialist of an informational era. Second, perspective feature is a willingness to proceed education (only 38 % do not plan to study further after graduation)

when 57 % of respondents are ready to invest in further education. The most demanded education for graduates is the second higher education.

9) Let's take a look at the most often voiced requests of employers towards the graduates (by students' estimations). Answers to this question are ranged from the most to the least often mentioned:

- certain practical skills of work (with this or that equipment, software etc.) (69 %);
- responsibility and accountability (59 %);
- high efficiency, zeal (51 %);
- discipline, punctuality (48 %);
- can easily cope with and use last attainments of scientific and technical progress (43 %);
- good knowledge of facts, principles and theory in the profession (specialty) (39 %);
- ability to search for and select necessary information (34 %);
- initiative, ability to implement ideas (34 %);
- ability to create new ideas (28 %);
- ability to re-study for another kind of activity with high tempo (27 %).

Thus, we see two tendencies. Students widely request key competences of highly-educated specialist of an informational era (revealing and understanding problems, finding non-traditional decisions, generating and implementing new ideas, IT skills, sound theoretical ground in the field of specialty, wide mental outlook sufficient for life-long learning, "teamworking" etc.). On the other hand, expectations of students towards future job are much lower. Less than one third of respondents believe that employers value this set of competencies in young specialists. Most of respondents consider that employers are interested in employees diligence, responsibility and specific practical skills along with job experience.

10) Peculiarities of youth purposes and notions in dependence of profession they study.

Let's examine intensions and notions of youth towards their profession in different professional groups (table 10).

In 2001 the most problem groups of respondents (from the standpoint of dissatisfied with their profession choice) were students studied for industrial and educational specialties. Seven years later situation has improved only in the first group. It is likely to be an outcome of positive tendencies in the real sector of economy, including industry, where sustainable economic growth was demonstrated starting in 2000-s (table 10).

On the contrary, educational (pedagogical) group of specialties remains the leader of unattractiveness. More attractive, than in 2001 became professions in construction, transportation and communication. Sustainably a bit higher than the average remains "economy and management". Became lower concerned indicators in agricultural and science professions. Moreover, students in these professional groups now show less inclination to work by profession and assess their professional choice worse. More sustainable position after 7 years belongs to public health sphere. Students in this group asses their choice as correct considerably more often (comparing with 2001) and more often are willing to work by profession.

Dissatisfaction with process of education and with their professional choice among students who are getting professions belonging to problem economy branches seems very logical. Share of youth (below 30 years old) in these branches has decreased by 1.5 – 3 times within reformation period.

Table 10 – Distribution of graduates' responses by groups of obtaining professions to questions «Do you consider your choice of profession in whole correct?», «Are you going to work in the area of obtained specialty?» (Novosibirsk region, 2001 and 2007/08, % of answered respondents)

Answers by groups of specialization:	Industry	Agriculture	Construction, geodezy, cadastre	Transportation, communication	Education	Public health	Economy, management, law	Science, IT	Trade, service sector
«Do you consider your choice of profession in whole correct?»									
2001 Yes	32,6	54,4	47,9	42,0	30,6	25,8	45,1	42,9	n/d
Rather yes	42,7	29,8	42,7	49,3	41,9	51,5	44,2	42,3	
Rather no	16,9	12,3	8,3	7,2	22,0	19,7	9,3	10,8	
No	7,9	3,5	1,0	1,4	5,4	3,0	1,3	4,0	
2007/08 Yes	54,7	52,6	55,9	52,7	30,5	47,2	47,1	39,2	42,4
Rather yes	31,5	30,5	43,2	36,5	50,7	40,2	41,7	38,3	43,2
Rather no	10,5	13,7	1,3	9,5	15,6	11,0	9,9	20,8	11,0
No	3,3	3,2	0,0	1,4	3,2	1,6	1,3	1,4	3,4
«Are you going to work in the area of obtained specialty?»									
2001 Yes	24,7	34,5	52,6	33,3	19,8	60,3	56,4	45,0	n/d
No	5,6	5,2	2,1	6,9	16,0	2,9	3,5	9,6	
Will depend	57,4	53,4	35,1	52,8	51,9	30,9	34,8	33,8	
Don't know	12,8	6,9	10,3	4,2	11,8	4,4	4,4	9,6	
2007/08 Yes	50,3	31,9	59,6	54,1	11,4	72,7	51,4	37,2	50,0
No	5,5	7,4	0,4	4,1	17,3	1,6	2,5	10,5	5,1
Will depend	39,2	44,7	37,7	39,2	59,3	20,3	39,9	44,6	36,4
Don't know	5,0	16,0	1,8	2,7	10,8	5,5	6,1	7,4	8,5

n/d – no data is available

* * *

In spite of originality of Russian higher school, and significant influence of traditions to its functioning, basic directions of its modernization are oriented towards world tendencies. Nevertheless,

this process takes places under strong pressure of habits (stereotypes) and inertia. Processes that are in accord with needs and interests of the population and/or scientific and educational community develop faster ("popularization" of high education, its commercialization, transition of universities into economic subjects of educational services market, implementation of "competence" approach, enforcement of significance of scientific researching, diversification of universities' activities and widening of their educational space etc.). Processes that do not fit to the needs or current conditions run slower (understanding of "Bologna process" requirements, internationalization of higher education, interstate educational mobility, creation of new types of universities, shift in educational technologies, support of individual curricula, providing conditions for improvement of quality and independent assessment of students' knowledge level, state-private partnership and business participation in higher school financing etc.)

Thus, we see various (including varying vectors) tendencies in evolution of Russian higher educational system. Result of these tendencies is not obvious for now.

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E-LEARNING PROJECT: TAXES, TAX BURDEN AND ENTERPRISE PERFORMANCE

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Abstract

The paper deals with the practical use of e-learning methods in the process of teaching the economic courses. It concentrates on the issues of taxes and tax burden of business subjects. The project is aimed at the analysis of tax burden of physical and legal persons which carry business or live in the area of the Slovak Republic. It copes with the Slovak tax system as well as with the basic principles of taxes and fees applied here. The broader concept of the project applies the model of the enterprise financial performance – to solve this part of the project; the methodology approach of financial analysis based on the financial ratio indicators was used. The project is realised on the basis of the research project VEGA 1/0856/09 Efficiency as the determinant of value and competitiveness of forest enterprises under changed economic and ecological conditions of globalization.

Key word: *e-learning, taxes, tax system, tax burden*

1 INTRODUCTION

The issues of taxes including their collection and payment are important for all citizens. Taxes can be defined as compulsory payments of legal and physical persons for account of the state or municipal budgets. Taxes are considered to be an important tool of macroeconomic regulation of the demand and supply as well as a tool needed to affect different activities of entrepreneurs and inhabitants (Hajdúchová – Kupčák, 2004).

Effect of taxes on development of business sphere could be examined from various points of view. Firstly, it is an effect on economic behaviour of subjects and consequent effect of taxes on finance decisions of business subjects. Effect of taxes on enterprise savings arises not only income effect (withdrawal of pro-fit after taxation – savings), but also effect of substitution. Enterprises create savings by amortisation (depreciation) and non-divided (held) profit, as a source of future investments. Lower taxation of non-divided profit than divided profit could have an impact on decisions of enterprise on profit usage. Effect of taxes on finance decision making of enterprises could be characterised in view of construction of individual tax codes (income tax, VAT, excise and property taxes), by which government influences behaviour, decision making and activities of enterprises. Extend of tax load has direct effect on finance decisions of enterprises. Development of business sphere in a great extend depends on reinforcement of incomes before taxes as a main instrument of economy development. Lowering of tax load should lead to higher work and business activity, higher savings and their exchange and to investments (Harumová, 2002).

The education devotes rather broad scope to the problems of taxes and their impact on the enterprise economics. However, the question of how to lecture these issues arises. One of the main obstacles in using the traditional teaching materials is the problem of rather frequent changes of tax legislation – e.g., from the time of its enactment, the Act 595/2003 Coll. on income tax has been amended totally

28 times and in the year 2009 five times. Moreover, the traditional teaching materials do not allow showing students the effect of tax burden changes on different enterprises. Because of this, we have decided to use the modern teaching methods in the form of information and communication technologies. The project of multimedia CD allows to eliminate the main problems of the classical paper-form teaching textbooks. It enables to update the tax legislation to the valid one and it also creates room for modelling of tax effects on the enterprise efficiency.

2 TAX SYSTEM OF THE SR

The present tax system of the SR results from the extensive tax reform undertaken in the year 2004. Tax reform in Slovakia was realized as a part of economical reform, while as the example was chosen the tax system of Germany and in Austria. The tax system confirmed the Act 212/1992 Coll., which was passed at the Federal meeting. It contained the exhaustive list of individual types of taxes, which forbid since 1.1.1993 to apply other type of taxation. It contained also the environment protective taxes, which were not completed into the form of law, but were collected in form of penalties and charges.

In 2004 was passed the tax reform regarding the entry of Slovakia to the European Union. The basic philosophy was that country became the part of the unified customs environment, which should ensure the free transfer of property, capital and the labour, while the tax environment remained autonomously. There become accepted the philosophy, that incomes will be taxed where they are created, it means in the place of residence and the consumption will be taxed were its performed (Hajdúchová – Kupčák – Hajdúch, 2005).

The tax system divides the taxes into direct and indirect. The **direct taxes** are reducing the part of income to taxpayers, who can be legal persons or citizens, according to their determined income and property. Burden of the direct taxes carries tax payer, without legal possibility of a transfer to the other person. To the direct taxes since 1993 belonged tax from earnings, tax from literary and art activities, individual income tax, taxes and levies from the earnings volume, taxes and levies from profit, household tax and tax from owning a land. These were replaced by the universal income tax and property tax. The road tax and tax from intangible assets transfer and taxes concerning the environment protection were applied as new ones. The stated taxes belong to the property taxes, which are the most unfair, because they do not reflect the real value of property. Mostly they are calculated from the volume without reflection of a moral and physical wear.

Indirect taxes are reflected in the price of purchased goods and in provided services with domestic and foreign origin. Tax burden is carried by the final consumer (citizen or legal entity). The tax payer serves only as a collector and conducts the tax in the budget. Till 1993, the tax from turnover, which rate varied, depending on individual groups of goods, belonged to the indirect taxes. For certain goods (especially basic groceries) could be also equal zero, or even negative. The turnover tax was replaced by the universal value added tax. The tax from alcohol sales was replaced by the excise tax. The indirect taxes also have function of the taxes on luxury, so the individual goods and services are weighed down by different tax rate. Higher rate usually affects the luxury goods or imported goods. The lower rate is concerning the basic groceries and domestic services (Hajdúchová – Hajdúch, 2005).

2.1 Direct taxes

Direct taxes are categorized by the criteria of tax incidence – their collection is based on the knowledge of income and property regimes that do not allow to pass the tax burden on the other subject legally. The taxpayer and the person who pays the tax is usually the one and only person, i.e. the tax burden lays only on the person who is seized by it. In the Slovak Republic, the unified (linear) tax rate of 19 % is used for all types of income (Pauličková, 2006).

The income tax is the most important type of direct taxes. It is defined by the Act 595/2003 Coll. on income tax as amended. It represents the most important type of direct taxes and it is levied universally on all incomes of both the physical as well as legal persons. The construction of normative legal regulation of is complex and compact as it includes in one piece of legislation the regulation of two taxes – the income tax of physical persons and income tax of legal persons (Pauličková, 2006).

The **income tax of physical persons** is, in many countries, considered to be the most important tax from the point of view of the taxation equity and economic effectiveness. The object of this tax is monetary as well as non-monetary taxable income of taxpayer accrued during the given tax period (normally from January 1st to December 31st). The objects of the tax are as follows:

- dependent activity incomes (§5),
- business, other self-employed activity and lease incomes (§6),
- capital property incomes (§7),
- other incomes (§8).

The object of the **income tax of legal persons** is taxable income in general defined (by the §2) as a income originated form all activities of the taxpayer including disposal of the taxpayer property. Considering legal persons established for business purposes, all their incomes (except of some exemptions) are taxable. In order to calculate the tax base, it is necessary to calculate the business profit based on the proper accounting service. The difference between the tax base and business profit originates from exclusion of costs and revenues that may illegitimately decrease or increase the tax base (Medveď et al., 2009).

The **local tax** is a kind of compulsory monetary payment of physical and legal persons that serves as either the main or the additional source of the local budget revenues. It is levied on the local inhabitants and legal persons localized in the given municipality (Pauličková 2006). The issues of local taxes and fees are regulated by the Act 582/2004 Coll. on local taxes and local fee for communal waste and small construction refuses as amended.

The present legal regulation based on the mentioned Act results from the restructuralization of public administration that led to the increase of local self-government based on the certain financial autonomy resulting from the responsible approach to the local taxation application. The mentioned responsibility can be seen in the process of handling the setting or adjusting the tax rate determined by the law (Medveď et al., 2009).

The mentioned group of taxes and fees consists of the following:

- real estate property tax:
  - flat tax
    - the object of this tax is either the flat within the block of flats or non-residential premises,

- construction tax
  - the object of this tax is every construction in the area of the SR that dispose of at least one above-ground floor and that is fixed to the ground,
- land tax
  - the object of this tax is any other real estate property that is neither the object of flat tax nor the object of construction tax,

- dog tax,
- public area use tax,
- accommodation tax,
- vending machine tax,
- non-winning slot machine tax,
- tax for entry and abidance of vehicle in the historical part of the city,
- nuclear device tax,
- local fee for communal waste and small construction refuses,
- motor vehicle tax.

2.2 Indirect taxes

Indirect taxes are collected within the price of purchased goods and provided services of both domestic as well as foreign origin. The taxpayer is considered to be the physical or legal person who either produces or imports the tax object. The tax burden lays on the final consumer while the producer or important just distracts those taxes to the budget (Hajdúchová – Kupčák, 2004).

The universal indirect tax is the **value added tax** (VAT), which payers are all state owned companies and non-state business entities, which turnover in 12 months exceeds 49 790 €, or which were registered as VAT payers voluntarily. VAT is the tax, which as also other excise taxes concerns the final consumer. It influences the cash flow of payers and increases the administrative demands, which partially influences the labour costs, if the accounting is performed internally, or the costs on services by external accountings evidence.

The basic tax rate of the VAT – 19 % – is levied on majority of goods and services while reduced rate of 10 % is levied on the pharmaceutical products, some of the ward aides, books and several similar products.

The tax payer is obliged to submit the tax to tax office till 25th day of the following tax period, which means, that companies, to which arises the tax duty are utilizing during these 25 days the state resources for covering its needs. Negatively are influenced the receivables of customers, because the taxable duty doesn't just arises when realizing the payment but also on the delivery day depending, which day occurred first.

The companies, to which arises the excessive allowance have the receivables to the state, which can be applied as a credit note on tax duty in next taxation period. In case, that companies regularly achieve the excessive allowances (exporters), the tax office reimburses the allowance till the end of following month after the submit of tax statement, which means that tax office uses 30 days the resources of companies.

Table 1: Local taxes

Type of tax		Object of tax	§	Tax base	§	Tax rate	§
Local taxes 582/04 Coll.	**Land tax**	land property in the area of the SR	§6	area of land in m^2 x value of land	§7	**0,25 %** municipality may increase or decrease it	§8
	Construction tax	construction in the area of the SR	§ 10	constructed area in m^2	§ 11	**0,033 EUR**/ m^2 per every m^2, municipality may increase or decrease it	§ 12
	Flat tax	flats and non-residential premises in the block of flats	§ 14	flat or non-residential premises area in m^2	§ 15	**0,033 EUR/ m^2** per every m^2,	§ 16
	Public area use tax	individual use of public areas	§ 30	used public area in m^2	§ 32	defined by the municipality in EUR per use of every m^2 of public area	§ 33
	Accommodation tax	temporary paid accommodation of physical person in given accommodation facility (§ 2 of Regulation 419/2001 Coll.)	§ 37	number of nights	§ 39	defined by the municipality in EUR per person and night	§ 40
	Vending machine tax	paid vending machines used by general public except of machines for travel tickets	§ 44	number of vending machines	§ 46	defined by the municipality in EUR per vending machine and year	§ 47
	Non-winning slot machine tax	non-winning slot machines	§ 52	number of non-winning slot machines	§ 54	defined by the municipality in EUR per non-winning slot machine and year	§ 55

Continue of table 1: Local taxes

Type of tax		Object of tax	§	Tax base	§	Tax rate	§
Local taxes 582/04 Coll.	**Tax for entry and abidance of vehicle in the historical part of the city**	entry and abidance of motor vehicle in the historical part of the city	§ 60	number of days of entry and abidance of motor vehicle in the historical part of the city	§ 62	defined by the municipality in EUR per motor vehicle and every day of entry and abidance of motor vehicle in the historical part of the city, may be also determined by the fixed rate	§ 63
	Nuclear device tax	nuclear device used for production of electrical energy	§ 67	area of the municipality cadastre in m^2 that is located in the area endangered by the nuclear device	§ 69	based on the distance from the device in three zones in Mochovce and Jaslovské Bohunice	§ 70
	Local fee for communal waste and small construction refuses	communal waste except of electrical waste and small construction refuses produced in the area of the municipality	§ 77	–	–	defined by the municipality	§ 78
	Dog tax	dog older than 6 months	§ 22	number of dogs	§ 24	defined by the municipality in EUR per dog and year	§ 25
	Motor vehicle tax	motor vehicle and towed vehicle of the M,N and O38 categories used in the SR for business purposes	§ 84	engine cylinder capacity in cm^3 for cars total weight in tons and number of axles for commercial vehicles and buses	§ 87	tax introduced by the local self-government district	§ 88

Source: autors

Small enterprises usually are not registered as payers of VAT. So they carry the whole tax burden as final consumers. VAT equally influences their cash flows and their profit (Hajdúchová – Kupčák – Hajdúch, 2005).

The excise taxes are levied on the following products either when they are imported to Slovakia from countries outside of the EU or when they are released to the tax free flow (Bradshaw et al., 2010):

- mineral oils,
- beer,
- wine,
- spirit,
- tobacco products.

The excise tax on electricity, coal and natural gas is levied when these products are supplied to the final consumer. The tax rate depends upon concrete commodity. Under certain cases, the mentioned products might be relieved from excise tax burden.

3 E-LEARNING PROJECT

Considering the use of classical teaching forms in the process of lecturing taxes and simulation of taxation impacts on business subjects, the several insufficiencies were recognized. The most important problems may be listed as follows:

- classical information materials – textbooks are becoming non-actual due to frequent changes of legislation,
- static form of presenting information,
- problematic modelling of tax burden effect in business subjects,
- problematic obtaining and consequent assessment of alternative possibilities,
- weak support of individual studying.

In order to find alternative ways of education that could eliminate mentioned problems, the interactive form of education seems to be the most suitable way. The first step included the creation of multimedia CD – it enabled to combine advantages of synchronous and asynchronous education. Students during lectures in the class obtain basic knowledge of the topic and, then, according to their reflection and needs, they may supplement it with the multimedia CD.

Character of the multimedia CD is the one of the web site with simple and easy student-friendly orientation. Such form of the CD allows using it also by ordinary users of computer technology with average computer knowledge. Thus, the negative attitude of certain group of students to something new and unknown is dismantled.

Structure of the multimedia CD is adapted to its main objectives. The CD is divided into two parts – theoretical and practical one (Figure 1). The **theoretical part** is devoted to the general characteristics of taxes and the SR tax system. Students may here obtain information on procedures of tax administration together with the simplified overview on individual taxes. The following information is assigned to each individual tax:

- general overview on the given tax or group of taxes,
- basic proprieties of the tax,

- way of calculation of tax duty,
- template of tax declaration,
- valid legal regulation.

Table 2: Excise taxes

Type of tax	Object of tax	§	Tax base	§	Tax rate	§
Excise tax on bier 107/2004 Coll.	bier produced in the tax area (SR), imported to the tax area from other member state or from the area of the third country	§ 4	amount of bier in hectolitres	§ 6	Basic tax rate – 1,65€/ Plato grade/hl	§ 7
					Reduced tax rate – 1,22€/ Plato grade/hl	
Excise tax on wine 104/2004 Coll.	wine produced in the tax area (SR), imported to the tax area from other member state or from the area of the third country	§ 4	amount of wine in hectolitres	§ 5	still wine 0 €/hl	§ 6
					sparkling wine 79,66 €/hl	
					sparkling wine with alcohol not more than 8,5% of volume 56,42 €/hl	
					intermediate products 82,98 €/hl	
Excise tax on spirit 105/2004 Coll.	spirit produced in the tax area (SR), imported to the tax area from other member state or from the area of the third country	§ 4	amount of spirit in hectolitres 100 % alcohol at temperature of 20º C	§ 5	Basic tax rate 939,38 €/hl	§ 6
					Reduced tax rate 469,69 €/hl	
Excise tax on electricity 607/2007 Coll.	electricity of combined nomenclature code 2716	§4	amount of electricity in MWh	§5	from 1.7.2008 to 31.12.2009 0,66 €/MWh, from 1.1.2010 1,32 €/MWh	§6

Excise tax on coal 607/2007 Coll.	black coal, brown coal, coke and semi-coke, other solid hydrocarbons of combined nomenclature code	§ 16	amount of coal in tons	§ 17	10,62 €/t	§ 18
Excise tax on natural gas 607/2007 Coll.	natural gas of combined nomenclature code	§ 28	amount of natural gas in MWh	§ 29	from 1.7.2008 to 31.12.2009 fuel 6,63 €/MWh, fuel for heat 0,66 €/MWh from 1.1.2010: fuel 13,27 €/MWh, fuel for heat 1,32 €/MWh	§ 30

The **practical part** allows students to calculate tax duty of the given subject – it consists of so-called "tax calculators" that allow to calculate automatically the tax duties in accordance with the chosen input parameters. Thus, students may clearly see all variables needed for the tax calculation. When input parameters are changed, students are able to observe their impact on the final tax duties of the given subjects so that they will understand the mechanism of functioning of the analysed tax.

The software environment used for this part of the CD is the MS Excell, mainly due to its wide use. The MS Excell environment is familiar for students and it is not necessary to explain it in detail. Moreover, such solution enables to use the CD in home computers and notebooks and students may use the software not only during the lectures but also at home. The lecturer may assign students more complex tasks aimed at the analysis of tax burden and its effect on the enterprise efficiency.

The project will help the measuring and monitoring of the process performance under specific conditions of the forest enterprise. The objective of this process is to systematically delimit and support processes in the forest enterprise and to define approaches to the measurement and evaluation of their performance with consideration to the specifics of the forest enterprise, international accredited standard and national legislative adjustment (Ivan, 2007).

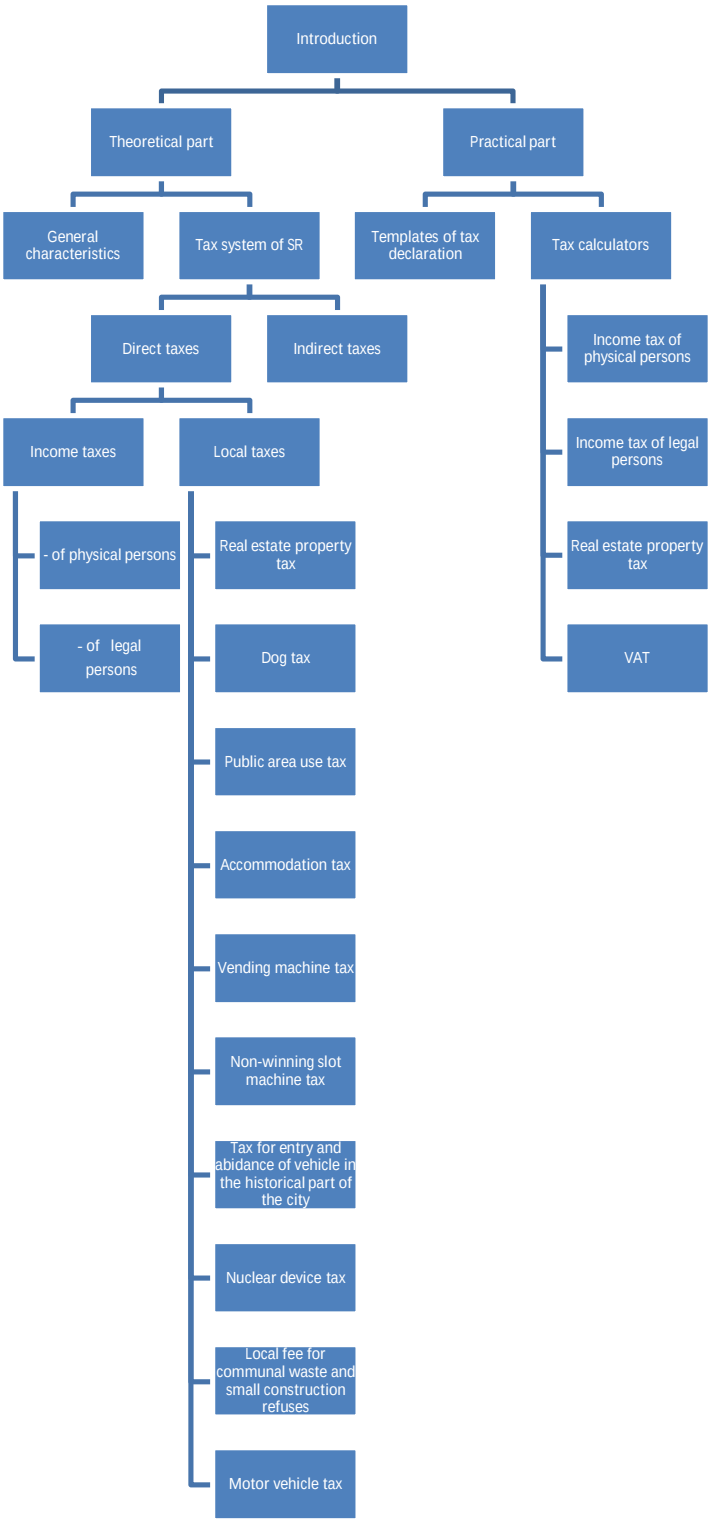


Figure 1 Structure of the CD *Source: autors*

Figure 2 Introduction screen – excise taxes Source*: authors*

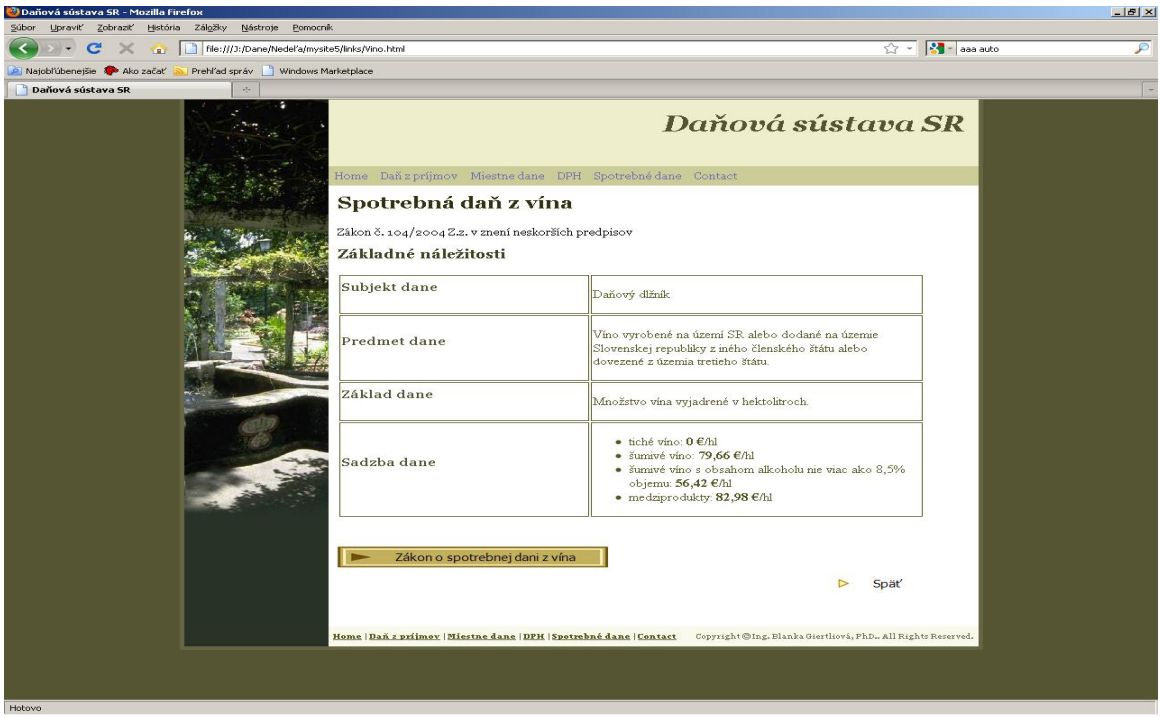
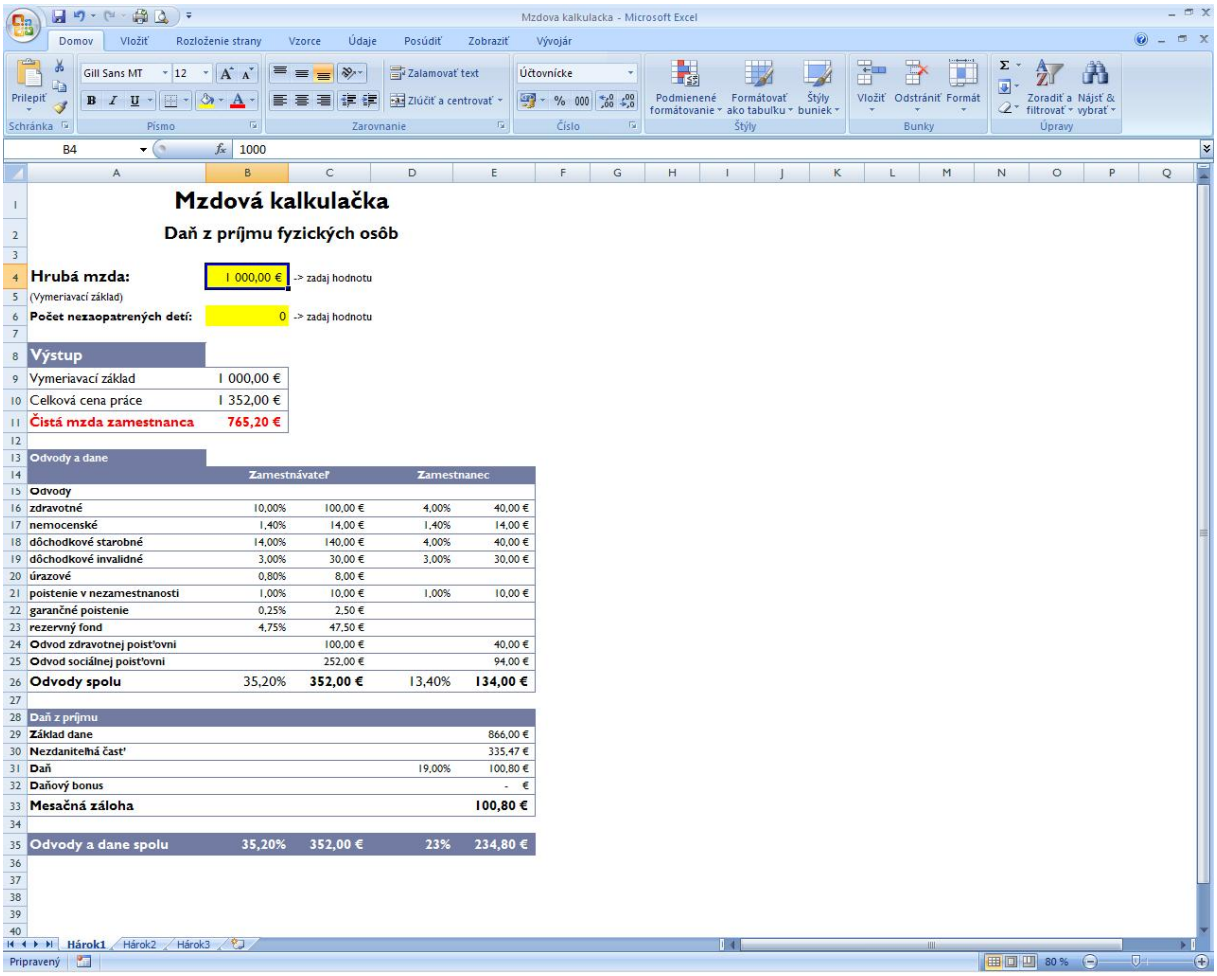


Figure 3 Introduction screen – excise tax on wine *Source: authors*



Mzdová kalkulačka

Daň z príjmu fyzických osôb

Hrubá mzda:	1 000,00 €	-> zadaj hodnotu
(Vymeriavací základ)		
Počet nezaopatrených detí:	0	-> zadaj hodnotu

Výstup	
Vymeriavací základ	1 000,00 €
Celková cena práce	1 352,00 €
Čistá mzda zamestnanca	**765,20 €**

Odvody a dane	Zamestnávateľ		Zamestnanec	
Odvody				
zdravotné	10,00%	100,00 €	4,00%	40,00 €
nemocenské	1,40%	14,00 €	1,40%	14,00 €
dôchodkové starobné	14,00%	140,00 €	4,00%	40,00 €
dôchodkové invalidné	3,00%	30,00 €	3,00%	30,00 €
úrazové	0,80%	8,00 €		
poistenie v nezamestnanosti	1,00%	10,00 €	1,00%	10,00 €
garančné poistenie	0,25%	2,50 €		
rezervný fond	4,75%	47,50 €		
Odvod zdravotnej poist'ovni		100,00 €		40,00 €
Odvod sociálnej poist'ovni		252,00 €		94,00 €
Odvody spolu	35,20%	**352,00 €**	13,40%	**134,00 €**

Daň z príjmu		
Základ dane		866,00 €
Nezdaniteľná časť		335,47 €
Daň	19,00%	100,80 €
Daňový bonus		- €
Mesačná záloha		**100,80 €**

Odvody a dane spolu	35,20%	352,00 €	23%	234,80 €

Figure 3 Tax calculator – physical person income tax

Source: authors

CONCLUSION

The modern ways of education based on the use of information technologies bring both the students as well as lecturers new possibilities. As it was already shown in the mentioned project, they may be used also in the courses aimed at the teaching taxes and modelling of tax burden of business subjects. The multimedia presentation allows students to cope with the SR tax system more in detail and also in more progressive and attractive way.

The realised project of the multimedia CD enables to obtain basic knowledge of the SR tax system and to plan the tax burden of both physical as well as legal persons. The results obtained using “tax calculators” may serve as a basis for deeper analysis of impact of taxes on cash flow and the business subject management profit. Such planning creates a part of the financial plans – it is another possible area if the use of the multimedia CD.

Moreover, it is possible to state that the practical application of e-learning methods brings increased interests of students – it allows solving problems and case studies more individually using electronic sources in order to be better prepared for practical application in the praxis.

Next step of the project work shall deal with its connection to the area of enterprise financial analyses and analyses of its effectiveness. Thus, the tool usable in education of more different courses at the Technical University in Zvolen is developed.

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9. Zákon č. 607/2007 Z.z. o spotrebnej dani z elektriny, uhlia a zemného plynu
10. Zákon č. 98/2004 Z.z. o spotrebnej dani z minerálneho oleja

The project is realised on the basis of the research project VEGA 1/0856/09 Efficiency as the determinant of value and competitiveness of forest enterprises under changed economic and ecological conditions of globalization.

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ON DEVELOPMENT OF MULTI-LEVEL STRUCTURE OF HIGHER EDUCATION CURRICULA IN RUSSIAN FEDERATION

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At the beginning of the 1990-ties the processes of deep restructurization of political, social and economic life took part in Russian Federation. Higher schools needed the possibility to react quickly to the changes in the labour market. It resulted in the fact, that a few higher schools simultaneously started to develop approaches to the more flexible curriculum structure. At the Moscow State Academy of Fine Chemical Technology a team of teachers – experts in the teaching methods was formed for working out the concept of the multi-level curriculum structure.

In 1991 government institutions supported the initiative of higher schools. In May 1991 the possibility of adoption of multi-level curriculum structure was discussed at a meeting of the board of the State Committee on Science and Higher Education of Russian Federation. A team of teachers experienced in the development of new more flexible curriculum structures has been formed at the Centre of Teaching Methods of the State Committee on Science and Higher Education. This resulted in a draft regulation on multi-level curriculum structure in Russian higher education.

To work out practical matters of introducing multi-level curricula in higher education the new curriculum structure was tried in the Rostov University, the Moscow State Academy of Fine Chemical Technology, the Samara Architecture and Construction Institute and the Tomsk Politechnical Institute (the decree of the State Committee on Science and Higher Education N 719 from 17.08.91).

In March 1992 the Temporary Regulation of the Commitee on Higher Schools of the Ministery of Science, Higher Education and Technical Policy on the Multi-Level Curriculum Structure of Higher Education in Russian Federation N 13 from 13.03.92 was carried into effect. This Regulation contains the fullest description of the concept of multi-level structure of curricula in professional education. Later the government institutions responsible for education carried the work at the documents on practical realization of multi-level curricula over to the Education and Methodics Associations where the higher schools are grouped in accordance with their specialty. The result was that the higher schools which initiated passing on to multi-level curricula remained alone within their own Education and Methodics Associations and could not fully implement the ideas of the Temporary Regulation of March 1992. Therefore in all subsequent documents – the State Educational Standard, the Law on Higher and Post-University Professional Education – there are much shorter passages on multi-level education and the mechanisms of its practical realization are not mentioned at all.

After joining the Bologna declaration in September 2003 Russia had to rearrange its educational system in accordance with its regulations, which was done in 2007. In accordance with the changes introduced into the laws on higher education in Russian Federation the basic curricula in Russia are the 4-year bachelor curriculum and the 2-year master curriculum. At the same time linear structure of

the curriculum which may cover 5 or more years is preserved in certain fields of education (medicine, art, military specialties). The present curriculum structure is shown at Fig. 1.

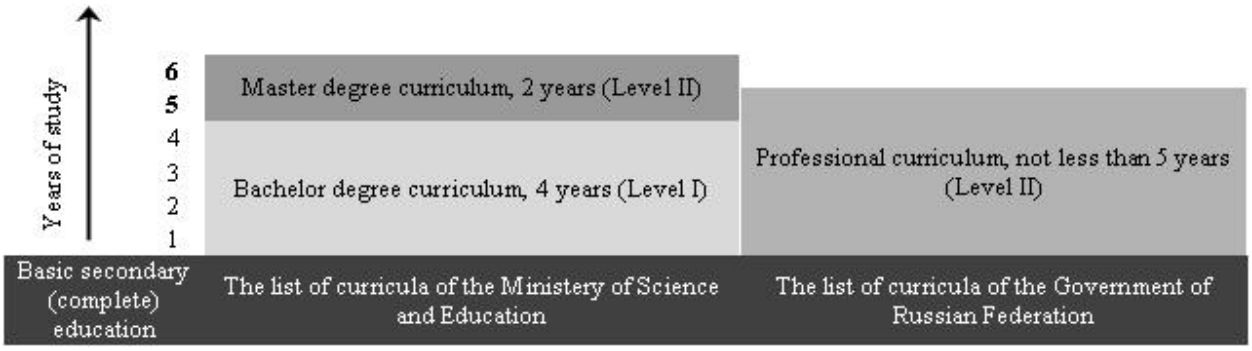

Figure 1. The structure of basic curricula in higher education of Russian Federation.

In the explanatory note to the Temporary Regulation on the Multi-Level Curriculum Structure of Higher Education in Russian Federation it has been mentioned that under the conditions of market economy the higher education should meet the following requirements:

- education should help the intellectual and moral development of a person, become the basis for professional training and retraining in accordance with the situation at the labour market;
- higher education should be accessible for everybody depending only on the capabilities and talant of a person;
- education should be of high quality and be of value for the human society;
- it should encrease the educational level of the people, which results in the democratization and cultural development of the society;
- Higher school should be flexible and be capable of immediately following the requirements of the labour market in the choice of specialties, types of professional activity, qualification standards.
- education should provide high qualification of students, their capability to the well-organized work;

These tasks could be most efficiently solved by the multi-level educational structure, which combines the general education and special professional courses, successful mastering of which results in higher education diplomas of different levels. Each level should contain general education component and a choice of professional courses, based on it.

In the Temporary Regulation on the Multi-Level Curriculum Structure of Higher Education in Russian Federation and the State Educational Standard for Higher Professional Education, adopted by the Decree of the Government of Russian Federation

N 940 of August 12, 1994 new approaches to forming curricula for higher professional education were presented. Curricula were to provide comprehensive basic professional education, form independent creative approach to mastering problem-oriented knowledge. Curricula differing in complexity, length

and the resulting qualification were suggested. Students were provided with the possibility to choose educational programs in case their qualification met the requirements for particular subject.

The encrease in the number of students acquiring basic higher education was suggested, which could help improving the general educational level of the nation. Also the state standards for the content and quality of basic higher education were introduced.

The stage of specialized professional training was suggested to take a considerably short period of time (not more than 2-3 years) to provide flexibility and quick answer to the requirements of the labour market on the choice of specialties, types of professional activity, qualification standards. Higher schools were permitted to determine a substantial part of professional training in accordance with employers' demands. To prepare highly qualified professionals competitive exams for students who preferred and were capable of mastering higher level of professional education were introduced, the period of study being prolonged for such students up to 6 years.

The structure of higher education in Russia was made much like the best known educational systems of other countries [6], which could facilitate the comparison of the educational level of students in different countries and the international recognition of Russian diploma certificates.

Still the majority of higher schools of Russia uses the linear curriculum structure of 5 and more years long (See Fig. 2). It happens so because so far higher schools had a right to choose between the linear and multi-level curriculum structure. The multi-level curriculum structure will become compulsory on September 1, 2011, so that a big number of bachelors will be graduating from higher schools since 2015.

Type of curriculum	% of graduates (data for 2006)	% of graduates (data for 2007)	% of graduates (data for 2008)	% of graduates (data for 2009)
Bachelor	11,7	12,1	14,0	21,1
Professiona	84,6	83,4	81,2	71,4
Master	3,7	4,5	4,8	7,5

Fig. 2. A share of graduates of Russian higher schools for different types of curriculum.

At the same time a number of higher schools fully implemented the multi-level curriculum structure. One of the examples of full realization of the multi-level curriculum structure is the Moscow State Academy of Fine Chemical Technology. The Moscow State Academy of Fine Chemical Technology has been passing on to the multi-level curriculum structure in the period from 1991 to 1997. The experience of this transitional period is presented in [7]. Fig. 3 shows the structure of education in the Academy.

At the first two basic educational levels the students acquire basic training in accordance with their bachelor specialization. The curriculum of the first two years contains similar set of compulsory programs for all technical specialties. At the end of the second year there is a qualifying examination, after which the students are distributed into groups corresponding to the specialty in which they will be receiving Bachelor Degree. The group is chosen in accordance with the preferences of the student, his academic records and the quotas, fixed by the Scientific Council for a given academic year.

Basic training in accordance with the chosen specialty at the second educational level (the 3rd and the 4th years) includes training in engineering, basic science courses in particular field, economic disciplines and basic (mostly theoretical) courses in the chosen specialty.

At the third level the study depends on the future profession of a student: engineer, designer, applied scientist, etc.

Postgraduate study (special postgraduate professional training) PhD, 3 years	
Competitive examination to become a postgraduate	
Complete higher education 3. The third educational level (special professional training)	
Engineering high school Engineer, 1,5 years	Master degree Master of Science, 2 years
Competitive examination to enter Master of Science program for particular specialty	
Basic higher education 2. Second educational level (basic professional training) Bachelor of Science in particular specialty, 2 years (6 specialties)	
Competitive examination to enter Bachelor of Science program	
General scientific training 1. The first educational level The standard general scientific curriculum, 2 years	
Competitive examination to enter the Academy	
Complete secondary education Secondary education certificate, 2 years	
Professionally oriented complete secondary school (X-XI years)	Faculty of pre-Academy training (X-XI years)
Competitive examination	
Basic secondary school (9 years)	

Figure 3. The structure of education in Moscow State Academy of Fine Chemical Technology.

New elements in the suggested variant of multi-level curriculum structure are:

- the segmentation of bachelor degree curriculum into two levels;
- wide basic education at the first level of education;
- increasing demands to students at higher educational levels;
- passing the major part of special professional training on to the third level – the level of special professional training;
- using bachelor degree curriculum as the basis for preparation of students of both bachelor and professional programs;
- individual program adjustment in accordance with the requirements of students and employers;
- competitive exams to enter each educational level.

During the transitional period of 1991-1997 the Moscow State Academy of Fine Chemical Technology followed the ideas of the Temporary Regulation on the Multi-Level Curriculum Structure of Higher Education in Russian Federation. It was assumed, that special professional trainig will be acquired by students at the third educational level, while the bachelor degree level is devoted mainly to general education. The Scientific Council of the Academy considered this idea as most important when passing on to the multi-level curriculum structure. The Academy views the transfer to the multi-level system of education as the possibility to increase the quality of professional training and not the way to prepare lower quality professionals.

Studying for the bachelor's degree helps to develop personal skills and get higher education, as well as forms the basis for future special professional education in a wide professional field by means of diferent types of training and self-education.

The described above variant of multi-level curriculum structure is most suitable for preparation of the students in science-based technologies, to which the majority of chemical technologies refers [8]. The development and implementation of science-based technologies requires professionals with deep and wide basic education. For example, chemical engineers study a set of disciplines in mathematics and science, including substantial knowledge of advanced mathematics, computer science, physics and, what differs them from other specialties, various chemical courses. In addition to these courses, chemical engineers should acquire good engineering and technological skills, oriented at fine (frequently at molecular level) processing of natural and technogenic materials and manufacturing a wide range of different chemical products.

After analyzing the situation a pre-university (0) level has been also suggested and the necessary steps towards organizing the training of students for the entering examinations to the Academy were taken. The work has been done to match the curriculum of the first level of the Academy with the final stage of the complete secondary education. The list of disciplines of the first level was made close to the list of disciplines of the final years of the natural sciences-oriented secondary school. It helped to work out the continuous programs within the educational complex "secondary school – higher school", also with the possibility to reduce the period of study by one year.

All students of the full-time course of the Moscow State Academy of Fine Chemical Technology follow the multi-level curriculum since 1996/1997 academic year. The master degree level is entered

by about one third of all students accepted to the first level (about 250 people per year). Students of the master level are provided mostly with individual training. Every master course is normally entered by 3 to 10 people. Individual work with students helps to spot those who are capable of science or teaching career and would like to become postgraduates. It turns to be valuable also to match the curricula for master degree and for the postgraduate study. The postgraduate education has also been divided into levels. The students of the master level have got an opportunity to include philosophy and foreign language from the postgraduate program into their curriculum so that they could further pass the philosophy and foreign language postgraduate examinations.

While working out the curriculum structure for science-based chemical technologies the following basic principles were considered as the most important [9-12]:

1. Multi-level structure of education;
2. Matching of the curricula of subsequent levels;
3. Alternative varieties of curriculum within the same level;
4. Substantial scientific courses within basic education;
5. Individual choice of courses within special professional training.

The concept of the multi-level curriculum structure was adopted in the Moscow State Academy of Fine Chemical Technology on January 21, 1991 and the transitional period towards the multi-level structure of education was over in 1996/1997 academic year. Thus in some Russian higher schools the transition towards two-level educational structure was successfully completed even before the beginning of active realization of Bologna process at the higher schools of European countries.

The experience of the Moscow State Academy of Fine Chemical Technology in implementation of the multi-level curriculum structure helps to suggest the most low-cost way of transition to this structure. Attention should be paid at the two tendencies in the higher education of the recent years. First of all, higher education is now acquired by the majority of people. More higher schools occur, at the same time less people enter the final years of the secondary school. Therefore higher schools are often entered by people with not very high educational level and less personal talant. Second, labour market needs not only professionals prepared for creating and developing of the new technologies but also those who could use the already existing technologies and achieve high quality of a product. Therefore it is useful to divide professionals required by the labour market into two big groups: experts of “locomotive” and those of “adaptive” type [13-14].

Curricula for preparing of experts of “locomotive” type should provide deep knowledge of basic disciplines, develop creativity, prepare students to realization of innovations. The curricula for “adaptive” type of students should be more practice-oriented and meet the present demands of the market. Two-level education helps to provide suitable type of curriculum for each of these groups.

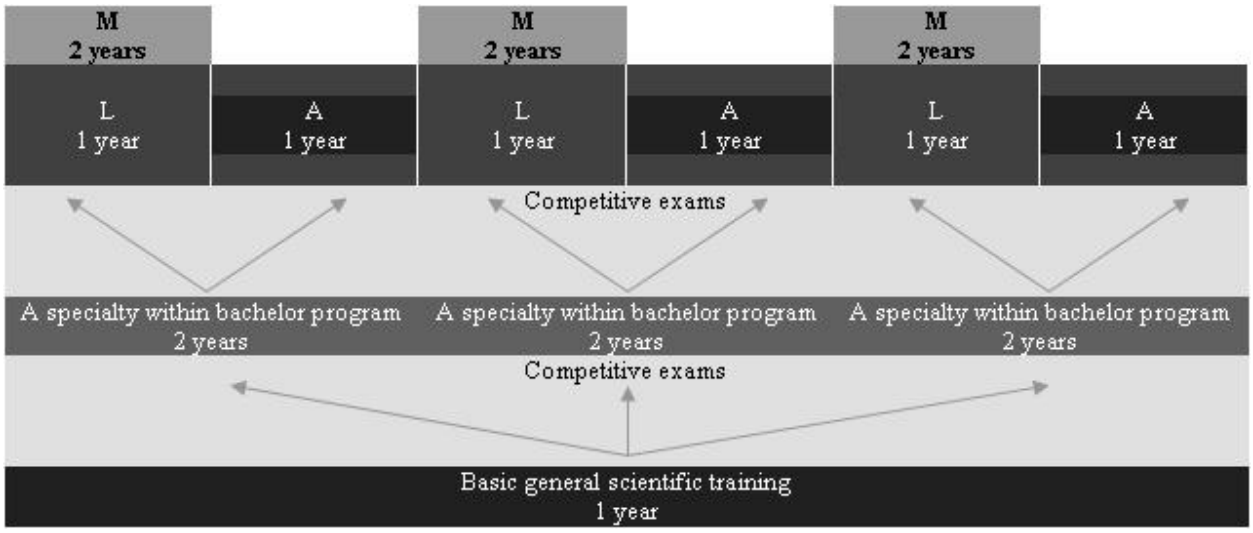

Fig. 4. A variant of multi-level curriculum structure within the two-level education.

Three educational levels are singled out within the bachelor program: basic scientific level (1st year), general professional level (2nd and 3rd years) and special professional level (4th year of bachelor program). In the first year students get the general scientific training. The capabilities and desires of students become clear, so that they are able to chose their specialty for the bachelors degree. In the second and the third year further differentiation of students in the choice of specialty takes place. After the third year students are divided into groups which study in accordance with the curriculum of "locomotive" (L) or "adaptive" (A) type.

This structure takes into account world experience in realization bachelor programs. In many European countries there are 3 years long academic programs and 4 years long special professional programs.

The study at the second educational level (master degree) normally follows the curriculum of "locomotive" type with particular specialization (engineer, designer, researcher, etc.). Quickly developing market economy does not allow to prepare experts for particular vacancy 5 or 6 years in advance. The broader education at the basic levels (bachelor level specialties) combined with narrower specialization at the master level seems to be most adequate.

The suggested variant of multi-level curriculum structure meets the requirements of the Bologna Declaration and at the same time helps to preserve the best traditions of Russian education: deep and wide basic training, combination of study and scientific investigations, substantial amount of practical training. The curriculum also helps to introduce programs of different level and specialization, alternative curricula within the same level, working out the professional specialization courses togehter with future employer, creating of competitive environment for the whole period of education. There is no doubt, that this will help higher schools of Russia to encrease the quality of education and advance their educational programs into the world market of higher education.

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INTEGRATIVE METHOD OF TEACHING ENGLISH FOR SPECIFIC PURPOSES (ESP) IN HIGHER SCHOOL

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Abstract

Introduction of an information technology in educational process takes the increasing place in teaching not only natural-mathematical, but also humanitarian disciplines. Work on introduction of information and communication technologies (ICT) as means of an intensification of process of training in the HIGHER SCHOOL has been spent in Tomsk Polytechnic University (TPU) since 2002. One of effective tools of students' self-study in foreign language in higher technical school is application of technologies Web CT and Web 2.0. Availability of technologies extends on educational process. In particular, information and communication technologies give possibility to the students in a choice of individual training and research. Essential advantage of technologies is a possibility to individualize the process of training by drawing up of tasks and intellectual scope expansion in a specialty, and development of abilities in the field of foreign languages. Increase of students' motivation in studying foreign languages, and active students' self-study became one of the priority problems put by Interdisciplinary Department of Professional Foreign Language Training (IDPFLT) in realization of the program «English for specific purposes (ESP) ».

Key words: *e-learning, information and communication technology (ICT), Web CT, Web 2.0, students' self study, English for specific purposes (ESP)*

1. INTRODUCTION

Development of an information technology has led to formation of new ways of Internet application. Nowadays in the world there is a consecutive and steady tendency to create an information society which urged to be the optimal conditions for the maximum self-realisation of each person. The bases for such process are intensive development of computer telecommunication technologies and creation of the developed information-educational environment. The Internet technology is less expensive in use, high-speed, resource-saving and allows providing extensive access of users simultaneously. Changes in access and speed connection are accompanied by the development of computer programs and their management. On this basis, it is possible to establish the fact that transition to an information society assumes deep connection between three components: the information, value of new information technologies and socially structural changes in a society. These factors lead to necessity of active use the Internet resources in education. Students' self-study is the major form of studying in the higher school, an obligatory component of educational and research activity of students. Its efficiency substantially defines the quality of professional training in higher school. The problem of training specialists with knowledge of foreign language is actual. In connection with economic situation in the country, specialists having experience of dialogue with representatives of other cultures have advantage at employment. The knowledge of foreign languages helps the future engineers to develop

logic thinking, promotes flexibility of cogitative activity, speaks not only about widely developed person in whole, capable to cope with arising problems, it helps the engineer to solve set of problems put before him in the process of work at any conditions of language dialogue. Only in this case we can tell about deeply intellectual, developed person, in particular the expert with the diploma of higher education.

Therefore foreign language studying in technical higher school urged to be remained one of leading issues. In all European countries the knowledge of language of international dialogue is an obligatory component of the curriculum.

Now in Tomsk Polytechnic University students of technical specialties study foreign language within 5 years, the result is the defense of a part of final qualification work in a foreign language. Knowledge of language at trained undoubtedly above in comparison with students of other HIGHER SCHOOLS studying language within 2 years. However there is a necessity for improving of skills in the sphere of professional language activity.

Fast increase of knowledge volume conducts to that recently acquired material becomes outdated for a short period of time. Therefore the higher school problem consists in preparing the expert who would possess not only the certain amount of knowledge, but also could fill up independently further them, improving the professional skill.

Constantly increasing stream of information materials in all specialties leads in increase of students' academic hours so, shows higher requirements to the management of students' self-study.

2. INTRODUCTION OF INTEGRATIVE METHOD IN EDUCATION

2.1. Pros and cons of ICT application in education as self-study activity

In the general structure of students' educational activity, self-study work is about 40 % during one semester within the whole budget of academic hours. Meanwhile it is obviously that frequently this time is used irrationally enough. It specifies necessity in searching new methods of carrying out self-study work.

In an increasing stream of information, especially in connection with distribution of a global computer network "Internet", great value gets an ability to take the information from sources speaking another language independently.

These factors lead to necessity of active use the Internet resources in training foreign languages of senior students. Introduction of an information technology in educational process takes the increasing place in teaching foreign languages in higher school.

The computer and the technologies connected with it as well as possibility to answer the problems put before education system. The computer allows carrying out new qualitative changes in an education, including the training of foreign languages. Without denying the importance of traditional ways of mastering foreign languages and culture, it is necessary to pay special attention that today we should consider as far as possible a condition of a science and new technologies, allowing to receive, effectively to reflect and transfer the facts and events of today.

Integration of e-learning foreign languages with a full time study is one of perspective models of training in the future. The quantity of the hours which are given for studying English for specific purposes of senior students in higher technical school is insufficient for full perfection of knowledge

of a foreign language. We consider that only integrated approach could solve a number of problems put before an education system as a whole and before each teacher. Namely, the given kind of training promotes:

1) to profound studying of languages;

2) to raise motivation to studying of foreign languages;

3) to develop critical and logic thinking of students;

4) to form the harmonious person of the future engineer;

5) ability to find ways of the solution of tasks in view independently;

6) to decrease a barrier of language dialogue.

2.2. Use of Web CT technologies with 4th year students of technical specialties.

At present many teachers still lack necessary training. Students' Internet use also raises questions how to prevent access of an inappropriate materials. The Interdisciplinary Department of Professional Foreign Language Training (IDPFLT) creates and carries out policies to counter such difficulties, and more generally, to promote the overall use of new technology in the form of a self-study work. Now one of effective tools of student's self-study of foreign language in Tomsk Polytechnic University (TPU) is application of technologies Web CT. Availability of technologies Web CT extends on educational process of the students of TPU.

In the picture below, the main goals and the structure of the course are shown. This course is performed for the 4th year students of Mechanical engineering Department. This course helps trained to improve their English and to get the experience in coordination of their work autonomy.

Fig. 1 The home page

In particular, IC technologies give possibility to the students in a choice of individual training and research. Essential advantage of technologies Web CT is an opportunity of individualization of training process by drawing up of tasks and intellectual scope expansion in a specialty, and the development of skills in studying foreign language. We consider that during the management of students' self-study with the use of technologies Web CT it is necessary to take into consideration:

• Requirements and abilities of students;

• Features of informative sphere of persons connected with all its other substructures and the person as a whole;

• Psychological nature of self-study work;

• Specificity of teaching foreign language in technical higher school.

Realization by the student of self-study work as specific form of educational activity on the platform Web CT demands its preliminary training to receptions, forms and contents of this work. In the whole structure of educational process the training subject gets two sides:

1) for the teacher is teaching: the organization and interaction with students within the limits of the contents which is predetermined by the overall aims of education;

2) for the student is studying: actions carried out by working with a teaching material which is subjected to mastering, and interaction with the teacher.

The original studying is carried out on the basis of ability of the student to regulate the actions in educational process, having the final purpose. Therefore the actions undertaken by the student during the studying and directed into the change of things and the phenomena, cause certain informative interest, motivated by the requirement.

Self-study activity of students always has the uniform basis in the course of training – individual knowledge. It is based on three kinds of activity of the student:

1) activity on mastering concepts, theories and laws or application of the ready information in familiar training situations;

2) activity which purpose is to define possible action of the acquired laws in the changed conditions of a training situation;

3) activity directed on independent discovering of laws.

Hence, the organization of self-study work on platform Web CT represents as specific pedagogical means of the organisation of student's activity in educational process which should include both a subject, and a method of educational knowledge. Thus, it is obvious that the essence of self-study work is defined by features of the informative problems embodied in the concrete maintenance of types of tasks independently carried out by the student, namely:

- Performance of tasks based on the sample (reproducing type);

- Reconstructive type of tasks;

- Partially-search or heuristic tasks;

- Research tasks (performance of project works).

Analyzing the self-study work of the 4th year students Mechanical Engineering Department on the platform WEB CT, according to the curriculum, we've defined the next explanations of the categories of tasks, which can develop different skills in studying foreign language.

Informative activity of students at performance of reproducing tasks on discipline English for Specific purposes (ESP) is directed on attentively to read and reproduce the concrete information in the form of a summary writing (annotation) in a foreign language. Student's self-study is shown in carrying out the task demanding the maximum approach to already done action.

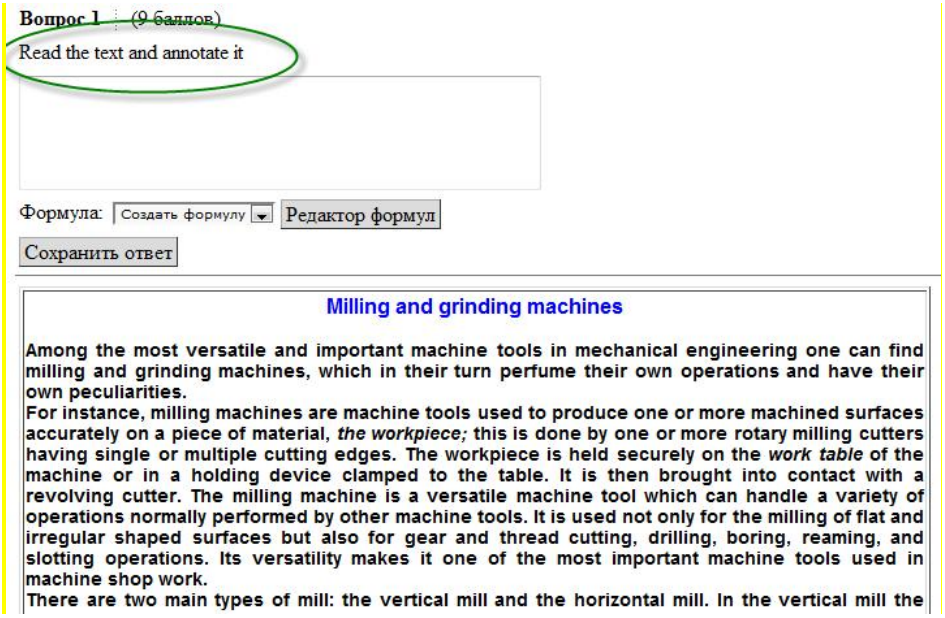

Fig. 2 Writing an annotation

Carrying out independently reconstructive types of tasks, the student faces necessity of transformation, reconstruction, generalizations, application of earlier studied material. In our case, performance of such tasks is tasks for training lexical and grammatical material, assumes reproduction by the student not only separate functional characteristics of knowledge, but also structure of this knowledge as a whole.

In tasks of partially-search type students solve problems, highlighting sub problems, thus using not only the stored experience, but also finding other ways of their previous experience. Performance of tasks demands exploring several known ways of the decision and their combination to limits in a subject domain.

Research tasks have high level of independence (performance of project works) when in a familiar situation it is necessary to find a new problem, new ways of application of the acquired knowledge. Students are supplied with the themes for project work and perform them independently or in a group.

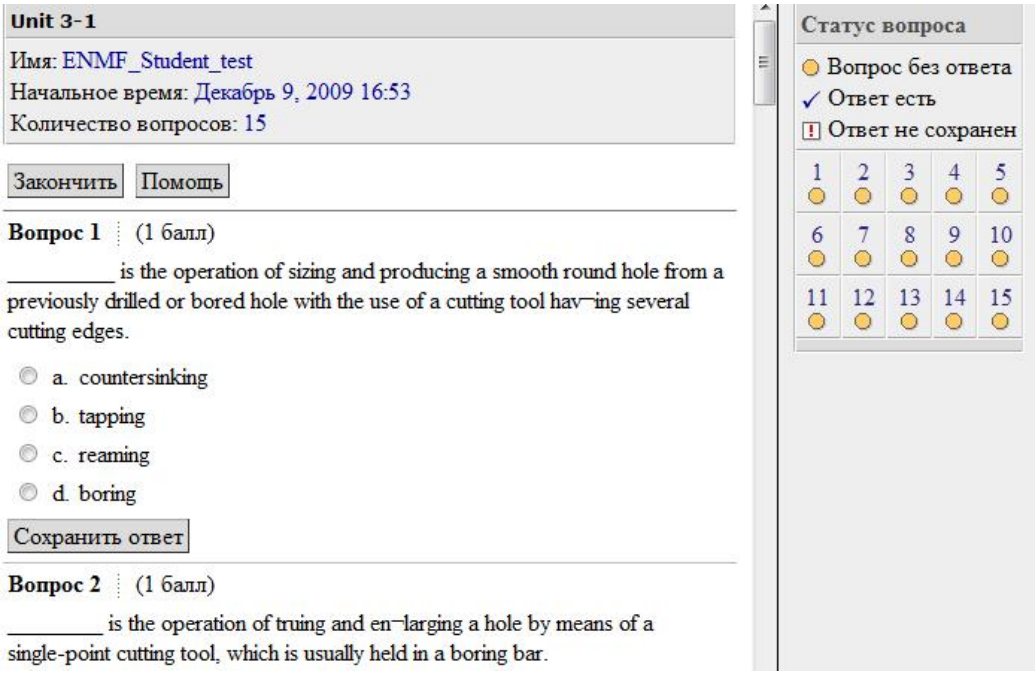

Fig.3 Vocabulary and grammar task

So, we've found out that working on the platform Web CT students can perform the same tasks as working in the classrooms; also it helps them to enlarge their vocabulary and improve their skills.

All of this should have the main requirements to the organization of students' self-study by the discipline ESP with the application of technologies Web CT. It consists in the following:

1) conformity of the maintenance of self-study work to requirements of curriculums;

2) self-study tasks are made according to the obtained students' knowledge;

3) observance of a principle of consciousness at their performance;

4) the organization of self-study in constant system;

5) individual approach realization to the student in the course of the self-study organization;

6) preparation of the student for performance of self-study through the Internet. It means:

-exact, accurate instructing about the purposes and work problems;

- explanation to the students necessary technical and organizational skills;

- statement before the student such problem which decision would demand from him intellectual efforts;

- observance of time given for the performance of self-study work.

7) formation of self-checking skills during the work;

8) obligatory checking by the student of self-study work and etc.

The organization of self-study work with application technology Web CT assumes pedagogical interaction as well. There are interaction boards for consultation students and checking their tasks.

So, examining the issue of performing students' self-study work on the platform Web CT, we've found out that it acts as the major form of educational process providing formation at the future experts who are ready for self-determination, for solving professional and social problems independently, for having abilities to be active in changing industrial and socially-cultural sphere. At the organization of students' self-study work with the help of technology Web CT, we define that it can be used in following kinds of activity of the trained: preparation for a practical training; performance of homework; self-study work on separate themes of a subject matter according to the curriculum; work with the additional literature; writing of a part of final qualification work on a foreign language; self-examination of knowledge and skills.

2.3 Use of Web 2.0 in educational process

The application of previously examined technology Web CT is based on the possibilities of Internet use nowadays. Web 2.0 is considered as one more way of application Internet resources in education. Nowadays everyone use Internet in different spheres of life. It is possible to find information there not only for entertainment purposes but to educate as well. The analyses of students' questionnaire shows that they use Internet every day, they find a lot of interesting and important information there. Some of them can't image life without Internet. Now it's their home, they have friends, communicate with them and solve professional and cultural issues. So, why not to try and use it for educational purposes!? In this way students have less problems in doing educational task, they can perform project works and explain their needs and requirements in their own words without being unforgotten. So it helps them to be freer in quotations, especially, when we speak about learning English as a second language. In this way, we've studied different sites which can help to introduce the method of teaching English integrative with the full time education. We've found the technology Web 2.0 is of great interest nowadays. What is Web 2.0? Briefly, it is a set of internet services and practices that give a voice to individual users. Such services thereby encourage internet users to participate in various communities of knowledge building and knowledge sharing. First, Web 2.0 is a scaling up of user participation that creates new opportunities for sharing and 'network effects'. The greater the number of students participating, the greater the value derived. Second, such sharing can evolve into more organized forms of joint knowledge building. Thus, Web 2.0 is about creating places for user collaboration. Third, Web 2.0 is about exploring a wide range of expressive formats. This is because digital media creates new possibilities for manipulating more than the conventional texts of communication: in particular, they encourage exploration of images, sound and video. Moreover, these opportunities have now become widely available. Finally, the rich and democratic patterns of exchange and publishing that Web 2.0 affords mean that the internet offers novel frameworks and resources for research and inquiry.

So, taking such aspects into consideration, it's possible to consider technology Web 2.0 being applied for educational purposes.

Moreover Web 2.0 involves individual users in coordination with others. Sometimes this coordination is crafted with careful motivation and creative skill. In other words it may be something that is constructed in the background – as internet services detect and integrate what users are doing in common. Those shared activities vary across a spectrum from the very serious to the very frivolous. It is not easy or sensible to classify what gets done into a recreational versus an educational distinction.

However, it is important to understand that Web 2.0 resources can stimulate and serve interests that lie outside the demands of a University curriculum. The activities of inquiry, conversation and production that such interests may entail are sometimes termed 'informal' learning. The opportunity to pursue those interests can exercise skills that usefully support what is done at classes. According to the needs of the students and the requirements of the curriculum, we've divided the internet resources for teaching ESP in technical higher school into several categories.

Educational Web 2.0 activities:

Table 1

Description / Link	Application with students	Advantages
Voxopop http://www.voxopop.com/ Voxopop is a web based audio tool that enables users to record their speaking for others to listen and respond to. It allows teachers and students to build up threaded audio discussions online similar to those on a text based bulletin board.	**Discussion points** - You can record a series of contentious statements and ask students to respond to each one. **Narrative building** - You can record the first sentence of a narrative and then ask students to listen to the thread and add a sentence each to the story. **Dictations** - You could record your own online dictation texts. Get the students to listen to the text, and write down what they hear and then record their own version of the text for you and other students to listen to. **Pronunciation drills** - Record some pronunciation drills and get students to listen to them and then record themselves saying the words or sentences. **True false statements** - Record some statements about yourself and get students to leave questions for you to find out which of the statements are true. You can leave your answers to the questions online too. You could allow students a week to leave questions for you to answer, then in class you can get them to tell you which statements are true or false. You could also get students to create their own true false statements and question each other about them.	It allows for real communicative speaking and listening practice outside of class time and that you have a good record of examples of your students speaking that you can listen to assess any pronunciation problems and to record and assess their progress as their speaking develops.
Penzu http://www.penzu.com Penzu is a simple online tool for creating a personal journal. Entries are automatically dated and students can add titles and text as well as images which appear in the margin	Penzu is a wonderful tool for creating materials and tasks for students. **Create digital materials** - you can create your own online material using text with images and share them with your students. **Writing portfolio** - you can use it to set written homework task for students. **Professional development journal** - you can use it as your personal development journal to reflect	It makes students written work much more accessible, they can integrate high quality images with the work and it remains as a tangible record of their progress and

of the page. They need to register to save their entries but this is simple and only requires the email address. This journal entries can be shared by email or can be printed up and brought into class.	on your teaching and your reading about teaching. **Lesson summary -** you can also record what you did with the classes each lesson and send it to them as a summary or reminder. **Model process writing -** you can use it to create models for writing activities. You could use a new entry each time you redraft to show how the text changes through the process steps of brainstorming and drafting to the finished product. **Learner diaries -** You can get your students to use it as a learning journal and write in what they learned from each lesson. They could share these entries with you. **Action research feedback** - You could use it for action research feedback by asking students to reflect on aspects of your teaching and then send you the response using the anonymous message feature. **Image based narrative** - Your learners will be able to create text which they can share with their parents. You can do this by giving them a group of images to upload to the margin of the text (in any order they choose) and then asking them to create a story based around these images.	achievements. It's also very content focused and there is no fuss with formatting or different fonts.
Listen and Write http://www.listen-and-write.com/ Listen and write is a dictation exercise creation tool. It has a large number of dictation exercises already created in a number of languages, but you or your students can also create your own. The dictation tool offers a number of options to support and develop students' ability to listen.	**Set listening for homework** - You can search for and select audio exercises for your students that are on a relevant topic and at an appropriate level. You could also let your students select their own listening activities for themselves or each other and they could discuss what they learned from the information content in class. **Let students select the listening** - You could ask your students to add links to audio files that they want to understand such as song mp3s, news reports or interviews, then you could create the dictation activities and transcriptions to go with the audio (or hope that someone else does) **Create your own activities** - You can create your own dictation activities for your students based on the audio files that you want them to understand.	It can track your students progress for you (and them) so it's an ideal tool for creating self-study work and homework tasks. If your students are competitive you can also keep a class scoreboard to show which students are doing best.
280 Slides http://280slides.com/ 280 Slides is a web based presentation tool similar to PowerPoint. It enables you to create	**Online presentation** - You can use it to put any classroom presentations that you do online for students to access from anywhere. This also enables you to import online video audio and images in to your presentations to illustrate points and make them clearer. **Listening and viewing tasks** - You can create	It enables you to integrate a wide range of rich media into your materials without downloading it to your computer

presentations with a series of slides and embed rich web based media into the slides such as video, audio and images. You can then deliver the presentations online, embed them into blogs or websites or download them to a computer hard drive.	your own listening and viewing tasks with questions and comprehension tasks based around up to date authentic web based media such as news or music videos , etc. **Student video projects** - You can get students to do their own video projects and then create a presentation that they can share with others explaining the process. Students could use something as simple as a webcam to produce their video content. **Students created materials** - Students could find their own media and design tasks and questions for other students in their class to answer.	and without violating the copyright of the owner. It makes the creation of multimedia tasks very simple and quick.
Eyeplorer http://eyeplorer.com/show/ Eyeplorer is a research and study tool built around Wikipedia. It enables students to search and cross reference terms in order to find and collate notes and references in preparation for writing assignments. It helps students to develop their writing through a process approach as well as developing their digital literacies.	**Essay tasks** - You can set simple academic type writing tasks for students based on a theme and ask them to use the tool to do their research and collect and collate notes using the tool. They then create a text from their notes. **Create notes** - You could create your own set of notes using the tool and then ask students to research the references to create their own essay. **Find relevant references** - You could simply ask students to find the 5 - 10 most relevant references based on an essay assignment question.	It shows students how to use web based tools and resources for study purposes and should enable teachers to lead students away from the more plagiaristic practices of copying and pasting direct from other online works.
Dvolver Moviemaker http://www.dfilm.com/live/mm.html Dvolver Moviemaker is a simple tool that enables you to create your own animated cartoons by selecting from a range of characters backgrounds and scenarios and adding your own dialogue text bubble. The movies can then be sent by email or embedded into blogs or websites for others to enjoy.	**Social expressions** - You can create movies which demonstrate social English language points or phrases and expressions being used in context. This can really liven up presentations of new language for students. **Vocabulary examples** - You can ask students to create animations which incorporate specific language points or vocabulary. **Create conversations** -You can give your students images of some of the characters + a context background for where they meet and then ask them to brainstorm a conversation between the two characters. They could then use the site to produce a polished final version of the conversation to share with other students. **Demonstrate concepts** - You or your students can create movies based around ideas like fear, happiness, boredom, etc and get other students to	It is so simple and quick to use, but gives very professional looking results which can then be shared. Animation is also very engaging and is great at showing time relationships as they actually do exist in time.

	guess the concept. **Film festival** - Set up your own film competition to see who can produce the best 3+ scene film. The best ones could then be embedded into a class blog or website. **Demonstrate time relationships** - You can create animations that demonstrate time relationships for teaching tenses.	
Wordle http://www.wordle.net/create Wordle is a simple tool that enables you to create colourful graphic representations of texts based on word occurrence from any given text. You just feed in the text either by copy and paste or by specifying a URL and then Wordle will analyze the text and create a colourful representation with more frequently occurring words appearing much larger than less frequent words. You can adjust colours and designs to suit your taste.	**Revision of texts** - You can paste in short texts that your students have studied recently. Show them the word cloud and see if they can remember what the text was about and how the words were used within the text. You can build up a bank of word clouds over a semester and pull them out at random to get students to recall the texts they have studied and the key vocabulary in them. You could also see if they could rewrite or reconstruct the text based on the word cloud. **Prediction** - You can create word clouds of texts before the students read or listen and ask them to make predictions about the content of the text based on the word cloud. They could also check any new words from the word cloud that they are unsure of before they read or listen. **Dialogue reconstruction** - You can create a word cloud of a dialogue students are studying and use it as a prompt to remember or reconstruct the dialogue. **Text comparison** - You can create word clouds from a of number professionally oriented text and then see if the students can decide which part of the text is from and why. **Topic research tasks** - You can create a word cloud based around a topic you want students to research. You could use a page from Wikipedia to do this, then use it to find out what students already know about the topic by asking what they think the relevance of each of the word is to the overall topic. They could then go to Wikipedia and find out more. Then report back on their findings using the key words as prompts. **Learner training** - This is a good tool for students to use regularly to help themselves. They can regularly make copies of the texts they study and pin them up to revise them or keep them in their gallery on the site. They could even create word clouds of their study notes to help them revise.	It is very simple for both teachers and students to use and it can produce very visually stimulating results.

Forvo http://forvo.com/ Forvo is a multilingual user generated pronunciation dictionary. You can search and find the pronunciation of words from a vast range of languages. You can also add words yourself and record the pronunciation or add words that you need the pronunciation for and wait for someone to record the word for you. Most of the pronunciations have additional information about the nationality, ethnicity, geographical origin of the speaker, so where words have more than one pronunciation example it's possible to compare different accents.	**Pronunciation research** - You can get students to research pronunciation of words they need to know. **Request pronunciations** - Students can add words that they want to know how to pronounce and you could add the pronunciation or wait for a visitor to the site to add the pronunciation. **Demonstrate different accents** - You could use the site in class to demonstrate the pronunciation on new words (especially if you are worried about your pronunciation or you want pronunciation with particular national accents).	It has input from such a range of sources, so the site is growing into a fantastic resource for comparing accents as well as learning pronunciation.
ESL Video http://www.eslvideo.com/index.php ESLVideo is a site that enables you to create web based interactive quizzes based around online videos. You can create a variety of multiple choice type questions, add transcripts or translations, add notes , etc. Once you have completed your quiz you can either send students a link to it on the ESL Video site or you can embed the quiz into your own website or blog.	**Video task for self-study work or homework** - You can create video based quizzes for your students to work independently. **Student created tasks** - You can get your students to create quizzes for each other. These could be based around video that they like or they could find or create a video which demonstrates understanding of a particular language point you have been working on. **Videos** - You can use the videos to help train students in the use of some web sites or tools or you could get them to create videos and quizzes to train you and other students in the use of various useful web based tools.	It enables teachers to create motivating tasks for learners that exploit online video. It also helps to by pass the need for some of the problems associated with accessing online video in class as the tasks can easily be set for self-study work and the site will track students results for you too.
Wallwisher http://www.wallwisher.com/wall/teachersweb20 Wallwisher is like a virtual sticky notice-board, though	**Video tasks** - We can create video tasks and get students to post responses to the wall by leaving it open for everyone to contribute. **Treasure hunt** - We could use the wall to collect different links to various resources around the web for students to explore, a little like a web quest or	It is really easy to create a wall and it makes collaboration very simple and quick too.

unlike real notice-boards you can post stickies with text images, links to websites and even videos. The notice-board is really simple to use and you can set access rights so that anyone can view and or post to it or only restricted people.	treasure hunt. **Theme based walls** - We could give students a theme and get them to create their own walls based around that theme. **Fan walls** - We could get students to create fan walls based around a favourite band or celebrity. **Share resource links** - You can use the wall to collect and share resources. **Create debate** - You can use the wall to create debates. You can do this either by posting your own contentious opinions or using videos from sites like BigThink.com and get students to respond. This could be a way of dealing with sensitive issues and enabling students to be able to express opinions that they might not feel comfortable doing in the classroom. **Grammar walls** - We can even create grammar walls and get students to post what they know and examples of different verb tenses or grammar points. **Wishing walls** - We could even get students to post their wishes on it using third conditional.	
TokBox http://www.tokbox.com/ TokBox is a free video communication platform that works in the browser without requiring download of any additional software. It enables a number of modes of communication. These include 1 to 1 live conferencing, many to many live conferencing, recorded video email messages. TokBox is also partnering with EtherPad to provide shared work spaces for creating and editing text.	**Chinese video whispers** - Use the video email feature to record a short text. Send it to the first of your students. Ask your student to write down the message and then record it themselves and send it to the next student. Each student should rerecord and send the message on to another, until the last student sends it back to you. You will then see how accurately the message matches to your original text. **Interactive video learning diary** - You could get students to create an interactive learning diary, they could email you their video summary of what they feel they have learnt that day and you could then respond. Your videos would form a good learning record and students would be able to look back at them later and see how they had improved - quite literally - and also hear the improvements in their speaking ability. This is also a great way to give your students one-to-one-time which can often be a problem in class. **Class survey** - You could send a video message to your students with a class survey question that they could respond to. This would be a good way to carry out classroom research, decide on learning	It is very simple to use but it still enables multiple modes of communication as well as multiple channels to support understanding (adding text and visual support through video).

	goals and make sure that all students had a means to respond to you in private and on an individual basis. **Different perspectives** - Show some of your students a video clip or picture that include professionally oriented situation or problem. Then ask the students to imagine that they are one of the people in the picture and they need to describe what happened. Ask them to a video giving their account of what happened. **Live tutoring support** - This looks like an ideal tool for supporting distance learners and doing 'face to face' tutorials. **Video interviews** - You could get in touch with someone for your class to interview. Just have one computer plus camera set up in class, and a visiting expert, friend or colleague on the other end for your students to interview. They could also interview an expert in groups from home with a conference call. **Video lesson with conferencing** - You could use the conference call to video cast your lessons to a group of distance learners. **Video twitter** - using the feed feature you could create a kind of video Twitter, with your students video micro-blogging about learning English, their day at the University or any topic they find interesting. **Text and video message** - Using the video email feature, you could record a video of yourself reading a text, then add the text within the email message. You could include some errors in the text and get them to watch the video and correct the errors. **Create a collaborative story** - Email students a video with the first line of a story and ask them to record your line of the story and add their own, then pass it back, or pass it on to another student. This way you could build up a story between the group over a period of time. **Tip of the day, word of the day** - Send you students a tip or word of the day by video email. These could be exam tips, study tips, recommended websites, or words and definitions. **Video dictation** - Send a video email of yourself dictating a text and ask your students to watch and	

	write the text in the email and send it back to you for correction.	
Ning www.ning.com Ning is an online service that allows users to create their own social networks and join and participate in other networks. Ning lets creators of networks determine the site's appearance and functionality, as well as whether the site is public or private.	**Research work -** The students pick their issues and start combing the Internet for resources that bear on the questions to voters. By creating social networks around academic topics, or even about specific projects for a course, a teacher can facilitate a strong sense of community among the students, encouraging personal interactions that can lead to the creation of new knowledge and collective intelligence. **Professional field of study -** Ning provides an opportunity for students to create their own social networks and learn how to cultivate and sustain a community of users that might resemble professional contacts and relationships.	It is an easy way for a cohort of students from an entering class, for example, or those who participated in a semester-abroad program to stay connected through the University years and beyond, even as they transfer to other institutions, graduate, or relocate.
Wikies http://pbwiki.com/education.wiki http://en.wikiversity.org/wiki http://knowhomeschooling.com http://westwood.wikispaces.com http://www.squidoo.com There are sites that allow students and teachers to establish their own wiki, with an educational slant (Pbwiki). Popular wikis are well established with educational emphasis (Wikiversity) or with material for more specialist interests (Knowhomeschooling). Some schools make their student wikis visible (Westwood wikispaces). Other sites invite sharing of expertise but without the wiki structure (Squidoo).	**Class resources –** publish class notes, PowerPoint lectures, schedulers and policies, show off examples of great students work. **Group project –** Build collaborative pages, start discussions and encourage comments. **Students portfolio –** Give students their own page to post content, upload self-study work and share their work. **Expand horizons** – Share and interact with other groups, across town or around the world.	Wikipedia can serve as a research site for beginning and intermediate learners of English, a place to contribute meaningful writing for more advanced students, and a site where prospective teachers of English can practice communicating to ESL audiences. Wikis are empowering collaborative multiauthored writing to better harness collective knowledge.
Media sharing	**Sharing material** – You can ask your students to share the material they find to the rest of the group	It is the simplest way to share your

http://youtube.com/group/reteachers http://www.bbc.co.uk/blast http://www.zentation.com http://www.miniciti.com http://www.notecentric.com http://www.savevid.com http://www.downloadhelper.net/intall.php http://www.picnik.com http://www.scribd.com http://flicker.com Sites have emerged that welcome creative digital material organised by educators.	**Project work** – to upload the media, presentations, abstracts online	materials to teacher and students.
Blogs http://www.blogger.com http://www.livejournal.com http://www.edublogs.com A blog is, simplest, an online diary posted in reverse chronological order	**Communication** – you may communicate with your students outside the classroom, consult and prepare the revision tasks. **Portfolio** – create your own homepage filled with program of the course, curriculum, exam questions and other necessary hints in the contents. **Creativity** - you can easily create and manage student and teacher blogs, quickly customize designs and include videos, photos and podcasts - it's safe, easy and secure	It is the best way to be in connection with your students outside the classroom. Blogging is creating tens of millions of authors and connecting them to audiences in ways previously unseen.
Social networking http://www.myspace.com http://www.facebook.com http://apps.facebook.com/mynewport http://www.goldstarcafe.net http://learnhub.com The mainstream social networking sites typically	**Communicative groups** – teachers and students can join different groups according to their needs and interests. There are a lot of educational communicative groups, where students can perform self-study work to revise the material, studied before.	Social networking sites are enabling both the many-to-many distribution from authors to audiences of multimodal artifacts and the automated presentation of user-selected content.

include education-oriented friendship groups.		
Collaborative editing http://www.google.com/docs http://www.bubbl.us http://www.virtual-whiteboard.co.uk	**Google docs**.- Text, spreadsheets and other documents can be stored centrally and collaborators emailed a URL to permit collaborative editing **Bubbl.us** – create colorful mind maps online; share and work with friend; embed your mind map in blog or site; email and print your mind map; save your mind map as an image. **Virtualwhiteboard** – provides you with a real time canvas for thinking, researching and teaching your students. The teacher can use these sites as producing a progress list for the group of the students. To put their marks and control their progress in knowledge.	They are available for educational, private and professional purposes

So, it's important to note that possibilities of Web 2.0 are vast and nowadays we have enough facilities to use them in educational process.

Web 2.0 tools and practices invite new ways for a learner to conduct personal research. Web 2.0 creates new structures for organizing data on the internet, new sources to refer to, new forms of authority, and new tools to interrogate this rich space of information. All of this has the potential of empowering the student as an independent learner but it also brings challenges to both learner and teacher –especially if strong inquiry skills of exploration and interrogation are to be actively cultivated. Web 2.0 knowledge structures are not navigated with the same tools (or the same ease) as might apply to more traditional documentary collections for learning.

The present experience of using Web 2.0 technologies with the senior students of technical specialties has at its core the cultivation of a distinct orientation to language. Interactions with writing are urgent to this. It is through experience with the written word that individuals learn how to represent and communicate events and ideas outside their natural context. Digital media expand this tradition by offering new modes of representation and expression. Thus, as learners engage more with digital artifacts through Web 2.0, so the curriculum must address the challenge of developing their confidence with the relevant new literacies and increased potential for creativity.

A core function of Web 2.0 services is to support communication between users. These tools allow individuals on the shared infrastructure of the internet to coordinate their activities to various degrees of depth. Web 2.0 offers educators a set of tools to support forms of learning that can be more strongly collaborative and more oriented to the building of classroom communities.

The possibility to publish their material supports users in creating original material for publication. Web 2.0 provides both tools and an audience. Within the space of classrooms, it is common to see the work of learners on display . The creation of an audience for learners is a precious opportunity and Web 2.0 space promises to offer a stronger feeling of doing authentic research when students submit the products of their study.

ESP teaching is not like other foreign language teaching. It is based on professional communication and research performance in foreign language of senior students. The done experiment shows the promise of appropriating Web 2.0 in educational practices. According to the mentioned above technology Web 2.0 may be considered as one of the sources for realization of the integrative method of teaching ESP in technical higher school.

3. CONCLUSION

Thus, successful realization of technologies Web CT and Web 2.0 in performance of students' self-study work as an integrative method of teaching ESP in technical higher school considers following important purposes:

- Increase of an active component in the teaching material maintenance, more successful realization of professional orientation principle;
- To get a match with current overarching policy and curriculum goals
- Perfection of students' independence to work, development of their computer literacy;
- Enrichment of the maintenance of a subject ESP at the expense of realisation of interdisciplinary dialogue of technical and humanitarian disciplines;
- Maintenance of an effective feedback on the basis of a combination of the test computer control of knowledge to performance and representation by means of technologies Web CT or Web 2.0 of the obtained knowledge;
- Giving to the process of training personally-focused character due to the displacement of accents from teaching to the learning, possibility of a choice of an individual educational trajectory, removal of psychologically stress factors.

To sum it up, lets consider the basic types of lingvodidactic issues, which can be solved with the use of Internet resources as an integrative method of teaching ESP in higher technical school, based on our experience. In other words, lingvomethodical possibilities of training foreign language, formation of skills and abilities in different forms of speech activities.

According to the table 2, it’s obvious to note that possibilities of Internet resources give the chance to improve students’ learning of foreign languages in all spheres of speech activities. So the application of Integrative method of teaching ESP is quite proved.

The technologies’ analysis shows that Web CT, applied at TPU has more organized structure, which helps students to solve the supplied problems by the tutor. At the same time Web 2.0 allows students more creativity in performance their work. These Internet technologies can supplement each other. The research shows, that the application of technologies Web CT and Web 2.0 in training of foreign languages in technical higher school as means of students' self-study work is necessary to consider some important conditions of their efficiency. First, this proper use of an information technology in educational process, which means gradual inclusion of the student in the process of self-study. Secondly, well developed structure and the contents of the tasks by the discipline in on-line mode. Thirdly, it is the mediated interaction of the teacher and the student through the Internet (information literacy of the linguist teacher).

Table 2

Speech activity	Skills
Phonetics	1) formation of listening skills 2) formation of articulation skills 3) formation of rhythm-intonation skills
Grammar	1) formation of receptive grammar skills of reading and listening 2) formation of productive grammar skills of written and oral speech 3) monitoring of the level formation of grammar skills based on the test activities
Vocabulary	1) formation of receptive vocabulary skills of reading and listening 2) formation of productive vocabulary skills of written and oral speech 3) monitoring of the level formation of vocabulary skills based on the test activities 4) enlargement of active and passive vocabulary
Reading	1) training of reading techniques 2) training of receptive vocabulary and grammar skills of reading 3) ability to choose different kinds of sense text information 4) training to analyze the text 5) formation of self-study skills working with the text 6) monitoring of correct and conscious understanding of the text
Listening	1) formation phonetic listening skills 2) monitoring of correct understanding of heard text
Speaking	1) formation of phonetic speaking skills 2) organization of students' webinars in order to solve the communicative problems
Translation	1) formation of vocabulary and grammar translation skills 2) monitoring of correct translation 3) mastering abilities to edit collaboratively translated texts
Written speech	1) teaching of calligraphy with the help of optical pen 2) training of productive vocabulary and grammar skills of written speech

	3) formation of spelling skills 4) monitoring of the formation level of spelling skills 5) mastering of reproductive and reconstructive skills of written speech with use of samples (annotations, abstracting, etc) 6) perfection of creative written speech, based on the interactive Internet programs

Self-study work with the help of technologies Web CT and Web 2.0 urged to create, first of all, optimum conditions for effective mastering of a teaching material as pledge of any successful training. Self-study work by discipline ESP under the conditions of Internet use can become organized, corrected, supervised, and mainly, adapted for specific features of students, hence, it is possible to speak about its new form – the computerized self-study work (method of integrative teaching ESP).

Taking into consideration the obtained results, the computerized form of self-study work can be characterized as purposeful, motivated, structured by the subject (student) of an aggregate carried out actions and corrected by the process and result of the activity, performed interactively within full time studying and e-learning, on the basis of the mediated management from the teacher.

So, the integrative method of studying foreign languages in higher technical school, in our opinion, urged to carry out the following socially significant functions:

1) increase of level of society education and quality of education;

2) satisfaction of requirements of the country in qualified trained specialists;

3) increase of social and professional mobility of specialists, their business, an outlook and consciousness level.

Some advantages of use Internet resources as a self-study of learning foreign language based on an integrative method of teaching can be noted, such as:

- unlimited time of material's studying
- free working hours (the chose of working time, breaks and the rate of mastering material)
- creative working

The main mission of ICT in studying foreign language for specific purposes based on an integrative method of teaching is aimed to realize different forms of interpersonal communication eliminating rupture between obtained knowledge and its valid mastering.

It should be mentioned that all forms of self-study with the use of Internet resources can't be productive without the effective, systematic coordination of the qualified tutor. Therefore even the most attractive video-, audio- Internet activities outside of the real educational process should be managed, only in this way progressive educational results can be obtained.

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EDUCATIONAL ASPECTS OF THE INTEGRATION OF BULGARIAN IMMIGRANTS' CHILDREN INTO THE GREEK SOCIETY

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Abstract

Immigrant integration is undoubtedly an important contemporary issue which, not surprisingly, has been researched from various scientific points of view. According to the Bulgarian Ministry of Foreign Affairs, as of February 7th, 2005, the number of Bulgarians living in Greece is approx. 290 000 – making Greece the country with the most Bulgarian emigrants. If we take into account that this number has risen significantly after January 2007, when the borders between the two countries were opened after Bulgaria joined the European Union, the need for researching the process of their integration becomes even more evident. With this in mind, when discussing the education of Bulgarian children living in Greece we have to consider two interdependent and mutually complementary aspects of the education of children who live in a foreign country: on the one hand - keeping their mother language and cultural identity; on the other hand – attaining intercultural education, helping the process of their integration into the foreign society. The current paper presents both aspects, with specific reports on the role of the Bulgarian immigrant society in Greece, the support provided by the Bulgarian government and state, and the relevant actions taken by the Greek Ministry of Education.

Key words: *immigrant's children integration; education of Bulgarian children in Greece*

1. INTRODUCTION

Immigrant integration is without a doubt an important issue in the modern world and it is no wonder that it has been researched from various scientific points of view. Regarding the emigration of Bulgarians to Greece, there is an interesting statistical fact: according to the last official statistics stated by Bulgarian Ministry of Foreign Affairs, as of February 7th, 2005, the number of Bulgarians living in Greece is 290000 – making Greece the country housing the most Bulgarian emigrants (in comparison, according to the same source, there are 270000 Bulgarians in USA, 120000 in Spain, 70000 in Italy, 44300 in Germany, 44000 in UK). If we take into account that this number has risen significantly after the borders between the two countries were opened in January 2007 when Bulgaria joined the European Union, the need for researching the process of integration of Bulgarian immigrants' children into Greek society is quite evident.

The necessity for development in this direction is also apparent by its concurrence with relevant European directives (2000 Lisbon strategy, 2002 Barcelona educational council, etc.) according to which the new role of the teacher is connected primarily with development of new pedagogical

methods for increasing children's motivation and establishing their identity in the context of cultural variety.

The issue of the education of Bulgarian children who live in a foreign country can be explored in two interdependent and mutually complementary aspects: the first one is connected to attaining intercultural education, helping the process of integration in the foreign society; and the second one is in the direction of keeping their mother language and cultural identity. These two aspects are going to be presented in more detail in the current publication.

2. SOME ASPECTS OF CONTEMPORARY INTERCULTURAL EDUCATION IN EUROPE

In order to manage cultural diversity in kindergartens and school classrooms effectively, the underlying philosophy has to be that diversity is valued and that it strengthens classroom dynamics and offers greater learning opportunities for all. In this direction, "effective education" (Le Roux 2001) is particularly directed and relevant to the specific and unique learning needs to all students. Gorski (2006) has reviewed conceptualizations produced by several of the field's pioneer voices, among which those of Nieto (1996), Grant (with Sleeter, 1998), and Banks (2004), concluding that all of them agree on several key principles, one of which is that multicultural education is good education for all students. In other words, in his attempt to identify a set of defining principles of multicultural education, Gorski once again confirms the significance of intercultural education not only for immigrant's children, but also for all children from the accepting society. Le Roux (2001) also claims that it is wrong to assume that multicultural education will inevitably be practiced in a situation where learners of different cultural backgrounds are present in a common school or classroom setting. He is of the opinion that all children should be taught about the cultural diversity outside the school in a world that has become increasingly pluralistic in character (Le Roux 2001: 44); true multicultural education for all, or "culturally responsive education" as he calls it, should prevail. Liddicoat & Diaz (2008) have also drawn attention towards the fact that the policy-makers have opted for an intercultural approach which has evolved from its initial focus, the integration of immigrant children, to a broader, more comprehensive goal in which intercultural education becomes a core educational process for both immigrant and mainstream students. In the intercultural context of an increasing ethnically diverse classroom, the goals of intercultural education have also changed, promoting mutual benefits for all students.

On the other hand, the increasing social and ethnic diversity in European education systems demands new teacher competences. Le Roux (2001) considers that culturally responsive teaching entails much more than simply teaching a culturally/ethnically diverse class. Effective education or schooling is not simply a matter of teaching and learning curriculum content; it is also about values, assumptions, feelings, perceptions and relationships. An accommodative, appreciative and responsive approach to the reality of cultural diversity is of utmost importance. In this respect, the prospective teachers need to learn that multiculturalism is more than a question of adding specific aspects to various school objects; it should incorporate an approach, attitudes, learning material, and the reality of various learning and teaching style and implicit assumptions (Le Roux 2001: 47). Experience suggests that learning is challenging and enriching when teachers are sensitive to, and accepting of, classroom diversity; when they have integrated their understanding of cultural diversity not only into their curricula, but also into their own personal outlooks and interpersonal interactions (Ganapathy-Coleman & Serpell, 2008). According to Le Roux (2002), effective educators are culturally-competent communicators; therefore, effective communication skills are a prerequisite for effective education.

However, communication is not always strictly verbal; Liddicoat & Diaz (2008) claim that teachers should provide opportunities for students with immigrant background to learn to communicate through providing activities where language does not play a major role.

On the other hand, Baldock (2010) argues on the significance of having "a reasonably clear notion of our own cultural identity" (Baldock 2010: xvi) as a prerequisite for understanding cultural diversity from early years. In his opinion, it is necessary to develop skills in response to cultural differences rather than just to acquire information about the cultures we expect to meet. In this regard, the support of people from outside the setting is very important; especially from parents whose own cultural background is not that of the majority of practitioners or other families at the setting. They may be willing to explain or demonstrate one aspect of their own cultural backgrounds. The advantages of asking parents to explain features of their cultures are connected mainly with the fact that they are likely to give a more realistic picture; moreover, since their children attend the setting, other children may be more able to understand that they are talking about something that happens routinely in their area rather that something exotic (Baldock 2010: 67; 68).

Last but not least, the aspect of citizenship education is mentioned. It can be based on transferring and transforming transcultural values and can play a key role in building a future Europe characterized by the roles of dialogue and tolerance (Sandström & Stier, 2008). It can also help prepare the ground for a sense of community and collective identity within the European Union.

3. EDUCATIONAL POLICIES IN THE FIELD OF INTERCULTURAL EDUCATION IN GREECE

The increase in immigration has affected the school system in Greece, which has had to adapt in order to meet the needs of new groups from a diverse range of backgrounds. In order to adjust to the increasing diversity of school populations, the Greek Government has undertaken an on-going policy for integration of immigrants' children. In the initial phase of mass immigration into Greece in the early 1990s, there seemed to be few immigrant children: those who had arrived were not generally admitted into the public schooling system, as they were the children of illegal immigrants (IMEPO Final Report, 2004). Since the mid-1990s, there has been a highly visible increase in the number of immigrant children recorded in public schools. This is partly because of more recent toleration of the undocumented status of their parents (as per United Nations Convention on the Rights of the Child). The Greek Ministry of Education has established projects for rapid language acquisition. According to statistical data on immigrants in Greece, gathered for a study conducted by the Greek Migration Policy Institute for the 2002/2003 academic year (IMEPO Final Report, 2004), there were approximately 97000 non-ethnic Greek children (2873 of which pointed Bulgaria as their place of birth) in the public school system, the majority of whom in primary school. The challenge for a heterogeneous society is to meet the raised expectations for educational policies that are able to respond to the needs of the entire student population, which requires educational policies that are culturally sensitive, that enhance educational, socialization and personal development opportunities for students of all communities. Immigrant students need to deal with various difficulties in schools, arising from the cultural differences between the host society and the society of origin (Giavrimis et al 2003). Paleologou (2004) has explored the different aspects of the implementation of intercultural education in the Greek context and states that intercultural education has gradually emerged in Greece as a new type of education.

Several large scale projects have been focused on intercultural education in Greece. One of the most significant and unprejudiced examples is the EMILIE project, the Greek part of which was conducted by a scientific team from ELIAMEP – the Hellenic Foundation for European and Foreign policy. The EMILIE project examines the migration and integration experiences of nine EU Member States and attempts to respond to the new challenges that multiculturalism is facing in contemporary Europe. Participating countries are Belgium, Denmark, France, Germany, Greece, Latvia, Poland, Spain and the UK. The project studies three important areas: education, discrimination in the workplace, as well as voting rights and civic participation. In the following paragraphs we are going to present in brief some important conclusions made in the Final report focused on education policy and the measures and practices adopted in dealing with cultural diversity in Greek education (Triandafyllidou & Gropas, 2007; Triandafyllidou & Gropas, 2009).

According to Triandafyllidou & Gropas (EMILIE Report 2007), Greece's immigrant population is estimated at approximately 1.3 million, or 12% of the total population of 11 million. The main immigrant nationalities include Albanians (about 60% of the total immigrant population), Romanians and Bulgarians (currently EU citizens), Georgians, Ukrainians, Russians, and to a lesser extent Asian immigrants (mainly from Pakistan and Bangladesh). In this regard, the largest immigrants groups in Greek schools by nationality are Albanians, Russian speakers (Russian, Ukrainian and co-ethnic children from the former Soviet Union), Bulgarians and Romanians. About half of the children born of foreign parents live in the largest two Greek cities; the capital Athens, and Thessaloniki. The highest concentration of immigrant students is found in the Athens metropolitan area, where immigrant and co-ethnic students are about 12 % of the total school population.

The EMILIE Report (2007) states that, since the mid-1990s, Greek public schools have been faced with an increasingly diverse (ethnically, culturally and religiously) school population. In 2008, children born of foreign or co-ethnic parents attending Greek public schools accounted for approximately 18% of the total school population (16% being children of foreign parents). In response to the changing realities, Greek education policy has essentially been defined on the basis of the following approaches: high priority has been accorded to Greek language learning as an instrumental but also a cultural tool for integration in Greek society; cultural and religious difference is accepted at the individual level; cultural and religious assimilation is encouraged as the outcome of successful integration through both curricular and extracurricular activities.

In 1996, the Institute for the Education of Co-Ethnic Returnees and for Intercultural Education (*Ινστιτούτο Παιδείας Ομογενών και Διαπολιτισμικής Εκπαίδευσης*, IPODE) was established as a semi-autonomous institute within the Ministry of Education. But, as stated in the EMILIE Report (2007), it deals more with the education of Greeks abroad than with providing for the needs of immigrant children in Greece. However, IPODE together with the Pedagogical Institute are responsible for issuing textbooks and other educational materials to be used in intercultural schools as well as in reception and support classes.

In parallel with the establishment of IPODE, in 1996 the first institutional measure was taken in the direction of intercultural education. The legislation referred to the establishment of intercultural schools for the education of "pupils with special educational, social, and cultural needs" (Triandafyllidou & Gropas, 2007). In principle, intercultural schools follow the curriculum and annual study programme of mainstream schools; however, they benefit from a significant degree of autonomy in order to respond to the special needs of the foreign student population. In practice, this autonomy means not being obliged to cover the entire curriculum, as other schools are expected to, with a view to paying more attention to Greek language learning and the overall process of smooth integration of

foreign pupils to the school environment. In addition to the standard curriculum, intercultural schools can provide courses on the language and culture of the country of origin of the foreign students for up to 4 hours per week. They can also teach Greek to the students' parents, inform them about the Greek educational system and encourage their participation in school activities in order to further integrate foreign students in the school and wider community life. Student festivals, plays, events and awards particularly themed on human rights, non-discrimination, equality (gender and other) and the fight against exclusion, racism and xenophobia are organized and supported by the state authorities through funding. However, it is obvious that these 26 intercultural schools do not meet the current needs of foreign pupils that account for approximately a tenth of the school population. At the same time, some of these intercultural schools have become all-foreigner schools, since Greek parents and pupils quickly abandoned them.

According to the EMILIE Report (2007), from 1999 onwards, two types of reception classes have been initiated. The first type includes groups of students who are taught Greek language and some basics from other subjects and who join with the regular classes for gymnastics, music and foreign language courses. The maximum period for which a student can be enrolled in these reception courses is two years and the decision to enrol a child in these classes is taken by the school in collaboration with the parents. For the academic year 2002/2003, 548 reception classes of this type were organised with 7,863 foreign students enrolled, 39.05% of which were organised in the Athens metropolitan area. The second type does not involve separate classes but takes the form of support classes and tutorials on the part of teachers who give special attention to foreign students, thus permitting them to follow the class curriculum with the rest of the pupils. For the same academic year, 127 support classes catered to the needs of 1,663 students. Some schools manage to provide both reception and support courses for their students, while others provide none at all; still others provide only for a limited level of teaching support to non-Greek mother-tongue students. Schools are also under-resourced in terms of access to intercultural pedagogical material. Although a lot of new teaching material has been developed over the past decade through the ad hoc intercultural programs, there are insufficient resources to disseminate this material to schools, reprint manuals, etc.

The EMILIE Report (2007) has shown in a very objective way the main shortcomings of Greek education policy. One of the most important disadvantages defined is the fact that intercultural education is considered a concern for foreign students only and not a priority for the entire student population. This deficit is contrary to the worldwide tendencies and understanding of contemporary intercultural education. Another significant shortcoming is that reception and support classes for migrant students are understaffed and under-resourced. At the same time, intercultural schools have been largely converted to all-foreigner schools given the high "flee-rates" of native Greek students from these schools. Another shortcoming of the overall policy design is the fact that mother-tongue learning has been rather restricted so far, because learning Greek is considered as the key vehicle to integration, while the language and culture of origin is not valued as cultural capital or as a tool for supporting Greek language learning. Intercultural education initiatives in Greece have tended to ignore the diverse linguistic background of the foreign student population and the ensuing linguistic issues in learning Greek. Thus, the results of the policy are undermined by problems in its implementation. Given the high number of foreign and co-ethnic children in Greek schools, the above shortcomings may prove disastrous for the education and subsequent labour market performance of immigrant and co-ethnic youths. The measures which the EMILIE Report (2007) has proposed include: the continuation of reception and support classes for non-Greek mother-tongue pupils; the promotion of teaching of the language and culture of the main countries of origin in optional courses during afternoon hours for all students; the on-going training and support of educators and teachers in the

field of multicultural education, combined with additional screening of teachers who offer to serve in schools and kindergartens with a high percentage of non-Greek mother-tongue pupils with a view to ensuring that people with expertise on the subject and/or motivated to tackle the challenge of cultural diversity can be appointed; further revisions in school curricula and textbooks with a view to acknowledging and celebrating the pluralistic character of Greek society and culture in the 21st century.

4. INTERCULTURAL EDUCATION IN GREECE: SOME GOOD PRACTICES

According to the EMILIE Report (2007), Greek terminology refers to "inter-cultural" *(διαπολιτισμική)* and not to "multi-cultural" *(πολυπολιτισμική)* education. In the Greek academic discourse, intercultural education and interculturalism (*διαπολιτισμική εκπαίδευση*, *διαπολιτισμικότητα*) are normative concepts. They prescribe a desired state of affairs and a prescriptive approach to the goals of education. By contrast, multiculturalism and multicultural societies (*πολυπολιτισμικότητα*, *πολυπολιτισμική κοινωνία*) are mainly seen as descriptive terms. Traditionally, the objectives of intercultural education have been defined as knowledge, acceptance and respect of diversity; mutual understanding and dialogue between different civilizations; rejection of stereotypes and prejudice; equal and constructive co-existence within a multicultural society. Triandafyllidou & Gropas (2007) put forward the following definition of intercultural education: *intercultural education involves not only intercultural exchange and knowledge of other cultures but also a reconsideration of the in-group culture through the integration of culturally diverse pupils into a cohesive societal whole*. In their view, such measures mainly include: the continuation of reception and support classes for non-Greek mother-tongue pupils; the promotion of the teaching of the language and culture of the main countries of origin in optional courses during afternoon hours for all students; and further revisions in school curricula and textbooks with a view to acknowledging and celebrating the pluralistic character of Greek society and culture in the 21st century.

Some good Greek intercultural education practices are connected with the so-called "Friendship days", when the traditions, history and culture of the students' countries of origin are celebrated, while many classes include projects and presentations based on themes that refer to the history, geography, culture of the students' countries of origin. At the same time, great pride was taken in showing the impressive progress accomplished on the part of immigrant children in their aptitude and speed of learning Greek and becoming accustomed to Greek literature, poetry, culture, mythology (Triandafyllidou & Gropas, 2007).

Karatsouni (2004) presents a Greek kindergarten class of 18 children, two of which are from Albania. Their teacher, in an effort to help the immigrant children's integration, asked their mothers to come to the class and read a fairy tale from a book written in the Albanian language. From the illustrations, the children guessed that the fairy tale was "Puss in Boots". Listening to the fairy tale in Albanian, they soon learned to discern the Albanian words for "puss in boots". They also noticed that the book had two columns of text in each picture, the second one being in Italian; when they realized it is another new language, they asked to hear the fairy tale in Italian as well, commenting afterwards on the similarities and differences between the languages. The children then decided to write and illustrate the story of "Puss in Boots" in Greek and Albanian. Their collective effort was beneficial for all of them: the Greek children prided themselves in becoming "multi-lingual" after "learning" a foreign language, while the Albanian children became closer with their Greek schoolmates, as well as becoming more comfortable with writing and using Greek letters. This initiative was followed by

other similar events, for example the parents of Muslim children presented the Ramadan celebration to the school.

Papadopoulou (2005) discusses the group activities organized in the 3rd Kindergarten in Kilkis, Greece where, out of 19 children, two were immigrants while another two were born of mixed marriages. Initially, all four children had problems in their communication with the rest of the class. In order to help them, a three-month intervention was organized, built around group activities which were designed to help children develop a closer contact with each other. The activities centred on using all senses, encouraging physical contact, learning to listen to and recognize different voices, observation of physical characteristics, etc. Activities included making children recognize their classmates from a certain characteristic like voice, palm prints, or pictures drawn by them. At later stages, children brought photographs of loved ones and discussed them with their classmates; in general, discussion was encouraged on things that make the children happy, sad, or afraid. All these activities helped build a better framework for communication in the classroom, which benefitted all the children, not only the immigrant ones.

Mandziara (2005) presents the experience in the field of intercultural education in the 36th Primary School of Athens, which has a high percentage of immigrant students, primarily because of its location in one of the areas of the city with a high concentration of immigrant citizens. During the 2003/2004 academic year, the first and second grade classes were comprised of 23 children, 18 of which were of Albanian origin, though most of them were born in Greece. This article refers to activities organized by the school under a general project titled “Traditional Greek and Albanian games, games with nature, language and mathematics”. The children played both Greek and Albanian games in class, as well as in the schoolyard; through the games, children were introduced to each other’s culture, found similarities and differences between the two cultures and learned to appreciate and respect each other. Moreover, the development of children’s verbal expression benefited by these interactions, something which became apparent when they were called to take “interviews” from two parents, one Albanian and one Greek, with relation to the games. Apart from the games at school, the children were able to play in a natural environment at the nearby hill, where their knowledge of nature and animals was developed through games of memory and imitation. The shared learning experience helped immigrant children overcome their shyness and join the classroom collective with better self-esteem.

Protonatorio et al (2006) present a different approach taken by teachers when organizing the celebration of a national holiday by the multi-national pupils. More specifically, the teachers aimed at avoiding the “standard” way of celebrating the Greek resistance during the Second World War, marked on October 28th; instead, the celebration was focused more on the experiences of different nations during the war, the different points of view and the common elements that are valid even today. At the same time, the project aimed at involving all children and their varied cultural backgrounds, helping them learn to work together and respect each other. The celebration was organized around the fictional “diary of a mule”, which depicts the animal’s life in a village before and during the war. References to the war, including literature, poetry and songs by both Greek and foreign authors, were used to place the narration in a historical setting while giving the children a clearer picture of life during the war. Other multi-cultural elements included narrations by children of their grandparents’ real experiences during the war, as well as translating anti-war slogans in all languages spoken at school. The celebration was a success, with all children and teachers getting involved and working as a whole. It proved that adopting non-standard methods can be beneficial, if not essential, in multi-cultural environments.

5. BULGARIAN IMMIGRANT'S CHILDREN IN GREEK SCHOOLS

As mentioned before, according to statistical data on immigrants in Greece (IMEPO Final Report, 2004) for the 2002/2003 academic year, there were approximately 97000 non-ethnic Greek children in the public school system, 2873 of which pointed Bulgaria as their place of birth. This number excludes children born in Greece by Bulgarian or mixed families. Another obvious fact connected with the increase of Bulgarian children living and studying in Greece is that, after Bulgaria's European Union membership in 2007, more and more Bulgarians have started legal or illegal work there; some of them have taken their children to live with them. Therefore, we can conclude that the number of Bulgarian children currently living in Greece is significant.

Having in mind the strong power of the Orthodox Christian church in Greece, Bulgarian immigrants' children are in a better position than, for example, Albanian ones (a big part of which are Muslims), because of the fact that the majority of them come from Orthodox Christian families. The existence of some kind of religious identity is almost taken for granted within the Greek educational and social context. This is the dominant identity the educational system cultivates and reproduces (Zambeta, 2000: 150). In this respect, one of the most serious issues affecting contemporary Greek education deals with cultural diversity and, in this case, the way it treats religious diversity. Having the same religion as Greeks, Bulgarian children have the advantage of being integrated in a country with a similar culture, so this at least is not a problem for them.

Because of the size of immigration in Greece, our Greek colleagues are more familiar with the issue of integration of immigrants' children and they have achieved good results in this area. However, most of them treat immigrants' children as a single group. The 1990s immigration wave in Greece included many different nationalities, such as Albanians, Bulgarians, Romanians, Georgians, Russians, Ukrainians, Poles, Moldovans, Pakistanis, Egyptians, Bangladeshi, Syrians, etc. There are rarely treatments of the children which take into account their origin and the specific problems connected with their country, language and culture.

The matter of the specific conditions and requirements for the integration of Bulgarian immigrants' children into the Greek society has not been researched in detail yet, in either Greece or Bulgaria. There has been no specific research into the question of integration of Bulgarian immigrants into Greek society. This question has become more prominent nowadays, when more and more Bulgarians work in Greece and take their children to live with them in comparison to the situation before 2007, when children used to stay behind in Bulgaria to live with their grandparents. On the other hand, many of the Bulgarians who immigrated to Greece in the 1990s have formed Bulgarian or mixed marriages and families, so there are more children with a Bulgarian background now living in Greece.

Bearing in mind that the integration of Bulgarian immigrants and their children into the Greek society may be achieved easily through the continuing cultural interaction of neighbouring peoples, the author has started work on a project aiming at cultural integration of Bulgarian immigrants' children in Greece through the similarities between Greek and Bulgarian proverbs and sayings (Engels-Kritidis & Stellakis, 2010). When discussing the creation of a basis for a culture of behaviour, pedagogical research and practices concentrate on the period of pre-school childhood; therefore, it is when children are in the pre-school age that it is necessary to find a means of unification as a basis for creating forms and methods of pedagogical interaction to help the process of integrating Bulgarian immigrants' children into Greek society. On the other hand, the proverbs and sayings of the two neighbouring peoples (Bulgarian and Greek) can be used not only to integrate the wisdom and experience of our forefathers into a short expression, but also for something much more: helping the process of

integration of Bulgarian immigrants' children into the Greek society and Greek language, through getting these children involved in equal peer-mates relationship with Greek children at the same age. Because of the geographical proximity of the two countries, there are a lot of similarities to be found between Bulgarians and Greeks with regard to the above folk genres. Additionally, their short size and ease of use keeps proverbs and sayings alive during everyday speech, even when people have moved outside their home country. In this regard, we have found, selected, analysed and categorized a collection of Bulgarian and Greek proverbs and sayings whose literal meanings correspond, in order to develop a theoretical model of pedagogical interaction based on their similarities, which can be used to help the process of cultural integration of Bulgarian immigrants' children aged 5 to 7 years into the Greek society.

6. ACTIONS AND INITIATIVES FOR KEEPING THE MOTHER LANGUAGE AND CULTURAL IDENTITY OF BULGARIAN IMMIGRANTS IN GREECE

There is a tendency for patriotic Bulgarian immigrants to organize forms of education on language and culture for Bulgarian children, so they can be taught like their peers living in Bulgaria, therefore maintaining their ties to the country. Associations of Bulgarians living in Greece, organized by Bulgarians living in Greece on a voluntary basis, are mostly located in the large urban centres, Athens and Thessaloniki; they organize cultural and educational activities focused on preserving the Bulgarian language and culture. One of their main activities is the creation and support of Bulgarian Sunday schools.

The Bulgarian Sunday school "St. Cyril and St. Methodius" in Athens was established in 1998. It has been through a lot of difficulties, but during the academic year 2008/2009 it was attended by 56 students aged 6-18 years. The staff consists of 10 Bulgarian teachers, teaching *Bulgarian Language and Literature, Bulgarian History,* and *Bulgarian Geography and Economics.* The school is self-supported; the parents pay tuition fees which are used to cover the expenses for renting class space and paying the teachers' fees. The school does not receive any financial aid from the Bulgarian Ministry of Education, but receives non-financial support from the Bulgarian Embassy in Athens; with the Embassy's help, the school can award Certificates for successful completion of studies, which are recognized by the Bulgarian Ministry of Education. With such a Certificate, a student can choose to continue his/her education in Bulgaria without having to take additional exams. In 2010, a second Bulgarian Sunday school was established in Athens with the name "St. Paisij Hilendarski".

The Bulgarian Sunday school in Thessaloniki was established in 2008. This project has been undertaken by Bulgarian patriots with the help and support of the Bulgarian monastic brotherhood of the Zograf Monastery in Mount Athos, who have provided premises for the school's classes. The school has also received support from the Bulgarian Consulate in Thessaloniki. The Agency for Bulgarians Abroad has also supported the school by providing the necessary textbooks, literature books and tuition materials.

As can be seen, for the educational process of these schools, financial support from the Bulgarian government and state has not been assured. However, starting from the 2009/2010 academic year, the Bulgarian Ministry of Education has initiated a National Programme called "Mother Language and Culture Beyond Borders" (National Programme 2010), which supports educational activities aimed at preserving ties with the Bulgarian nationality, culture and spirituality and strengthening the national affiliations. Under the terms of this Programme, a competition was held and 53 Bulgarian Sunday schools from all over the world (among which two schools in Greece – one in Athens and one in

Thessaloniki) were selected to receive a shared fund of 2 500 000 Euro, distributed in accordance with the number of children in each school, as support for the educational activity they are performing. During last year's conference of the Association of Bulgarian Schools Abroad, the Bulgarian Minister of Education assured everyone that the "Mother Language and Culture Beyond Borders" programme will be continued in the future. In year 2010 and in spite of the financial recession, the Programme was initiated again, albeit with a significantly reduced budget of 1 500 000 Euro. Nevertheless, this kind of yearly financial support is of utmost importance and we strongly believe that this National Programme should be active in the future.

7. CONCLUSION

Intercultural education in Greece has been improving every year. The existence of the reception and support classes for non-Greek mother-tongue pupils will continue, promoting teaching of the mother language and culture in optional courses. The intercultural education of Greek teachers will help develop them through consistent training and support in the field, ensuring pedagogues with expertise on the subject who are motivated and able to tackle the challenge of cultural diversity. Further revisions in kindergarten and school curricula and textbooks with a view to acknowledging and celebrating the pluralistic character of Greek society and culture in the 21st century will be made. Specific educational tools will be provided to help the process of integration of Bulgarian immigrants' children into the Greek society, as well as to get them involved in equal peer-mates relationship with Greek children of the same age Thanks to the Bulgarian cultural societies in Greece, Bulgarian children will continue studying their mother language and history in Bulgarian Sunday schools; it is our belief that, sooner or later, the Bulgarian Government and state will support them not only partially, but totally; the responsibility for maintaining the Bulgarian language and the Bulgarian cultural identity in Bulgarian emigrants all over the world should be a state issue.

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ACTIVITIES, RESULTS AND IMPLEMENTATION OF ERASMUS PROGRAM AT VILNIUS GEDIMINAS TECHNICAL UNIVERSITY

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Abstract

During quite a few years institutions, taking part in the project, have already been co-operating in the Socrates-Erasmus program, promoting the exchange of students and teachers. The Main objectives in the project are: improve quality in education; enhance its European dimension; foster co-operation, dialogue, exchange of information and experience between Institutions and other sectors of society; increase mobility and improve transparency and credit recognition (Diploma Supplement; recognition for teachers); adopt a system of easily readable and comparable degrees (ECTS); move towards the adoption of a two-tier degree; move towards the establishment of a single quality accreditation system and unified criteria for quality assurance; promote a knowledge-based society (Lifelong learning and teaching program); increase the attractiveness of the European Area of Higher Education in Vilnius Gediminas Technical University (VGTU); move towards the adoption of a common frame of reference for degrees. VGTU participates in five Erasmus Intensive Programs.

Key words: *Lithuania, Vilnius Gediminas Technical University (VGTU), ERASMUS program, teaching staff, incoming, outgoing students*.

1. INTRODUCTION

When ES SOCRATES program was finished in 2007, new Lifelong learning and teaching program began. This program will be operative until the year 2013. This program includes four separate programs: *Comenius, Erasmus, Leonardo da Vinci, Grundtvig*. Lifelong learning and teaching program ERASMUS cooperates with higher education institutions, stimulates academic mobility and develops study quality. Program ERASMUS gives an academic opportunity for university staff to meet their colleagues from abroad and develop practical skills. The article presents science fields and ERASMUS program activities in VGTU.

2. VILNIUS GEDIMINAS TECHNICAL UNIVERSITY

Lithuania is the biggest of the three Baltic states (65 300 km^2). It borders Latvia in the north, Belarus in the south-east, the Baltic Sea in the west; Poland and Kaliningrad region of Russia in the south-west (see the figure below).

Geographical location of Lithuania

Vilnius Gediminas Technical University (VGTU) is the third biggest high education institution in Lithuania. It is history in brief:

- 1956 – founded as the Institution of Higher Technical Education in Vilnius;
- 1969 – reorganized into Vilnius Civil Engineering Institute;
- 1990 – attained the status of Vilnius Technical University;
- 1996 – awarded the name of Lithuanian Grand Duke Gediminas.

VGTU has got 16.500 Bachelor's, Master's and PhD degree students and 930 academic full-time staff, in total 1500 staff members.

At present the University has 8 faculties (see the Table below).

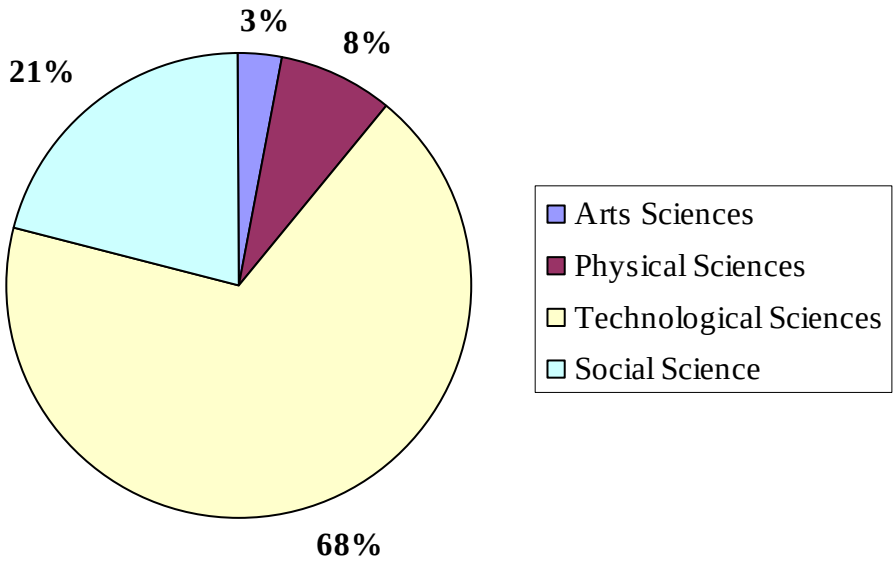
Faculties and Departments of VGTU

Faculties	**Departments**	**Science**
Environmental Engineering	• Environmental Protection; • Geodesy and Cadastre; • Hydraulics; • Roads; • Urban Engineering; • Heating and Ventilation; • Water Supply and Management;	Technological
Architecture	• Architecture; • Architectural Fundamentals and Theory; • Art; • Building Structures;	Arts

	• Urban Design.	
Electronics	• Automation; • Electronic System; • Electrical Engineering; • Computer Engineering; • Telecommunication Engineering.	Physical
Fundamental Sciences	• Chemistry and Bioengineering; • Physics; • Graphical Systems; • Information Systems; • Information Technologies; • Engineering Graphics; • Mathematical Statistics; • Mathematical Modelling; • Strength of Materials; • Engineering mechanics.	Physical
Mechanics	• Biomechanics; • Machine Engineering; • Materials science and Welding; • Printing machines; • Industrial Enterprise Management.	Technological
Civil Engineering	• Architectural Engineering; • Safety and Fire protection; • Reinforced concrete and masonry structures; • Geotechnical Engineering; • Steel and Timber structures; • Structural mechanics; • Buildings materials; • Construction economics and Property management; • Construction Technologies and management; • Bridges and special structures.	Technological
Transport Engineering	• Automobile transport; • Railway transport; • Transport technological equipment; • Transport Management.	Technological
Business Management	• Finance engineering; • Economics and Business management; • International Economics and Business management; • Law; • Business technology.	Social
Institutes	• Institute of Aviation; • Institute of Humanities; • International Study Centre; • Centre for Continuous Education; • 4 research institutes; • and some laboratories.	

I and my colleague are working in the faculty of Environmental Engineering. This faculty includes 7 academic departments, Institute of Geodesy, Institute of Environmental Protection and research laboratories: Environmental and laboratories of Working Conditions and Roads. Most specialists are trained at this faculty to meet the needs of public infrastructure, roads as well as Environmental protection in Lithuanian. Researches and students of the faculty are in close contact with industry tendering their research and consultancy services.

Most students (68%) select Technological science fields (see the figure below).



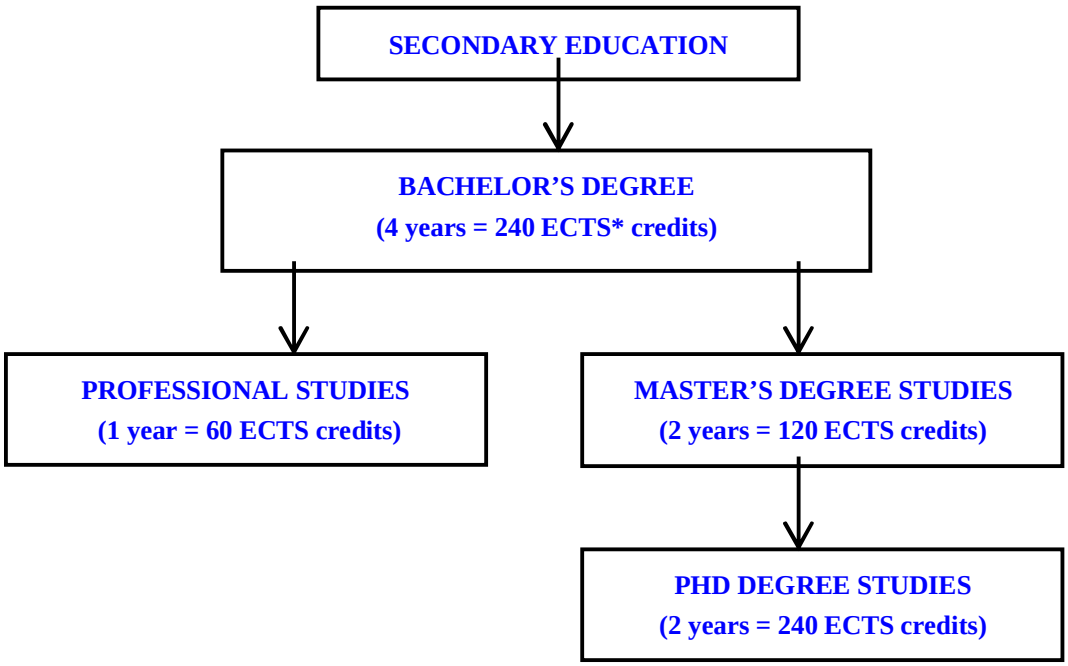
Science Fields of VGTU

VGTU has had the two-tier system 4+2 (Bachelor and Master) since 1990. The University offers study programs in all three cycles (Bachelor, Master and PhD). The University functions in correspondence with the education system of Lithuania are shown in the figure below.

VGTU offers 13 study programs in English: 8 at Bachelor's degree level, 5 at Master's degree level. All of the programs are open for both international and domestic students. Bachelor's degree programs:

- Architecture; Information Systems Engineering;
- Mechanical Engineering; Construction Engineering;
- Transport Engineering; Economics and Management;
- Business Management; Building Energetic.

On successful completion of all the courses, projects, final exams, and the diploma project, a student will be granted a Bachelor's degree. In order to help future students to develop basic skills necessary for successful Bachelor's engineering studies, pre-engineering courses are arranged. This programe offers intensive instruction in mathematics, physics, computing and technical drawing. Pre-engineering courses are scheduled for spring semester, if at least 15 students need them.



* European Credit Transfer System

Study programs in VGTU

Programs offered for Master's degree:

- Architecture;
- Business Management;
- Electrical Energetic; Systems Engineering;
- Industry Engineering and Management;
- Environment Management and Clean Production.

The University provides PhD programmes in the following fields of research:

Humanities:

- History and Theory of Arts (Sculpture and Architecture)

Physical Sciences:

- Mathematics; Physics (Condensed Matters);

Social Sciences:

- Management and Administration; Economics;

Technological Sciences:

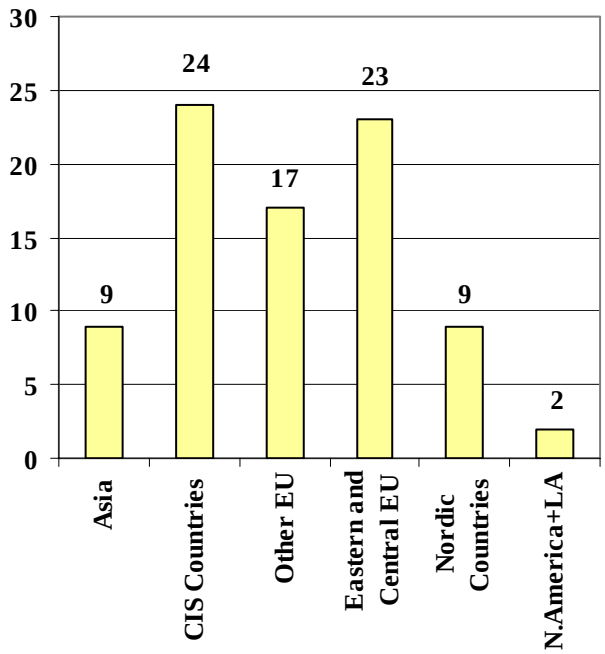
- Electrical and Electronic Engineering; Civil Engineering;
- Transport Engineering; Environmental Engineering;
- Chemical Engineering (Biotechnology); Energetic and Power Engineering;
- Informatics Engineering; Materials Engineering;
- Mechanical Engineering; Measurement Engineering;

Postgraduate programmes are based on individual work and are combined with course work and research.

VGTU Credit System in comparison with ECTS: 1 full academic year = 40 VGTU credits i. e. 60ECTS credits. One semester has 20 VGTU credits, i. e. 30 ECTS credits. 1 VGTU credit = 40 hours of efficient work = 1 week; VGTU 1 credit = 1.5 ECTS credits.

3. REALIZATION AND DEVELOPMENT OF ERASMUS IN VGTU

VGTU is an active participant of ERASMUS program and has already participated in it for ten years. ERASMUS provides mobility for studies and placements, possibility to work in international classes increased effectiveness of partnerships for university students and academic VGTU agreements for the cooperation by regions (in the year 2010). See the picture below.

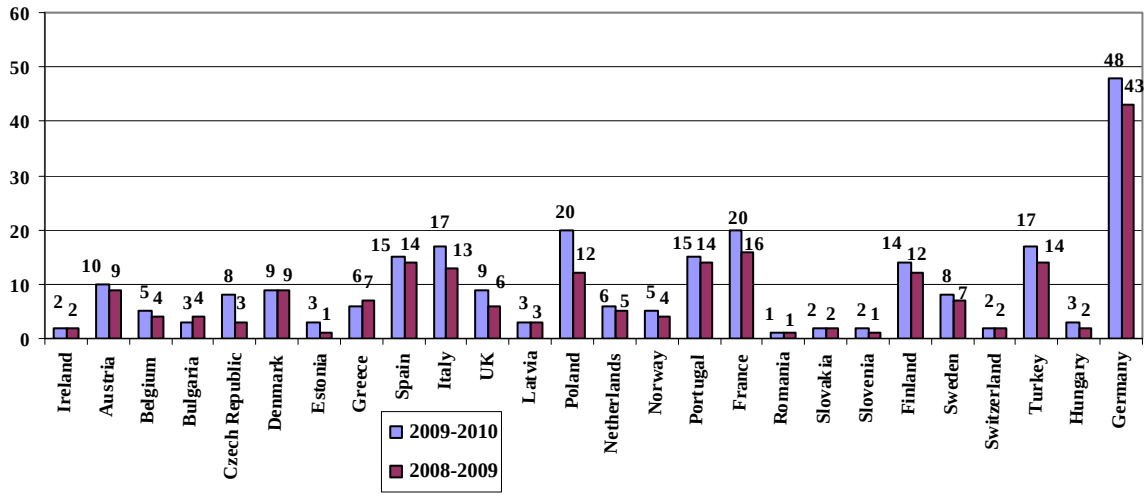


Cooperation agreements by regions

Over 250 ERASMUS cooperation agreements have been signed within European countries (2009-2010). Most agreements have been made with Germany (48 institutions), only one with Romania, four with Bulgaria:

- Gabrovo Technical University;
- Russenski University;
- Sofia Technical University;
- Varna University of Economics.

See the figure below.

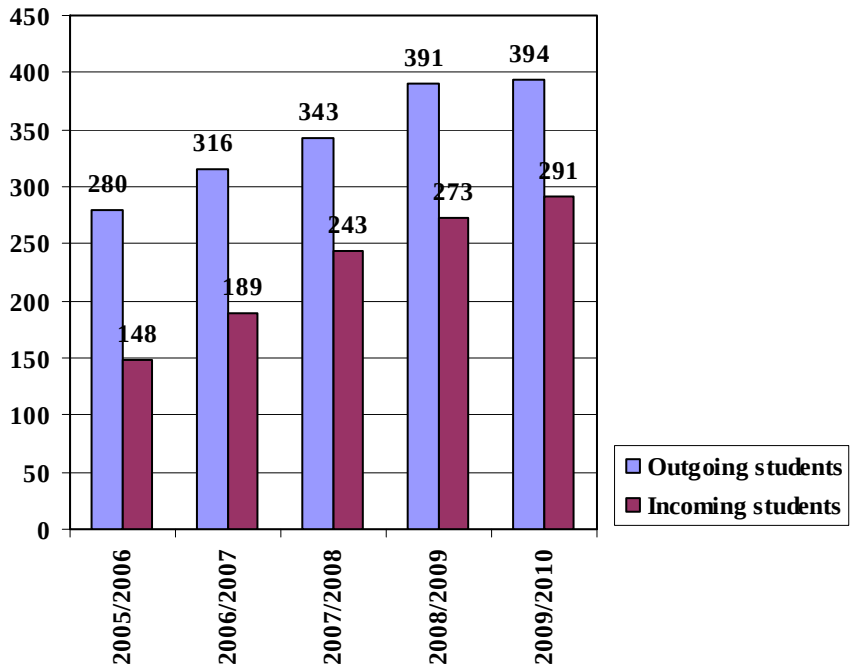


ERASMUS cooperation agreements by countries (in the years 2009-2010)

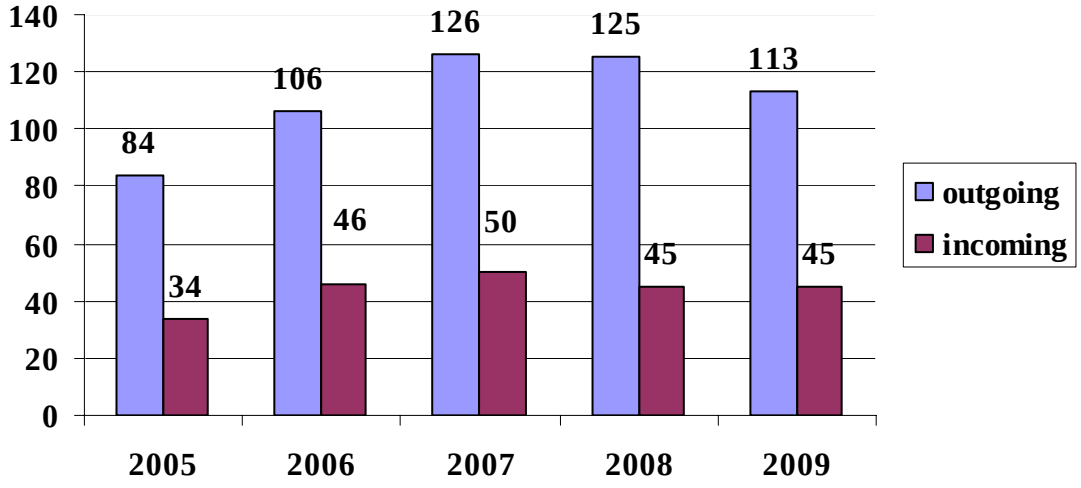
The numbers of outgoing students increase every year. The goal is to increase outgoing students by 5% every year. In order to achieve this goal it is necessary to cooperate with the Students agency, to organize various events e. g. Erasmus Days, International Weeks to set up Erasmus Students Network, etc. All of these activities have been successful are visible in the next picture.

Average duration of ERASMUS program is 4.5 months, average scholarship per month – 500 Euros. Students come from Norway, The Czech Republic, Finland and Poland. The balance between outgoing and incoming students of ERASMUS is improving. In the years 2007-2008 it was 1:1.41, 2008-2009 – 1:1.43 and 2009-2010 – 1.35. The most popular science field within students is Business Management. It attracts about 20% of all incoming students. Departments of Transport Engineering, Fundamental Sciences, and Environmental Engineering welcome the least numbers of students. The number of incoming students to the Architecture department increased by two times (from 11 students in 2007/2008 to 32 students in 2009).

Teaching staff mobility in VGTU is the highest comparing to other higher educational institutions of Lithuania. Mobility during the years 2005-2009 is shown in the histogram below.



Outgoing and incoming exchange students (studies)



Outgoing and incoming of teaching staff

The biggest numbers of teachers go to the Germany, Portugal, France, Poland and Spain. Important ERASMUS program priority is to involve new teachers in mobility programs. At first, 13 % of new teachers participated in ERASMUS program in the years 2008-2009. 40% of all new participants were women.

All the departments have to renew the structure of partnership, quality of mobility and collaboration. Strategic priorities of internationalization are:

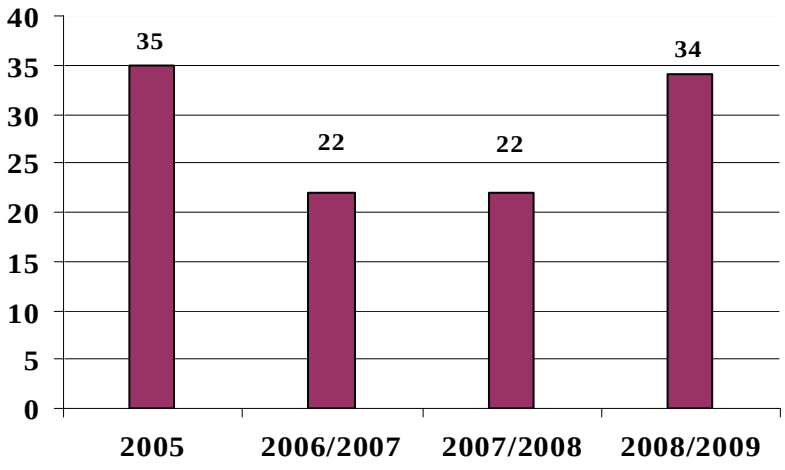
- To increase the participation in international projects, co-operation networks, consortia, research platforms, etc. and learn from partners good practice;
- To increase effectiveness of partnerships;
- To diversify cooperation geographically (priority regions outside the EU);
- To improve the system of monitoring and assessment of the process of internationalizations (at faculty and individuals' level);
- To attract more international staff from abroad to work at VGTU;
- To improve the international competence of academic community by prioritizing training at home for students and staff.

The means to realize the strategy of ERASMUS program are:

- To renew and supplement information in VGTU internet system (www.vgtu.lt) for students and staff;
- To organize information seminars for students, who want to participate in ERASMUS mobility program;
- To organize accommodation for incoming students and make a good social-cultural programe;
- To consult every incoming teacher about the organization of seminars and lectures.

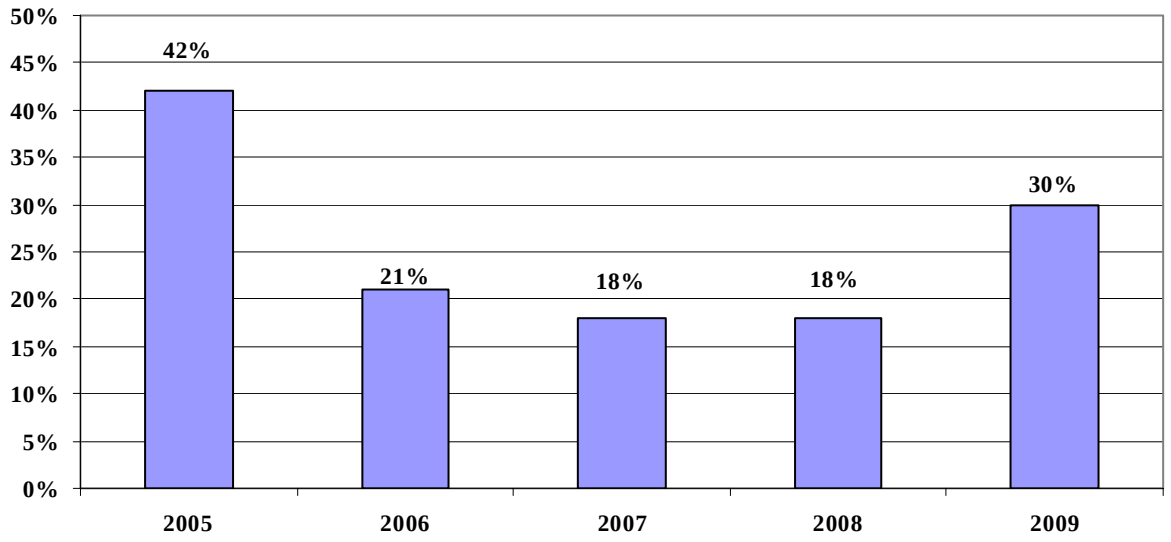
4. REALIZATION AND DEVELOPMENT OF ERASMUS IN THE FACULTY OF ENVIRONMENTAL ENGINEERING

Outgoing of teaching staff in the Faculty of Environmental Engineering is shown in the histogram below.



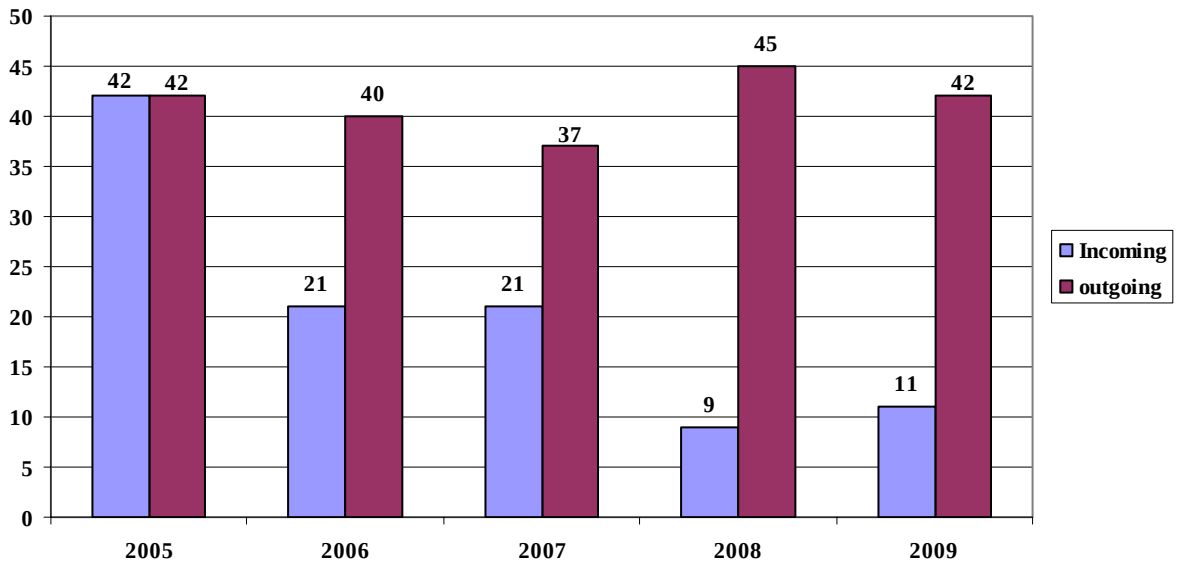
Outgoing of teaching staff

The comparison of VGTU and Environmental Engineering Faculty teacher's mobility are presented in the histogram below (in the years 2005-2009).



The comparison of VGTU and Environmental Engineering Faculty teachers mobility

Incoming and outgoing students are shown in the histogram below (in the years 2005-2009):



Incoming and outgoing students during the year 2005–2009

5. SUMMARY

1. VGTU offers 13 study programs in English which are open for both international and domestic students;
2. VGTU educates engineering, informatics, electronics, aviation, architecture, and management specialists;
3. VGTU has already belonged to ERASMUS Universities charter for 10 years;
4. The number of students and teaching staff interested in Lifelong Learning Programe increases;
5. Teaching staff mobility in VGTU is the biggest in science institutions of Lithuania and is among 10 highest results in Europe;
6. Outgoing students exchange rating increases every year and most often they go to Germany.
7. The most popular department among incoming students is Business Management. It has about 20% of all incoming students.
8. The smallest numbers of students come to the Departments of Transport Engineering, Fundamental Sciences, and Environmental Engineering.

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EFFECT OF DISCUSSIONS' FORUM ON STUDENT KNOWLEDGE AND MOTIVATION OF STUDENTS AND INSTRUCTORS IN ONLINE COURSES

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Abstract

This paper is focused on effects of discussion forums on student knowledge. It compares together the same online courses with different frequency of student posts per discussion round. For high quality discussion, several rules need to be applied. Motivation of students as well as motivation of teachers is a very important factor. Eleven instructors who have more than 5 years of experience in online education were interviewed and the results are discussed in this paper.

Key words: *Online discussion, communication, interaction, motivation, online collaboration, discussion threads, discussion rules*

1. INTRODUCTION

While teaching pure online courses, all tutors have to keep in mind that electronic communication is crucial since online students are missing traditional face-to-face communication. Students are missing personal contact with the instructor, which needs to be subsidized in a different way. Each teacher or course manager has several options how to replace this face-to-face communication. Today's learning management systems (LMS) offer several channels for communication. Like traditional form of teaching, online teaching can be very personalized and interactive, too (Davidson-Shivers, 2009). Interactivity requires a lot of effort from an instructor as well as from a student.

Each teacher can use multiple channels for communication:

- Discussion threads
- Online chat / Online meetings
- Email message
- Announcement
- Feedback on students progress (comment in research paper)
- Syllabus

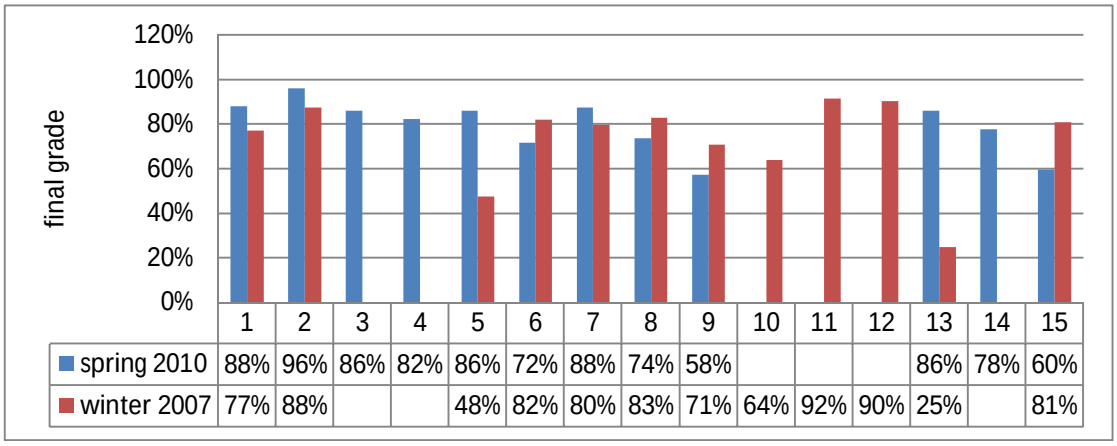
The more channels are used, the more effective the communication is. Moreover, using synchronous and asynchronous communication might lead to achieving better results by the students in the course.

2. COMMUNICATION BETWEEN TEACHER AND STUDENT

Teachers together with their course managers are creating the course from the scratch. At Vysoka Skola Manazmentu v Trencine (VSM), it is up to the cathedra head and a teacher what kind of online

activities are prepared for the students. The tutor has to follow the syllabus but little changes are allowed, yet those changes need to be approved by the cathedra head. There are not any general rules for that since each course is different. Different courses are running under different conditions because the amount of the discussion activities in an accounting course might be different than the amount of discussion activities in a political science course.

In the year 2009, the management of VSM tried to increase the interaction among students as well as between students and their instructor. Based on previous standards, each teacher should increase this interaction as well as increase the weight of grades for online activities which directly influence student's final grade. Teachers were asked to increase the grades because the workload per online student was increased, as well. If they would not increase the weight of this grade, students might not pay adequate attention to online activities. Moreover, if the weight of the grade for online participation was low and majority of the enrolled students were not taking this activity seriously, it would be useless for the remaining few students and the teacher to discuss online as their effort would be ineffective. Online activities are often time consuming and thus, appropriate motivation of students is required.



	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
spring 2010	88%	96%	86%	82%	86%	72%	88%	74%	58%				86%	78%	60%
winter 2007	77%	88%			48%	82%	80%	83%	71%	64%	92%	90%	25%		81%

Chart of final grades for the same course for two different semesters

In an example provided above, a certain teacher increased the number of required student's posts to discussion forums as well as the weight of grades for online activities from 15 % to 25 % within a 3-year period. In each course, there were 15 students enrolled. The chart compares final grades of the students enrolled in the course in Winter 2007 and later in Spring 2010. If there is no grade it means that student dropped the course before week 8, without any grade. The average grade for spring term 2010 was 79%, while 3 years ago the average grade was 73% so the average grade increased by 6%. The course was taught by the same instructor and the difficulty of the course was of the same level. The similar trend of increasing the average grade where are more online activities is visible also on other course taught at VSM. Furthermore, the gap between average grade of face-to-face class and online class is very small, only 3%, so the average grade at face-to-face class is 82% in spring term 2010.

3. DISCUSSION FORUMS

Discussion forums are often part of online activities. Based on the survey done at VSM in Trencin, it was found that for most of the asked teachers this is the only online activity which is performed. The survey was conducted among 11 instructors who teach different courses both online and face-to-face. The instructors are between 30 – 48 years old. Two of the teachers are men and 9 are women. The answers on the questions were short essay answers. The survey is anonymous and this paper will present the responses of the teachers on various questions. The questionnaire was divided into two parts. First one was about discussion forums, second part about supplementary materials and online activities for students. The answers in the following questions are describing current situation of online teaching at VSM.

3.1 Appropriate number of discussion rounds

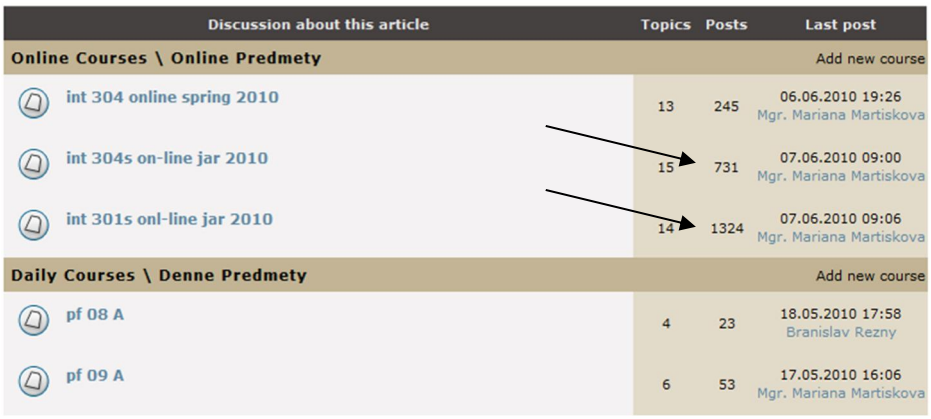
Question 1 was about the amount of discussion rounds per 10-week course. Most of the instructors answered that they have between 8 to 10 discussion rounds. Teachers who had only 8 discussion rounds, did not post any discussion questions in week 5 and week 10. They usually leave this time for students' questions before exams, so those weeks are actually review weeks. During the two weeks, most of the communication is done via email, thus there is no need for group discussions.

3.2 Appropriate number of questions

Question 2 explored the teachers' opinion on appropriate number of discussion questions in one week. Majority of the instructors have one or two main questions. When the forum is "dying", they ask a specific question to a specific student or the whole group in order to restart the discussion. Teachers got experience that when they deploy additional question in the middle of the week, more students join the discussion. This might be a result of the fact that some students did not understand the original question or they did not know the answer.

3.3 Appropriate number of students' posts

Question 3 was about the appropriate number of students' posts per week. At this point, the instructors' opinions differed. At VSM, we have policy that an online student should post a minimum three posts per week. Three out of 11 instructors said that this is too much and they would like to lower the number of students' answers to two answers per week: one answer to teacher's question and one reaction to a classmates' post. Six teachers are fine with the number of students' answers and they think that increasing this number would not be a wise step because it might lower the quality of students' responses. The other argument was that it is very time consuming for teachers to read all the students' posts. If the university increased the number of required responses from the students, they would not be able to read all of the students' posts and grade them correctly. The last three instructors would like to increase the number of the students' posts because they think that a good discussion requires more interaction among the students. Two of those three instructors require different number of students' posts based on the course. They said that it is hard to define the appropriate number since some courses do require more communication than other courses. On the screenshot below, it is visible that there is a different total number of posts per course; all taught by the same teacher.



Discussion about this article	Topics	Posts	Last post
Online Courses \ Online Predmety			Add new course
int 304 online spring 2010	13	245	06.06.2010 19:26 Mgr. Mariana Martiskova
int 304s on-line jar 2010	15	731	07.06.2010 09:00 Mgr. Mariana Martiskova
int 301s onl-line jar 2010	14	1324	07.06.2010 09:06 Mgr. Mariana Martiskova
Daily Courses \ Denne Predmety			Add new course
pf 08 A	4	23	18.05.2010 17:58 Branislav Rezny
pf 09 A	6	53	17.05.2010 16:06 Mgr. Mariana Martiskova

Screenshot from teacher's discussion board for Spring semester 2010

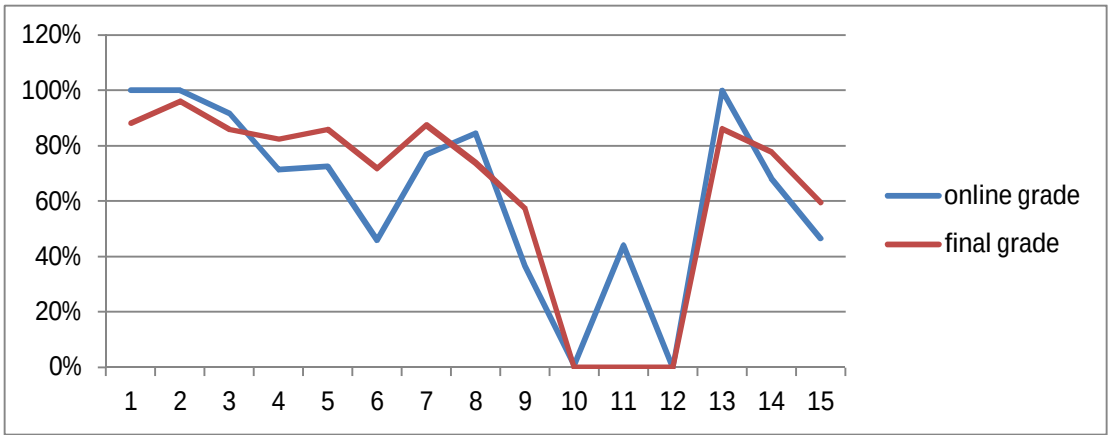
In the picture above, it is visible that there is almost double amount of students' and teacher's posts in two different courses. The number of the students in each section was 15, which is the maximum number of students per online course. The course INT 304 (International Law) has on average 48.7 posts per student for a 10-week course, which makes 4.87 posts per week per student. The course INT 301 (International Relations) has on average 88.3 posts per student for a 10-week course, which makes 8.83 posts per week per student. As it was said before, school requires at least 3 posts per week per student which means that students enrolled in the course INT 304 posted 3 times more. Of course, they are required to do so by the teacher and the grade for online participation eventually had a higher weight in this course than in some other courses.

3.4 Effect of discussions on students knowledge

In question 4, we asked teachers whether the discussions have any influence on students' knowledge. Ten out of 11 instructors answered yes and one of the instructors thinks that discussion forums are practically ineffective. Five instructors said that discussions are very effective, especially when they ask a student a specific question regarding his/her own post. Students have to think more and they have to go deeper into the topic. The effectiveness of the discussions also depends on the students' approach. Therefore, they should be motivated by the instructors. There are two ways how the instructors motivate their students. The first one is, of course, with a good grade for online activities. The second motivator is the tutor's participation in online discussion and direct interaction between a student and the tutor.

3.5 Relationship between final grade and grade for online activities

In question 5 we asked whether the students who are active in online discussions have better grades than those who are not so active or do not participate at all. Eight out of 11 instructors said that it really affects their knowledge as well as a grade from other course assignments. Teachers are including topics which are discussed in discussion forums into their exams and therefore, there is a relationship between students' activity in online discussions and their final grade, as shown below.



Relationship between grade for online activity and the final course grade

The data in the chart above concern the course INT 304 and it is very visible that students who were active online had also better final grade from the course. Students labeled with numbers 10, 11, and 12 dropped the course before week 8, therefore, they did not receive any final grade. The weight of grades for online activities varies from 10 % to 25 %, and it depends on the character of the course and on the course instructor, as such. In some courses where teachers require a lot of graded activities, high percentage of students eventually drops the class. The students were simple overloaded with their work so they decided to drop the class rather than have low grade or even fail the course.

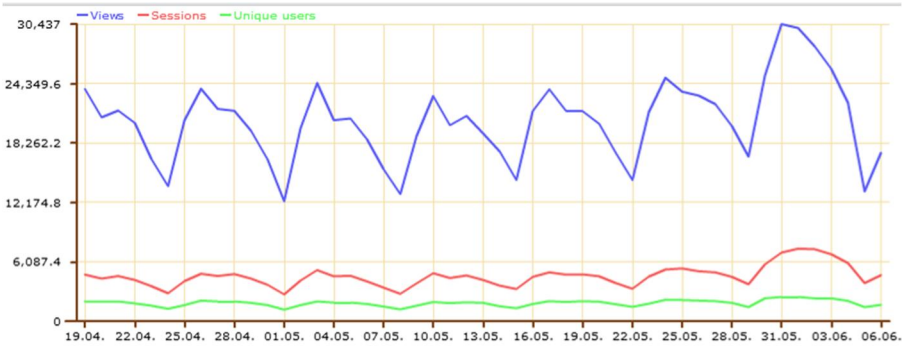
3.6 Discussion board rules

Question 6 was about the rules which instructors have on their discussion boards. All of the teachers are following scholastic honesty rules which can be found at

http://www.vsm.sk/en/students/scholastic-honesty/policies-and-procedures/.

Students are not allowed to copy the text into discussion threads from other sources without proper citation. Also, when using information from different sources, they must cite the source and give credit to the original author. They have to do this not only because of the scholastic honesty rules, but a trusted source behind their claim will also give more credibility to their ideas. The teachers who answered this questionnaire got two different rules for discussion posting. As it was mentioned, teachers ask students to do first posts before Thursday midnight and other two before Sunday midnight. The other group of teachers is just asking students to add three posts in three different days, no matter what day. By applying those rules, teachers achieved that students' discussions are not starting on Sunday afternoon of a given week, which would be very ineffective as that is the last day.

The chart above refers to VSM Bulletin Board which is the main discussion forum at VSM. It is visible that the peak of views is always on Monday, when all the students are checking new tasks and assignments. The lowest number of views is always on Saturday. Second highest number of views is on Wednesday and Sunday when posts are due. Before applying the rule of posting on Wednesday we had most visitors on Monday and Sunday.



Statistic of views of the Bulletin Board

3.7 Increase or decrease number of students post

The last question about discussion forums, question 7, asked whether instructors ever tried to increase or decrease the number of posts per student per week. Five teachers realized that when they increased the number of posts above three per week, the quality of posts went down. Three teachers increased the number of posts from two to three and they think that it was a good idea. Last three teachers have three posts per week, and they would like to lower the number of required posts per student because they think that for their courses, discussions are not as important as for other courses. Those were IT and math courses.

4. ADDITIONAL ONLINE ACTIVITIES

The second part of the questionnaire was not only about discussion boards but also about extra work each instructor is doing. All of the instructors post to discussions' threads extra information they found on the internet so the students are not limited only by the one or two books which they have for particular course. Also, teachers provide their students with additional articles in PDF or MS Word format. Ten out of the eleven asked instructors also provide their students with PowerPoint slides, which are used in face-to-face delivery mode.

Four instructors prepare case studies for their students as an extra activity. Two of them are also discussing those case studies in a separate online discussion so the students learn more as they partially lead the discussion. Those teachers found this as a very effective technique and students actually participate in those discussions more frequently than is required.

Especially in Math and IT courses, teachers prepare practical exercises for the students. Students are asked to do specific math exercise and post the answer to the discussion board. Each exercise is afterwards checked by other students. Again, this is an activity where students are creating discussion threads and teacher's role is just to monitor the situation. In case students are wrong, teacher of course enters the discussion and fixes the problem by pointing to the student's mistake or showing the correct procedure.

Four out of seven teachers post links into discussions for videos which are on the internet or which they created. As they said, it is something different and students generally like it. Moreover, some things are hard to explain by words and it is more useful for the students when they see a video than reading a couple of pages long PDF file. VSM offers courses in English as well as in Slovak language

and teachers reported that finding videos in Slovak language is more difficult; therefore, they are mostly using videos in courses taught in English language.

The last question for each teacher who was interviewed was about synchronous communication, a.k.a. online meetings. The question was very specific: Would you organize online meetings taking about 2 hours of an early evening with your online students once every two weeks? Only three out of eleven instructors replied that it is a good idea and they have no problem with that. Another two replied that they are willing to do such an activity but only during regular working hours. Five teachers said no. One instructor had a very interesting answer: as a teacher, she is not willing to do such an activity but as a student, she would definitely appreciate option to have an online meeting with her teacher. She has experience with that and she things that it is really useful. The other issue while talking about synchronous online classes is whether students would be willing to participate, at all.

5. RECOMMENDATIONS TO TEACHERS

5.1 Interaction among students in discussions

Interaction among students can be achieved by creating small teams that have to accomplish some specific tasks. Teacher is not the only person who should lead each discussion. Sometimes, students can learn more by analyzing some issues together. They are more involved in this process; moreover, such a discussion is different than discussion between teacher and students. Also students do not have the feeling that they are alone in an online class.

If an instructor is creating such discussion, he or she should pick one student who will be the team leader or discussion moderator. Of course, this role should not stick with one student only but this role must circle among the students, so everyone will be in the shoes of a discussion moderator. This discussion must have some rules, just like any other class discussion. The tutor of the course should clearly lay down those instructions or rules. Without rules, it would be very hard to grade this kind of activities; moreover, it might lead students to ignoring such activities.

Interaction among students helps to build students' sense for confidence, self-realization as well as teamwork and it creates friendly atmosphere. Good environment is crucial for educational process, moreover, when students feel comfortable, they learn more. Another advantage is that students in the group are coming with different experiences and background. Such a team might find new or different solution to a task which was assigned (Franc, Zounkova, Martin, 2007).

5.2 Using discussion forums instead of email communication

Many times, the email communication can be replaced by setting up a discussion thread. Teaching online is time consuming and therefore, teachers should make their teaching and the way of guiding students less complicated. Based on Mr. Tomei's research, replaying to an easy email question takes on average 4 minutes. This time includes reading simple question and preparing an answer (2004). It is common that students face similar problems. Instead of replying several students who face the same problem individually by an email, tutor can set up a discussion thread where the question will be discussed. Therefore, we recommend for teachers to set up "Questions and Answers" forum. This forum will not be graded and students can ask various questions regarding the course here.

Based on Bill Usher's research, we can say that many users, in our case students, have difficulties while using some web application. Those problems are often very similar. For example, they are not able to find something on the web page, or they got difficulties with their browser. The number of

such users is high, especially in the first year of their studies (Ussher, 2007). Those problems are many times solved by the instructor and not by the IT support department and this is another time-consuming issue for every teacher. In this case, it would be beneficial to have a thread in a discussion forum, where those problems can be openly discussed. Not only teacher can answer this type of questions, but also active students are able to help with such a situation.

6. RECOMMENDATION TO SCHOOL MANAGEMENT

Teaching online is a time-consuming process. Several studies show that more time is spent on one online student than on one regular, daily student. As a result of this fact, we cannot compare one online class with one daily class. There is different kind of communication in an online and in a regular class. When a teacher wants to prepare an interactive online class, he/she needs more time for preparation. Once the teacher has prepared course units for the course, he or she can save some time. We should not forget that each class is different and also those course units should be adjusted and personalized.

6.1 Motivation of teachers

Many teachers and course creators reported double time spent on preparation of an online course comparing to regular daily course (Davidson-Shivers, 2009). This is the fact that needs to be considered by the management. The management should lower the number of classes in regular workload while they are considered as a substitute for online classes. Also they should set up maximum limit of online student per instructor in order to ensure the quality of education.

Course managers should be involved in the creation of course modules and course units in order to keep certain quality level of each course. They should not forget about different ways of communication and implement all possible channels into each course. This is crucial when we want to create course, which is interactive and not boring. Students will be the ones who will profit on multiple-channel communication, because of a better and a more effective learning experience. Increasing the quality of each course should be the university goal.

If we would like to build a course for students, we should keep in mind that interactivity is the key. Knowledge is not just passed from the teacher to his/her students, tutor has to build or construct the new knowledge on the top of existing students' knowledge. "The greater the interactivity in an online course and the more attention paid to developing a sense of community, the more likely students will stick with the course" (Palloff & Pratt, 2003 p.117). There are always some students who drop the course because they might have had the feeling that the course did not fit them or they felt that the course was boring. It is the responsibility of the course creator to create a course, which will help students to gain some knowledge in an interactive and an effective way.

The current situation is that teacher teaches four courses per trimester (10-week courses) and at VSM, we have 4 trimesters. During the summer trimester, this number is lowered to one course only. Four courses per trimester is a full workload (20 x 45-minute sessions per week) per one trimester. It depends on students' registration numbers how many courses are taught by a teacher online and how many face-to-face. Usually, it is three face-to-face courses and one online course with a maximum of 15 enrolled students.

Once the working load of an instructor is full, he/she takes extra money for each online student in an online course. The number of students is not limited so the greater is the number of students in a section, the more money the teacher earns. The instructor is working more hours and therefore, he

should have higher salary. The teacher's work is monitored by his or her cathedra head and based on his/her performance, cathedra head decides which standard the teacher fulfills. Currently, we have three levels ranging from 33 to 66 euros per student. Now, most of the instructors achieve the highest pay and they are doing what they are required to do. However, as it is visible from the questionnaire, teachers are not really willing to do something extra for their students because their extra time and effort is not recognized.

Each teacher wants to pass most of his/her knowledge to his or her students and therefore, they try their best. The management of the university should support those instructors who are using various techniques while passing the knowledge and provide for adequate financial compensation accordingly. In order to be fair, the school should create several pay rates, ideally up to five, and set rules for online teachers. Here is the example of such a pay rate table:

1st rate: 40,- Euros per student per course	Email, discussion threads	average interaction per student = 1
2nd rate: 50,- Euros per student per course	Email, discussion threads, announcements	average interaction per student = 2
3rd rate: 60,- Euros per student per course	Email, discussion threads, announcements, feedback on student progress	average interaction per student = 2
4th rate: 70,- Euros per student per course	Email, discussion threads, announcements, feedback on student progress, chat and/or online meetings (webinars)	average interaction per student = 3
5th rate: 80,- Euros per student per course	Email, discussion threads, announcements, feedback on student progress, chat and/or online meetings (webinars), creating additional course materials	average interaction per student = 3+

While comparing this table with the current situation, most of the instructors would qualify into the second and the third pay rate. The different pay rates might be beneficial for all the involved groups: management, teachers as well as students.

More interaction between students and teacher does not necessarily mean more discussion questions and more posts which should be done by teachers as well as students. As it was mentioned at the beginning, the communication can be done also through feedback. For example, a written or face-to-face feedback on the quality of a submitted research paper. The current situation is that no one is really checking whether the instructor provides feedback on each activity in a course to his/her students. How can students improve if they do not have enough of a constructive feedback? This is a form of one-on-one interaction and it is crucial for student's progress.

The other possible form of communication is online chat or online meetings. This is again something that is not recognized at all by the management of the school. This activity is very time-consuming and it definitely increases the quality of the course. Even though discussion forums are very effective, they cannot be used for everything. Some activities require asynchronous communication and some of them synchronous communication.

6.2 Risk

If a teacher wants to earn more money, he/she has two options:

1. Take more students
2. Get higher rate with lower number of students.

There is a risk when the teacher decides for option number one. And therefore, the maximum number of online students should be set up as well. Based on the study of Santilli and Beck, one online course requires 80 – 160 hours depending on the number of enrolled students and difficulty of the course (2005). If the teacher works full time for school a.k.a. 155 hours per month, that means that he is able to take maximum of two online courses in order to provide good learning experience to students. This rule should be forced upon by the management so that instructors do not have a full work load plus an extra of 60 online students. This number is too high and would negatively affect the quality of provided education.

Ideal situation would be fewer students per instructor with better learning experience, but this is not always possible because of a limited number of teachers which each school employs. Therefore, a school should hire also part-timers and pay them for teaching at VSM. Of course, those teachers should be aware of school policies and procedures so the certain standards are kept. Those teachers should be observed more closely by cathedra heads who will also decide the pay rate which the part-time teachers receive per student in the end.

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PRIVATE KINDERGARTENS IN BULGARIA

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Abstract

The present paper makes a historical survey of the private kindergartens from the Liberation to the present times. The paper dwells on the analysis of the legislative basis of the private preschool education; the preconditions of its formation; the stages of its development – from the Liberation till 1917, from 1918 – 1948 and after 1991. The data about the private kindergartens that existed before 1948 are hereby classified: Bulgarian private kindergartens, private kindergartens organized and financed by the religion communities (of a foreign religion, minorities and of native religion) and other kindergartens (missionary). The contemporary state of the private preschool education is also being discussed in the present research work.

Key words: *private kindergartens, children's schools, missionary and minority children's schools*

Nowadays in Bulgaria there are municipal, state and private kindergartens. From 1891 to 1944 they were classified in two categories: state and private kindergartens. The public children's institutions were financed by the state, districts and municipalities.

The private kindergartens till 1948 were categorized into different types due to the way of financial support. The kindergartens were divided into three groups the same way as the private schools:

1. Bulgarian private kindergartens;
2. Foreign private kindergartens;
3. Kindergartens organized and sponsored by the religious communities.

The first group preschool institutions were made for children of Bulgarian origin or children of Bulgarian subjects. They were established by physical people or non-profit organizations.

The second group joins kindergartens, established by foreign organizations and foreign state structures. In the first reports of the school inspectors the kindergartens were called "foreign children's schools". There were American, Czech, French, Russian, German, Italian kindergartens. Later they became popular with the titles: "children's schools of foreign propaganda" or "missionary children's schools". These kindergartens were established for the children of the respective nationality and the Bulgarian children.

The third group children's schools concerns the Jewish, Armenian, Turkish, Greek schools, which were famous with the titles "children's schools of the minorities", "foreign children's schools" or "foreign faith children's schools". Preschool institutions of that type were established for children from different ethnos who lived in Bulgaria.

The kindergartens in Bulgaria till 1934 were officially called “children’s schools”, but in some regions they were popular under the name “nursery-schools”. The first preschool educational institutions established in Bulgaria after the Liberation were private. The first private kindergarten in Bulgaria was established in the town of Svishtov. It was called “Child’s wisdom” and was opened by Nikola Zhivkov on August, 10th, 1882. There were 53 children in it who were taught and trained by N. Zhivkov and his wife. There were also two “school mothers” who took care of the children as well. Sixteen children paid 1 rubla , 2-8 children paid - half of a rubla, the rest of the children were free of charge. Probably some funds were collected from the citizens of Svishtov who were extremely delighted to see the opening of the children’s institution. For its needs, N. Zhivkov bought Froebel’s gifts, games and desks [4].

In the summer the kindergarten stopped its work probably because of the unfavorable weather conditions and financial troubles. The parents were deeply dissatisfied with that fact and were “ready to pay extra and even give much more money for the kindergarten to open again”.

On the first of May, 1883 the nursery-school “Child’s wisdom” was restored again and functioned till 22nd, May, 1884.

In the same year the first private Bulgarian kindergarten was opened by the “Mother’s care” society in the town of Plovdiv. The main purpose of the children’s institution was to teach the children how to speak proper Bulgarian and be separated from the Greek children [12]. At that time in the town there were two active Greek kindergartens. The creators of the Bulgarian kindergartens tried not only to restrict the Greek influence on the children but to support in a way the family upbringing. They provided the children’s institution with the necessary furniture and objects as “visual aids”. The material support came also from the Directorate of Public Education in Eastern Roumelia.

At first in the nursery –school in Plovdiv there were 55 children as the poor ones were free of fee after their parents had shown a poverty paper. 1]

In 1886 “Mother’s care” society opened the second kindergarten in “Marasha” neighborhood in the town of Plovdiv. [15] The following year there were three Greek kindergartens in the town, and in Stanimaka (the town of Assenovgrad) –two [2]. In the country at that time there were Jewish and Armenian kindergartens.

From what is said above we could conclude that at first were established Bulgarian private kindergartens, after that– kindergartens sponsored by the religious communities.

A certain effect on the establishment of the public preschool education undoubtedly had the Law of Public Education created by G. Zhivkov [6]. It was adopted in 1891. According to it the children’s institutions were included in the educational system.

After the issuing of the new legislative document the number of the preschool educational institution s gradually started to increase, including private kindergartens as well. Their development in the period 1891-1917 is presented by the data in the table below [21]:

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Private children's institutions /kindergartens/

Year	Bulgarian			Minorities								
				Greek			Jewish			Armenian		
	Children's schools	Children's teachers	Children	Children's schools	Children's teachers	Children	Children's schools	Children's teachers	Children	Children's schools	Children's teachers	Children
1891												
1892												
1893												
1894				8	14	102	2	4	309	1	2	67
1895				7	12	572	2	5	349	2	3	159
1896				7			2			3		
1897				10			4			1		
1898				11			9			2		
1899				15	20	1135	10	8	744	3	5	291
1900	1	2	97	14	22	1901	9	11	603	3	5	191
1901				14			12			6		
1902				16			10	12	670	5		
1903				5	11	966	5	4	259	6		
1904	1	2	118	15	24	1830	10	12	670	6	7	346
1905	1	2	55	16	23	1588	9	10	647	4	5	251
1906	2	3	119	-	-	-	10	17	347	3	7	240
1907	4	6	249				13	18	673	3	6	210
1908	5	7	330				11	21	593	4	6	201
1909							1			2		
1910	10	13	584				11	7	641	6	9	249
1911	8	10	419				12	24	699	5	8	286
1912							1			1		
1913							2			2		
1914							1			2		
1915										1		
1916	1									1		
1917										1		

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Year	Missionary								
	French			German			American		
	Children's schools	Children's	Children	Children's schools	Children's	Children	Children's schools	Children's	Children
1881									
1892									
1893									
1894									
1895									
1896									
1897									
1898									
1899									
1900	1	1	25				1	1	26
1901	1			1			1		
1902				1			1		
1903	1	1	28	1	1	33	3	4	87
1904	1	1	26				2	3	73
1905	1	2	86	1	1	35	1	2	57
1906	2	4	110				1	4	53
1907	3	5	148	1	1	45	1	4	131
1908	3	5	139	2	3	72	1	3	86
1909	1						1		
1910	4	6	178				2	6	143
1911	4	6	160	2	3	28	2	6	81
1912	1								
1913	1								
1914	1						1		
1915	1						1		
1916	1						1		
1917	1						1		

The data displayed here show some irregularity in the development of the private preschool education. In the period 1891-1893 there are no data for private kindergartens. This information is not objective as in the school year 1892-1893 only in Varna there were 4 Greek, 1 Armenian, 1 Jewish and 1 French private kindergartens [9]. At that time there were other private kindergartens in other residential areas.

In 1894 in the country there were 11 private children's schools, in the next year their number increased. The biggest number of children's schools was in 1901, 1903 and 1904 with the total number of 35 children's schools. In this period the public children's schools were fewer.

Within the tendency towards increasing the number of private kindergartens, the economical and political reasons caused a certain decrease in their number. Though in 1910 and 1911 their number went up again and reached 33 kindergartens for a year. The comparative analysis of the data of the private and public children's institutions from 1891 to 1917 shows that in the years when the public children's institutions decrease the private ones increase. The formation of the latter was as a result of the sharp need of public preschool education and the desire of the minorities to have their own nursery-schools.

In that period the biggest number of private children's schools were the Jewish ones, followed by the Greek ones which stopped their work in 1905. It is important to mention here the private Bulgarian preschool institutions at that time were few in number. Probably the parents of the Bulgarian children due to financial reasons preferred their children to attend public kindergartens. The biggest number of children attended the kindergartens of the minorities in 1904.

The missionary children's schools according to the data given by N. Chakarov and V. Nacheva-Petkova started their work at the beginning of the 20th century. That information is not correct as they started their work at the end of the 19th century. And most were the French kindergartens.

After the First World War there was a deficiency of preschool institutions. The difficult financial situation of the municipalities, the use of the school buildings for military purposes even after the war was one of the main reasons during the school year 1918-1919 for the formation of only 7 public and 16 private preschool institutions.

There were public preschool educational institutions in Burgas, Vidin, Stanimaka (Assenovgrad) and Plovdiv, private kindergartens in Varna, Sofia, Plovdiv, Kyustendil, Odrin, Dimotika, Strumitsa and Bansko [14].

In 1919-1920 the public children's schools were 11 and were situated in Burgas, Vidin, Plovdiv, Stanimaka (Assenovgrad) and in the village of Kuklen, Plovdiv region. The private children's schools in the same year were more – 14 and were functioning in the following towns: Sofia, Varna, Plovdiv, Russe and Bansko. [16].

In Sofia there were 4 private nursery-schools. A kindergarten was established as part of the Armenian primary school. There was an American one, headed by Elizabeth Clark. In the capital several private kindergartens were opened part of "Knyaginya Nadezhda" orphanage and part of the infant crèches. The best organized preschool institution was the American one. The rest did not have appropriate rooms and the necessary furnishing. The teachers who worked there did not have the necessary teaching experience. [7].

In the next few years the private kindergartens were more than the public ones. That was due to the financial problems in the municipalities in Bulgaria. After the adoption of the Law of Public Education in 1921 which stated that those towns which had a population of more than 20000 people were obliged

to open preschool institutions. That pointed the beginning of the tendency towards opening of public kindergartens.

In 1924-1925 the public children's schools were with 18 more – the total number was 60, the private ones – 24. The increase of the number of public kindergartens was due to the fact that in the same year 25 primary schools were opened [11]. There were kindergartens joined to these schools. Though there was still a deficiency of kindergartens in the country at that time.

The development of the public preschool education was rather difficult because the society was not so interested in education and due to financial reasons. The private children's schools established by the Bulgarian citizens were hard to work and prosper. The parents did not pay the fees in time and the children were less in number. That was the case with the children's school in the town of Kazanlak opened by Rayman. It existed only for a year or two. Dona Spiridonova also tired to open a kindergarten in the same town. Regardless of her initiative and efforts she was forced to close it because there was a lack of material equipment [10].

The organizers of the private missionary preschool institutions also had some troubles. They run their institutions on their own funds, some of the institutions were sponsored by the country. The Jewish kindergartens were better furnished and equipped by more affluent Jews and Jewish organizations. The Turkish nursery-schools were of worst condition. They were few in number, though the Turkish national group was the second biggest after the Bulgarian national group. It could not value the educational opportunities that a kindergarten could provide. That's why the Turkish society did not establish kindergartens. The first Turkish kindergarten was opened in 1927. .

The kindergartens of the 'foreign propaganda" were in a much better state. The best-equipped kindergartens were the American ones. "Considering the equipment and furnishing in these kindergartens the Inspectorate could only draw a lesson" – stated the school inspector from Sofia in his report sent to the Educational Committee in the Ministry of Public Education The American kindergarten in Sofia was attended by many kindergarten teachers whose aim was to get acquainted with the pedagogical process and the setting there. The German kindergartens were also well furnished and equipped. That was confirmed in the report of the regional school inspector from Varna who wrote the following: "The German kindergarten in Varna is comparatively well equipped and furnished. It has all necessary equipment. The Froebel's methods are being applied and the results are good" [3].

More detailed information about the development of the private kindergartens in the period 1918-1944 is displayed in the table below:

The table shows the level of development of the private kindergartens in Bulgaria. The period from 1918 to 1938 is characterized by the clear tendency towards the rising number of private preschool institutions. In 1938 there were 65 private kindergartens in the country. In comparison with 1918 till 1938 they were 4 times more. Along with their increase, there was also an increase in the number of children in them. The children in the private kindergartens in the school year 1938-1939 were 2606. The biggest number of children in a kindergarten was in the school year 1925-1926 - 64 children on average, and the least number in 1934-1935 – 37 children on average.

In comparison with 1918-1919 the pedagogical staff increased as well – 49.

School year	Number of kindergartens	Number of kindergarten teachers	Number of Children		
			Total	In one kindergarten	In one group
1918-1919	16	22	841	53	38
1919-1920	14	21	889	63	42
1920-1921	20	32	1083	54	34
1921-1922	19	37	1124	59	30
1922-1923	22	27	937	43	35
1923-1924	26	33	1187	42	35
1924-1925	24	31	1275	53	36
1925-1926	28	40	1804	64	45
1926-1927	38	60	2311	60	39
1927-1928	48	72	2424	50	34
1928-1929	47	68	2448	52	36
1929-1930	49	68	2365	48	35
1930-1931	44	57	2080	47	36
1931-1932	46	59	1779	39	30
1932-1933	53	66	2091	39	32
1933-1934	56	60	2162	39	36
1934-1935*	56	58	2051	37	35
1935-1936*	60	68	2406	39	35
1936-1937*	62	68	2525	41	37
1937-1938	65	75	2606	40	35
1938-1939	68	82	2977	44	36
1939-1940	66	73	2733	41	36
1940-1941	63	71	2447	39	34
1941-1942	57	65	2325	41	36
1942-1943	44	52	1879	43	36
1943-1944	34	40	1393	40	35

Note:The statistic data in the table were taken from Statistics of education in Kingdom of Bulgaria in the school years and from Statistics of Education from 1940-1941 to 1945-1946. Only for the years marked with asterisk the data were taken from "Monthly news from Statistics Head Directorate" magazine, issue 10, from 1938.

From the school year 1939-1949 to the school year 1943-1944 there was a certain decrease in the development of the private kindergartens. At the end of the analyzed period their number was 25. Along with that the number of the kindergarten teachers who worked in them also decreased. Considerable changes took place in the educational system: gradual introduction of pedagogical specialists and decrease in the number of unqualified teachers.

In the period 1918-1944 in the private kindergartens one teacher taught about 36 children. In contrast to them in the public kindergartens one teacher took care of 48 children. That fact shows that the public children's institutions were overcrowded with children which further affected the pedagogical process in them. The working conditions in the private kindergartens were definitely better.

The development of the private Bulgarian and missionary kindergartens can be traced in the table below:

Year	Bulgarian			Minorities											
				Jewish			Armenian			Romanian			Russian		
	Kindergartens	Kindergarten teachers	Children	Kindergartens	Kindergarten teachers	Children	Kindergartens	Kindergarten teachers	Children	Kindergartens	Kindergarten	Children	Kindergartens	Kindergarten teachers	Children
1918-1919				1			1								
1919-1920	5	6	276	1	1	29	4	6	122						
1920-1921	6	7	242	6	8	396	3	5	148				1	3	30
1921-1922	3	3	175	7	9	369	2	4	135	1	2	20	1	2	46
1922-1923	4	4	145	7	11	308	3	4	127	1	1	17	1	2	26
1923-1924	4	4	143	9	14	355	3	4	145	1	1	11	2	9	99
1924-1925	3	3	163	8	11	405	2	3	141	1	1	15	3	9	164
1925-1926	3	3	180	11	16	657	3	5	254	1	1	22	3	6	176
1926-1927	7	11	347	9	17	647	5	7	347	1	1	17	4	7	178
1927-1928	10	12	377	13	21	708	6	9	341	1	1	21	4	10	162
1928-1929	8	10	396	13	19	675	5	6	270	1	1	22	4	10	227
1929-1930	9	11	416	15	23	847	4	6	296	1	1	23	5	11	179
1930-1931	9	11	388	14	18	674	3	4	240	1	1	15	4	7	157
1931-1932	10	11	369	14	18	699	2	2	85	1	1	9	4	9	117
1932-1933	12	12	418	15	19	689	3	4	215	1	1	10	4	4	123
1933-1934	15	15	625	13	16	588	3	4	217	1	1	10	5	4	131
1934-1935	15	15	598	12	15	513	3	4	172	1	1	8	4	4	113
1935-1936	14	14	599	11	13	451	4	5	200	1	1	10	4	5	119

1936-1937	17	18	849	12	14	450	4	5	219	1	1	13	4	7	107
1937-1938	23	24	1141	11	13	394	4	5	225	1	1	14	5	6	95
1938-1939	25	28	1338	11	14	458	4	5	210	1	1	7	4	7	97
1939-1940	24	26	1169	10	11	402	4	5	204	1	1	5	4	5	86
1940-1941	25	25	1038	9	10	331	4	5	204	1	1	2	5	5	107
1941-1942	24	22	937	8	9	336	5	6	204				4	6	60
1942-1943	16	16	606	6	5	171	3	4	125				3	5	44
1943-1944	13	13	550	2	2	110	3	4	96				3	3	38

The data in the table show that the minority kindergartens are more than the private Bulgarian kindergartens. From the kindergartens established by the ethnical groups, the greatest number was of the Jewish society followed by the Armenian one.

The development of missionary kindergartens in the period between the two world wars is displayed in the table:

Year	Missionary											
	French			German			American			Italian		
	Kindergartens	Kindergarten teachers	Children	Kindergartens	Kindergarten teachers	Children	Kindergartens	Kindergarten	Children	Kindergartens	Kindergarten	Children
1918-1919	1			1			1			-	-	-
1919-1920	2	3	131	1	2	32	1	3	104	-	-	-
1920-1921	1	1	48	2	5	132	1	3	30	-	-	-
1921-1922	1	1	56	3	5	260	1	2	63	-	-	-
1922-1923	1	1	64	4	5	203	1	2	47	-	-	-
1923-1924	2	2	78	4	6	227	1	2	68	-	-	-
1924-1925	3	4	176	3	3	139	1	2	72	-	-	-
1925-1926	4	4	263	2	2	152	1	3	100	-	-	-
1926-1927	4	5	204	4	6	296	1	4	137	2	2	137
1927-1928	4	5	197	5	5	237	2	3	108	2	4	222
1928-1929	4	5	200	5	5	214	2	3	83	3	5	283

1929-1930	4	5	147	5	5	187	2	3	86	3	3	144
1930-1931	4	6	176	4	4	185	2	2	98	3	4	147
1931-1932	5	6	167	5	6	168	2	2	61	3	4	104
1932-1933	7	8	232	5	6	176	2	3	67	3	3	150
1933-1934	7	9	191	5	5	142	2	2	76	3	3	101
1934-1935	6	6	140	5	5	155	2	2	85	3	3	93
1935-1936	6	6	161	6	7	239	2	2	106	3	4	123
1936-1937	6	6	140	6	7	307	2	2	103	3	3	96
1937-1938	6	7	179	6	7	251	2	2	105	3	3	84
1938-1939	6	6	188	6	7	268	2	2	111	3	3	76
1939-1940	6	6	182	6	8	294	2	2	97	3	4	96
1940-1941	6	6	159	7	8	395	2	2	83	3	3	94
1941-1942	6	9	172	7	8	475	1	1	45	3	3	47
1942-1943	6	6	247	6	10	501	-	-	-	3	4	123
1943-1944	6	7	193	5	8	364	-	-	-	2	2	42

In the period 1918 – 1944 in Bulgaria there were foreign preschool institutions: French, German, American and Italian. Among them the greatest number belonged to the French ones. The Jewish, Armenian, Czech, Romanian and Turkish kindergartens could be attended only by children from the respective nationality and ethnos. It was the same situation with the Russian kindergartens where the children of Russian immigrants were taught. The missionary kindergartens were mainly attended by Bulgarian children. For example in Burgas in 1927-1028 the French children's school was attended by 33 Bulgarian children, the German one – 33, and in the Italian kindergarten there was only one Italian child. [8] These were mainly children of intelligent parents. They preferred to send their children to these kindergartens not only because of the better material base, but because their children could learn there a foreign language. The training was carried out on the basis of Bulgarian educational program, but it was taught in a foreign language. In these children's institutions the children were taught to respect and acquire knowledge about another country and were trained to be students in the respective missionary schools. In contrast to them, the education and training in the Jewish, American and other kindergartens was in Bulgarian.

The kindergarten teachers in the private kindergartens of the ethnical communities belonged by rule to the respective ethnical group which had established the preschool institution, but Bulgarian women could work there. The same was valid for the kindergartens organized by foreigners. In them the kindergarten teachers were foreign or Bulgarian teachers.

The military and economical conditions in the country in 1944-1945 had minor affect on the state of the public kindergartens in the country. An interesting fact is the sharp decrease of the private kindergartens. In the school year 1943-1944 they were 34, in 1945 – 25. The political events led to closing of all German kindergartens. At the same time the Jewish kindergartens were restored that had

been closed in the school year 1942-1943 due to political reasons and deportation of the Jews in other residential areas.

In the school year 1944-1945 on the territory of the whole country there were only three private Bulgarian kindergartens. At the same time the public kindergartens increased. This tendency continued through the following years as well.

In 1946 in Bulgaria there were 19 private kindergartens which were attended by 921 children. They were about 3 % of the children who attended preschool educational institutions. 23 kindergarten teachers took care of them.

In 1947 the private kindergartens reduced their number to 14. They were attended by 881 children taught by 22 kindergarten teachers [24].

After 9th, September, 1944 the private kindergartens needed a permission from the regional school inspector to continue their work process. This permission had to be registered and issued every year. To avoid the clumsy procedures in some towns the private kindergartens functioned under the form of different courses and others. In connection with the above mentioned a meeting was held on 12th, November, 1947 of the Administrative Council of the Council of Ministers at which Penka Kasabova, chief inspector of preschool education was present as well. The following decisions were made at that meeting: Article 349 from the Law of Public education states that in such cases a written permission is required from the regional inspector; all the documents issued to the present moment were to be revised again. [18].

In connection with the decisions made the Ministry of Public education sent to the regional inspectors a circular letter on which they insisted on them to check if there were active kindergartens and children's schools in their regions, opened by religious communities or if there were courses performed by private persons in which the children were taught a foreign language. The circular letter forbade the regional school inspectors to issue a permit for new private kindergartens except for those where the children were not Bulgarian citizens [19]. The inspectors were obliged to take responsibility of the problems discussed on 5th, November, 1947. From the letters sent by them to the Ministry it became clear that there were foreign private kindergartens in the towns: Russe, Plovdiv, Varna, Plovdiv, Sofia, Burgas and in the region of Gorna Dzhumaya, Vratsa and Plovdiv; religious courses were organized by priests where the children could acquire religious education [21].

The Ministry of Public education with a letter № 4504 from 4th, December, 1947 to the regional school inspector in Sofia closed not only the foreign kindergartens which did not have a permit, but even those where unqualified teachers worked.

In 1947 Kiril Dramaliev became a minister of Public education who in August, 1948 issued a decree for foreign schools [17]. It stated that all foreign kindergartens opened or sponsored by the governments of other countries, by different religious missions and congregations or by private physical or legal bodies were to be closed. The kindergartens of the minorities were given a status of state educational institutions.

From 1948 to 1992 in Bulgaria there were no active private kindergartens. In that period there were more municipal kindergartens. Along with them there were state preschool institutions which were established for children with special educational needs.

The political changes in Bulgaria after 1989 had a significant effect on education as well. In 1991 a Law of Public Education was adopted which restored the private education [5]. It gives certain regulations about the opening and functioning of the private schools and kindergartens. In all other

later issued normative papers concerning education there are paragraphs about the private kindergartens. In the present Regulations book of application the law of Public education the private kindergartens are defined there as institutions "which are opened and transformed at the request of Bulgarian physical persons or legal bodies, are not sponsored by the state or from the municipality budget and use their own or rented material base and equipment".

The normative paper permits the establishment of foreign kindergartens at the request of foreign legal body in accordance with the international agreements [13].

The normative procedures in the recent decades provide the opportunities of developing the private preschool education in Bulgaria.

Before the adoption of the Law of Public education in 1991 in our country the first private kindergarten "Drita" was opened. That happened in 1990. Its founder and head is Dilyana Bozhinova [22].

The first licensed private kindergarten was established in Sofia in 1992. It is situated in "Levski" neighborhood.

In 1993 the number of the private kindergartens in our country was three. At that time the first private kindergarten "The Little Prince" was opened in Varna. That happened on 5th, February, 1993 with license RD-14-6/93. At first there were only 7 children between 4 and 7 years old who stayed all day long in the kindergarten. Later on other 5 groups were formed.

The dynamics of the development of the private kindergartens from 1992 to 2000 can be traced in the table below:

School year	Number of kindergartens
1992-1993 г.	1
1993-1994 г.	4
1994-1995 г.	1
1995-1996 г.	5
1996-1997 г.	4
1997-1998 г.	5
1998-1999 г.	7
1999-2000 г.	11

These are the licensed private preschool institutions which in comparison with private schools are much fewer.

At the beginning of the new century the number of private kindergartens gradually increased. In the school year 2000-2001 in Bulgaria there were 18 licensed private kindergartens with 318 children studying in them. 51 kindergarten teachers took care of them. In comparison with 1996 their number increased with 7, and the number of children increased with 69. [26]

In the school year 2007-2008 in Capital Municipality there were 36 private kindergartens with about 1000 children in them. At the same time the municipal preschool educational institutions were 196. [24]

In the school year 2009-2010 the licensed private kindergartens on the territory of the country are 48. There are 1777 children in them, that is 0,8% from the total number of children attending preschool educational institutions [23]. Most of the private kindergartens now are situated in Sofia. They are fewer in the town of Plovdiv, Varna and Burgas.

These data are not objective as they concern mainly the licensed private kindergartens from the Ministry of Education. There is a great number of illegitimate forms of preschool education with different titles in our country: - "children's site", "children's club", "children's nursery-school", "children's alliance" and others.

The private preschool education is realized in self-maintained kindergartens and in the preparatory classes/groups of the primary and comprehensive schools. In the towns where there is a deficiency if vacant places in preschool institutions more private kindergartens are established. In that way the kindergartens can admit more children of preschool age. The parents prefer their children to attend private kindergartens because of the better working conditions, the small number of children in a group – up to 20 and the extra pedagogical and other services- foreign language education, dances, art, horse riding and others and the use of presentation programs. But there are still vacant places in the private kindergartens. At present there are 1777 children in them, and their capacity is 2213 places. [23]

The high fees the parents pay in the private kindergartens are impossible for some parents. In the all-day long private kindergartens they vary between €3200 and 3600.

In the project concerning the Law of school education and preschool training and preparation there is a clause which promises certain state financing for the private schools and kindergartens. [25]. The economical crisis and the considerable sum of money lead to the conclusion that this clause is definitely hard to fulfill.

The private kindergartens are an important element in the system of preschool education. At first they were established in our country to satisfy the sharp need of educational training of preschool children. After that these institutions strengthened their position as crucial educational places. Regardless of the fact that the policy of the Ministry of Education is not also adequate with respect to the private kindergartens, in different periods their number predominates over the number of the state and municipal kindergartens. That is an indicator of the necessity of private preschool education and of its public prestige.

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NEW TENDENCIES IN PRESCHOOL EDUCATION IN BULGARIA

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Abstract

The present paper focuses on the main tendencies in the preschool education made in the recent years: the enacting of the State educational standards, creation of variant programs for kindergartens; compulsory preschool tuition at school; initiation of additional services in children's institutions (foreign language learning, art; dances and some others), humanizing of the pedagogical process; differentiated payment for the teachers and initiating new titles; establishing of private kindergartens; reducing the number of the municipal preschool institutions in the villages and their increasing in the bigger towns which suffer a deficiency of vacant places and others.

Key words: *tendencies, preschool education, kindergartens and others*

The contemporary realities and dynamics of the social life in the country in the recent years have caused significant changes in preschool education. In that respect a few main tendencies in preschool education were outlined – change of the normative basis and the program content; creation of variant programs and program systems; restoring the educational process in the private kindergartens and others.

In the recent years in the normative papers the term "public preschool education" was replaced with the notion "preschool education and preparation". In theory and in practice, however, the term "preschool education" gained greater popularity. "It – as V. Petrova writes – determines not only the process but also the result of the qualitative changes with children before school". [10]

The tendency towards connecting the preschool institutions with the educational structure is constant and stable at present as well. They (excluding the preparatory classes) keep their self-independence and separate formations.

There are no significant changes in the structure of preschool education. Its system includes all-day, half -day and week long kindergartens. The tendency to an all-day long type of kindergarten remains as a major type of preschool institutions. The contemporary half-day kindergartens function mainly as part of schools, though in the recent years due to the amendments made in the educational law they could function in the premises of the all-day long preschool institutions. That idea of our legislators did not find broad application as the parents' wish was for an all-day stay of the children at the kindergarten. A new moment in the legislation with respect to preschool education is the establishment of seasonal groups, part of the kindergartens and schools, for preschool age children. The Regulations book of public education application gives the opportunity for establishing kindergartens where the children can stay for a few hours only. It concerns educational institutions with unrecorded working time.

In the 90s of the last century there was a tendency towards decreasing the number of the kindergartens and the number of children in them. This was due to the low birth rate in Bulgaria, due to the restitution and privatization of a number of kindergarten buildings and due to the migration processes,

though the range of children was not greatly affected in the kindergartens. In 1999 62 % of the children attended preschool institutions. In comparison with 1989 the percent of the children decreases with nearly 2%. Bulgaria is one of the few countries from Eastern Europe which has kept the range of children in kindergartens. In 2009-2010 the number of the independent kindergartens with a headmaster is 2262. In preschool institutions the pedagogical staff is 19500 people, from whom 1200 are headmasters without a group with 217800 children in them. As a result of the great efforts made on behalf of the municipal authorities the percentage rate reached 74,3 % (16). In the recent years there has been a clearly defined tendency towards increasing the range of children in the preschool institutions. However, there is still a sharp need of preschool institutions in bigger towns – Sofia, Varna, Plovdiv. The tendency in these towns is towards a greater demand of vacant places in preschool institutions compared to the lower supply. The municipality administrations in these towns are forced to take urgent steps. In 2007-2008 school year on the territory of the capital municipality there were 196 children's institutions, 87 of them were incorporated children's institutions and 109 all day kindergartens. They were attended by 2039 children (15). A great percentage of the children, however, could not enter a kindergarten. This led to the redecision made by Sofia Municipality Council to adopt a Program for increasing the number of the kindergartens (2008-2015). The following measures for deficit decrease of vacant places in preschool institutions are pointed down here:

„1. Emptying the premises, enlarging of already existent ones and building new kindergartens

- Vacating of separate rented premises after the expiry date of the contract and possibility of vacating the premises before the expiry date of the contract;
- Opening of new groups within the range of the existent capacity;
- Enlargement of the existent kindergartens;
- Building of new kindergartens;
- Building of a specific place for fire hazardous structures by the order of FDS (Fire and damage security) with the possibility of new group opening.

2. Other measures

- Imposing of moratorium on premises renting in kindergartens;
- Enlisting on the basis of registration and classification of the children on the electronic information system;
- Opening of all-day and half-day long groups in free municipal buildings (schools);
- Opening of groups in free municipal buildings (public community centers);
- Public-private partnership – stimulating of private investors' interest in building new kindergartens;
- Possibility for establishing family kindergartens" [15].

From the beginning of 2010 in the capital have been opened and reconstructed three kindergartens. The deficiency of vacant places is one of the main reasons why children in some kindergartens have to sleep in the corridors. That fact confirms the sharp need of building preschool institutions in Sofia.

The municipal authorities in the other big towns are in search of variants for making more places in preschool institutions. In that respect new buildings are being constructed. The setting and furnishing in the new preschool buildings keep the modern standards and requirements. Certain premises are being reorganized, subsidiary buildings are being constructed so that more children be admitted in the kindergartens. In that way the area could be rationally used, but at the same time many kindergartens are left with no gyms and entertainment halls.

At the same time the number of children who attend kindergartens in the villages is decreasing. One-group kindergartens predominate with children of various ages. Their simultaneous tuition and preparation hardens the educational process. In the foreseeable future the tendency is towards closing these kindergartens as they cannot fulfill the regulated attendance normative. This will probably lead to the creation of another tendency – establishment of summer kindergartens functioning only in summer season.

A new moment in preschool education in the recent years is the initiation of admission criteria in the kindergartens in the towns where there is a vacant place deficiency. In the present year the deficiency number in Sofia for first group is 2000, for second group – 1000, for the other groups there is no deficiency as their attendance is decided to be obligatory in the new project of school education.

Another tendency developing at the beginning of the new century is the establishment of private kindergartens. For a period of about 40 years in Bulgaria there were no private preschool institutions. Though from the Liberation to 1948 there were different types of private kindergartens in the country, several years after the establishment of the social power these kindergartens stopped functioning.

After 1991 when the Regulations book for application the law of public education was adopted which allows the opening of private preschool institutions, such institutions started to be built again. At first there were just a limited number of private kindergartens. But at the beginning of the new century they got greater in number. In 2009-2010 school year there are 48 licensed private kindergartens in the country, where there are 1777 children.[18] The increasing of the private preschool institutions is an indicator which shows their place in the system of preschool education. The reasons for this tendency can be traced in three dimensions. On one side the municipality kindergartens in the big cities cannot cover all children at preschool age. On the other side – the parents prefer to send their children in these kindergartens because they provide the kids with extra services – foreign language learning, dances, horse riding, art and others. The third reason is the limited number of children in a group. In most kindergartens the number of children in a group is not more than 20 kids. In state and municipality kindergartens in the big towns the number of children in a group can go up to 35 children, which further complicates the organization of the pedagogical process and does not create favorable conditions for mental and physical development of children.

The municipal kindergartens also organize extra pedagogical and other services [12]. In that respect other specialists are needed to work with children – foreign language teachers, choreographers and others. They are specialists in their own subject, but they have not the necessary qualification to work and educate children of preschool age. Most of them are part-time teachers. Parents pay extra fees for the additional services no matter if their children attend municipal or state kindergarten. By initiation of extra pedagogical and other services the parents and children's needs and wishes can be satisfied.

In order the preschool education to be admissible and available, the new project of school education and preschool tuition and preparation makes provision for the parents whose children attend private kindergartens, to be compensated with part of the fee they pay in the kindergarten. [22] They will receive only the sum which the country releases for the maintenance of the children in preschool

institutions, in spite of the fact that up to the present moment the greater part of the kindergartens live on municipality budget. The state financing will ease the access to private education and will solve partially the problem with the place deficit in preschool institutions in the big towns. There is a slight possibility that the statement in the project of educational law for state financing the private education will be adopted by the National Assembly. Under the present conditions of financial crisis the sum of 10 million levs necessary for the private schools and kindergartens is quite big. Its provision will be an extremely difficult task for the government.

New organizational forms have been created recently of preschool education which have various names – "children's study-room", "children's site", "children's club", "children's alliance" and others. They are a private initiative and the children can stay there as long as their parents like. It is necessary that these institutions be organized as subdivisions of the preschool educational system in order certain control activities to be implemented on their work aiming the provision of education of good quality. In some of them not only children of preschool age are admitted but also school children as well. That troubles the organization of the pedagogical process and determination of the education institution type.

A new tendency in preschool education is the humanization of the pedagogical process in children's institutions. It expresses itself with the interaction between pedagogues and children established on the basis of cooperation and respect to the child's personality. The humanistic orientation of education and tuition is connected with establishing certain conditions for the development of children by satisfying their needs and interests, by establishing conditions for realization of children's activities, by the change of their position in the pedagogical interaction and others.

An important tendency in preschool education is the working out of variant programs and program systems. At the beginning of 90s of the last century MESC (Ministry of education, science and culture) approved two educational program: "Children's education from two to seven years of age"[13] and "Children's activity in kindergarten [2]."

In 2000 for the first time in our country were approved State educational requirements for preschool education and preparation. [7] They determine the compulsory content of the preschool education pointing out the knowledge required, skills and relationships the children have to adopt. The new normative paper regulates the structure and the size of the school content of the educational subjects. It shows the following educational subjects: Bulgarian language, mathematics, nature orientation, social orientation, art and physical education. There are organized cores in every educational subject. The cores in the educational subject "Bulgarian language" are the following: „coherent speech – speaking and listening", „grammatically correct speech", „sound culture of speech", „literacy preparation" and „semantic side of speech". The education subject "mathematics" consists of five cores: "qualitative relations", "measuring", "special relations", "time relations", "plain figures and forms." The cores in the educational subject "social orientation" are: "communication with people around", "the world and my ego", "object medium", "healthy medium", "social and cultural medium" , "cultural and national values". The educational subject "natural world" includes the following cores: "animal world", "vegetation world", "natural physical medium and natural phenomena". The educational subject "art" has six cores – "artistic information and perception", "artistic reproduction and expressiveness", "fiction", "music", "fine arts", "technical and artistic construction". In the educational subject "physical culture" there are the following cores: "motor activity", "physical capacity and motor qualities" and "forms of physical and motor activity".

Later in 2005 certain changes in the state educational requirements were made; some of the titles of the educational subjects were replaced and were created some new. That led to changes in the cores too. Some extra names and titles were added to the main ones: “Bulgarian language” and literature. Apart from that the following independent educational subjects were established: “fine arts”, “music” and “game culture” [8]. The adoption of the state educational requirements helps the preservation of the traditions in the preschool education and helps its development. On the basis of the State educational requirements of the preschool tuition and preparation were made the program systems: “Hand in hand”, “Molivko (The Pencil)”, “Arts” and others.

The pedagogical personnel in kindergartens can choose the program system to work on in line with the level of children’s knowledge. They independently choose which educational content to cover and learn with the children from different groups. This improves the quality of the pedagogical process. At the same time their responsibility increases with respect to the appropriate choice of program document. In connection with the above mentioned Dimitar Gyurov writes the following: “ The approbation of the school documentation – concepts, program systems, educational strategies and technologies and their discussion, not their formal unified application under administrative control, led to the conclusion that the responsible teachers are capable of independent and creative tracing of their own work in daily life in the boundaries of the program systems”. [1]

The changes in the program documentation are timely. The adoption of the new programs and program systems in practice will be even more successful if they are tested beforehand.

A novelty in preschool education is the diagnostics, which helps establishing the level of educational content acquisition in the educational subjects in lead-in, medium and lead-out level. The ministry of education made tests to fulfill the diagnostics procedures.

In the recent years in the pedagogical process contemporary information technologies are used – technical games, computerized games, video recordings and others.

At the beginning of the new century a new tendency appeared – compulsory preschool preparation of the children for studying at school. With the changes of the Law of Public education, made in 2003 the compulsory preparation of the children a year before first grade was introduced and adopted. This preparation is carried out in preparatory classes in schools or in the preparatory groups in kindergartens [4]. In that way the children are provided with equal educational background before the primary school level. In that respect the number of children who have not studied in children’s institutions can be reduced. In connection with the above said a Preparatory group program was developed for the kindergartens [17]. A year earlier a Book for the teacher in the preparatory group at school was published [14]. It gives additional instructions to the teachers how to work with the program “Before the school threshold”. The book was developed under the project of the National Institute of Education.

The program for the preparatory group in the kindergarten put a new tendency connected with the division of the program content into two modules: for children who have not attended kindergarten before the preparatory group and for children who have attended kindergarten till the preparatory group. Only the educational subject “Bulgarian language” is divided into three modules – children, whose family language is Bulgarian but have not attended kindergarten; children whose family language is Bulgarian but have attended kindergarten and children whose family language is not Bulgarian and have not attended kindergarten. The differentiation of the school material helps satisfying the educational needs of the children with different educational background and of different levels of the society as well as their successful development. Along with that the negative tendency

towards increasing the number of regulated and not regulated educational situations with children gets stronger. The total number of the compulsory educational situations on full-time and all-day basis of the pedagogical process is 24 per week with children of Bulgarian origin and 25 with bilingual children. Their total number is reduced with a few in half-day organization. With children whose family language is Bulgarian the number is 21 per week and 22 with children whose family name is not Bulgarian. As a result of this the time for playing games and for the other activities was significantly reduced. The tendency is towards the immediate literacy of the children in the kindergarten rather than towards preparation for that. In many preparatory groups/classes children are taught to read and write. That is school's priority. Children's teachers in some preparatory groups/classes use educational methods characteristic for the school educational programs. For example, they give the children homework tasks. In most cases this improves the quality of their school preparation, but there is also a risk some children to form negative attitude to the school activities. That reflects on their level of personal readiness for school.

For the first time in Bulgaria after finishing the preparatory group or the preparatory class the children are given a certificate and a book is issued for those who are liable to compulsory tuition.

In the new Project for changing and expanding of the educational law the preparatory year before first grade is regulated and is said to be obligatory for children at the age of 5 [22]. That idea of the Cultural ministry is an expression of the wish a common preschool education to be implemented for children between 5and 7 years of age, that is before the beginning of primary school. Their parents and guardians are free of tuition fees. The project says that the tuition is organized due to the rules and regulations determined in the Regulations book of law application. The children who do not speak Bulgarian are supposed to study Bulgarian language on the basis of a specialized methodology. The additional education in Bulgarian will form communication skills in the official language, will help children to acquire cognitive and speech act experience for the successful educational work at school. The cultural ministry cares about the children who are liable to compulsory education but live in a residential area where there is neither a kindergarten nor a school. These children are provided with free transport to the kindergarten or school to the nearest village or town on the territory of the municipality. The initiation of the compulsory preschool education with children at the age of 5 will provide them with better preparation for primary school and will lead to the decrease of the number of children who will fail in school. The idea of a compulsory character of the preschool education suggested in 1891 in the Law by Georgi Zhivkov, has been realized after 112 years later. It is an achievement in its development and a proof for his prestige in the society.

Another important tendency developed at the beginning of the new century is the integration of children with specific educational needs and/or chronic illnesses as part of the common kindergarten. That kind of education suggests their mutual tuition with the rest of the children in the group as one or two children with specific needs can be admitted in a group [4]. In connection with that Regulation N 1 was regulated form 23, January, 2009 concerning children and school boys and girls with special educational needs and/or chronic illnesses [5] and National plan for integration of children with special educational needs and/or chronic illnesses in the system of Public education [19]. This regulation determines the state educational requirements for tuition of children and school boys and girls with special educational needs and/or chronic illnesses. In children's institutions this is realized by programs for preschool tuition and preparation; individual educational programs; individual programs for early impact and early rehabilitation for children with eye problems and for children with hearing problems. Their integrated education and tuition is realized in the kindergarten along with the respective resource center which further helps that kind of tuition. In that process certain specialists

take part – special pedagogues, resource teachers, psychologists, speech-therapists, ear rehabilitation and speech therapists and others, as well as parents, guardians and custodians [19]. In order this process to be successful it is not enough for the children to be included in the common educational sphere and be provided with the appropriate specialists, but they need also supportive surroundings which include favorable architectural and social-living conditions, special educational-technical means and equipment, didactic materials and manuals. In that way the children are provided with more convenient conditions to work and study which are favorable for some children with serious health problems. In a number of kindergartens were built special platforms and ramps but in most of them the necessary measures have not been taken yet. Apart from that the educational work in integrating these kids with special educational needs to the common kindergartens is of great use for these children to adapt easier and quicker to the school surroundings and their integration in the society.

In some cases the desired results cannot be achieved. On the contrary the counter effect arises. The children with special educational needs not only lag behind in their development, but their presence in the groups has a negative effect on the development of the other children. It is of high importance in the normative documents the admission of children with special needs and serious health problems in the common kindergartens to be clearly implemented due to the specificity of their health state. In order better working conditions to be established for all children in the kindergarten the number of children in the groups where there are kids with special educational needs or/and chronic illnesses. In that way the pedagogues will be able to spend more time on individual work with those children and with the rest of the children in the group.

A better variant is the formation in the massive preschool institutions of special groups for children with chronic illnesses or with special educational needs who only on special occasions could join the rest of the children in the group. In most cases for the time being there is no the necessary synchronization in the work of the kindergarten teachers, social workers and resource teachers. That's why there is a need of regulated requirements to be followed.

For the children with serious health problems there are still active kindergartens. These children can be admitted there after all the possibilities for integrated education have been tried and checked in the kindergarten according to Article 18 from the Law of the public education and under the written request on behalf of the parents or custodians to the headmaster of the kindergarten. Due to the regulation concerning children and school boys and girls with special educational needs and/or chronic illnesses, the work of the specialized kindergarten is oriented to:

- education which can provide successful social integration of the children with special educational needs and/or chronic illnesses;
- social integration of children with special educational needs and/or chronic illnesses;
- preparation for the integration of children with special educational needs and /or chronic illnesses in common educational surroundings;
- resource help to the integrated children with special educational needs and/or chronic illnesses [5].

Due to political and economical changes in the recent decades the migration of people to Europe has increased drastically. The movement of people to other countries and continents is easier now because of the rapid development of the international communication and transport relations. This process also affected the Republic of Bulgaria. The number of immigrants and refugees has increased in our country. Most of their children attend Bulgarian kindergartens and schools [3]. As a result of that

process a new tendency in education appeared – integration of immigrants' children. Their successful adaptation to the kindergartens depends on what kind of special methods are used when these children study Bulgarian language. In the educational material topics on life, way of living and the culture of the people from another nationality must be included. The educational surroundings in preschool institutions must create suitable conditions for all children to feel themselves comfortable and emotionally satisfied regardless of the differences which exist among them. All that will be in favor of the successful integration of the children from other nationalities in the educational institution.

Kindergartens in Bulgaria are attended by children from different ethnical background. This opens the question for their integration in the preschool institution. Their successful adaptation to the new conditions is fulfilled due to the equal-right integration and development of their cultural identity. Unfortunately intercultural education which is realized in kindergartens is not complete. In the educational content the cultures of the different ethnic minorities are not presented profoundly. The children's teachers are not qualified enough to work in multicultural medium. In that respect MESC (Ministry of education, science and culture) worked out a Strategy for educational integration of the children and school boys and girls from ethnic minorities.

Its main strategies are:

- Equal rights guarantee for good quality education for children from the ethnic minorities;
- Preservation and development of their cultural identity;
- Preconditions for their successful sociolization;
- Turning the cultural diversity into a source and factor for mutual understanding and spiritual development of the growing-ups and creating an atmosphere of mutual respect, tolerance and understanding;
- Formation of appropriate social-psychological climate which will favor the strategy realization [21].

Over the recent years the number of Roman children who do not attend preschool institutions has increased. The reasons for this are different: low level of social involvement of these citizens, improper understanding of the meaning of the preschool education connected with the development and preparation of the child for school, need of financial support, demotivation of the children and others. Certain legislative measures are needed to be taken in order this problem to be solved; the parents of those children between 5 and 7 years of age who do not attend preschool institution have to be imposed sanctions.

An important tendency is the appointment of speech-therapists, pedagogical advisers, psychologists in preschool institutions. For example in Varna there are five pedagogical advisors and three psychologists who work in 17 kindergartens.

The pedagogical advisors and psychologists work in the following main directions: psychohygiene and psychoprevention of the children; interaction with the teachers, headmaster, assistant-teacher aiming the successful integration and sociolization of all children towards the educational institution; provision of additional pedagogical activities; competent assistance to handicapped and disabled children and others.

In the new century the women are those who mainly prefer to choose the profession of a kindergarten teacher. The bigger part of the pedagogical teachers has Bachelor's or Master's degree. The number of

qualified preschool pedagogues is constantly increasing. The teachers promote their qualifications through different forms: seminars, practices and trainings. A part of the teachers take part in conferences, round tables, lectures with university teachers.

In the National program for development of school education and preschool tuition and preparation (2006-2015) a new system for monitoring, analysis and evaluation for teachers' development and realization is to be introduced. In that respect the model of prognostication and planning of the qualification activities will be continued. The new normative document shows measures for the initiation of a system for career development of the teachers which is divided into two dimensions: vertical and horizontal. The vertical career development provides the teachers with the possibility to take a leading position. With respect to that development the competition model for a leading position still remains unchanged. The horizontal career development is carried out through different teacher's positions [9]. Since 2009 five teacher's positions have been introduced: "junior teacher", "teacher", "senior teacher", "chief teacher", "teacher-methodologist".

The Ministry of Education in order to increase the prestige and the social status of the teachers, in particular of the kindergarten teachers, made not only a system for career development but also a system of differentiated payment of their work. In the future the two systems must be improved by changing the normative basis for obtaining professional-qualification degree; the criteria and indicators for differentiated payment of the teachers and the different position occupations undergo certain changes as to be precise. At the moment the differentiated approach in teachers' payment is not based on all criteria pointed in the National program for development of school education and preschool tuition and preparation (2006-2015). For example the teachers' payment is not influenced on the number of children in a group and others. The indicators by which the teachers' work is assessed are actualized in Regulation N 5 form 4th January, 2010 concerning the working payment of the personnel in the sectors from the system of the Public Education [6]. There are points for all indicators. Their number is 100. The system for differentiated payment of work has to be closely connected with the results of the education and tuition of the children. The points showing the teachers' work with children in a multicultural medium and with special educational needs and/or chronic illnesses are not enough. They are 8, with 2 points more than the points indicating the work with parents. The child's personality depends to a great extent on the mutual work of the family and kindergarten. But that assessment cannot be the same as the assessment of the education and training of the children with serious health problems. This regulation determines the order and the way of the monthly payment of the pedagogical and non-pedagogical staff who work in the state and municipal children's institutions. [Art.1].

The criteria which specify the titles "chief teacher" and "teacher-methodologist" are not clear enough and objective. The pedagogical experience of the teacher is not always a guarantee for high professionalism. When a teacher has to be chosen for one of these positions the headmaster's competence is of crucial importance. What should be taken into account are the acquired professional-qualification degree and the professional competence of the teachers.

In the last decade there has been an excess of kindergarten teachers. At the moment the search is for foreign language teachers. The fact that children start to learn a foreign language form a very early age led to the creation of a new university specialty "Preschool pedagogy and foreign language". In that way the future teachers are provided with foreign language training. Their practical realization will solve the problems connected with the provision of foreign language specialists in the kindergartens. The training of the kindergarten foreign language teachers is an attempt for improving the quality of the foreign language education of the children. Since the school year1997-1998 the future preschool

pedagogues have been taught not only in that specialty, but also in the specialty "Preschool and primary school pedagogy". This new specialty was created under the influence of the experience of some European countries and the tendencies of the social development in our country. Those who have graduated at this specialty can work in the sphere of preschool and primary school education depending on social needs. The formation of these two new specialties is regulated with Regulation № 86 form 12, August, 1997 which confirms the educational-qualification degrees in higher school in the Republic of Bulgaria.[11, 2]

The successful functioning of the preschool education system depends on its effective management. In order to be successful, it has to be improved further. Regarding the already mentioned above the future management decisions have to conform with the modern needs and dynamics of the contemporary life style. One of the possibilities to achieve this is the decentralization of the preschool education management. With respect to this the Ministry of Education takes a number of measures. According to the National program for school education development and preschool tuition and training (2006-2015) its functions have to be changed – from administrative-regulatory towards control-regulatory. It has to keep the already regulated standards of preschool tuition and training and to control their implementation. The program makes provision to the Regional inspectorates of education to be free of administrative-managerial authorities and make themselves sectors for developing the methodical work and control. According to the program the decentralization dimensions are two [9]:

- appointment and release of headmasters;
- opening and closing of kindergartens .

An important part in the process of appointment and release of headmasters has the local municipality – parents' representatives, teachers' representatives and representatives of the local authorities. A new tendency in preschool education is the introduction of mandate period of the headmaster's position without a limit to the number of mandates. For the time being this idea has not been realized.

For several years now a National Institute for teaching headmasters of educational institutions has been functioning. There are two educational groups there: initial training for those who wish to occupy the position of "headmaster" and periodical training for active headmasters. With the new normative document the local authorities are provided with more possibilities to open and close kindergartens.

A novelty in its financing is the gradual introduction of the system under vicarious budgets. At a meeting of the Municipality council a decision is made concerning the vicarious budgets; the types of expenditures are also determined which will be monitored by the children's institution; the formula on which the means will be distributed among the headmasters, control functions of the municipality and others. The introduction of the new financial system gives a new status of the kindergartens. They acquire financial autonomy, which provides them with the possibility to operate with their funds following the regulations of MESC. The kindergarten headmasters have to coordinate the funds under the conditions of financially economical independence, control the modern management and find extra means for activities.

In the recent decades the interest in preschool education in the world and in our country has drastically increased. It has to be reformed with regard to the changes in social –economical conditions. The innovations in preschool education turned it into a major resource of increasing the education quality in the other, higher classes. It turned into a system which conforms with the requirements of the society, parents and school.

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THE SUBJECT OF WAR REPRESENTED IN CONTEMPORARY ILLUSTRATED BOOKS BY EUROPEAN AUTHORS

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Abstract

Contemporary Illustrated books address numerous social issues in a realistic way. The new world order as a consequence of globalization, multiculturalism and terrorism, has brought to surface subjects like war. This study investigates the ways in which European authors choose to present the subject of war in children's books.

Key words: *Illustrated books, war in children's literature, children's book*

1. INTRODUCTION

War as a topic has been present in the field of children's literature for several decades; for instance, among many other books, in *I am David* by Anne Holm, published in the 1960s. The notion of war is a diachronic issue addressed by many writers as humanity is still faced, even today, with many war operations in various places and in many forms, i.e. terrorism and other types of attacks. The significance and weight of this issue have led the 2008 MLA Convention to organize a special division on children's literature. Also, the Bookbird journal devoted its last issue (47, 2010) to war. Children's literature attempts to communicate what happens currently in the world to children within the framework of information, awareness raising and ideological intervention. The authors' trend to inform readers on war-related issues is also found in illustrated books addressing younger children. This study is based on this type of books because they have a double narrative code: text and picture, namely two "voices" each of which attempts to elevate the issue in its own way. Current illustrated children's books involving topics such as war, distanced from the idealistic romantic ideals of last century literature (Hollindale, 1997: 205-218) constitute an interesting field of study. This study relates to narrative modes adopted by contemporary authors, which will enable readers to understand the causes and construe the outcome. The writers' goal is the narrative techniques to be adopted in order to communicate war-related issues to young readers (Bosmajian, 1989: 308).

2. THE CONTENT AND THE MATERIAL OF THIS STUDY

This paper examines five illustrated books by European authors – Europe has faced a Balkan war recently; four of them have been translated into Greek and one is by a Greek author. The scope of this study is to see how war-related issues are represented in these books. In particular, we attempt to answer the following questions:

A. Which narrative techniques do the writers use to bring out the subject? (heroes, narrator…)

B. Which literary genre do the authors choose?

C. How is war sketched in these books? Which is the pretext and which is the outcome?

D. What is the relationship between text and picture?

E. Is war used as a plot guide or as a means to develop other subjects, i.e. peace, reconciliation etc.?

F. What is the reaction and opinion of everyday citizens (ideological question to readers)?

The books cited are:

1. Pin Isabel, *O sporos tis eirinis [The Seed]*, Synchronoi Orizontes, Athens 2001 (*Der Kem*, Pin Isabel, Michel Neugebauer Verlag, Verlagsgruppe Nord-Sud Verlag AG, Gossau Zurich, Switzerland 2001)

2. McKee David, *Oi kataktites*, Hestia, Athens 2004 (*The Conquerors*, David McKee, Andersen Press, London 2004)

3. Battut Eric, *Polemos horis aitia [The Battle]*, Metaichmio Publications, Athens 2003 (*Bataille*, Autrement 2000)

4. Verrept Paul, *O mikros stratiotis [The Little Soldier]*, Synchronoi Orizontes, Athens 2004 (*De kleine soldaat*, Verrept Paul, Uitgeverij Clavis, Amsterdam-Hasselt 2002)

5. Trivizas Evgenios, *O polemos ton Oufron kai ton Tzoufron [The War Between Oufron and Tzoufron]*, Minoas publications, Athens 2006.

A brief description of the book contents is deemed necessary:

1. Pin Isabel, *O sporos tis eirinis [The Seed]*, Synchronoi Orizontes, Athens 2001 (*Der Kem*, Pin Isabel, Michel Neugebauer Verlag, Verlagsgruppe Nord-Sud Verlag AG, Gossau Zurich, Switzerland 2001)

The scarabs and the beetles are neighboring peoples considering each other an enemy. They set the borders of their territories and guard them. One day, a strange object falls on their borderline. Both the scarabs and the beetles call out scientists to examine it and both reach the same conclusion: it is a cherry seed. They dream of forests and mountains covered with cherries, and rejoice. But who does the cherry seed belong to since it fell on the borderline? Neither of the two gives way to the other and each tries to steal it from the other. This is also the pretext for war which leads to war preparations. When the two armies marshal their troops they realize that there is no cherry seed, but a cherry tree instead. Then they realize that there is no need for war because they can share the fruits.

2. McKee David, *Oi kataktites*, Hestia, Athens 2004 (*The Conquerors*, David McKee, Andersen Press, London 2004)

In a large country ruled by a General, people believed that their lifestyle is the best. The General and his army often attacked neighboring countries to conquer them. The other countries resisted but the General still managed to occupy them. One day, the General left for the last country left to conquer. It was a very small country and had no army. Not only did the country not resist at all but also they welcomed them and entertained them. While staying there, the soldiers would associate with women, play the country's games, listen to its stories, sing and eat their various dishes which they also learnt how to cook. One day, the General decided to call them back since there was no reason to stay there anymore. After the soldiers returned, the General found out that everything in his country was different since everything reminded him of the small country. That is because the soldiers brought

with them the "loot", which are new recipes, new women's fashion, games and songs from the other country. Even the General himself lulled his son with a song from the small country.

3. Battut Eric, *Polemos horis aitia [The Battle]*, Metaichmio Publications, Athens 2003 (*Bataille*, Autrement 2000)

The red kingdom lives in harmony with the blue kingdom. Children play happily with each other. The grownups and the kings communicate well with each other. That serenity was upset one day when chicken shit fell on the kings' edge of their nose while taking a stroll. Their initial laughter was followed by a serious tone as they thought that it is not right for a king to make fun of another king. That was considered a pretext for war. Each king gathered his subjects and told them that they should go to war. So warfare outburst and lasted for a long time for the walls of the countries were very solid. Every device they used failed, so the kings decided to meet and end the war. Their subjects and their children went to the meeting, too. Suddenly, they saw their children playing together as they used to. The kings could not even hear about peace, so a checkerboard was set. No one was interested in war anymore and the two countries have reconciled.

4. Verrept Paul, *O mikros stratiotis [The Little Soldier]*, Synchronoi Orizontes, Athens 2004 (*De kleine soldaat*, Verrept Paul, Uitgeverij Clavis, Amsterdam-Hasselt 2002)

A little soldier tells his story about the day when war burst out in his country. He relates the facts of the battles and the consequences of war on buildings and people. The story ends with the hero and his family trying to move on with their life, burdened, though, by the anxiety about the future.

5. Trivizas Evgenios, *O polemos ton Oufron kai ton Tzoufron [The War Between Oufron and Tzoufron]*, Minoas publications, Athens 2006.

Two armies are deployed in a valley. Their heads, *Oufros* and *Tzoufros*, are great commanders. The reasons for war are not completely clear because the newspapers include different information. The morning of the conflict each commander was visited by his adjutant who announced sabotage on weapons by the enemy troops. The two commanders tried to solve the issue and give orders by telephone. But for various reasons, messages were transferred erroneously and, thus, in the final conflict the two armies had canoes and bouzouki[14] respectively instead of weapons. The commanders thought that their opponent had something devious in his mind because of their armor and the bugle call for retreat. Although the battle did not take place, the history books of both opponent countries mention gallant deeds and self-sacrifices of heroes.

3. DISCUSSION

In the above books one can find similarities and differences in respect to the narrative techniques adopted by the authors, taking into account, naturally, the limitations imposed by the translation process of the texts (O'Sullivan, 2005) from the source language into the Greek language.

3.1. Findings about techniques and other narrative features of the texts.

Characters/heroes:

[14] A Greek musical instrument.

Most of the writers choose to use stories with human characters. In fact, in the book *O mikros stratiotis*, the main character is a child. That choice is seen to contribute more towards identifying the reader with the characters and better understanding of the characters' attitudes in the story. The characteristics of the heroes refer to modern people. Only in the book *O sporos tis eirinis*, the characters are scarabs and beetles.

The type of the narrator

All the writers use a third-person narrator, thus aiming to a more reliable story telling and a more objective view concerning the description of the facts (Stanzel F.K. 1999: 310), with the exception of the book *O mikros stratiotis*, where there is an autobiographical first-person narrator/hero:

"One day war outburst. Some people knew why. Others, like me, couldn't understand why all this happened…"

The guise of first-person narration in such a text is expected to influence the degree of apprehension of the atmosphere of the story. One could consider with certain reservations that the particular book, despite the clear use of first-person narration, almost takes the role of a backstage reporter who interviews the hero. The narrator/main character of the text has no clear age level characteristics. The age is assumed by the title (*O mikros stratiotis*). However, in terms of illustrations, the book clearly relates to a boy dressed in a military uniform, holding toys in his hands, sometimes tanks and sometimes a specific little animal/toy.

O mikros stratiotis

The parody

In the above texts we observe that the writers make use of satirical mood and parody to a lesser or greater extent. The use of parody is a method known from ancient Greek literature (see Aristophanes).

But it is also found in modern texts which can relatively easily be recalled by young readers and through which the world of the grownups can be debunked (Zervou, 1997: 32). Parody, as a hypertextual process and self-conscious imitation of texts, has managed to convey a new meaning and a reversal of the situation (Hutcheon, 1985: 6, Genette, 1997: 8, Kristeva, 2002: 44). The texts with a strong element of parody presuppose an active reader who should be able to conceive the double semiotic code of the text in order to interpret the text (Hutcheon, 1985: 93). The book where parody is strong is *O polemos ton Oufron kai ton Tzoufron* by E. Trivizas. The parodic intention of Trivizas is spread throughout the book, ranging from the title, the introduction of the topic, the taunt of a country's defense systems to the degradation/taunt of the means of the attack (weapons). When the soldier meets his commander to inform him on the sabotage on their arms by the enemy, he tells him about good news and bad news:

"The good news, General, is that when our cook defected, he didn't take the mustard with him. The bad news is that the enemy agents sabotaged our weapons." (page 18)

["-They what? I demand to know how they did it'

- They replaced the strings of our weapons with boiled spaghetti!"]

And when the General of the opposition camp is informed that there was sabotage on their weapons too, and asks to find out how it happened, they reply:

["They peed in the gun-barrels…" (page 25)

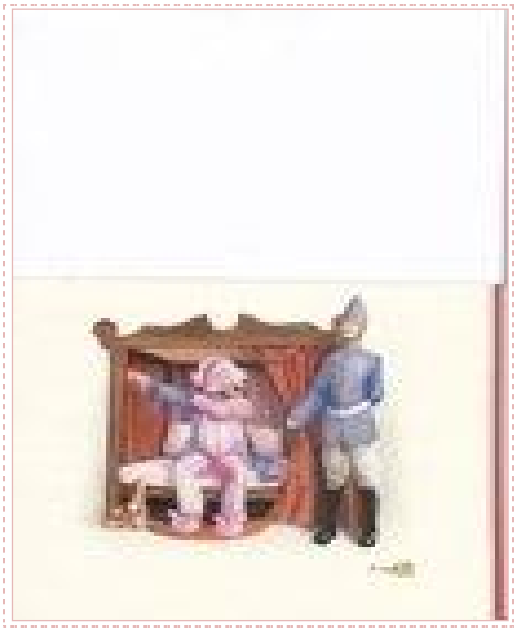
The writer even mocks historiography books and the subjectivity of their content that serve the respective beliefs and the national expediency of each opponent. The writer adopts the same technique used in history books and describes the warfare between the two opponents who have all the characteristics of "bold and resourceful generals", "operational troops", spies etc. Through such narration not only does the writer undermine the story writing but also subverts the model-leader and -hero, and the dominating powers in general, as the latter are presented. The reader follows the warfare between two opposite armies of one thousand soldiers each; the former has canoes as weapons and the latter… bouzouki. The disorderly retreat of the adversaries upon the bugle call for retreat undermines the model of the "brave" soldier. Using a meta-mythmaking device, Trivizas reinforces a possible concern on the part of the reader in relation with the plausibility of the historical sources, since he refers to different modes of description of the facts from both sides. The parodic mood also permeates the illustration of the book where the commanders are depicted wearing pink gowns and bunny-slippers, and having animal dolls on their beds (picture).

3.2. THE LITERARY GENRE

In relation with the literary genre in which the authors prefer to develop the subject, they select the fairytale (1,2,3,5). It is acknowledged that fairytales have timeless nature, that is, the facts take place "anywhere and nowhere". Everything happens far in time and space. Therefore, the possibility of something similar taking place in the present, the "here" and "now" of the reader, is at the same time possible and impossible. Narration is in past tense.

"*How beautiful were the countries where they lived!"*» (Battut Eric, *Polemos horis aitia)*

"*Once there was a big country…"* (McKee David, *Oi kataktites*)



O polemos ton Oufron kai ton Tzoufron

3.3. THE CAUSES AND THE OUTCOME OF WAR

In all the books, the causes and pretexts of war are presented. All writers present them in a manner that leads to the reader's realization that they are all lame excuses. In the book *Polemos horis aitia* the text says:

"While the two kings were taking a stroll, some birds flew over their heads and a chicken shit fell on their nose. THE kings laughed…then they looked at each other. They thought that kings should not make fun of each other over a dirty nose and considered it a PRETEXT OF WAR".

In Trivizas' book, *O polemos ton Oufron kai ton Tzoufron:*

"..they claim that they had to do with an utterly cute nose of a princess, others with the nose of a pencil, others with the disappearance of the cuckoo of the emperor's clock…others with a poisoned chocolate cream"

Sometimes the nationalistic, arrogant and selfish view of a country's citizens is presented as the pretext. In this case, the citizens think "*…that the way they lived was the best*" and thus made "*…attacks to neighboring countries*". *(Oi kataktites,* McKee David).

Presenting those meaningless wars aims at challenging the readers' attention through humor which will cast doubt over the seriousness of the reasons for war. The book *O mikros stratiotis* by Verrept differs as to this technique. The author does not present a cause but moves to the fact itself and leaves the reader to guess or express the reasonable question on the cause of war.

"One day war outburst. Some people knew why. Others, like me, couldn't understand why all this happened…"

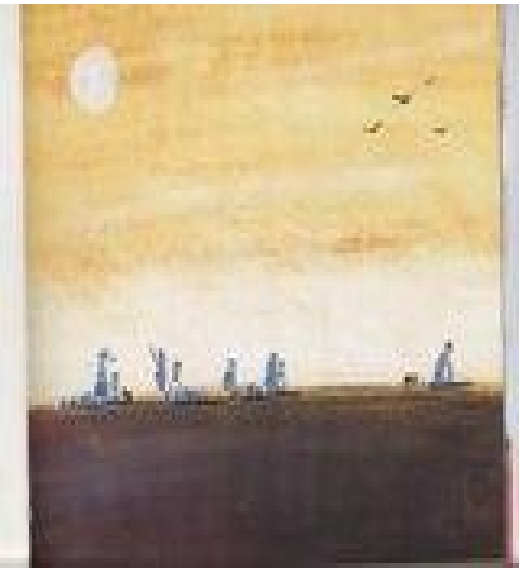
The consequences of war are outlined by the writers through the heroes' action and the evolution of events, in many ways. Sometimes, the narrative walks a thin line between the cover-up and the exposure of the ruthless reality. Although the attitude of the texts towards the readers is to "protect" them from the consequences of war, the intention to reveal all unpleasant results for everyone involved is obvious. The unpleasant atmosphere is outlined with simple style and modest expressions that do not provoke tension and fear to children:

"When it got dark, the battle ended. Everyone went home. It was a difficult, gloomy day". (*Polemos horis aitia*).

This is the style Verrept's book, *O mikros stratiotis*, deviates from. There is no hesitation and facts are presented realistically.

"Too many people were killed", "Many people, though, had lost their homes", "they were sad", "when I got home, I found the house collapsed", "some of my friends had been killed"…

Also, a totally different view of the consequences of an attack to another country is revealed in the book *Oi kataktites* (McKee D.) The writer outlines the results of the invasion not for the conquered but for the conquerors. It refers to the cultural influence on the soldiers by the citizens of the country conquered. The reader of the book realizes the significance and the power of civilization as the opposite to material wealth, which is always the given goal at any military operation. The book reveals the other side of the situation, that there is not only one perspective. And the question is raised as to who the conquerors and the conquered, eventually, are, since the General, when he comes back victorious to his country after having conquered the other country, finds out that: *"…everything was somewhat different. The smell of food reminded him of food in the small country. People played games like the ones in the small country. Even some of their clothes resembled the clothes in the small country. He smiled and thought:" Oh! War loot"]. And the story ends like this: "In the evening, when he – the General – put his son to bed, his son asked him to sing him a lullaby. So the General sang the only songs he could remember, the songs of the small country he had conquered"*.



Polemos horis aitia

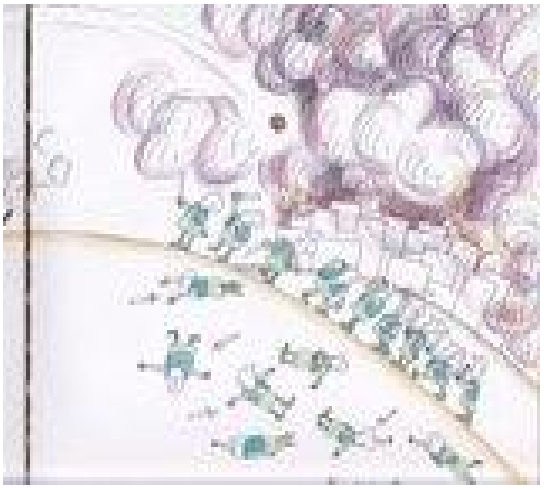
3.4. THE RELATIONSHIP BETWEEN TEXT AND PICTURE

Even if the texts make an indirect reference to the consequences, the illustration dares to show the truth to a greater extent.

In the book *Polemos horis aitia*, the phrase *"When it got dark, the battle ended. Everyone went home. It was a difficult, gloomy day"* is accompanied by the following picture.

Victims lying on the ground, the anguish of the relatives (women), and the pictures of victim burial show the disastrous consequences of war.

Pictures say more than words dare day, even in the case where writer and illustrator is the same person.



Oi kataktites

The above picture accompanying the phrase *"The other countries resisted – but the General still conquered them"* in the book *Oi kataktites* represents soldiers on the ground lying killed or wounded. The connotations of colors for sentiment (Nodelman, 1988) found in many texts also contribute to the atmosphere of the books.

In the book *O mikros stratiotis* there is harmony emanating from a realistic presentation of the consequences of a battle and war in general. Narration through both illustration and text focuses on and elevates exclusively the disastrous outcome of a military operation. Phrases such as *"Too many people were killed", "some of my friends had been killed"* accompany pictures that remind more of a reporter's photographs. Evidence of such realistic narration is the double page depicting the graves and on the top left of the page the system numbering the many victims. Human losses as a consequence of war are presented outright.

O mikros stratiotis

The ideological stance presented in the text through either parody or a simple reference/description is often strengthened by illustration, which is particularly important in these books since they elevate the text. In Trivizas' book, the subversion of the models is also attempted intertextually through illustration. For the portraits of the commanders, the illustrator resorts to paintings depicting specific national heroes and adopts familiar forms. Napoleon and Kolokotronis, a national Greek hero of the Greek revolution of 1821, are easily identifiable.

O polemos ton Oufron kai ton Tzoufron

3.5. HOW THE NOTION OF WAR IS USED

In two out of the five books, authors use war as a means to promote reconciliation in the end (*Polemos horis aitia & O sporos tis eirinis)*, whereas in the other three books the entire plot involves mainly the act of war, its outbreak, development and outcome.

"A smile accompanied the thought (of the leaders) that there was no reason to fight anymore, since the peoples could share its beauty and fruit" (*O sporos tis eirinis*).

"Now that they have reconciled, their blue-red village looks very nice…" (*Polemos horis aitia*).

The reader discovers the value of reconciliation and the lack of any reason for war and its consequences.

3.6. REACTION AND ACTION OF THE CITIZENS

In all five books, the peoples are usually presented with peaceful intentions and are led to war because they obey their leaders. The leaders talk about the good of their country to convince them. The leaders are those who make the decision for war.

"the beetles and the scarabs were not thrilled with what their leaders told them …but they had to obey" (*O sporos tis eirinis*).

"At times the General would take his army and attack neighboring countries" (*Polemos horis aitia*)

"They made us wear military uniforms, steel helmets on our heads, and take guns" (*O mikros stratiotis*).

The ideological dimension is obvious. The peoples do not decide, do not react and are involved in operations with painful consequences for them. The ideological question for the readers lies in the place where the consequences and the pretexts are presented. Hypothetical questions such as *"what if the peoples denied following their leaders' decision"* or why *"it was a sad day,* (and) *people had tears in their eyes"* express the ideology of those texts.

4. CONCLUSION

In a period when violence and the subversion of every day life are a fact, writers and illustrators attempt to talk to little children about war through an illustrated book which has a double narrative code: picture and text. To meet these needs, they choose the genre of fairytale and use mainly a third-person narrator and human characters. Parody and humor are a technique preferred by some writers, and most texts focus on the causes and consequences of war, without laying particular emphasis on the magnitude of the destruction. Naturally, there are exceptions. Pictures are usually more revealing than texts in relation with the disastrous consequences of warfare. The above books have all the elements that create an ideological framework which will raise concerns to the little readers over the causes and outcome of war.

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STUDENTS' PERCEPTION OF AGGRESSIVE BEHAVIOUR IN SLOVENIAN ELEMENTARY SCHOOLS - ANALYSES OF DATA FROM INTERNATIONAL STUDIES

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Abstract

In this paper students' perception on appearance of aggressive behavior in Slovenian elementary schools and their perception regarding feeling of safety based on data acquired as part of the TIMSS (Trends in International Mathematics and Science Study) and CRISP (Children's Rights International Study Project) surveys are presented. Statistically significant age and gender differences were established. Specifically, we have established a trend that students in Slovenia statistically significant report more on physical aggression during the years (1995-2007), which is true for both older and younger boys and girls. Reports on frequency of perceiving other forms of aggression were less evident. Regardless, students express similar degree of feeling of safety which indicates that it was not the actual level of aggression that increased but the awareness and the level of reporting on physical aggression.

Key words*: aggression, aggressive behaviour, feeling of safety, students, school, international studies*

1. INTRODUCTION

1.1. Aggression and aggressive behaviours

Aggressive behaviour being one of the most burning issues of present-day school, it is of utmost importance to devote assiduous attention to it. All aggressive behaviour represents aggression, but many instances of aggression are not aggressive behaviour (Anderson & Bushman, 2002). It can be assumed that aggression as a personality trait results in a more frequent occurrence of aggressive behaviour. There are two opposite poles of aggression and aggressive behaviour: a positive one in the form of assertiveness and a negative one which appears in the form of hurting oneself and other people (Renfrew, 1997). The focus of our analyses is going to be the negative aspect of aggression. The negative aspect of aggression is also focused on in a definition rendered by the World Health Organization in 1996, which defines aggression as the intentional use of physical force or power, threatened or actual, against oneself, another person, or against a group or community, that either results in or has a high likelihood of resulting in injury, death, psychological harm, mal-development or deprivation. The shortcoming of this definition is that it is so comprehensive. Our work in based on more specific definition that argues for aggressive behaviour to be such a behaviour that has intention or actually causes physical or psychological harm to self or other (Renfrew, 1997).

One could not overlook the fact that also the manifestation of aggression could vary. Most generally the aggression can be classified as collective aggression, self-directed aggression and aggression directed to others (World Health Organization, 1996). Based on available data we will focus on expression of aggression directed to others.

Since aggression is a relatively stable personality trait, which endures from childhood onwards, throughout adolescence and well into adulthood (Hudley, 1993; Loeber, Hay, 1997), it is of utmost importance to impact violent behaviours in childhood, in particular in the sense of diminishing the frequency and severity of aggression in the future. Some authors namely believe the stability of aggression is quite comparable to the stability of intellectual abilities (Ferris, 1996; Carr, 1998; Fossati, Maffei, Acquarini and Ceglie, 2003; van Lier 2005). Childhood aggression is thus a good indicator of one's social, psychological, behavioural and educational problems in the future (Schwartz, Nakamoto, Hopmeyer Gorman, McKay, 2006; Crick, 2006). Aggressive children are also more likely to experience peer rejection than children who are not, which adds to numerous negative developmental results.

1.1.1 Aggressive behaviour in school

Aggressive behaviour occurs in all kinds of environment, the school environment being no exception. Development of expression of aggressive behaviour is influenced by family factors (family climate, social-economic status etc.), peers, media and also school factors, such as school size, ratio of students per teacher, resources etc. Higher-scale expression of aggression is associated with students' lower feeling of connection to school (Kos, 1990), absenteeism from instruction (Krall, 2003) and negative attitude towards school (Kozina, 2007). Studies have pointed out that there is a significant correlation between aggression and the whole school climate and, in a more narrow sense, the quality of the pupil – teacher relationship (Krall, 2003). Rigid attitude of teachers and use of institutional instruments of power have turned out to be two high-risk factors for the development of aggressive behaviour within school (Popp, 2003).

General school orientation regarding aggressive behaviour (e.g. if they are strictly and consistently sanctioned) is also important. Looking at schools that set and maintain rules of behaviour that are being clearly announced and expected and reward their consideration and sanction disobedience one could observe lower levels of aggressive behaviours. High achieving orientation of schools has proven to be problematical since it results in high expectations and aggressive behaviour (Dekleva, 2000). Dobnikar (2002) also connects aggression with high achieving orientation of schools, high competitiveness, demands on obedience and lack of individual approaches and solutions.

Aggressive behaviour is also related to student achievement. In general, studies have revealed that children who express more social and pro-social behaviours perform better in the educational field (Masten, Morison, Pelligrini, 1995; Wentzel, Asher, 1995), whereas the educational performance of more aggressive children is lower (Dishion, 1990; Masten et al., 1995; Schwartz, Gorman, Nakamoto, McKay, 2006). It has been established that there is a correlation between children's school performance and their popularity among peers (Wentzel, Asher, 1995). Children who are accepted by their peers achieve better results in tests and exams than children who are subjected to peer rejection. Social exclusion pertains in particular to refusing to take active part in class, avoiding school and everything else connected to it. All of this inevitably results in poorer school performance (Buhs, Ladd, Herald, 2006). Sociometric studies have revealed aggression to be the number one cause of children experiencing peer rejection, which also leads to problems in school (Hudley, 1993).

There is no doubt about the significance of correlations discovered in various studies, however, correlations observed in the reverse direction, i.e. poorer performance resulting in aggressive behaviour, should neither be disregarded. Parents' expectations are nowadays namely extremely high, and if children fail to meet these expectations, it all ends up in disagreements and results in an increase

of violent behaviour in school (Popp, 2003). Tomori (2003) has also reported on poor school performance being a significant risk factor for the development of aggressive behaviour.

1.1.2. Trends in aggressive behaviour in school

People are generally convinced that school violence, regardless of the type of aggression, is on the increase. This belief is a result of extracts from reports on individual cases, assaults on teachers and similar incidents. Analyses of published articles from archives of the Slovene daily newspaper Delo also point to an increase in aggressive behaviours in schools. These analyses have namely shown a sharp rise in articles on violent behaviour in schools in the second half of the 1990s. Two reasons can be found for this: there have either been no newspaper reports on such incidents in the past, or violence has indeed increased to such a large extent (Balkovec, Debevec, 2003).

Studies also confirm that frequency of aggressive behaviour in schools and exposure to aggressive behaviour are extensive. In USA almost three quarters if children between grades six and twelve are witness aggressive behaviour. Similarly 56 to 87 percent of youth report on aggressive behaviour (Flannery, Vazsonyi in Waldman, 2007). Studies conducted in Germany on the other hand show that the actual level of aggression and violence in schools between 1994 and 1999 did not increase (Fuchs, 2001, based on Popp, 2003).

1.2. Perception of feeling of safety

What influences the students' feeling of safety is a very complex issue that requires insight into different aspects of feeling of safety. Regarding that during the childhood children encounter aggressive behaviour frequently (on television, in other media, in school, in neighbourhood etc.) youth become desensitized to the use of aggressive behaviour and begin to use aggression as a socially acceptable form of behaviour (American medical Association, 1996). Interestingly several studies has shown that most of the respondents feel safe at schools (Smith, Hill, Evans in Bandera, 1999; Price, Teljohann, Dake, Marsico in Zyla, 2002; California Healthy Kids Survey - CHKS, 2010) which also corresponds to our findings.

A research study (Twemlow, Fonagy in Sacco, 2002) on factors related to personal feeling of safety in different environments indicates that most likely to significantly affect young person's feeling of safety in school are quality of the caregiver-child relationship, level of exposure to family and community aggressive behaviour, presence of protective adults, the rules of the social system, the presence of drugs and alcohol, media reports concerning safety in a community, media violence, the presence of a safe haven or retreat, training in personal safety techniques, good relationships with peers and friends, engaging in altruistic behaviours, and a sense of belonging to a community. Reduction of aggressive behaviours in school would therefore only be one of the measures for increasing the feeling of safety in school that also contributes to beater teaching of teachers and learning of students.

2. METHOD

Data acquired as part of TIMSS 1995, TIMSS 1999, TIMSS 2003, TIMSS 2007 (Trends in International Mathematics and Science Study) and CRISP 2006 (Children's Rights International Study Project) have been used in the course of the conducted secondary analyses.

TIMSS methodology is dedicated to assessing mathematics and science knowledge in those grades where the majority of students are at the time of assessment aged 9, as well as in grades where the

majority of students are aged 13. In Slovenia, this either corresponds to the third and seventh grades of the eight-year primary school, or the fourth and eighth grades of the nine-year primary school. Sampling was comprised of random samples and the process was conducted in several stages and the selected samples were representative and sufficient for conducting all statistical analyses (Japelj Pavešič, Svetlik, Kozina, Rožman, 2008; Japelj Pavešič, Svetlik, Rožman, Kozina 2008; Japelj Pavešič, Brečko, Bezgovšek, Čuček, Kozina, Lipovec, Magajna, Perat, Vidmar 2005). For the purpose of secondary analyses, national databases consisting of data taken from student questionnaires, will be used (1995: N = 5,274; 1999: N = 3,109; 2003: N = 6,704; 2007: N = 10,404). In the study cycles there are slight differences among variables measuring aggressive behaviours in schools, since questions are subject to changes and improvements, there are however sufficient similarities among them to justify making comparisons. Items measure the perception of actual aggressive behaviour which students were subjected to in the month before.

Since 1991 three bigger data collections have been carried out in Slovenia as part of the Children's Rights International Study Project (CRISP). In the last data collection in April 2006, questions about school aggressive behaviour were added to questions about children rights. Sampling was comprised of random samples and the process was conducted in several stages and the selected samples were representative and sufficient for conducting all statistical analyses. For the purpose of secondary analyses, national databases consisting of data taken from student questionnaires, will be used (N = 3,302).

According to research question various methods for analysing the data were used. For following the trends of perception of aggressive behaviours in schools we have analysed the respective items on the level of descriptive statistics. The data were processed using the SPSS 17 and IDB Analyzer 1.4.0.8. (IEA, 2005). IDB Analyzer was designed specially to process the data from international studies, i.e. large scale data bases that have specific sampling designs. The data were compared using descriptive statistics (%) and standard errors (SE). The significance of statistical differences in average values was determined based on overlapping the confidence intervals or by processing the X^2 tests. When the confidence intervals set by the values of standard error do not overlap or were values are $p < 0.05$ the differences are statistically significant.

3. PURPOSE OF THE PAPER

Numerous articles are devoted to phenomena of aggressive behaviour in school. In our article we focus on frequency of aggressive behaviours in school and following the trend of changing the frequency during time but also on the perception of feeling of safety. We were interested whether the parallels between frequency of aggressive behaviours in different age groups or genders and perception of feeling of safety in elementary school in Slovenia could be drawn.

4. RESULTS AND DISCUSSION

4.1. Perception on aggressive behaviours and feeling of safety among students according to age

Studies have revealed varying trends of aggression as regards the same individuals in different age periods. Some have shown a decrease over the years (Hyde, 1984; Park & Slaby, 1983, based on Hudley, 1993), whereas others have shown an increase (Whiting & Whiting, 1975; based on Hudley, 1993). The increase and decrease of aggression over a certain period

of time depend on the type of aggression observed. A decrease by age was particularly obvious with regard to physical aggression (Cairns et al., 1989; Romano, Tremblay, Boulerice, & Swisher, 2005), whereas a totally different trend was observed as regards verbal and psychological aggressions, which were on the increase from childhood to adolescence (Romano et al., 2005).

The interpretation resulting from these observations is that aggression itself does not decrease over years, what does however change is the way it is expressed. In the early stages, the focus of aggression is more on the physical level, and later more on the verbal and indirect forms of psychological aggression. Another possible interpretation assumes older children are capable of better insights into the way they experience things themselves, they have better abilities of metacognition, and hence deliver more factual accounts of their own degrees of aggression and aggressive behaviours aimed at them. The option that older students could engage socially desirable behaviours more often than younger students should also not be disregarded.

In general, studies have revealed significant differences in aggression according to the age of participants, which is why trends of aggressive behaviour for every year in question will be presented for younger and older students comparative.

Table 1. Percentage of younger and older students (SE is stated in brackets) that have perceived aggressive behaviours in various TIMSS study cycles.

	1995		2003		2007	
	younger	older	younger	older	younger	older
I had something stolen.	15.4	19.9	17.9	12.0	16.4	9.5
	(0.8)	*(0.8)*	*(1.0)*	*(0.7)*	*(0.8)*	*(0.7)*
I was hurt by another student.	27.3	19.4	39.5	26.6	42.6	32.8
	(1.1)	*(0.6)*	*(1.5)*	*(1.1)*	*(1.4)*	*(1.0)*
Other students forced me into doing something I did not want to.	-	-	13.2	7.2	11.6	7.0
			(1.0)	*(0.5)*	*(0.6)*	*(0.5)*
I was mocked and insulted.	-	-	36.5	26.8	30.8	23.6
			(1.3)	*(1.0)*	*(1.0)*	*(0.9)*
Other students would not let me take part in what they were doing.	-	-	23.8	12.4	23.6	12.7
			(1.1)	*(0.7)*	*(0.8)*	*(0.6)*

Notes. Shown above are percentages of students who answered that in the previous month some of the listed incidents had occurred in school. Younger students in TIMSS are 9 years old, older students are 13 years old. In 2003 a different statement was used: *I thought I would get hurt by another student.* In year1995 older students have respondent to scale 1-never; 2-1to 2 times; 3-2 to 4 times; 4-5 times or more

As is evident from Chart 1, in 2003 and 2007, younger students reported about physical aggressive behaviour more often than in 1995. Since the statement assessing the expression of physical

aggression used in 2003 was not exactly the same, it has not been possible to include it in direct comparisons. In 1995 and 2007, the statement used assessed physical violence that had already occurred, whereas in 2003 it assessed the feeling of an individual who thought he might get physically harmed. Data for the years between 1995 and 2007 are comparable and can lead to a conclusion that there was an increase in physical aggressive behaviour, since significantly more younger students made reports about physical aggressive behaviour in 2007 if compared with the year 1995. Similarly, there was also an increase in the reports of frequency of theft. The same statement was used for assessing perceiving of theft in all study years, and it can thus be observed that there was a significant rise in the number of perceived thefts among younger students from 1995 to 2003. Between 2003 and 2007 the number of perceived thefts declined, however the differences are not statistically significant.

Items on verbal and indirect aggressive behaviours were included in the 2003 and 2007 cycles only. Results point to a considerable decline in verbal aggression between 2003 and 2007. With regard to indirect aggression included in the statements regarding exclusion and coercion, the differences are of no statistical significance.

There is an increase of reports on physical aggressive behaviour during the years 1995 to 2007 for older students. This indicates a statistically significant increase of perceiving physical aggressive behaviour. In all the observed years there is statistically significant less reports on perceiving aggressive behaviour of older students comparing to younger students. This is in compliance with some other research (i.e. California Healthy Kids Survey - CHKS, 2006-2008) which indicates that greater social adaptation of older students reflects in less frequent occurrence of aggressive behavior.

With regard to theft the trend is not unambiguous. There is a considerable increase in perceiving of theft between 1995 and 1999 by older students (Table 4), whereas from 1995 to 2003, and even more so to 2007, the number of students that reported on thefts decreased. With regard to more indirect forms of violence, such as coercion and exclusion, no significant differences were observed between the years of 2003 and 2007. As for verbal forms of violence, a significant decrease was observed between 2003 and 2007, similarly as for younger students.

In general and in accordance with professional literature (Romano, Tremblay, Boulerice in Swisher, 2005, Flannery, Vazsonyi in Waldman, 2007), there are significant differences in perception of violent behaviour among younger and older students. In 2003 and 2007 theft is significantly more commonly reported by younger students, whereas in 1995 it is more common among older students. Physical, verbal and psychological violence is more frequently perceived among younger students. As mentioned before these results could be attributed to the fact that older students more frequently express socially desirable behaviours.

Irrespective of how often children state that they have perceived aggressive behaviour, their feeling of safety can be completely different. Data regarding feelings of safety have been taken from the Children's Rights International Study Project - CRISP data.

It is evident from Table 2 that the biggest proportion of students feels safe from physical aggressive behaviour in school when they are seventeen years of age and least when they are nine. As for indirect aggressive behaviour and aggressive behaviour experienced on the way to/from school, thirteen-year-olds feel safest, whereas least nine-year-olds feel safe. Differences among participants of different ages are statistically significant, but all data indicate that most students regardless of type of aggressive behaviour feel safe at school. The fact that larger percentage of older students feel safe could be attributed to the presumption that younger students feel threaten not only by their peers but also by older students.

Table 2. Percentage of students that feel safe in school or/and on the way to/from school in CRISP study according to age.

	9 years	13 years	17 years	Differences according to age	
				$X^2(2)$	p
Physical aggressive behaviour	73.3	80.5	85.5	38.01	$p < 0.01$
Indirect aggressive behaviour	68.9	74.5	69.5	11.16	$p < 0.01$
Aggressive behaviour on the way to/from school	66.9	82.8	79.0	50.72	$p < 0.01$

Notes: Children provided answers on the scale from 0 = 'I do not feel safe' to 3 = 'I feel perfectly safe'. Percentages of students who reported with grade 2-I feel safe and 3-I feel perfectly safe are reported. Children were divided into age groups according to the information they had given about their age: 9 years=8-11 years; 13 years=12-15 years; 17 years=16 years and more.

4.2. Perception on aggressive behaviours and feeling of safety among students according to gender

A great majority of studies which deal with aggression in one way or another have revealed significant differences between genders (Delfos, 1996; Gomez, 1991; Zlotnik, 1993, based on Delfos, 2004), which is why trends in aggression were addressed separately for boys and girls. In most cases the male gender exhibits more aggressive behaviour than the female gender. A number of different approaches, i.e. biological, sociological and evolutional approaches, have been used in attempts to explain these differences. Contemporary studies mostly attribute differences in aggression between the two genders to different ways of exhibiting aggression, and not to such a big extent to different levels or quantities of aggression. In this context the male gender usually displays more direct forms of aggression, whereas the female gender exhibits more indirect forms of aggression (Condon, Morales-Vives, Ferrando, Vigil-Colet, 2006). In doing so boys are supposed to show more physical aggression, while differences in verbal and indirect aggression between the two genders are more inconsistent and mostly point to more aggression as regards girls (Hudley, 1993; Holtappels 1997; Tilmann, 1999; Fuchs, 2001, based on Popp, 2003).

Table 3 show percentages of younger students, participants of TIMSS, who stated that they had experienced various forms of aggressive behaviour, shown comparatively by gender.

Table 3. Percentage of younger boys and girls (SE is stated in brackets) that have perceived aggressive behaviours in various TIMSS study cycles.

	1995		2003		2007	
	Girls	Boys	Girls	Boys	Girls	Boys
I had something stolen	12.5 *(0.9)*	18.2 *(1.0)*	14.9 *(1.3)*	20.7 *(1.3)*	12.9 *(1.0)*	19.9 *(1.0)*
I was hurt by another student	22.5 *(1.2)*	32.0 *(1.4)*	36.5 *(2.0)*	42.3 *(1.6)*	37.8 *(1.6)*	46.4 *(1.6)*
Other students forced me into doing something I did not want to	-	-	10.5 *(1.1)*	15.6 *(1.3)*	9.5 *(0.8)*	14.3 *(0.7)*
I was mocked and insulted	-	-	35.8 *(2.0)*	37.2 *(1.3)*	26.6 *(1.1)*	34.9 *(1.5)*
Other students would not let me take part in what they were doing	-	-	22.1 *(1.6)*	25.3 *(1.6)*	21.4 *(1.1)*	25.9 *(1.0)*

Notes. *Shown above are percentages of 9-year old students who answered that in the previous month some of the listed incidents had occurred in school. In 2003, a different statement was used:* I thought I would get hurt by another student.

Data point to significant differences between the two genders as regards all forms of aggressive behaviour. Throughout study periods the study indicates an important correlation between gender and the perception of school aggressive behaviour. In all TIMSS studies and in both age groups, boys have reported greater exposure to aggressive behaviours in schools, both to direct as well as indirect forms of aggression, which corresponds to professional literature (Delfos, 1996; Gomez, 1991; Zlotnik, 1993, based on Delfos, 2004). A decline in perception of verbal aggression has been observed among girls, whereas differences are not statistically significant as regards boys. Regarding indirect forms of aggressive behaviours there are no statistically significant differences.

In Table 4 percentages of older students who stated that they had experienced various forms of violence are shown separately by gender.

Table 4. Percentage of older boys and girls (SE is stated in brackets) that have perceived aggressive behaviours in various TIMSS study cycles.

	1995		1999		2003		2007	
	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys
I had something stolen	16,8 *(1,0)*	23.3 *(1.0)*	18.6 *(1.2)*	27.9 *(1.6)*	8.7 *(0.8)*	15.3 *(1.2)*	6.5 *(0.8)*	12.6 *(1.0)*
I was hurt by another student	12,3 *(0,7)*	26.8 *(1.0)*	21.7 *(1.2)*	35.8 *(1.5)*	23.9 *(1.4)*	29.3 *(1.4)*	26.1 *(1.2)*	39.5 *(1.4)*
Other students forced me into doing something I did not want to	-	-	-	-	4.9 *(0.6)*	9.6 *(0.7)*	3.9 *(0.5)*	10.3 *(0.8)*
I was mocked and insulted	-	-	-	-	26.9 *(1.3)*	26.6 *(1.4)*	20.4 *(1.2)*	26.8 *(1.0)*
Other students would not let me take part in what they were doing	-	-	-	-	10.4 *(0.9)*	14.4 *(1.0)*	9.4 *(0.8)*	16.2 *(1.0)*

Notes. Shown above are percentages of 13-years old students who answered that in the previous month some of the listed incidents had occurred in school. In 2003 a different statement was used: *I thought I would get hurt by another student.*

As regards older students also the data from TIMSS 1999 cycle are available which enables more constant monitoring of trends for the discussed items. As regards older students, boys are again the ones to perceive violence more commonly than girls, this being statistically significant. A similar trend is evident for both genders. Frequency of perceiving theft among older students increased from 1995 to 1999, and decreased to 2003 and 2007. In general, a trend of decrease has thus been perceived among older students, whereas among younger students the frequency of reporting on theft remained unchanged throughout years. From 1995 to 2007 there was a significant increase in the frequency of reporting on physical aggressive behaviour, among both younger and older students. Perception of verbal aggressive behaviour among girls decreased considerably from 2003 to 2007, while it remained unchanged for boys. Among older girls there was also a significant decline in the frequency of coercion, whereas there were no significant differences perceived regarding boys and younger girls. With regard to the statement used for assessing exclusion from a group, the differences proved to be of no significance. Less frequent reporting on aggressive behaviours by older girls than boys may point

to their higher social competences. This presumption however should be studied based on a survey, designed specifically for studying the relation between students' social competence and their expressing of aggressive behaviour.

Similarly as statistically significant differences between genders regarding the occurrence of aggressive behaviours in school, also differences in perceiving the feeling of safety are observed. Data about the feeling of safety have been acquired from the data included in the Children's Rights International Study Project 2006.

Table 4. Percentage of students that feel safe in school or/and on the to/from school in CRISP study according to gender

	Girls	Boys	Differences according to gender	
			$X^2(2)$	p
Physical aggressive behaviour	81.0	80.6	1.34	$p > 0.05$
Indirect aggressive behaviour	66.0	75.2	40.43	$p < 0.01$
Aggressive behaviour on the way to/from school	74.6	81.3	21.61	$p < 0.01$

Note: Children gave answers on the scale from 0 = 'I do not feel safe' to 3 = 'I feel perfectly safe'. Percentages of students who reported with grade 2-I feel safe and 3-I feel perfectly safe are reported.

There are no statistically significant differences between boys and girls as regards the perception of safety in the field of physical aggressive behaviour. There are however statistically characteristic differences regarding the question about indirect aggressive behaviour and behaviour on the way to/from school and, where more girls do not feel safe than boys. This is in compliance of the analysis results that show more boys who perceive different forms of aggressive behaviour. One could assume that this is partly because of the fact that girls are physically weaker than boys. For detailed analyses and development of guidelines on less presence of aggressive behaviour and more students who feel safe in school a development of longitudinal study is necessary in order to enable us to check for perceiving of aggressive behaviour and feeling of safety on same data.

5. CONCLUSIONS

As expected, considerable differences in the perception of aggressive behaviour have been observed between genders. Boys perceive more aggressive behaviours in school than girls, which is the case for all assessed types of aggression, as well as for all study years. Significant differences have also been observed between younger and older students. In all cycles of the TIMSS study conducted in Slovenia, younger students consistently perceive aggressive behaviours in school than older students. Also younger students according to CRISP data feel less safe in school than older students. This could be attributed to different social maturity and aptitude for moral estimation of students of different age groups. On the other hand also less sensitiveness for aggressive behaviours of older students that have been exposed to aggressive behaviours in everyday life could be one of the reasons for fewer reports on aggressive behaviour.

Irrespective of differences among groups, similar trends in aggressive behaviour can be observed. The results represent trends in students' perception of aggressive behaviour in Slovenia from 1995 to 2007.

An increase in perception of physical aggression has been observed for the years between 1995 and 2007. Among younger students the frequency of perceiving theft increased over years, while among older students it decreased. In general, a decline in perception of verbal aggression was observed between 2003 and 2007. Analyses conducted separately by gender have shown considerable differences in particular on account of girls. Verbal aggressive behaviour perceived by girls declined significantly, while perception of verbal aggression among boys remained the same. A considerable decline has also been observed in the perception of frequency of coercion among girls. The frequency of perceiving exclusion from a group remained unchanged over years.

We would like to point special attention to physical violence and its increase. It is particularly worrying that 42 percent of younger students and 32 percent of older students reported about physical aggressive behaviour in 2007. Not only in individual schools but also on the system level the background for such results and for development of guidelines should be examined for all forms of aggressive behaviour.

We believe it is important to point out that in spite of the perceived increase in physical forms of aggressive behaviour and theft among younger students, nevertheless a relatively high percentage of students participating in analyses stated their feeling of safety in schools and school surroundings. We would surely like for all students to feel perfectly safe, but the fact that more than two thirds of them feel safe or perfectly safe, leads to a conclusion that despite a possible increase in aggressive forms of behaviour, on average students personally do not perceive this as threatening to their personal safety. Although girls report about actual aggressive behaviours less frequently, they do not feel as safe. Thus, fewer younger students feel safe than older ones, which also corresponds to the fact that they report about all types of aggressive behaviour more commonly.

In view of acquired results it would in the future make sense to research to what extent the increase in reporting about physical forms of aggressive behaviour in schools can be attributed to the introduction of zero tolerance towards physical violence, and to conduct a more in-depth assessment of the feeling of safety children have in schools and in school surroundings.

Since only data taken from TIMSS and CRISP studies have been included in our analyses, it is not possible to make conclusions about trends in aggressive behaviour in general on the basis of acquired results. As the focus of TIMSS and CRISP studies was not on assessing aggressive behaviour but on other issues, lesser attention was paid to aggression. However, as the TIMSS study is conducted in cycles, it does nevertheless provide a rough insight into trends, and thus creates a need for a more detailed analysis of aggressive behaviour in school. Simultaneously it poses new questions regarding the perception of verbal aggressive behaviour among girls and boys, since not only a difference between genders, but also a difference in trends was revealed as regards this form of aggressive behaviour.

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SINGULARITIES OF SCHOOL PREPARATION IN FIELD OF NANOTECHNOLOGY

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Abstract

Development of computer techniques, making on its basis new means of communication, it has led to creation of new type of society - informational - and as the second integrator, unconditionally appear information technologies. On the one hand, it has simplified and accelerated an informational people-to-people contact, and on the other, has considerably reduced interest to a printed and written literature and, as consequence, has reduced a part of creative thinking in an intellect human activity like a user of the information. One of the key problems in the world consists in schools which cannot manage with a problem of augmentation of a human capital. That is why, in case we wish to change a situation considerably - the school should variate to stop being the brake of developing of country, and has returned itself a role of one of the main mechanism of reproduction of the high-quality and competitive population.

Key words: *computer techniques, informational society, human capital, mechanism of reproduction*

1. INTRODUCTION

In human history there was no other such season. The season, when on life of one breed there is a significant amount of qualitative changes of life. Thinks work 1-2 years: they still work, but we buy new already. Occupations exist 5-10 years: the graduating student is compelled to get the second education or training courses. Cultures, the states, political and social direction exist some decades and then vary directly. Technologies replace one another with increasing rate. The world passed from industrial to innovation economics. Countries compete with each other, who reconstruct faster, who will enter the following innovation, who will think up new technology. Along the whole length of life we live some radical technological transformations. Only 30 years ago mobile phones and internet were achievements of science fantasy. Radical technical changes lead to destruction of normal cycles of reproduction of a human life.

One can say, in modern world technologies become the agents of new civilizations. Children faster adults master the new techniques, new devices, and moreover, often train in it hardly thinking parents. Breach the cycle of reproduction, the society becomes multicomponent on development degree. For example, many old men do not want to open up new and qualitative leap become between them and future aimed young people.

Now thanks to destructive processes occurring last decades in our economy actually everything, that Russians now can stake in the modern world is their young educated people. And it is valid so. Idea about «the human capital», and about the think that even it, instead of «the material capital» in the modern world defines competitiveness is known from the middle of the last century.

To trust modern developers, especially important it becomes today: in the presence of the advanced workers there is possible or working out and start of technologies on a reconstruction of resources, or a creation of schemes at which dependence of resources does not threaten the country and a society.

With the big part of confidence we can say, that the human capital – it is a sphere of economy which is so actuality and we are not too late in. Scientific and technical progress at the development present stage, is characterized by the new lines qualitatively differing from earlier inherent it. Before (19-20 centuries) was division and a concrete definition of the fields of knowledge, natural sciences were divided into chemistry, physics, biology. The chemistry was divided on analytical, organic, etc. But further integration even more often began to be required. If earlier integration of sciences was turned on support of the solution of a separate scientific direction, for example creating devices for applied using energy for atomic fission, now this integration should work for a problem solving of interdisciplinary nature, for example, creating biorobots like devices for making ones should be solved applied problems of physicists, both information sciences, chemistries, biology and engineering-mechanical. This objects demand new type of integration scientific thoughts and exactly nanotechnology is one of this integrator. At present it is an information revolution in the world. Development of computer techniques, making on its basis new means of communication, it has led to creation of new type of society - informational - and as the second integrator, unconditionally appear information technologies. On the one hand, it has simplified and accelerated an informational people-to-people contact, and on the other, has considerably reduced interest to a printed and written literature and, as consequence, has reduced a part of creative thinking in an intellect human activity like a user of the information. One of the key problems in the world consists in schools which cannot manage with a problem of augmentation of a human capital. That is why, in case we wish to change a situation considerably - the school should variate to stop being the brake of developing of country, and has returned itself a role of one of the main mechanism of reproduction of the high-quality and competitive population.

To live in a modern world, our children should:

1. Understand how the social reality forms
2. Since early childhood get in future: to assimilate the most conteporary techniques
3. Have an ability to see future in present and facilities which will open in a few years.

2. SINGULARITIES OF SCHOOL PREPARATION

One of the possibility of realizing above-named tasks is the work of profiling schools in a field of high technology, exactly in nanotechnology. Why profiling in field of nanotechnology can help to solve some above-named problems, but everyone knows profile subjects schools? In this case basic is interdisciplinary of nanotechnologies as scientific and technical direction. Nanotechnology means a wide spectrum of directions of scientific and technical realization. Therefore profiling of schools cannot be solved in the standard ways. New approaches are necessary and they can be provided by transition of school to a new level of educational standards. From the simple doctrine to the competent approach. Education in area of nanotechnology demands interdisciplinary professionalizing which will allow graduates of high schools to adapt easily on a modern labor market and in a business environment. For this purpose it is necessary for school acquaintance with nanotechnology.

MIREA has initiated on profiling of some schools in area of nanotechnology. Educational authorities of Southwest district of Moscow have supported this initiative.

Experiment, in the extent in a year on features of school preparations in area of nanotechnology, which took place at school № 1103 , has shown that to realize this problem, we should follow differently for separate age categories.

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2.1. Elementary school

For an elementary school propagation of the new should be carried out through forms accessible to pupils: through entertaining stories, experiences of entertaining chemistry and the popular labor activity implicitly acquainting children with the scientific information. As an example of such implicit training it is possible to give work within the limits of carrying out of lessons of technology on creation by pupils of Cash desk of chemical elements, and further the chemical constructor. At such lessons pupils get acquainted with skills of plotting of elementary geometrical figures (circles of various diameters, rectangles etc.), and also fix ability to draw. In the end they create tags of chemical elements with valences inherent in them from which one afterwards will mechanically collect formulas of molecules.

Formulas of molecules

And, at last, a concluding phase of mechanic making of such molecules will be modeling of passing of some chemical changes, for example, preparation water from oxygen and hydrogen molecules. Pupils will be accustomed to new to them to activity kinds - manipulation with separate chemical elements and to implementing of chemical reactions. It is natural that nobody will be required on current stage of the complete understanding of chemistry and physics processes, but pupils in an elementary school will memorize concepts of chemical elements, molecular formulas, valence and chemical reactions. All of this will allow them to assimilate great volumes of a material in chemistry and physicist in the upper school. The same bonding of muscle labor in an elementary school and separate subjects

information sciences can be recommended for physics, biology, etc. In a natural history course in the entertaining form it is necessary to acquaint pupils with the last researching in the field of high technologies. At the same time teachers of an elementary school on the basis of analysis of such kind of activity of pupils by time of the beginning of education in high school make recommendations about possible preferences of pupils: natural sciences, a humanitarian direction, mechanic labor.

2.2. Secondary school 5-7th classes

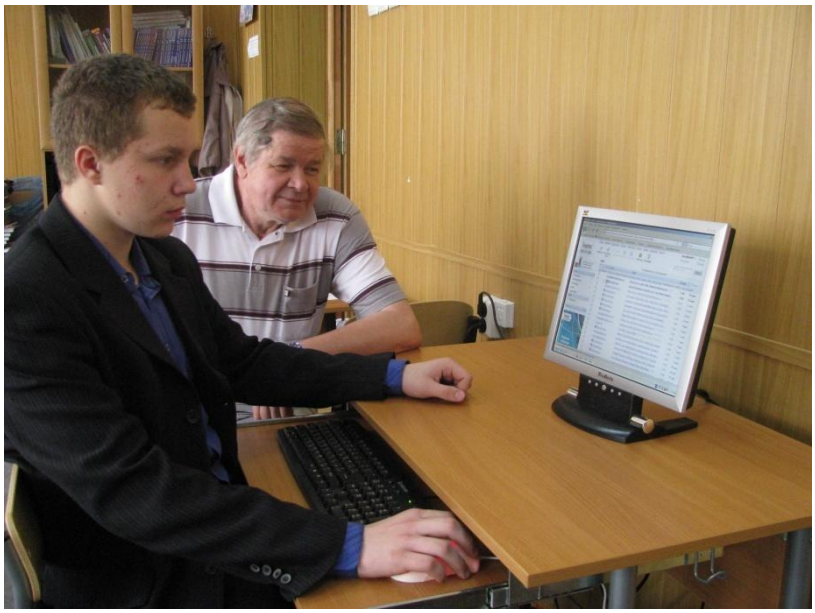
Since the fifth class, works of profiling starts, consisting in differentiating of pupils on directions of naturallyscientific and humanitarian. For classes of a naturallyscientific direction the time of occupations within the limits of natural history by the bases of physical knowledge and material constitutions will be increased. For classes of an economical direction the same augmentation of quantity of hours is yielded to the economics bases. For the same parallels it is desirable to provide resumption of teaching of lessons of technology, construction and modeling. It is necessary to mark, that new lessons of technology should be accessible both to boys, and girls and to have the task of technological support of subjects of a profiling. For classes of a naturallyscientific direction it is machinery, the elementary models and the experiences applied as a presentation of physicists, chemistries and biology, and also the developing plays helping more profound understanding these subjects. It is natural, that pupils will not reap the fruits of their labor of applied in concrete training process, however pride sense for the labor will be the additional factor of desire of profound understanding of a subject. Along with it already in the beginning of education of technology it is necessary to introduce the understanding bases of nanotechnology, as possibillity of handling with separate constituent parts of material. In particular, it can be realized owing to making by pupils hands of the chemical constructor from a tree or plastic. Constructing and further the robotics should have the purpose creation of the elementary devices of reception nanoparticle and creations from them technical products. Important also within the limits of profiling to review education of profile subjects plans, and also some the general, for example, information science, aside as increases in quantity of hours and, simultaneously, a deepening direction. Concerning informatic science for classes of a natural cycle the basic emphasis should do on programming, and also on programs of modelling of physical, chemical and biological processes. Close to this, deepening of profile subjects, apparently, needs to be carried out at the expense of subjects of a humanitarian direction such as: drawing, singing, etc. These subjects should be studied within the limits of an additional education.

2.3. *Secondary school 8-9th classes*

In 8-9th classes Acquaintance to new technologies in addition with carrying out of an advanced course of physics, chemistry and biology should be spent in the form of design activity of pupils. Information interchange and expansion of interschool contacts provided at the expense of participation of schoolboys in work of thematic seminars of city and regional character, and also the international scientific festivals of youth, is the additional factor of additional deepening of area of profiling. Understanding plurality of spheres of application of nanotechnology including directed on a trespass to mankind and world around, and considering boys natural bent to various types of weapon, that it is necessary to limit a choice to spheres of protection of the person and environment. For this purpose along with nanotechnology, children should shine and know problems of ecological safety of the person, ways of definition of the pollution influencing the person and the world surrounding them. Therefore in projects should be reflected ecology questions, experimental works according to physical and chemical environmental contaminations. It, in turn, demands introduction ecological themes at profound studying of subjects of a natural-science cycle.

2.4. *Secondary school 10-11th classes*

For the senior school acquaintance with new scientifically - technical directions can interest pupils as self-realization possibility in the future. It should lead to increase motivation to training. Naturally, acquaintance should be adapted for level of pupils and simultaneously should be taught along with the academic forms of a statement of material elements of research activity. For this purpose should be entered an additional teachers instructors of research activity of pupils of the senior classes. As instructors can be involved post-graduate students and teachers of corresponding chairs of high schools - school partners. They can carry out direct preparation of the future entrants. To post-graduate students the given kind of activity will be set off as student practice. Thus, can be provided the scheme of through training school - high school. Along with this modified, but as a whole the traditional scheme of training of pupils it is necessary to begin work on introduction of an individual trajectory of training of schoolboys. The given scheme provides development of independence, competence, decision-making on own strategy of formation. It is realized by two possible directions. The first direction - an individual trajectory of training within the precincts of school. According to this direction, since 5th class, being based on recommendations of the teacher of the initial classes which have defined preferences of the concrete pupil, the differentiated approach to schoolboys in the course of material giving is carried out. In process of subject development is made gradual reorientation of separate pupils to interschool remote training. In this case the pupil can prepare a part of a studied material independently, using network inclusion in a concrete lesson or studying a material more profoundly in the separate computer cabin connected to the Internet.



Classes for the distance education

The control of mastering of a material is carried out by a writing of examinations, including transferred distantly through an intraschool network. The separate equipped computer cabins can settle down in a separate placement on the school ground floor, for example, in one of school workshops. In

process of development, since 8th class, separate pupils should pass to independent profound studying of one of subjects of the profiling closest to interests of the pupil. The control of studying of a subject is carried out by a series of examinations and of annual examination in the chosen subject. In 10 - 11th classes all subjects of profiling are profoundly and independently studied. At the given level the control is carried out not only on examinations and annual examinations, and in 11 class profile subjects become examinations in a choice, but also protection of scientifically research work at the beginning of 10 classes chosen theme. It is natural, that independence of studying does not mean an exception of the teacher of school in this process, but in this case the teacher plays a role of the adviser helping to deeply understanding studied material. At such scheme in case of fast mastering of the information the saved time is given to considering and preparation of research work. In 8-9th classes such time is taken away under a project writing. The second direction at possibility completely remote at the control of direct training from the side, being near to parents. This original remote house training, with possibilities of internal consultation of school teachers, examinations and annual end-of-year examinations. For level 10 - 11 classes operate the scheme with instructors in the chosen direction of profiling. Such scheme most approaches for training of children with the limited possibilities on movement. One of difficulties in preparation of schoolboys in sphere of high technologies is absence of possibility to get skills of work on the process equipment. Even the elementary equipment for school to buy practically not probably. Therefore it is necessary to use remote forms of scientifically-educational activity. In this case work on the process equipment is carried out through the Internet thanks to special programs.

3. CONCLUSION

All forms of works set forth above will allow for short enough time:

1. To generate at pupils necessary educational level for simplification of vocational counseling in the further life;
2. To provide through training of youth since a school bench before its receipt in high school;
3. To replace a paradigm of formation from class-fixed system (subject formation) on oriented (ability of orientation in the world), transition from acquire knowledge to acquisition of abilities and development competences;
4. To replace one type of a discourse - **«the protective childhood» (**children need to be protected in every possible way from the world of adults) to another, cultivated in the modern world, - **«the competent childhood» (**children are capable to become at more and more early stages of development independent in a range of definition of own style of a life to make the decision of own strategy of formation etc.)

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THE USE OF INTELLIGENT SYSTEMS IN IMPROVING THE QUALITY OF BUSINESS TRAINING ACTIVITIES ON GLOBALIZED MARKETS

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Abstract

Global competition and business environment changes emphasize the importance of human capital and learning process within organizations. Moreover, professional activity has become so knowledge-intensive that learning has become an integral part of adult work activities. In light of these changes, organizations have to adapt and ensure continuing training activities in order to have competitive employees that are crucial to business success. Like virtually every aspect of business, training has embraced technology in hopes of increasing the effectiveness and overall efficiency of corporate training activities. This paper analyzes the importance of employee learning and training activities and gives an overview of enterprise training costs and investments in selected European countries. Furthermore, it researches the evolution and the use of intelligent systems as tools for improving the efficiency and overall results of enterprise training and learning activities.

Key words: *training and learning acivities, intelligent systems, global competition, enterprise*

1. INTRODUCTION

Countries around the world have shifted from the resource based concepts to knowledge based concept of economy. The global competition and dynamic environment emphasize the importance of human capital within organizations, as well as the ability of knowledge gaining that goes together with the concept of human capital. Under these new conditions, knowledge is increasingly seen as both the raw material and major product of organizations.

Emerging business requirements put additional pressure on technical infrastructure that makes it necessary for organizations to improve their operational agility and ensure better alignment between business and information technology. In fact, change in the information technology generates knowledge up at enormous speed, as well as its quick obsolescence. In this complex environment characterized by turbulence and uncertainty, ability to adapt, creativity and knowledge gathering are imperatives for organizations that want to find their global niche. Increased consumer demands require new solutions and knowledge. It can be said that in such conditions of dynamic competition, sophisticated information technology, knowledge economy and globalization, the role and the importance of human resources in enterprises has become vital for business success.

In the knowledge society, an educated person is someone who is willing to consider learning as a lifelong process (see Vemić, 2007, Fischer, 2000). Learning does not end with the graduation, on the contrary the practical learning begins just then. However, information overload, the emergence of high-functionality systems and a climate of rapid technological change have created problems and challenges for education and training process. New instructional approaches are needed to adapt with

new conditions and to circumvent the problems of coverage and obsolescence. Like virtually every aspect of business, training has embraced technology in hopes of increasing the effectiveness and total efficiency on corporate training activities. Technology- based training is found to be as efficient as traditional methods of training, if not more, and it is proven that is often accompanied with reduction of costs and time of such activities.

This paper analyzes the importance of employee learning and training activities and gives an overview of enterprise training costs and investments in selected European countries. Furthermore, it researches the evolution and the use of intelligent systems as tools for improving the efficiency and overall results of corporate training and learning activities.

2. THE IMPORTANCE OF EMPLOYEE TRAINING AND DEVELOPMENT ON GLOBALIZED MARKETS

Due to the fact that global market conditions are constantly changing and business environment becomes more complex as competition increases, organizations are confronted with a number of vital challenges in order to improve their operational efficiency. The quality of a company's workforce and ability to adapt to changes is vital for business success (Pappa & Stregioulas, 2008). The continuous investment in human resource development is critical in the present economic context (Accenture, 2006).

Employee training can be defined as planned and systematic effort in acquiring new, or development of the existing knowledge, skills, capabilities and attitudes towards learning with a purpose of achieving effective performance through increased work productivity (Buckley & Caple, 2004). As a generator of new knowledge, employee training should be linked to strategic goals and objectives and therefore placed within a broader strategic context of human performance management. Training and learning do not take place in a separate phase, but are integrated into the work process (Fischer, 2000). What is more, according to the human capital theory, the implementation of the training program will result in improving the skills and capabilities of employees, and consequently affect firms' productivity and performance (Snell, & Dean, 1992).

Training design process is described in the figure 1. It should be emphasized that training activities will be effective only if they help employees reach instructional or training goals and objectives.

Education is no longer the duty and the privilege of those in higher positions and skilled labor, just the opposite, it is becoming the duty and the need for everyone (Vemić, 2007). The strategy of human resource development has to be in line with the whole business strategy so that every employee understands the organizations' business goal and to use all of their knowledge, capabilities and skills in accomplishing that goal. The task of training management is part of the work of human resource managers who mostly rely on traditional methods in order to assess the training needs of the employees, and often lack a full overview of the actual corporate context in which training is applied (Pappa & Stregioulas, 2008). As a result, training activities do not have a planned outcome, and those kind of investments are not profitable.

Nowdays, there should be emphasis on high-leverage learning and training activities that would lead to improved employee performance and improved business results.

Possibilities of providing training activities differ in large and small organizations. In general, the larger the organization, the more it invests in its' employees. However, today all organizations, no

matter the size, that want to be competitive must acknowledge the need for human resource development and set aside more and more resource for those activities.

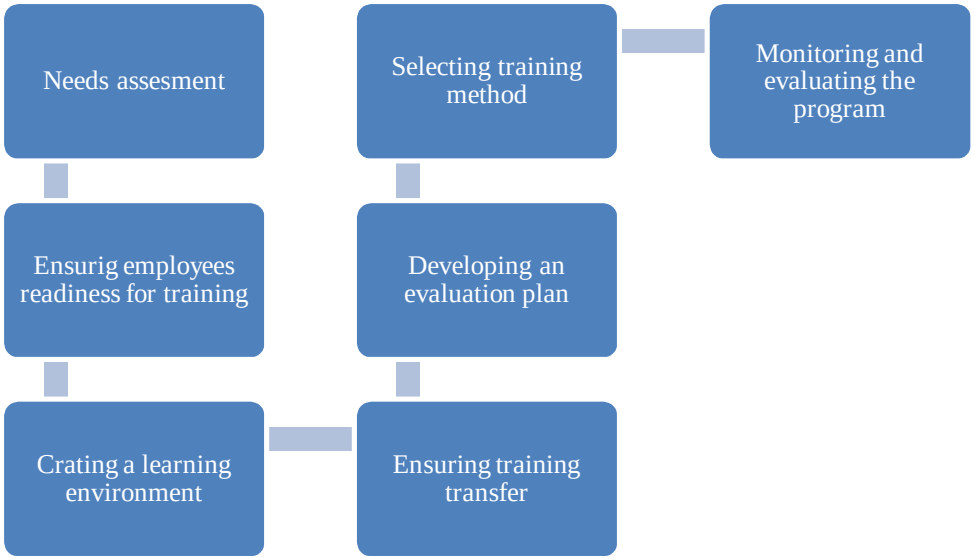


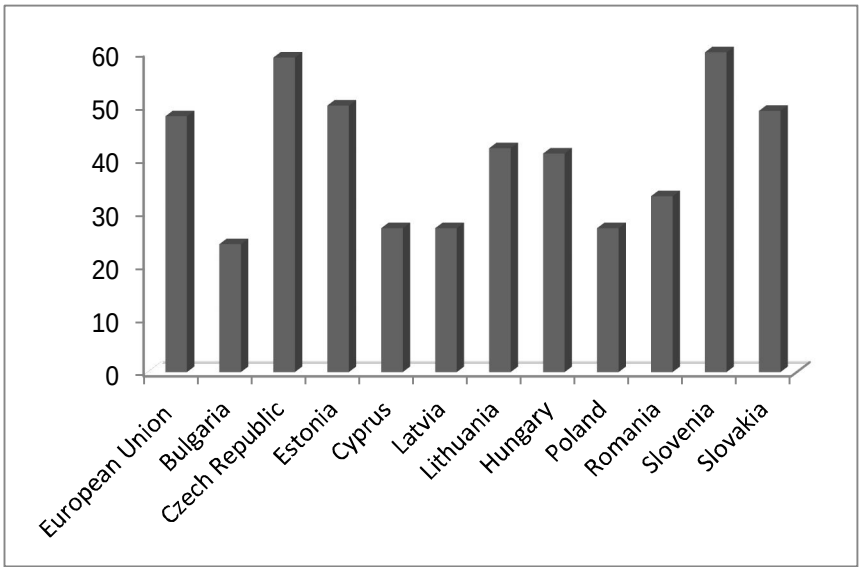
Figure 1. Training design process (adapted from Noe, R., 2006)

According to certain research, most enterprises invest 3 to 5 % of their revenue into adult education (Vemić, 2007). Furthermore, it is estimated that enterprises that want to keep the pace with global competition need to provide their employees with 2% of total annual fund of working hours for training and education (Torington, 2004).

In continuation (charts 1 and 2), records of the number of enterprises providing training, and enterprises that have training plans in selected EU members , that is in the twelve new member states, (EU-12) are presented.

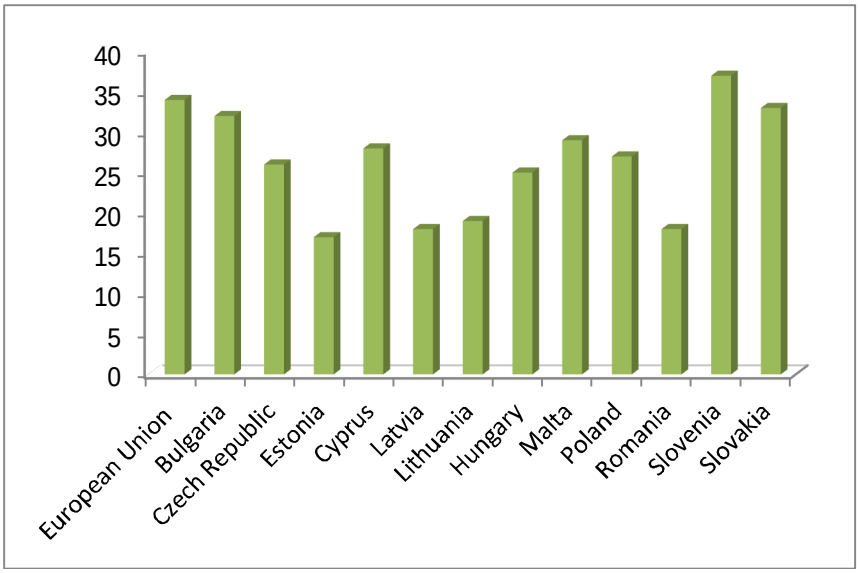
It can be seen that Slovenia and Czech Republic had the highest percentage of enterprises that provided some type of training activities, 60% and 59% respectively. On the other hand, Bulgaria had the lowest percentage of enterprises providing employee training (27%) in 2005 among analyzed countries. Furthermore, among the analyzed countries, again Slovenia had the highest percentage of enterprises with training plans in 2005 (37% of all enterprises) while Estonia had the lowest percentage, only 17% of all enterprises with training plans.

Chart 1. Enterprises providing training, as % of all enterprises, 2005



Source: Eurostat, 2010

Chart 2. Enterprises with training plans including continuing vocational training, as % of all enterprises, 2005

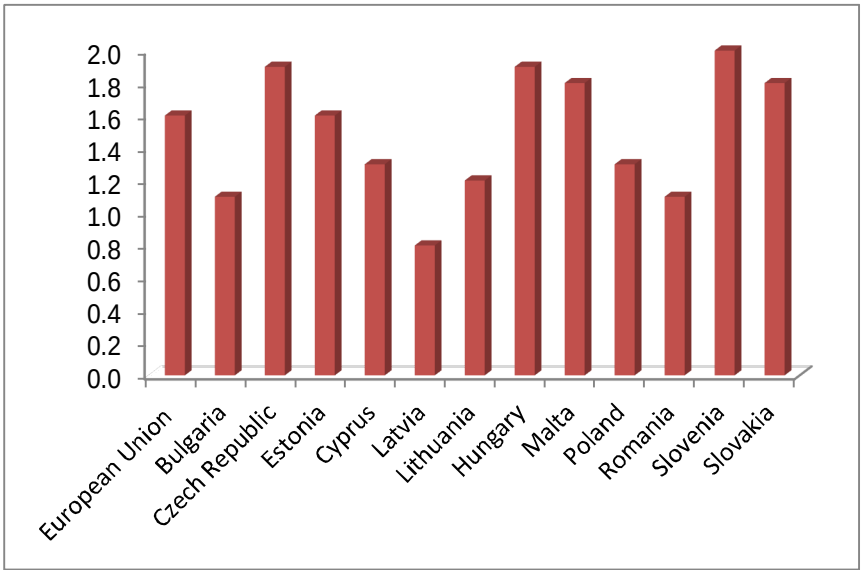


Source: Eurostat, 2010

Cost of training is a factor that affects enterprise decision whether to engage in such activities or not. According to the available data, in Slovenia costs of continuing vocational training costs made up to 2% of total labor costs, which corroborates that it is the country with the highest enterprise

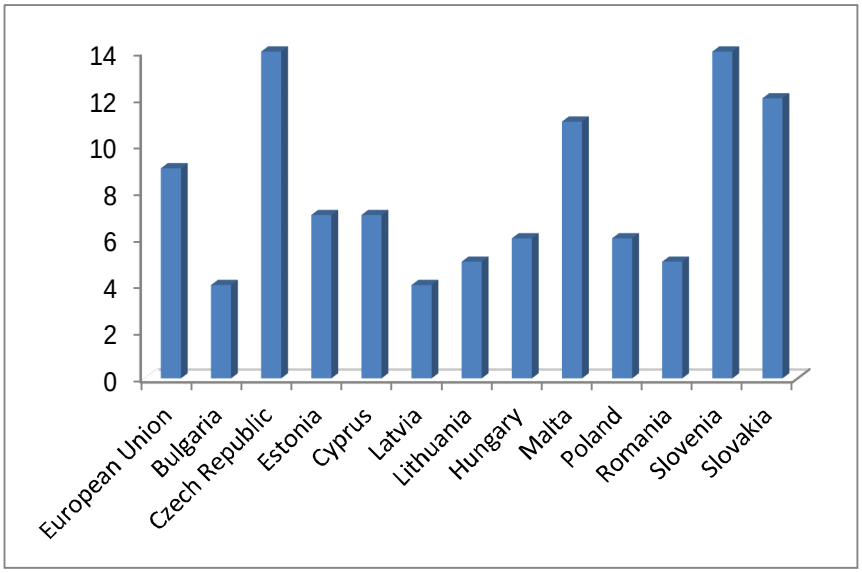
involvement in training activities among the analyzed ones (chart 3). This can also be supported by the fact that Slovenian and Czech employees spent the most hours in training courses in 2005, 14 hours per employee (chart 4). Contrary to the mentioned, workers in Latvia and Bulgaria spent 4 hours in training courses in 2005 and training costs in these countries represented the smallest part of total labor costs (chart 4). In Latvia (0,8%), Bulgaria (1,1%) and Romania (1,1%) training costs constituted a very small part of total labor costs, in other words, those countries had the lowest investments in training activities.

Chart 3. Cost of continuing vocational training courses as % of total labour cost (all enterprises), 2005



Source: Eurostat, 2010

Chart 4. Hours spent on continuing vocational training per employee (all enterperises), 2005



Source: Eurostat, 2010

3. CHALLENGES FACING THE WORKFORCE AND ENTERPRISES IN THE KNOWLEDGE ERA

Globalization, need for leadership, increased value placed on knowledge, need for attracting and retaining talent and customer service and quality emphases are some of the major forces influencing workplace and training activities today.

Also, some of the challenges for the development of successful business in this knowledge and information era are considered to be (Fischer, 2007):

- Lack of creativity and innovation. Innovation and creativity are considered to be the most important capabilities for successful performance in the new knowledge society. Societies, countries and enterprises of the future will be successful not because people work harder, but because they work "smarter" and that is possible due to the rapid technological advancements (Drucker, 1994).
- There is a need for development of the right system that will help in the process of training and disseminating knowledge. However, computers by themselves will not change education. The content, value and quality of information are not changed just because information are offered in multimedia or by intelligent tutoring systems.
- Users of intelligent systems must set most of the goals, not the system itself. The tools, vocabulary, operations supported by the system should be in sink with the working environment, where they are natural and appropriate.
- The most important objective of computational media is not reducing the cost of education. Although, the opportunity to use technology to lessen the cost of education should not be ignored, it is not an only objective or as important as the goal of increasing the quality of education.
- Due to the fact that service and information sector are going through a rapid and ongoing process of change, workers in those sectors will face with a challenge of acquiring new knowledge and skills at a very quick paste in order to stay competitive. New infrastructure must be developed that allows people to learn on the job and experts to communicate their knowledge within and across domains.

4. INTELLIGENT TUTORING SYSTEMS (ITS)

As a way of facing some of the challenges in the workplace and satisfying training and learning needs that have emerged on the globalized markets an innovative use of computers has been developed. Recent advances in computing power, connectivity and greater bandwidth have increased the multimedia capabilities of technology based training. Today's high-end technologies can increasingly approximate conventional, instructor-led classroom training and even go beyond it, concerning the methods, volume and benefits of such training. The main challenge still remains, and it is how to encode in software the subject matter expertise and the teaching skills of a enterprise's best expert or instructor to provide the benefits of intelligent, one-on-one instruction cost effectively.

One possible solution was found in the form of intelligent tutoring systems (ITS). Intelligent tutoring systems are computer programs that are designed to incorporate technique from the AI (artificial intelligence) community in order to provide tutors which know what they teach, who they teach and

how to teach it (Nwanna, 1990). The goal of ITS is to provide the benefits of one-one-one instruction automatically and cost effectively (Ong and Ramachandran, 2003). It enables training and learning in highly interactive environment and it goes beyond training simulations by answering user questions and providing individualized guidance.

Intelligent tutoring systems typically rely on there types of knowledge organized into three separate software models:

1. The *expert* model that comprises the facts and rules of a particular domain, i.e. the knowledge of the experts, to be conveyed to the student;
2. The *student* model represents the student's knowledge and skills that affect the way how student should be thought. It refers to a dynamic representation of the emerging knowledge and skills of a student.
3. The *instructor* model is the part of the system that designs, regulates and enables instructional interactions with the student. It is closely linked to the student model, using knowledge about the student and its own tutorial goal structure in order to decide which pedagogic activities will be used.

The ITSs are used both in the educational system in order to help students achieve higher level of preparedness and knowledge, but also in enterprises with the purpose of ensuring quality training and learning possibilities for the employees.

4.1. The evolution of intelligent tutoring systems

Computers have been used to achieve a variety of educational goals since the early 1950s. Early computer assisted instructional programs were used to engage the students in challenging reasoning tasks and capitalize on multimedia capabilities. There were some major stages in the development of computer-based instructional programs. It began in the 1950s with simple linear programs which were based on the principle of operant conditioning (Nwanna, 1990). The main proponent and the inceptor of such programs was B.F. Skinner. The major shortcoming of linear programs was the fact that they did not provide individualization. Linear programs offered all students the same sequence and same tasks no matter the level of knowledge or skills they had.

Crowder (1959) overcame some limitations of Skinnerian systems by placing more attention to students' responses, using them to control the material presented to the student. The branching programs that resulted still had a fixed number of frames but were able to comment on a student's response and then use it to choose the next frame (Nwanna, 1990).

In the 1960s and 1970s new programs were developed, so called generative systems. Generic systems were built upon the recognition of the fact that the teaching material could itself be generated by the computer. These systems had the ability to both generate and solve problems.

Generative systems were the main precursor of ITSs. Although individualization and feedback had been improved, there was still a rather shallow knowledge representation (Nwanna, 1990). James Carbonell (1970) gave a great contribution to the development of the computer-based instructional programs by emphasizing the importance of artificial intelligence in computer-assisted instructions. He constructed the first intelligent tutoring system named SCHOLAR. SCHOLAR was a pioneering effort in the development of computer tutors able to respond to unexpected student questions and to generate instructional material in varying levels of detail. Although, according to nowadays modern

standards, SCHOLAR would be graded as fairly primitive, both in topic selections and language, it introduced methodological principles that have became central to ITS design.

4.2. Costs and benefits of implementing intelligent tutoring systems

Although there has been a sustained effort in the application of artificial intelligence to education over the past three decades with some recognized success stories, intelligent tutoring systems did not have an expletively massive impact on education and training in the world (Corbett, Koedinger & Anderson, 1997). There are several reasons for this lack of diffusion (Corbett, Koedinger & Anderson, 1997). First, the ITSs are expensive to develop and the necessary computing power was, until recently, too expensive to deploy. Also, the ITSs did not found massive usage in education and training due to the fact that the creative vision of intelligent computer tutors has largely arisen among artificial intelligence researchers rather than education specialists.

Furthermore, there were some empirical testing's made in which the performance of computer based instruction students trained on simulated equipment and tested on real equipment was found to be at least as good as that of students trained using only real equipment (Fletcher, J.D., 1999).

On the other hand, although there are some downsides and limitations to the implementation of the ITSs, there are also certain benefits. Some of the unique contributions of technology based training and intelligent tutoring systems include (Fletcher, J.D., 1999):

- The ITSs have ability to capture the interactions of one-on-one tutoring;
- The ITS s have the ability to generate instructional material and interactions as needed rather than foresee all such materials and interactions needed to meet all possible eventualities;
- The ITSs allow either the computer or the student to ask open-ended questions and initiate instructional dialogue as needed or desired.
- The use of technology-based training, i.e. ITS, reduces the costs of training by about one third;
- Technology-based training reduces or eliminates many of the variable costs associated with the classic classroom;
- Technology-based training and specifically ITS often leads to a reduction in the time that individual spends in training.

5. CONCLUSION

Given the significance of human capital to business success, aligning individual training with business priorities becomes a key challenge. The implementation of this new business service entails integrating learning into daily working tasks and putting in place mechanisms for the effective management of business processes, organizational roles, competencies and learning processes.

Organizations which are constantly creating new knowledge, extending it through the entire organization and implementing it quickly inside the new technologies, develop good products and excellent services and can ensure their position on global markets.

According to certain research, most enterprises invest 3 to 5 % of their revenue into adult education (Vemić, 2007). Furthermore, it is estimated that enterprises that want to keep the pace with global

competition need to provide their employees with 2% of total annual fund of working hours for training and education (Torington, 2004).

From the performed analysis, it can be seen that Slovenia and Czech Republic had the highest percentage of enterprises that provided some type of training activities, 60% and 59% respectively. On the other hand, Bulgaria had the lowest percentage of enterprises providing employee training (27%) in 2005 among analyzed countries. Furthermore, among the analyzed countries, again Slovenia had the highest percentage of enterprises with training plans in 2005 (37% of all enterprises) while Estonia had the lowest percentage, only 17% of all enterprises with training plans.

According to the available data, in Slovenia costs of continuing vocational training costs made up to 2% of total labor costs, which corroborates that it is the country with the highest enterprise involvement in training activities among the analyzed ones. Contrary to that, workers in Latvia and Bulgaria spent 4 hours in training courses in 2005 and training costs in their country represented the smallest part of total labor costs (chart 4). According to the available data, in Latvia (0,8%), Bulgaria (1,1%) and Romania (1,1%), training costs constituted the smallest part of total labor costs.

As a way of facing some of the challenges in the workplace and to satisfy training and learning needs that have emerged on the globalized markets an innovative use of computers has been developed.

One possible solution was found in the form of intelligent tutoring systems (ITS). Intelligent tutoring systems are computer programs that are designed to incorporate technique from the AI (artificial intelligence) community in order to provide tutors which know what they teach, who they teach and how to teach it (Nwanna, 1990).

Although the ITSs are expensive to develop and the creative vision of intelligent computer tutors has largely arisen among artificial intelligence researchers rather than education specialists, there were some major contribution of ITSs. The use of technology-based training, i.e. ITS, reduces the costs of training by about one third, eliminates many of the variable costs associated with the classic classroom, leads to a reduction in the time that individual spends in training, have ability to capture the interactions of one-on-one tutoring.

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THE IMPACT OF ELECTRONIC SOURCES ON USER SATISFACTION: THE CASE OF LIBRARY AND DOCUMENTATION CENTRE AT THE FACULTY OF ECONOMICS AND BUSINESS, ZAGREB, CROATIA

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Abstract

At recent time, a growing interest in information electronic sources can be evidenced in higher education and scientific institutions in the Republic of Croatia. Scientists, faculties, graduate and postgraduate students intensively use domestic and international databases of journals, books, doctoral dissertations, master degrees, graduation thesis, legal acts, statistical reports, etc. Several domestic and international databases are available to faculty staff, students, and external users of Library and Documentation Centre at the Faculty of Economic and Business at Zagreb. In the paper we present some results of the research on domestic and international database usage, referring primarily to those devoted to social sciences. Research results presented can be of a great help in determining the needs and benefits of making demanded content accessible to certain classes of bibliographic database users.

Key words: *domestic databases, international databases, user satisfaction, Library and Documentation Centre, Faculty of Economics and Business, Zagreb, Croatia*

1. HISTORY OF THE LIBRARY AND DOCUMENTATION CENTRE AT THE FACULTY OF ECONOMICS AND BUSINESS

Library at The Faculty of Economics and Business in Zagreb, Croatia, was established in 1921 at The High School of Trade and Traffic, what was the original name of the Faculty. At the beginning, Library possessed 1.030 books separated in professors' and students' library.

Development of the main institution and expansion of teaching procedures were reasons why the Library was dislocated, besides in the Central Library, in small dislocated libraries for a small number of users at institutes, seminar rooms and cathedras. After 60 years, in 1979, a bibliographic fund was centralized in a unique Central Library, a specialized scientific and educational library for the economy and related disciplines.

Documentation Centre at The Faculty of Economics and Business in Zagreb was established in 1954, which meant a development of the information function within the Library Department. It was the first Documentation Centre specialized in the economy within the whole country, the former Republic of Yugoslavia. The main purpose of this Centre was to search required information on bibliographical sources in different fields, needed by professors for their scientific work, and by graduate and postgraduate students for their paper, reports, exposes, seminars, essays and graduation thesis preparation.

Since 1991, the library operates under the name Library and Documentation until June 01, 2006, when the name was changed into The Library and Documentation Centre.

For almost a decade, The Library and Documentation Centre clients can search library materials in an online catalogue, as well as online domestic and international databases.

The Library and Documentation Centre has at its disposal about 90 computers plus 14 computers in a computer classroom for library users. The Library is divided in a section with a reading room containing 106 seats, an open bibliographic depository for users and librarian offices located on area of 1.935m². The number of users is today about 21 thousands.

2. THE CONCEPT OF DATABASES

A database is a set of related diversified, permanently stored data of one information system or data from one application field. A file is part of the database which contains data about objects of the similar type, which are usually the most numerous in the database. There are some advantages of databases:

- easy way of finding data using different criteria
- high-speed access to data
- fast sorting of data using different criteria
- rather easy data conversion.

Each database is well-organized collection of data selected according to certain rules which depend on the field from which data are collected. In databases which will be addressed in this paper the majority of records is in relation to articles published in journals. Other records are related to paper reports published in collected papers or other publications like books, doctoral dissertations, technical reports, patents, etc.

The original paper reports stored in online databases are written for most in different languages. Bibliographical records (including abstracts) in all databases are in English language which implies searching of terms in English language.

3. HISTORICAL DEVELOPMENT AND OCCURRENCE OF DATABASES IN CROATIA AND THE WORLD

In the mid-60s of the 20th century first databases were developed in the United States with the government financial support for the NASA space flight program and arming supported by The SAD Department of Defense. This enabled the deployment of two major information services or hosts – Lockheed Information Systems in Palo Alto, California, introduced DIALOG, and The Systems Development Corporation (SDC) from Santa Monica, California, launched ORBIT. DIALOG now involves over 400 and ORBIT over 100 different databases.

At the same time, nonprofit organizations are creating discipline-oriented databases on magnetic tapes. The US National Medical Library designed MEDLARS (Medical Literature Analysis and Retrieval System) in 1960, while Chemical Abstracts Service started with a database CBAC (Chemical and

Biological Activities) in 1965. Shortly afterwards, in the 1967, Engineering Index and in the 1969 BioScience Information Service (BIOSIS) appeared.

The first databases on magnetic tapes in Croatia appear in seventies and early eighties like Chemical Abstracts in Documentation and Reference Centre, University of Zagreb and Current Contents at the National Library in Zagreb. Magnetic tapes were very limited media for data storage which were displaced by magnetic discs enabling online searching.

In the mid-70s some online databases were developed in Europe, like DATA-STAR (BRS – Bibliographic Retrieval Service and Predicast) in Suisse and ESA/IRS (European Space Agency/Information Retrieval Service) in Italy.

In the eighties there were a lot of online databases with full text in human sciences produced by commercial institutions, such as NEXIS where you could find newspapers and journals online. Many university and public libraries also stated using online databases.

The late nineties are characterized by the rapid growth of telecommunications and CPU power what made great amounts of information accessible via Internet. Traditional information services are customized and transformed as online services. Web and network versions of online databases are spreading at astonishing pace and they enable users to search information through the Internet.

In the nineties in Croatia started a project called CARNet (Croatian Academic and Research Network), sponsored by Ministry of Science and Technology. A lot of university and public libraries use online access of domestic and international databases usually completely free thanks to the fee paid by the government. Advantages of using Croatian online databases to domicile users are searching possibilities on mother language, full text searching, printing of data, storage on some type of media and the ability to exchange selected documents by e-mail.

4. THE CENTER FOR ONLINE DATABASES

The Center for online databases is a joint project of the Ministry of Science, Education and Sports, CARNet and Ruđer Bošković Institute which enables access to major international databases for academic community and library users.

The Center began to work in 1995 offering only one database – Current Contents (CC). Until 2006 Center for online databases acquired licenses for access to thirty-five international databases which all were available to scientists, employees of institutions of higher education and students exclusively through the CARNet network. After 2007, The Center for online databases offers access to approximately sixty databases. Some of them are located on local servers at institutions while most are accessed through the servers of database owners and operators themselves.

5. USERS OF ONLINE DATABASES

Ministry of Science, Education and Sports assures some funding for using domestic and international databases and for online search program. All scientists, faculties and students have online access and are searching databases without charge. Access to domestic and international databases and programs for browsing is possible for:

- employees of institutions of higher education and scientific research institutes
- students, regardless of their status
- other selected interest groups (e.g., biomedical consortium).

The most of domestic and international databases are available throughout the academic and research community, while a smaller part of the institution has access only to specific databases. Users can access those databases for which their home institution is listed in the owner's license database. The number of participating institutions often depends on the price of subscription for a particular database or databases. Institutions, depending on subject area, choose a database to which subscription is discharged by the Ministry of Science, Education and Sports of the Republic of Croatia

6. TYPES OF ONLINE DATABASES

At The Center for online databases all databases belonging to one of the following groups:

- bibliographic databases
- citation databases
- databases with full text.

6.1. Bibliographic databases

Bibliographic databases contain information on works published in various publications. Work descriptions are very detailed. Bibliographic records of papers include information such as:

- author
- title of the paper
- original
- summary
- year of publication
- institutions from which the author is
- types of publications
- the original language of the work, etc.

Bibliographic records may also contain additional elements such as the name of a meeting (if these are proceedings of a conference, seminar, etc.), number of contracts, patent information, subject, author's e-mail address, the URL of the document, holder of property rights (copyright), etc.

Bibliographic databases are different related to academic areas covered, the volume (number of journals, books and other publications that deal), the structure and scope of the bibliographic records (some database are describing the work using ten data fields, some thirty or more) and additional treatment (e.g., compound subject analysis, which helps users in searching).

The abbreviated version of the work within the bibliographic database is suitable for quick preview of a large number of papers. Today it is a common case that records within each bibliographic databases

are associated with records from other databases and full versions of papers published somewhere on the Web.

6.2. Citation databases

Citation databases are basically bibliographic. Their special feature is that they, in addition to the works themselves, analyze bibliography / references / citations, which authors presented at the end of their work. Authors on that lists often describe the work that has been particularly important and used more than others. That is why the citation databases are often used for quality assessment of the cited work.

Citation databases provide statistical overview of the most popular, most widely read and cited papers of a particular discipline within a certain period of time. These data have great importance for scientists. Options of citation databases are complex and diverse and in our country are mainly used to determine which papers are cited by the author as well as how many other authors have cited some particular work or author.

One of the characteristics of the citation databases is that they do not record the difference between positive and negative citations. Recently, some citation databases also introduced a possibility to exclude self-cited works (e.g., Scopus).

6.3. Databases with full text

The main feature of the database with full text is ability to see the full text of each published paper.

Databases with full text are mostly related to the collection of electronic journals, from one or more publishers. Full texts are usually accompanied by a bibliographic description of each work (as in bibliographic databases) and contain some additional data fields and offer more search capabilities.

Full text of the paper is usually offered in *HTML* and/or *PDF* format. *HTML* is read by a Web browser such as Mozilla Firefox, Opera, or Microsoft Internet Explorer, while the *PDF* is read by Acrobat Reader. Web browsers have both their own advantages and disadvantages. Advantage of the HTML format may be seen in the ease of navigation, hypertext links between sections of several levels of the paper, image quality and the connection between the list of references and their citations in the text. PDF format is commonly retaining features of the printed version of a publication. PDF is suitable for printing but does not allow simple handling of text and pictures.

Each of the database types mentioned is used for different purposes:

- *Bibliographic databases* are used for obtaining insight into the scientific field
- *Citation databases* are used to gain insight into the scientific field as well as for monitoring the impact of a specific work or scientists/authors within a particular scientific field
- *Databases with full text* are used for finding works in particular journals or of certain authors.

For each potential user it is important to have ability, after they have found some abbreviated bibliographic records, to rather easily access to full texts or some additional information. This will be provided in the best manner using links between bibliographic databases and electronic journals and between different databases.

6.3.1. Databases with full text - electronic journals

Databases with full text are available for users in Croatia since 2000, due to help of The Centre for online databases. In recent years, databases mentioned have been extended by a series of electronic

journals of the world's largest publishers. Since 2006, the entire Croatian academic and scientific community makes use of 20.000 journals from the following publishers:

- Elsevier (Science Direct) - about 20.000 journal titles
- Springer Verlag (SpringerLink), and Kluwer – 1.300 journal titles
- John Wiley & Sons (WileyInterscience) - 220 journal titles
- Blackwell Publishing (Blackwell Synergy) - 880 journal titles
- Emerald - 155 journal titles
- Cambridge University Press (Cambridge Journals Online) - 130 journal titles
- Oxford University Press (Oxford Journals) - 180 journal titles
- Lippincot Williams & Wilkins (through Ovid interface) - 100 journal titles
- EBSCO Publishing - over 6.000 journal titles
- thousands of journal titles in open access.

The Library and Documentation Centre at the Faculty of Economics and Business offers to its customers the access to certain domestic and international databases. Most domestic and international databases contain full text of many books, journals and other publications (conference proceedings, reports, etc.).

7. USER SATISFACTION SURVEY OF DOMESTIC AND INTERNATIONAL DATABASES

The research was conducted in May and June 2010 at Library and Documentation Centre at The Faculty of Economics and Business. The research was conducted on the use of domestic and international databases and users satisfaction with different databases. Library users filled 70 questionnaires and express their opinion. In addition to the users opinion, explored the reasons of using a database, access to user databases, an area of interest as an individual and personal datas as gender and age group of individuals.

Library users completed questionnaires and induce reasons for using electronic sources. They choose between several answers. It was offered: seminars, expose, essays, graduation thesis, postgraduate thesis (master's or doctoral), research, lectures, presentations, project work, stay current with the profession, personal interests and other.

The most users, 50 of them, select the first offered answer that refers to the seminar, expose and essay. Database for graduation thesis uses 38 users, 28 users for lecture and presentation, 26 users for personal interest, 15 for postgraduate thesis (master's or doctorate), 13 for researching and 11 for project work and stay current of their profession.

Users are accessing datas from computers installed at library, the workplace, from home or dormitory. The most of 67 database users were browsing from home, library computers used by 34 users, 14 users from the workplace and one of the dormitory.

The majority of 52 respondents were female and 18 respondents were male.

Respondents were mostly younger and 45 users have been included in group of 18-25 years, 20 users were in the group of 26-35 years, three in the group of 36-45 years and two in the group of 46-55 years. None of the respondents had more than 55 years old.

Library users are chosen one or more interest areas between the offered answers: economics, demography, marketing, trade, law, finance, mathematics, statistics, accounting, organization and management, tourism and information technology. Most of them, 47 users chose economy as your interest area, 32 users chose finance, 29 users chose organization and management, 20 users chose marketing, 17 users chose accounting, 16 users chose tourism, 12 users chose trade, 10 users chose statistics, 7 users chose demography, 6 usres chose mathematics, 5 users chose information technology and 2 users chose law.

The survey obtained data will be presented and explained for each database, domestic and international.

8. DOMESTIC DATABASES IN CROATIA

There are several databases in Croatia that offer an ability to search the scientific literature. Our survey included the following local database:

Hrčak

- EJOL (Electronic Journals Online Library)
- Croacta
- CroLex.

8.1. Hrčak (http://hrcak.srce.hr/)

Hrčak is the central portal which joins together all Croatian scientific and professional journals and offers open access to articles published in these journals or, at minimum, to bibliographic information and abstracts of the papers.

Portal was created and operated with the support of Ministry of Science, Education and Sports. Users can easy find particular journals and papers by browsing (alphabetically or by the field of science) or search by various data fields. It is possible to address a specific area of science so that users can search works related to: natural sciences, technical sciences, biomedicine and health, biotechnical sciences, social sciences and the humanities.

Hrčak offers editors free and easy tool for publishing their journals in electronic form or adding the ability for searching existing electronic journal. This is increasing the visibility and influence of bibliographic matters in national and international scientific community.

Portal contains a large number of interesting journals openly available primarily to scientists and researchers.

Open access journal or OA journal offers access to full texts through the network, free of charge for readers or their institutions. OA journals use also some other models of funding, so that majority of their costs is covered by donations from sponsors (government, ministries, various agencies), by funds of professional and scientific associations or universities or profits from advertising fees paid by the authors and editors wishing to publish their texts.

Recently, Hrčak added the ability to publish a particular journal or work on Facebook, Twitter or Delicious profile as a post. The technological advance mentioned could have a significant impact on the popularization of science.

Currently it is possible to see and search: 212 journal titles, 3.801 journal number (fascicule), 2.991 supplements (only bibliographic information) and 49.011 articles (bibliographic information and full text).

Some journals edited by The Faculty of Economics and Business in Zagreb, such as Marketing, Zagreb International Review of Economics and Business - ZIREB and Proceedings of the Faculty publish their papers at Hrčak database.

Library users very often use the specified database and they are satisfied with it as the domestic database. Hrčak is the mostly use domestic database at Faculty of Economics and Business in Zagreb.

8.2. EJOL (http://ejol.irb.hr/)

EJOL (Electronic Journals Online Library) is a database of electronic journals, which offers the possibility to retrieve all necessary information about the journal such as the availability in electronic form together with the full texts of works, information about issuer, which journals are currently available from a particular area of interest, is the journal is indexed in Current Contents or in some other relevant publication/database, what is the abbreviation (short name) of the journal, which institutions have access to full text, and many other information.

Some abilities of browsing and searching EJOL database include:

- alphabetical browsing and searching of all titles
- browsing and searching by scientific area (fields are divided by UDC classification)
- browsing and searching by title, by publisher, by short title, by ISSN number, and using key words (from the title and contents of journals on Croatian and English language)
- additional search options:
    - type of publication (electronic and printed publications)
    - sort of publication: journal, Croatian printed, preprint archive
    - secondary publication in which the journal is indexed
    - level of access to the full text of the central institution
    - ability to review the list of Croatian journals
    - ability to review some of the library subscriptions to printed matters.

Currently it is possible to view and search 6.859 journals, 382 journals with full text of papers that are freely available to all users, 98 journals with free full text of works of older ages, and a simple and quick overview of print and electronic subscriptions of other libraries.

The Library and Documentation Centre at The Faculty of Economics and Business, University of Zagreb, as an institution is not involved in this project because EJOL full text journals which incorporate social themes mostly are not available in electronic form.

Clients of The Library and Documentation Center use EJOL online database on a smaller scale, primarily because EJOL allows retrieval of necessary data about a particular journal, all its details and direct connection to the Web site publisher of a particular journal.

Library users occasionally use the specified database and they are fairly satisfied with it as the domestic database. EJOL is the least use domestic database at Faculty of Economics and Business in Zagreb.

8.3. Croacta (http://www.croacta.com/)

Croacta.com is an online service that allows searching and browsing of laws, regulations, decisions and other legal acts published in official press of the Republic of Croatia. The published data are divided into two databases:

- Register of Regulations
- Official Press Releases.

Register of Regulations is a database with all valid regulations of Republic of Croatia and regulations that were put out of use in the period since 2003 until today. The database contains the texts of regulations with all amendments. In the database are also store non-valid regulations from the period from 01/10/2003 until today. There are also a number of nonofficial, editorially cleaned texts for which the official consolidated text is not approved and published.

The regulations are divided into two groups: "The Croatian legislation" and "International contracts". It is possible to search all the rules or choose a particular group of regulations and defined period of time results.

If you are looking for current regulations, the period of search must end up with an option to **'today'**.

Example:

The period from **"1995"** to **"today"**, including all **applicable regulations** issued after the 31/12/1994.

The period from **"1995"** to **"2010"**, including all the **invalid regulations** issued after the 31/12/1994 and terminated before the 07/06/2010.

Official Press Releases is a database which contains all titles published in the Official Press since 1990 until today.

Documents are divided into two groups:

1. **Official part** – all documents published in the “official part” of the Official Press from the 16/01/1990 until today.
2. **International contracts** - all documents published in the "International contracts" from the 14/11/1992 until today.

Documents can be searched by number of Official Press or by keyword. It is sufficient to choose a year and a number of Official Press or insert appropriate keywords.

Library users occasionally use the specified database and they are fairly satisfied with it as the domestic database. Croacta is the most used domestic database after Hrčak database at Faculty of Economics and Business in Zagreb.

8.4. CroLex (http://www.crolex.hr/)

CroLex is the largest domestic database of legal documents containing texts published in the Official Press Releases and International contracts. By searching the database user can found:

- legal regulations, administrative procedures, policy documents, etc.
- acts of the legislative, executive and judicial authorities, president of the Republic of Croatia, etc.
- information about the civil state of the law in peace (structure, funding, procedures, etc.)
- information of civil society (rights and obligations under the law in peace)
- selected quotes from the Bible.

Database mostly consists of full texts which provide a great advantage for the user seeking necessary information.

Library users occasionally use the specified database and they are fairly satisfied with it as the domestic database. CroLex is on third place of used domestic database at Faculty of Economics and Business in Zagreb.

9. INTERNATIONAL DATABASES

9.1. EBSCOhost (http://search.ebscohost.com/)

EBSCOhost is one of the largest online sources of information that offers more than 300 collections. Almost 3.000 journals with full text can be searched and more than 5.000 publications with summaries, newspaper reviews and encyclopedic information. Significant collections are: **Business Source Complete, Academic Source Complete, EconLit, Regional Business News**, Eric, List, SOCindex, Newspaper Source, Clinical pharmacology, Health Source, PsycINFO. Some databases are important for social sciences and for users of The Library and Documentation Centre at The Faculty of Economics and Business and will be separately presented later in this paper.

EBSCO stands out with its new interface, adjusted to the user needs and translated into Croatian language.

Access to the database, the conditions and duration of licenses, are in the responsibility of The Centre for online databases. Access to database outside the Faculty of Economics and Business is possible with direct authentication and identification data that can be requested at The Library and Documentation Centre or via e-mail.

Library users occasionally use the specified database and they are fairly satisfied with it as the international database. EBSCOhost is the mostly use international database at Faculty of Economics and Business in Zagreb because a lot of published materials and especially economic areas.

9.1.1. ERIC (http://www.eric.ed.gov/)

ERIC (Education Resources Information Center) is a database in which you can search more than 1.3 million bibliographic data of individual articles published in journals and other scientific materials. The database is frequently updated and supplemented with new data several times a week. Some of the articles are published as the full text.

The database is very popular in the U.S. and is designed for researchers, teachers, politicians, librarians, journalists, students, and everyone which area of interest is one of those such as education, library science, information science or computer science.

Databases make it possible to search:

- articles published in journals
- books
- research papers
- proceedings of conferences
- reports
- scientific materials.

In addition to articles published in journals, the database enables search of material relevant to education such as materials of various educational organizations, professional organizations, research centers, political organizations, university publications, and state and local agencies. Authors and publishers can also publish materials from conferences, various studies, dissertations, etc.

The database contains articles published in journals since 1966 until today as well as publications of other organizations and agencies that can be accessed via the database Web site.

Database can be searched by author, title or keyword using simple or complex search.

ERIC database contains 1.2 million of records, and every year adds about 31.000 of new ones. This database includes more than 2.000 journal titles.

Since 2004 there are possibilities of free access to around 100.000 full texts of articles in the PDF format.

Library users very rarely use the specified database and they are fairly satisfied with it as the international database. Library users of ERIC international database at Faculty of Economics and Business in Zagreb can search database but some published works are not accessible in full text. Users can see bibliographic and other datas necessary for their scientific researching.

9.1.2. EconLit (http://www.aeaweb.org/econlit/index.php)

EconLit database is a bibliography of American Economic Association - AEA - containing information from economic literature for last forty years. It contains articles in journals, books, working materials, reports and dissertations.

It is possible to search and see full texts of more than 480 journals and journals of the American Economic Association without a grace period of access to full text (American Economic Review, Journal of Economic Literature and Journal of Economic Perspectives).

The database contains links to articles from all fields of economics, including capital markets, government studies, econometrics, economic forecasting, environmental economics, government regulations, labor economics, monetary theory, urban economics, etc. It contains many full texts from economic and financial journals on several languages.

Library users occasionally use the specified database and they are fairly satisfied with it as the international database. Library users of EconLit international database at Faculty of Economics and Business in Zagreb can search database with all published materials in full text. Database is particularly useful for library users because of published materials from all fields of economics in full text.

9.2. Emerald Insight (http://www.emeraldinsight.com/)

Emerald (Electronic Management Research Library Database) is a collection of electronic journals published by Emerald Publishing (MCB University Press). Emerald Publishing acts since 1967 as part of the University of Bradford, USA. Database EmeraldInsight is the leading database of scientific literature, journals and books. More than 3.000 university libraries around the world provide access to published content. Statistical data for the year 2007 presented on the official publisher's site show about 2 million downloads per month in average.

Emerald contains more than 65.000 articles from 120 journals in the fields of economics, management and library science, as well as significant number of journals devoted the technical disciplines. Mostly covered are all important managerial disciplines such as strategy development, management, information management, marketing, and human resource management.

Library users occasionally use the specified database and they are fairly satisfied with it as the international database.

Access to database users and the staff of The Faculty of Economics and Business has been enables until the end of 2009. Unfortunately, subscription was not renewed by the Ministry of Science, Education and Sports and access to full text is no longer possible. It is only possible to search bibliographic information and summaries of published papers.

9.3. JSTOR (http://www.jstor.org/)

JSTOR offers a range of thematic collections, over 1.000 academic journals in electronic form with the possibility of printing and insight scientific literature. Since 2009 JSTOR teams up with ITHAKA organization in order to improve the services offered.

Database can be searched by scientific fields. The Faculty of Economics and Business is subscribed on two databases: Business 1 and 2 that offer a total of 81 titles. Selecting the option „browse“ you can see a list of all titles to which The Faculty of Economics and Business has access. Indented titles are older titles of the same journal and not included in the total number of specified (81).

Besides these, users can search other areas of science important economic topics such as: business, economics, finance, law, organization, management, marketing and advertising, and mathematics and statistics. Published materials can be searched through the abstracts and bibliographic information.

Library users occasionally use the specified database and they are fairly satisfied with it as the international database.

9.4. ScienceDirect (http://www.sciencedirect.com/)

ScienceDirect is the World's largest electronic collection of full text and bibliographic information from natural, technical and medical sciences. Science Direct offers over 2.500 journals (as a publisher it offers around 2.000) and over 10.000 books. The database can be searched by subject area, journal and article title, author and journal number/issue.

The publisher of ScienceDirect database is Elsevier, as is the case with SCOPUS database (citation database with summaries intended for scientific research) and Scirius database (scholarly search tool for searching contents of journals, and other electronic resources needed in research work such as Web pages of scientists, repositories of institutions and patents and Web pages of scientific institutions).

The Faculty of Economics and Business is subscribed to the journals in the field of *Business, Management and Accounting* that can be accessed and the full texts of articles viewed. From March 2010 the subscription is terminated and access to the database is not possible any more for Scopus database and current 2010 journals in the ScienceDirect collection.

Library users occasionally use the specified database and they are fairly satisfied with it as the international database.

9.5. SCOPUS (http://www.scopus.com/)

Database is maintained by Elsevier since 1966 and its citation part is available since 1996 until today.

SCOPUS is the largest multi-disciplinary citation and bibliographic database that provides access to millions of abstracts from peer-reviewed scientific journals from international publishers. The database includes works from the 15.000 journals, 535 journals in open access, 750 conference proceedings, 600 business publications, 200 million quality Web sources and 12.7 million of patents, and covers all fields of science.

Research areas that can be searched are:

- chemistry, physics, mathematics and engineering – 4.500 journals
- biomedical sciences – 5.900 journals
- social sciences, psychology, economics – 2.700 journals
- biology, agronomy and ecology – 2.500 journals
- general science - 50 journals.

SCOPUS includes 27 million of records and 245 million of references and citations and represents an excellent source for insight into many global scientific publications. Features for search and retrieval of necessary data are large and information can be searched by journal title, article title, author, keyword, abstract, ISSN, etc.

From March 2010 The Faculty of Economics and Business canceled the subscription and access to the SCOPUS database due to lack of financial support.

Library users very rarely use the specified database and they are fairly satisfied with it as the international database.

9.6. UN WTO (http://www.e-unwto.org/)

UN WTO (The World Tourism Organization) is an agency of the United Nations and the leading international agency in the field of tourism, with 161 member countries. In its e-library WTO offers a wide selection of literature with about 400 titles. Proceedings from seminars and conferences, books, statistics and forecasts, educational material and much of other literature are completely available for viewing or archiving.

After acceptance of Application for Designation as a WTO Depository Library, The Library and Documentation Center at The Faculty of Economics and Business, University of Zagreb, became an official UN WTO (World Tourism Organization) depository library in January 2010. The above implies an obligation to continually collect and archive all published documents and publications of the UN WTO.

Data can be also accessed through the Web site of UN WTO but restrictions are very severe so that only a small number of reports are available for users without subscriptions. In spite of all that, library users occasionally use the specified database and they are fairly satisfied with accessible published materials.

9.7. Cambridge Journals Online (http://journals.cambridge.org/)

Cambridge Journals Online covers more than 230 peer-reviewed journals in various fields of science, published by Cambridge University Press and other scientific and professional associations in printed and electronic editions.

Cambridge University Press collaborates with many organizations around the World from North America to South Africa (as it stands on the official publisher's Web site) to make it possible to submit books for research purposes just on time.

There are several possibilities of search and retrieval of necessary data. Search is possible by journal title, article title, author, keyword, abstract, ISSN, etc.

Access to the electronic database is possible only from a local area computer network within The Faculty of Economics and Business, University of Zagreb, Croatia.

Library users occasionally use the specified database and they are very satisfied with it as the international database. Cambridge Journals Online is the most interesting international database for library users because of published materials in full text.

9.8. Oxford Journal (http://www.oxfordjournals.org/)

Oxford Journal provides electronic access to scientific and research journals published by Oxford University Press as a part of the University of Oxford. Journals cover wide areas and have the high scientific quality, as evidenced by high impact factors which register citation of some papers in other publications and can be checked in the Journal Citation Reports.

Oxford University Press exists more than a century and is one of the oldest and largest publishers of scientific literature in the World. Their mission implies high quality results and data availability around the world.

Access to the electronic database is provided only from a local area computer network within The Faculty of Economics and Business, University of Zagreb, Croatia.

Oxford Journal database as Cambridge Journals Online is very interesting for library users at The Faculty of Economics and Business. Users occasionally use the specified database and they are very satisfied with it as the international database because of published publications from all fields of economics.

9.9. SpringerLink (http://www.springerlink.com/)

SpringerLink is an information service of Springer Verlag publisher, which offers access to online information from scientific, medical and technical books and journals. It includes electronic and printed editions from Springer and some smaller publishers (e.g., Urban and Vogel, Steinkopff and Birkhäuser).

There are several possibilities of searching and retrieval of necessary information. Search is possible by journal title, article title, author, keyword, abstract, ISSN, etc. Included are several areas of science and economics. Users can search the fields such as architecture and design, humanities, biomedicine and health, chemistry, computer science, geography and environmental engineering, social sciences and law, mathematics and statistics, physics and astronomy and information technology.

Most of the published information is from the field of biomedicine and health (997.055 papers) and in the field of economics someone can search through 136.879 papers published.

In the database currently are available more than 500 journals. Published and accessible to search is a bit less than five million (4.734,998) of all publications, journals, books, reference materials and protocols. It is possible to search 38.042 book titles and the 2.242 journal titles.

Access to full text is partial. Some works can be seen as the full text and for some there is a limit to the summary of the paper. In spite of all that library users occasionally use the specified database and they are fairly satisfied with it as the international database.

9.10. Wiley-Blackwell (http://www3.interscience.wiley.com/)

Wiley-Blackwell, published by Wiley InterScience, is one of the leading sources for an electronic search which includes over three million published works, nearly 1.500 journals, 7.000 books and reference material. It covers a wide range of scientific fields such as chemistry, geography, education, engineering, humanities, social sciences, information technology and computer science, law and criminology, health, mathematics and statistics, medicine, veterinary medicine, physics and astronomy, and psychology.

For users and employees of The Faculty of Economics and Business interesting areas relate to business economics, finance and accounting. Access is possible for journals subscribed of the Ministry of Science, Education and Sports, as a part of the reference literature.

Library users very rarely use the specified database but they are fairly satisfied with it as the international database.

9.11. Current Contents (http://ovidsp.tx.ovid.com/)

Current Contents (CC) is the most popular bibliographic database in Republic of Croatia. The reasons for its popularity are the relatively high criteria of journal selection, coverage of all areas of science, the frequency of updates, summaries of authors, authors' addresses, names and addresses of publishers, the ability to view the content of each issue of the journal and the additional keywords that enhance your search. There is a possibility to find information and articles published since 1993 until today.

The base consists of:

- content of individual numbers (issues) of journals

- more than six million bibliographic records of works from more than 7.600 leading journals from all fields of science, and more than 2.000 books and conference proceedings.

Through its seven sections, Current Contents covers all areas of science:

1) **Agriculture, Biology and Environmental Sciences (AGRI)** - covers more than 1.040 leading international journals in disciplines such as agronomy, biotechnology, botany, ecology, entomology, hydrology, nutrition and veterinary medicine
2) **Clinical Medicine (CLIN)** - cover more than 1.120 leading journals in clinical medicine, including areas such as anatomy, anesthesiology, surgery, psychiatry and clinical physiology, nuclear medicine, oncology and pediatrics
3) **Engineering, Technology and Applied Sciences (TECH)** - covers more than 1.120 leading international journals in engineering, technology and applied sciences, including aeronautics, automation, electrical engineering, energy, optics, computer science and technology and telecommunications
4) **Life Sciences (LIFE)** - covers more than 1.370 leading international journals in the biosciences, including areas such as biochemistry, biophysics, pharmacology, physiology and toxicology
5) **Physical, Chemical & Earth Sciences (PHYS)** - covers more than 1.050 leading international journals in the natural sciences, including areas such as astronomy, physics, chemistry, mathematics, meteorology, paleontology, statistics and probability
6) **Social and Behavioral Sciences (BEHA)** - covers more than 1.620 the world's leading journals in the social sciences, including fields such as anthropology, economics, information science, librarianship, communications, linguistics, international relations, education, planning and development, political science, business, history, law, social medicine, sociology, management and geography
7) **Arts and Humanities (ARTS)** - covering about 1.120 the world's leading journals in the humanities, including areas such as architecture, performing arts, philosophy, linguistics, literature, history, religion and theology and the visual arts.

Selection criteria include journal's publishing regularity, titles and abstracts in English, the frequency of citations, the citations of authors and editors, editorial integrity of the review and the inclusion of a large number of international journals in order to balance the representation of authors of different nationalities.

Online database is very attractive for users and employees of The Faculty of Economics and Business and many other experts and scientists because of its diverse published information covering virtually all areas of interest.

This database can be searched only from the computers installed at The Faculty of Economics and Business. That can be the reason for very rarely use the specified database. Library users are fairly satisfied with it as the international database.

9.12. WoS (http://apps.isiknowledge.com/)

WoS (Web of Science) is the database maintained by the Institute for Scientific Information (ISI), since 1991 until today. The database is only citation / bibliography and there is no ability to view the full texts.

WoS covers over 8.700, according to the opinion of the international research community, the World's leading journals from all fields of science. Database can be searched by journal title, article title, author, group of authors, editor, year of publication, address, language of the published work as well as other indicators relevant to a particular database. In addition to the usual bibliographic data, the database includes references / quotes that:

- provide user access to information about cited references by the author
- allow users to review authors who have dealt with certain types of research over a longer period (Related References).

Web of Science combines citation database produced by Institute for Scientific Information (ISI) - Thomson:

- Science Citation Index Expanded (SCIE)
- Social Sciences Citation Index (SSCI)
- Arts & Humanities Citation Index (AHCI).

Database is attractive to users and staff of The Faculty of Economics and Business, since it contains high-quality papers from all fields of science, as well as bibliographic information and data on the citations of individual papers, which are important for research and development of any kind of scientific work.

This database can be searched only from the computers placed at The Faculty of Economics and Business.

Library users very rarely use the specified database but they are fairly satisfied with it as the international database.

9.13. DOAJ (http://www.doaj.org/)

DOAJ (Directory of Open Access Journals) is a comprehensive collection of scientific and professional journals in open access. DOAJ tries to include as many journals as possible in all scientific fields, assuring that they are valuable journals with proven content quality. Each of the journals has to pass the review process and quality control of the editorial board, must include the scientific content, and has to be published periodically and available in open access.

The database currently includes 5.064 journals from which 2.089 can be searched directly by title. Papers can be searched in full text and until today (June 2010) there are 400.959 article titles included in database.

The database is important for users and employees of The Faculty of Economics and Business because of its quality and especially the availability of the full texts that certainly make it easier to find information for prepare research papers.

Library users occasionally use the specified database but they are fairly satisfied with it as the international database.

10. CONCLUSION

Research has proven that users of Library and Documentation Centre at Faculty of Economics and Business use domestic and international databases for writing all sort of papers (seminars, exposes, essays, graduation thesis, postgraduate thesis (master's or doctoral), case studies, presentations, projects) required during the study. Users search datas to prepare lectures, in order to stay current of their profession as well as from personal interest.

According to the data, users more used domestic databases and have them more satisfied. The most commonly used domestic database Hrčak and they are very satisfied with it. Croacta and CroLex databases of legal documents, laws, regulations, decisions and other legal acts, used less and they are equally pleased with them. EJOL (Electronic Journals Online Library) is the least used domestic database of full text journals in most social themes that are not available in electronic form. International databases are used less than domestic database with less users satisfaction. The most used international databases are EBSCOhost, ScienceDirect, Emerald Insight, JSTOR and EconLit. Users are very satisfied with datas found in databases such as Cambridge Journals Online, Oxford Journal, ScienceDirect, EBSCOhost and Emerald Insight.

Users surveyed were in the majority of female and aged 18-25 years. Most users access to databases from home computers, less with the computer from the library and the workplace. The most interesting searching areas related to economics, finance, organization and management, marketing and accounting because users and students are from The Faculty of Economics and Business.

Domestic and international databases are very important in education and research because they allow individuals quickly and easily search a large number of publications and informations online.

APPENDIX:

The questionnaire - The Impact of Electronic Sources on User Satisfaction: The Case of Library and Documentation Centre at Faculty of Economics and Business, Zagreb, Croatia

Assess their level of information literacy:

	do not use at all	do not use	occasionally use	use	use very often
Word processing (Word)					
Spreadsheets (Excel)					
Database (Access)					
Presentations (Powerpoint)					
Information retrieval on the Internet					

How often do you use electronic resources and services:

	do not use at all	almost every day	2-3 times a week	several times a month	several times a year
domestic databases					
International database					

Specify the uses of electronic information resources (list up to 3 responses):

- ☐ seminar, expose, essay
- ☐ graduation thesis
- ☐ postgraduate thesis (master's or doctorate)
- ☐ case study
- ☐ lecture, presentation
- ☐ project work
- ☐ stay current with the profession
- ☐ personal interest
- ☐ other: _____

Where do you get access to electronic information sources? (you can specify more than one answer)

- ☐ from the library
- ☐ from the workplace
- ☐ from home
- ☐ other: _____

Which of these domestic databases do you use and how often? (select of the offered answers)

	do not use at all	very rarely use	occasionally use	use	often use
Hrčak					
EJOL					
Croacta					
CroLex					

Which of these international databases do you use and how often? (select of the offered answers)

	do not use at all	very rarely use	occasionally use	use	often use
EBSCOhost					
Emerald Insight					
JSTOR					
ScienceDirect					
EconLit					
UN WTO					
Cambridge Journals Online					
Oxford Journal					
SCOPUS					

Springerlink					
Wiley - Blackwell					
Current Content (CC)					
WoS (Web of Science)					
ERIC					
DOAJ					

Evaluate your satisfaction by using the domestic databases. (select from the answers)

	very dissatisfied	dissatisfied	fairly satisfied	satisfied	very satisfied
Hrčak					
EJOL					
Croacta					
CroLex					

Evaluate your satisfaction by using the international databases. (select from the answers)

	very dissatisfied	dissatisfied	fairly satisfied	satisfied	very satisfied

	very dissatisfied	dissatisfied	fairly satisfied	satisfied	very satisfied
EBSCOhost					
Emerald Insight					
JSTOR					
ScienceDirect					
EconLit					
UN WTO					
Cambridge Journals Online					
Oxford Journal					
SCOPUS					
Springerlink					
Wiley - Blackwell					
Current Content (CC)					
WoS (Web of Science)					
ERIC					

	very dissatisfied	dissatisfied	fairly satisfied	satisfied	very satisfied
DOAJ	○	○	○	○	○

Age:

- ○ 18 - 25 years
- ○ 26 - 35 years
- ○ 36 - 45 years
- ○ 46 - 55 years
- ○ over 55 years

Gender:

- ○ female
- ○ male

Professional education:

- ○ incomplete or complete primary school
- ○ secondary qualifications
- ○ higher education (1st level of the Bologna Process)
- ○ completed undergraduate or graduate studies (2nd level oft he Bologna Process)

- postgraduate doctoral study (3rd level of the Bologna Process)
- master's degree - MA
- doctoral study - Ph.D.

Position or profession:

- student
- undergraduate student
- graduate student (full-time and part-time student))
- postgraduate doctoral study student
- other:

Type of employment:

- employed in higher education
- employed in other sectors
- retired
- unemployed
- other:

Please indicate your interest area (there is possibility of more than one answer):

- economy
- demography
- marketing
- trade
- law
- finance

- mathematics
- statistics
- accounting
- organization and management
- tourism
- information technology

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17. http://www.croacta.com/
18. http://www.crolex.hr/
19. http://www.doaj.org/
20. http://www.e-unwto.org/
21. http://www.efzg.hr/default.aspx?id=11726
22. http://www.emeraldinsight.com/
23. http://www.eric.ed.gov/
24. http://www.jstor.org/
25. http://www.online-baze.hr/
26. http://www.oxfordjournals.org/
27. http://www.sciencedirect.com/
28. http://www.scopus.com/
29. http://www.springerlink.com/
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AN ADVANCED SEARCH ENGINE FOR THE ONLINE METADATA REPOSITORY OF MULTIMEDIA EDUCATIONAL RESOURCES ON BIODIVERSITY

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Abstract

This paper addresses implementation problems of online digital repositories containing metadata on biodiversity-related multimedia resources and of searching digital objects for educational or scientific purposes. Technology details and practical aspects concluded from the experience in the case of "KeyToNature" project are presented. There was created an online framework to gather large amounts of biodiversity-related digital data and metadata from cooperating providers and to make them publicly available via an advanced search engine tool. The novelty of the advanced search engine solution consists in the creation of specific queries for the search web service in the digital repository, in the implementation of a communication protocol between the client application and the repository server, and in other original solutions for metadata presentation.

Key words: *Online digital repository, metadata search engine, Rich Internet Application*

1. INTRODUCTION

The results reported in this article have been obtained in the frame of "KeyToNature" (www.keytonature.eu), which is an EU-funded project focussing on interactive educational tools for the identification of organisms. It aims at enhancing the knowledge of biodiversity at all educational levels across Europe. Some project partners are data providers for an online repository for metadata of media resources which can be used in the creation of interactive, computer-aided identification keys (Nimis, 2009, Martellos et al., 2010). These digital objects should become online searchable and accessible (KeyToNature project, 2010). The solution was to create an online digital object repository that stores only the metadata associated with the digital resources. The implementation of the metadata repository and the associated search tools are described in this article.

Most digital repositories provide a search interface which allows resources to be found. These resources are typically deep web objects since they frequently cannot be located by search engine crawlers. The online repositories frequently use the Open Archives Initiative Protocol for Metadata Harvesting (OAI-PMH) to expose their metadata to other digital libraries (Lagoze, 2001) and search engines (McCown, 2006). There are two general strategies for searching a federation of digital libraries: distributed searching, and searching previously harvested metadata.

Distributed searching typically involves a client sending multiple search requests in parallel to a number of servers. The results are gathered, duplicates are eliminated or clustered, and the remaining

items are sorted and presented back to the client (Meisels, 2008). A benefit to this approach is that the resource-intensive tasks of indexing and storage are left to the respective servers in the federation. A drawback to this approach is that the search mechanism is limited by the different indexing and ranking capabilities of each database.

Searching over previously harvested metadata involves searching a locally stored index of information that has previously been collected from the libraries in the federation. When a search is performed, the search mechanism does not need to make connections with the digital libraries it is searching - it already has a local representation of the information. This approach requires the creation of an indexing and harvesting mechanism which operates regularly, connecting to digital libraries of the project data providers and querying the whole collection in order to discover new and updated resources (Weber, et al., 2010). A benefit to this approach is that the search mechanism has full control over indexing and ranking algorithms, possibly allowing more consistent results. In "KeyToNature" project we have adopted this second strategy.

2. THE FUNCTIONAL STRUCTURE OF THE ONLINE METADATA REPOSITORY

One of the main objectives of KeyToNature (K2N) repository of educational resources on biodiversity (Fig. 1) is to make media such as images, sounds, videos, taxon pages and also the identification tools themselves searchable by their metadata in multiple languages. The workflow to achieve this, consists of several steps: 1) the metadata providers submit the metadata of their media or identification tools in a specified form (metadata harvesting), 2) the metadata are stored in a metadata repository (metadata ingest); 3) an advanced search engine provides an interface for users to launch queries against the metadata repository. In order to create the metadata repository, several open source solutions have been studied and the platform based on Fedora repository system was selected (Fedora team, 2008), based on its flexibility, scalability, but also the interoperability (Hagedorn, G., 2009) with other international approaches, e.g. Europeana (Europeana, 2010).

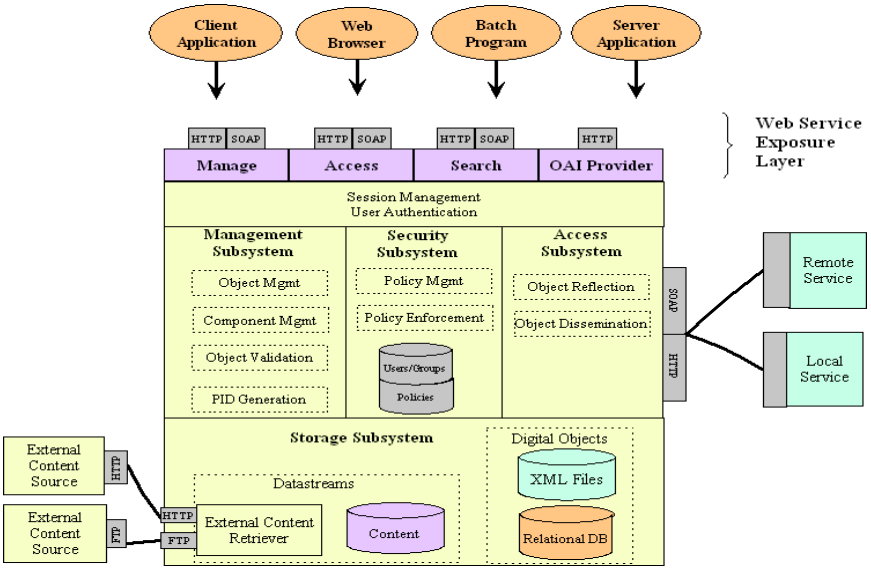

Fig. 1. The functional structure of the online metadata repository

The K2N metadata repository consists of three layers: the “Web Services Exposure Layer”, the “Core Subsystem Layer”, and the “Storage Layer” (Fig. 1). The Web Services Exposure Layer is comprised of three related web services described using WSDL - Web Services Definition Language (Christensen, 2001): a) Management Service: it defines includes operations necessary for clients to create and maintain digital objects and their components; b) Access Service: it includes operations necessary for clients to perform disseminations on objects in the repository (i.e., to access an object's content) and to discover information about an object; c) Access-Lite Service: it is implemented as an HTTP-enabled web service. The “Core Subsystem Layer” implements the management and access subsystems, defined as a group of related subsystems by the “Web Services Layer”. The “Management Subsystem” implements the operations necessary for creating, modifying, deleting, importing, exporting, and maintaining digital objects. The management subsystem also includes modules for validation and object integrity to ensure that imported, newly created, and modified objects are valid from both an XML (eXtendable Markup Language) schema perspective and also from the set of repository-specific integrity rules. The PID (Persistent Identifier) generation module is responsible for providing a unique identification code for each digital object. The “Access Subsystem” implements the operations necessary for disseminating the content of digital objects and digital object reflection. The “Storage Layer” implements the storage subsystem that handles reading, writing, and removal of data from the repository. Digital objects are stored as XML-encoded files.

3. METADATA HARVESTING AND THE INGESTION WORKFLOW IN REPOSITORY

In order to standardize the metadata sampled from many different providers of biodiversity data, a resource metadata exchange agreement was designed (Hagedorn and Weber, 2009). It defines the types of resources and also the metadata fields for each resource type, e.g. title, keywords, subject category, scientific names, copyright, license, format and URIs. It supports resources available at different quality levels (e. g., high-resolution, web-optimized, or different thumbnail sizes) under different URIs, information in multiple languages is supported (e.g. title in English as well Slovenian).

The metadata harvesting method proposed in K2N is the use of MediaWiki templates. The templates are standard wiki pages which are designed to be embedded in other wiki pages, using a specific syntax. They use parameters, so that a template can be used (“called”) any time with different parameter values. In this way the using of templates to put the metadata on the wiki provide a visually attractive reporting of the data, facilitate data proofreading and provide basic error reporting facilities, such as required fields or incorrect data values.

The value pairs parameter name – parameter value are harvested by implementing a wiki extension. The wiki extension is programmed to parse the metadata templates from the wiki pages or uploaded as attachments to wiki pages by the providers, and finally to store temporarily the data in a MySQL database.This extension offers also a query interface by which the data can be selected according to various criteria, in order to realize the XML export to the metadata repository through an ingestion workflow. The ingestion workflow is implemented in a set of Java-based tools, which continuously interacts with the harvesting application in order to check for new available metadata. The main tools are briefly presented below.

3.1. Parsing Tool: it downloads new metadata and performs a simple syntactical analysis in order to discover lacks in metadata. In this stage, a simple transformation of metadata is necessary to accommodate metadata already provided in the wiki templates to an XML format.

3.2. PID generator tool: its role is to establish the object identifier based on the MD5 checksum algorithm, calculated against some of the metadata fields already prepared for ingestion. The tool is meant to ensure the PID persistence over time and oneness of the metadata resource as well.

3.3. Search Tool: the search tool is looking for already ingested objects. This tool is necessary, because when a metadata collection page is updated or deleted in the wiki pages, the corresponding content form the K2N repository need to be updated. Several tests have been performed by using different methods, but SPARQL (Prud'hommeaux, 2008) was proved to be more reliable and rapid.

3.4. Validation and FOXML generator tool: this set of functions generate the FOXML (Fedora Object XML, 2009) files from the XML files.

3.5. Repository ingest tool: the FOXML files prepared for ingestion in the previous steps are ingested in the digital repository in batches of maximum 1000 digital objects. The output of this operation is a XML report containing a statistics on: number of successfully ingested object, number of objects overwritten and the overall processing time.

3.6. MediaWiki report tool: the outcome of this tool consists of MediaWiki pages, linked to existing collection pages, and informing the data providers with messages (warnings, errors) and statistics. It uses the Bliki engine, a Java extension for MediaWiki.

4. THE ADVANCED SEARCH ENGINE OF MULTIMEDIA RESOURES

The chosen framework of metadata repository and advanced search is a backend framework. For the search engine we have selected AdobeFlex as programming environment (Herrington, 2008), as the applications are embeddable in a large variety of web environments. After defining and implementing the communication between the Flex-based client and the digital repository (Fig. 2), the most important step was the creation of the user interface. The interface exposes the methods and mechanisms that the search tool will use in order to transmit the user input (the request or query) to the repository and to present the result for various types of users (beginner to advanced).

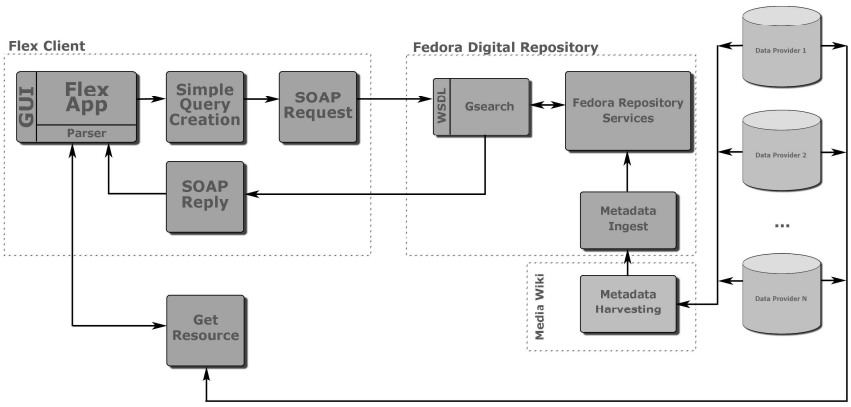

Fig. 2. The communication between the search engine and the digital repository of KeyToNature

There are two versions of the search tool available: one for all media, and one especially for identification tools. Both offer simple search where a full text search can be combined with the choice of one or several query conditions like resource type, availability (for all media), language, organism group, platform(the latter three for identification tools only). Both media and identification tool search also offer an advanced search, where one or several fields can be selected to restrict the query.

4.1. The simple search.

This type of search (Fig. 3) consists of a single text input control and additional drop-down menus. The menus allows users to add additional search criteria for narrowing or filtering results. Examples are selections according to the resource type they wish to find (images, identification keys, etc.) or according to availability (online, free, printed-only, etc.).

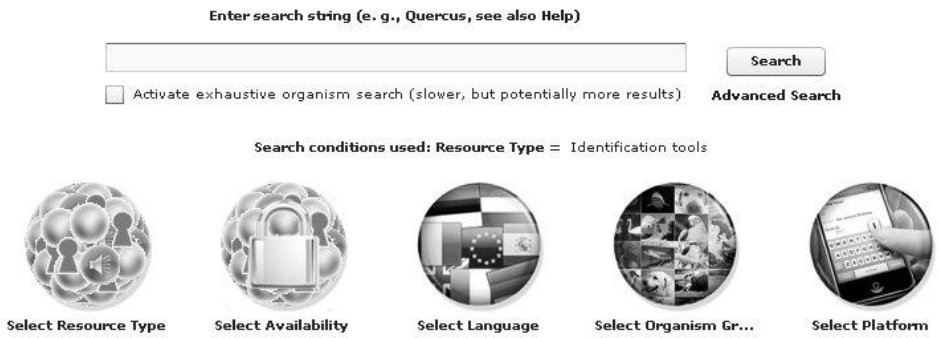

Fig. 3. The main user interface for simple search.

The exhaustive search for organism names uses a thesaurus of synonyms. This is a complex mechanism that helps users find more resources by extending their search criteria with added synonyms, scientific names and common names. Despite the underlying complexity, the feature is implemented and communicated in the simplest possible way. When the results come back from the repository, users are informed about the extra search terms that were extracted from the thesaurus reply and used in the query. The simple search interface automatically chooses the best display mode (tabular or matrix image gallery) based on the resource type of the media retrieved.

4.2. The advanced search engine

The advanced search interface (Fig. 4) allows users to interactively create complex queries, including logical operators. The interface has three sec¬tions: 1) Search Conditions: select the group of searched metadata fields; 2) Sorting Mode: ascending/descending by multiple user-selectable fields; 3) Display mode: a) gallery mode (Fig. 5) with metadata details accessible via the icons situated on the upper right side of the thumbnail image (Fig. 6), or b) table mode.

The advanced user interface is based on XML (eXtendable Markup Language) storing the user's selections and inputs. After a search has been performed, the created query may be easily revised by the user, without having to re-compose a query. When browsing through the displayed results, users have access to three options which are available for both simple and advanced search modes: "New Query", "Revise Query" and "Switch gallery/table mode".

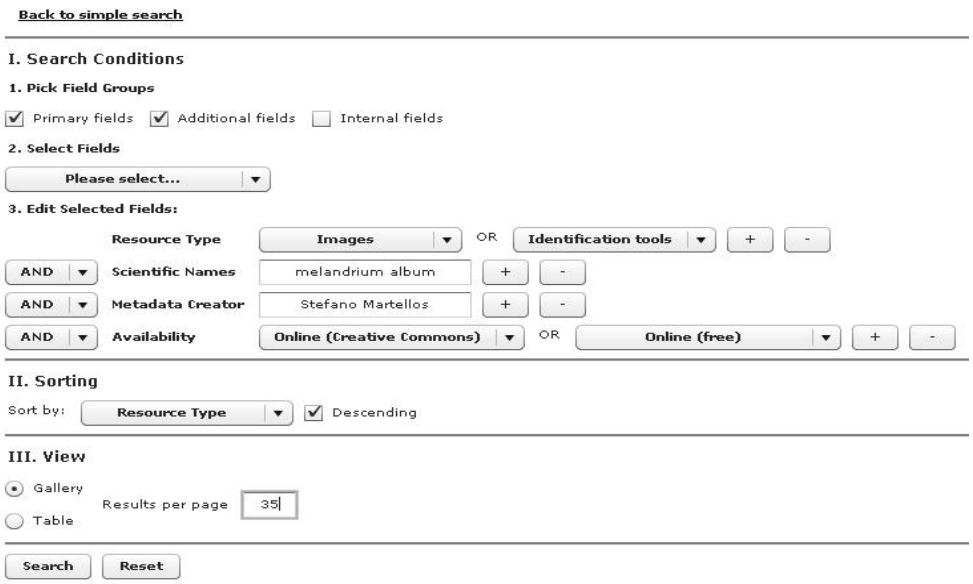

Fig. 4. The user interface for advanced search

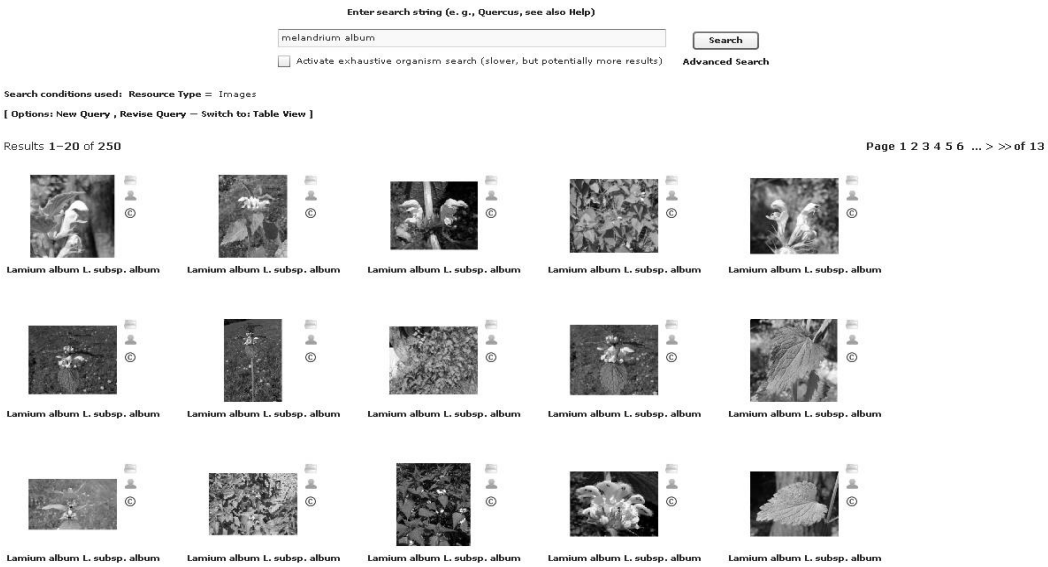

Fig. 5. The search results of digital objects displayed in the "gallery" view mode

4.3. The parameters for the search engine

The KeyToNature search tool currently has several external parameters by means of which it can be preconfigured when embedded into a web interface: 1) language selection, 2) preset to search identification keys only, 3) preset for searching freely available online resources only, 5) preset for searching only online resources which are under a "Creative Commons" license.

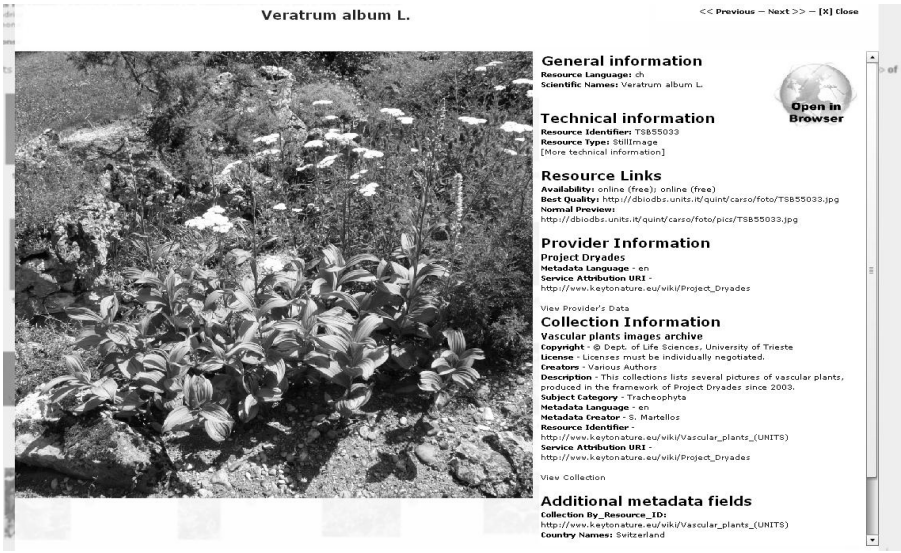

Fig. 5. Metadata details on a biodiversity-related digital object (in this case, a picture

4.4. Multilingual interfaces

The KeyToNature metadata search engine is currently available in nine languages (Bulgarian, Dutch, English, Estonian, German, Italian, Romanian, Slovenian, Spanish), based on two XML external configuration files, which are easily customizable and extendable to additional languages.

5. CONCLUSIONS

The advanced search engine presented in this paper was implemented as a client application in Adobe Flex. It communicates via specific web services and protocols with the KeyToNature online repository of biodiversity-related digital educational resources. The selection of Adobe Flex has proved a successful decision for implementing the user interface for search. It is an excellent tool for processing the large amount of XML returned by the digital repository. For the implementation of the online metadata repository a set of harvesting and ingestion tools have been developed in order to automatically process the metadata on multimedia resources made available by data providers. The search engine is largely platform-independent, due to the wide availability and distribution of the Flash player. The KeyToNature search engine proved to be a robust, fast application, which can be easily integrated into various portals. It could be a model for implementing similar applications interacting with online digital repositories.

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CURRICULUM AND E-LEARNING MATERIALS FOR THE CERTIFICATION ON INTERNATIONAL ONLINE PROJECT MANAGEMENT

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Abstract

This paper presents the structure of the curriculum and the e-Learning materials developed in order to support the certification of the competencies on international online project management. The training profile is a multidimensional one, considering the structuring of the competencies in the following classes: virtual collaboration, project planning and time management, online communication, project documentation and intercultural communication. The complexity and the innovation of this training approach consist in the enhancing existing project management practices in industry conditions and in combining technical skills with soft skills training in a distributed environment. The results have been implemented in the frame of the Leonardo da Vinci pilot project Pool2Business: "Project Organisation OnLine to Business".

Key words: *international online project management, virtual collaboration, certification of competencies, e-Learning materials*

1. INTRODUCTION

Through globalisation many companies and organisations enforce international, distributed projects. They bundle the different competencies in the different countries to gain competitive advantage and need highly qualified project-teams who can face the heterogeneity of international projects. Studies proof, that multilateral projects especially in engineering sector have only a success-rate of about 30-40% (Cleland, 2004). To close this gap, the EU-funded project Pool2Business (P2B) has the aim to train and certify the competencies of the people from companies within the engineering sector on the international Online Project Management (OPM). Hence, the target group of P2B are employees, who are going to work in international projects and want to acquire the relevant competencies.

The training programme is focussed on the development of competencies which are crucial to manage international, virtual projects using online collaboration, project-performance-management, risk management, intercultural communication and soft-skills. It is a unique combination of skills, which is rarely provided by training institutions in the EU, especially for employees in companies and organisations. Existing certification-programmes, e.g. IPMA (International Project Management Association), PMI (Project Management Institute) do hardly address skills in online collaboration, intercultural communication and international aspects (Neumayer, A., 2004, Robert, F., 2003.

While assuming learners to have basic project management skills developed through traditional training programmes and concepts, P2B exploits the advantages and concepts of e-Learning and online collaboration to develop the more sophisticated skills of OPM. The training approach is intended to

ensure a curriculum and training methodology that provides OPM training in online environments and that simulates settings of real online projects in the training process (Dittler, U., 2002). The POOL2Busines training approach is undertaking a major effort to provide the best blend of traditional training practices with the power of online learning. This blend of training methods (Kerres, 2003) achieves the integration of skills acquisition in the learning process and assures the achievement of learning outcomes that respond to real business needs.

2. IDENTIFICATION OF THE TRAINING NEEDS

The POOL2Business training programme is designed to meet the needs of companies that are heavily engaged in international project collaboration. These are the companies that require the highest level of expertise and skills development in the management of online projects. In our analysis with small and mid-sized organisations of various European countries realized in spring 2009, a list of training shortcomings have been identified and reported in scientific articles (Herber, E., 2009).

It was concluded that international project management bears new and different challenges for companies with the except of general project management topics. Topics like virtual communication applying a mostly foreign project language, communication and collaboration tools as well as intercultural skills are of high importance. Expectedly, good communication is at the top of the hit list of the key success factors in international projects. 80% of all participants rely on a good communication to be able to work on an international project successfully. Personal contact and communication to all project stakeholders seems to be very important (42,4%), though it may be linked to higher communication costs. In this context, also the knowledge of the project language is named as a very important factor for project success (38,8%). In spite of the areal distance between the team members of an international team and the resulting higher vacation costs face-to-face meetings are irreplaceable. About 80% of all companies start their international projects in a face-to-face kick-off including all project members and partners. Regular meetings as well as spontaneous meetings in between show very high satisfaction.

Table 1. The target groups and their characteristics

Group	*Characteristics*
OPM learners	Objective: developing basic OPM skills Proficiency: formal PM education or experience in projects (1 year)
OPM Practitioners	Objective: improving practical OPM skills Proficiency: management experience in online projects (at least 1 year)
OPM Experts	Objective: sharing Expert Knowledge on OPM Proficiency: OPM management and/or research experience (at least 3 years)

Deriving from these findings, we have defined the target groups and formulated a list of required competencies and associated learning outcomes focussing on the following key areas: 1) Virtual Communication & Collaboration in Online Projects; 2) Soft Skills, Intercultural Communication, and Documentation Standards in Online Projects; 3) Project Planning, Time Management and Risk

Management in Online Projects; 4) Specific Information related to OPM (with relevance to the specific target user needs).

3. DEVELOPMENT OF THE TRAINING CURRICULUM

The results of the research survey showed that the training profile is a multidimensional one, considering the structuring of the competencies in several classes. The survey made among the industry partners aimed to check the validity of the identified competencies as well as to anchor the results into the state of the art of the labor market and into the current industry practices. A competency profile is defined, which then directs the creation of learning modules/units and the selection of supportive media and materials. Special attention is given to using an approach to competency definition that is in line with the efforts of the IEEE Learning Technology Standards Committee (LTSC) and their "Reusable Competency Definitions" standard (IEEE WG20: Learning Technology Standards Committee, 2004).

The pedagogic-didactic approach in the curriculum modules contains a blend of methods (Fig. 1) and it is structured on three complexity levels (Fig. 2). The quality principles are as follows:

• *Active Learner Involvement*: in adopting a moderate constructivist approach it is important to integrate acknowledge learner responsibility and learner self-organization as main principles for the acceptance and success of e-learning scenarios.

• *Provision of stimulating learning situations:* to follow the principles of problem-based and project based learning which logically follows from the nature of the intended training modules. An overall pragmatic view of what is really feasible in concrete project environments should facilitate the choice of actual instructional design and materials. This is particularly relevant for group assignments and group collaboration. An aspect that has to be considered is the variety of media and approaches to cater for multiple intelligences and different learner styles, some of which may even have gender-specific relevance.

• *Selecting a learner-centered organizational and communicative framework:* that enhances motivation and provides the possibility for group interaction, community building peer-learning but also reflective learning possibilities such as web-logs and diaries.

• *Blended learning approach:* that utilizes both online and offline scenarios to their full potentials. It has now widely been accepted that a well-defined combination of online and off-line activities yields best results. This requires, however, careful planning and definition of interfaces.

Fig. 1. Pool2Business training methodology

Fig. 2. Pool2Business training levels

The conversion course is for learners whose previous education and/or experience does not qualify them to enroll in the Pool2Business basic or advanced training programme, but who wish to acquire knowledge in OPM. Its main objective is to harmonize the knowledge of a heterogeneous group of regular Pool2Business learners.

The basic course creates a fundamental understanding of the characteristics of international OPM and the difference to traditional Project Management (PM), explains typical problems and shortcomings of OPM in practice, and develops skills that will help learners to prevent or overcome these problems in real projects.

The advanced course strongly focuses on the development of practical skills that are required in online projects. It explains best practices, tools and techniques that learners can apply in their own project management activities. In practical (simulation) projects, learners collaborate in group projects and develop practical skills of managing projects online.

The POOL2Business training programme follows a blended learning approach. Teaching and Learning takes place through a wide variety of methods and styles. A majority of the training takes place online, highly participatively and interactively, encouraging learners to collaborate. It utilizes both online, offline and collaborative scenarios to their full potentials and provides the most effective form of teaching and learning.

All POOL2Business training programmes have e-Learning modules at each level which help the learners acquire basic knowledge and skills for professional development and independent study. A large number of the e-Learning modules are web based learning material provided through the POOL2Business learning management system (MOODLE) which can be studied by the learners independently of other learners (self-study periods).

In every module, learners are required to complete quizzes, assignments and/or assessments associated with the processes of the project management life cycle to enable them to assess their learning progress. They can be used by the learners to test their understanding of the concepts and their ability to evaluate and adapt those to various project situations.

The following resources are directly involved in the training:

● Web Based Trainings (e-Learning modules developed by consortium members for their basic training programme or e-Learning materials of third party providers, e.g. open educational resources)

● Case Studies & Best Practice Reports (they are applied to support the theoretical concepts explained in the training modules as well as to transfer the knowledge into practical settings)

● OPM Glossary & WIKI, (they are used to create a common sense and terminology on important OPM concepts / it can be an important means of dissemination)

● POOL2Business Handbook (important experiences collected throughout the previous trainings are collected in a handbook and provided to trainers. It collects all lessons learned throughout the training programme and it is involved in the training process in the form of a storyboard for case studies and best practice examples)

The online lectures are provided in regular intervals to access information as a basis for further self-study periods and research. Learners are scheduled to meet expert trainers and other learners to discuss important aspects of OPM. These sessions serve as a feedback channel for learners who have questions related to the training materials they studied.

Table 1. Outline of the training unit "Online Project Management from a Practical Perspective"

Topics on …/ (allocated time)	*Contents*	*Learning outcomes*
Project Planning / (1 hour)	● estimation techniques involving partners ● selection of project partners / team members, know-how, costs ● driving end-to-end planning and localization	● ability to prepare a project plan and document as well as to communicate it properly
Virtual Collaboration / (1 hour)	● virtual collaboration processes: benefits and risks ● criteria in selection and assessment of virtual collaborative tools ● data collection from virtual spaces	● knowledge on efficient collaboration practices ● ability for self-organization in virtual spaces ● skills in tracking of the collaboration problems in an online project
Intercultural Communication / (2 hours)	● participation and communication in a team ● fill in the proposals, complete reports and reach the results ● awareness of the cultural difference – show tolerance	● knowledge on the cultural differences ● effective written and oral communication ● understand team work

Table 2. Outline of the training unit "Specific Aspects of Online Project Management"

Topics / (allocated time)	*Contents*	*Learning outcomes*
Project Planning / (5 hours)	● project controlling by indicators ● find appropriate human resources ● achieve the consistency ● managing goal conflicts between ● problem solving and prevention strategies ● risk analysis and measures	● development of a good project schedule that supports the timely progress of the ● skills on the efficient planning ● ability to estimate and redefine the scope and effort of project activities
Virtual Collaboration / (5 hours)	● designing the requirements for the virtual collaboration ● practical criteria in managing and assessing the virtual collaboration ● best practices in facilitation ● achieving the expertise in the evaluation of collaboration in online projects ● a structured counseling on problem solving	● skills in designing, setting-up and maintenance of technology-supported collaborative spaces ● proficiency in tracking the activities ● prove availability for facilitation ● prove capacity to organise and use shared resources and to develop collaborative interactions
Intercultural Communication / (5 hours)	● the leadership skills: good practices ● when and how to modify project proposals ● how to use culture as a benefit not a handicap ● persuasive communication ● conflict management ● negotiation	● good practice in project related communication / intercultural skills ● efficient documentation skills

The above Table 1 & 2 briefly illustrate the organization of two training units from the "advanced course" in what concerns the main topics to be trained and the envisaged learning outcomes. Similarly, for each of the training units in the whole programme the learning objectives are defined and the associated training content has been developed. The collection of e-Learning modules provide important theoretical concepts, but also explain best practice scenarios, tools and techniques that learners can apply in their own project management activities. In every module, learners should be required to complete quizzes, assignments and/or assessments associated with the processes of the project management life cycle to enable them to assess their learning progress.

Fig. 3. Examples of training materials available on the e-Learning platform

4. THE ASSESSMENT AND CERTIFICATION PRINCIPLES

Feedback on the learning progress is very important. During and at the end of a course participants are asked to complete various types of assessments. Assessments are helping the learners to estimate their existing knowledge about the subject and to understand the main issues and learning targets of the courses.

In the basic module, assessments based on e-Learning modules (e.g. quizzes) are available to learners throughout and after their self-study periods. These enable them to re-assess their current level of knowledge and/or skills in the context of the specific learning module. Individual case study reports are used after completion of the basic module(s) to assess the individual achievements of the learner.

In the advanced module, written course work and presentations of interim and/or final work results lead to better understanding of the performance of students and are a vital source for assessment. Additionally, work results / reports, analysis and/or essays are used for the purpose of assessment to generate additional information that typically cannot be generated by presentations and/or written assessments. Assessments in basic course modules are mainly task-centred, but the assessments in advanced modules problem-centred (considering the practical work in the study project).

The Pool2Business (P2B) programme needs to provide certification that meets the needs of PM professionals in a way that adds value in the current business environment. The P2B certification is not yet widely recognised and will have to become established in the PM marketplace. The distinguishing features of the programme are that it focuses on international Project Management in a virtual environment, and it is delivered on-line. While other programmes offer elements of the P2B course, this course specifically focuses on the combination of international and virtual PM environments.

Certification will be based on individual marks rather than group marks for the International PM and International PM Executive courses. It is proposed that a certification exam be scheduled once or twice a year, for which, participants would register. The exam will be available on-line and will be conducted under exam conditions in a designated country centre.

5. CONCLUSIONS

Considering the target groups and nature of OPM training, Pool2Business designed and managed a training program that is based on self-directed knowledge and skills acquisition which adjusts to the needs of industries. This has implications on various aspects: training organization, integration into the work environment, and the certification of such programs. The whole curriculum design has been based on a project management procedure in which the key steps has been structured in different tasks and milestones, which have been tested by a quality assurance circle. The training program follows an interdisciplinary approach (project planning, virtual collaboration, intercultural communication) of theory and practice, which uses merely online learning to provide a thorough understanding of important online concepts in distributed work and learning situations. It uses collaborative project scenarios to enable practical training and skills acquisition embedded in the work environment. The intention is to ensure that knowledge is acquired 'on-the-job' and applied in real projects rather than to explain them in theory.

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PUBLIC-PRIVATE PARTNERSHIP IN EDUCATION: FOREIGN EXPERIENCE AND PERSPECTIVES IN RUSSIA

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Abstract

Nowadays public-private partnership (PPP) plays very important role in modernization of educational processes. Public-private partnership means cooperation between state and private sector for attainment of general targets. The article consists of introduction, two parts and conclusion. This article presents a review of public-private partnership in secondary, primary and higher education, focusing on partnerships in which governments use contracts as instruments of accountability. While governments remain the main financiers of primary and secondary education, a substantial share of education worldwide is now delivered by private agents. The purpose of the article is to show the main directions of public-private partnership and to characterize role of it in «knowledge based economy».

Key words: *public-private partnership, education, endowment fund, state and private sectors, private financing initiative.*

1.INTRODUCTION

The innovative type of development of the economy has made new demands to the formation of human capital which developed in the system of lifelong education that is education in the course of life, one of peculiarities of which is the public-private partnership (PPP). Private participation in the provision of public education has a long history in many countries. Over the last 15 to 20 years, however, new forms of private participation have developed in public services including education. The public-private partnership is generally long-term partnership of the state and business for the achievement of common aims. The key characteristic of PPP is the division of risks between the state and the private sector, the leading role in identifying priorities belonging to the state.

Basing on the experience of western countries, experts mark out the following distinctive attributes of PPP:

- Long validity of agreements on partnership;
- Mixed forms of project financing (at the expense of individual investments added by the state financial resources, or joint investment of several participants);
- Division of responsibility between partners in accordance with their tasks and agreements.

2. ROLE OF PUBLIC-PRIVATE PARTNERSHIP IN PRIMARY AND SECONDARY EDUCATION

Private participation in education has increased dramatically over the last two decades across the world, serving all types of communities—from high-income to low-income families. Although governments remain the main financiers of education (at least of primary and secondary education), in many countries private agents deliver a sizable share of education (table1).

Table 1 Growing private enrollment rate in education, 1990 and 2005, selected countries

	Primary%			Secondary%		
Country	**1990**	**2005**	**Change%**	**1990**	**2005**	**Change%**
Brazil	14	10	-29	35	**12**	**-66**
Chile	39	51	31	49	52	6
Colombia	15	19	27	39	24	-38
India	10	20	100	10	23	130
Indonesia	18	17	-6	49	44	-10
Netherlands	69	69	0	83	83	0
Pakistan	25	27	8	24	25	4
Peru	13	16	23	15	22	47
South Africa	1	2	100	2	3	50
Ukraine	0	0	0	0	0	0
Tunisia	1	1	0	12	5	-58

A number of governments contract with the private sector to provide some of the services involved in producing education, such as teacher training, management, or curriculum design. Other government's contract with a private organization to manage and operate a public school, as is the case with charter and concession schools. Still other contracts require private organizations to provide education to a specific group of students by means of a subsidy, a contract, or a voucher. In the most common type of PPP, the government provides subsidies to existing private schools.

Some countries make a sharp distinction between the role of the public sector as education financier and that of the private sector as education provider. For instance, in the Netherlands, all education is publicly financed, including private schools, which enroll more than two-thirds of all students. In other countries, the private sector plays an important role in providing education, but the government only subsidizes some of the students who attend private schools (for example, Chile). Several African countries have different types of nonpublic schools, including government-subsidized independent schools (for example, the Gambia), partially subsidized mission or religious schools (for example, Lesotho), and at least partially subsidized community-organized schools (for example, Kenya). Elsewhere, some countries have public schools that are supported financially by the private sector (for example, Pakistan). Overall, the private sector's participation at the primary school level has grown

more than its participation at the secondary level, but there is significant variation across countries. While overall private participation is typically higher at the secondary level, private participation at all levels continues to grow. The theoretical literature suggests **four positive outcomes** of the private provision of public services:

• PPPs can create competition in the education market. The private sector can compete for students with the public sector. In turn, the public sector has an incentive to react to this competition by increasing the quality of the education that it provides.

• PPP contracts can be more flexible than most public sector arrangements. Generally, the public sector has less autonomy in hiring teachers and organizing schools than the private sector does. Public-private contracts can be a better fit between the supply of and demand for education. Flexibility in teacher contracting is one of the primary motivations for PPPs.

• Governments can choose private providers in PPP contracts by means of an open bidding process in which the government defines specific requirements for the quality of education that it demands from the contractor. The contracts often include measurable outcomes and clauses that specify the condition to deliver a certain quality of education, and the contractor with the best or lowest cost proposal is then chosen. This one characteristic of the contract alone can raise the quality of education.

• PPP contracts can achieve an increased level of risk-sharing between the government and the private sector. This risk-sharing is likely to increase efficiency in the delivery of services and, consequently, to induce the channeling of additional resources to the provision for education.

Also there is a body of literature that argues that there are **negative outcomes** associated with the private provision of public services:

- PPPs will lead to the privatization of education and thus will reduce the government's control over a public service.
- Increasing the educational choices available to students and their families may increase socioeconomic segregation if better prepared students end up self-selecting into high-quality schools, thus further improving their outcomes.
- PPPs will lead to poorer students being left behind in the deteriorating public schools that lose the support of more educated parents.

3. FOREIGN EXPERIENCE OF PUBLIC-PRIVATE PARTNERSHIP IN HIGHER EDUCATION AND RUSSIAN EXPERIENCE OF PPP.

In the modern world one of leaders to use the mechanisms of PPP is considered Great Britain where at the end of 90th of the last century the so-called Private Financing Initiative (PFI) was formed. The core of the mechanism is to attract individual investments for big construction projects. The expenses of the private partner are afterwards indemnified either from incomes of operation or from budget payments. Educational establishments can act as objects of the PPP mechanism. For today the private financial initiative is effectively applied not only in Great Britain, but also in such countries as Canada, France, Netherlands, Portugal, Australia, Japan, the USA, and Singapore.

PFIs are an increasingly common form of public-private partnerships used by governments to procure social infrastructure. Under the most common form of these initiatives, the government makes

contracts with the private sector for the finance, design, construction, and operation of infrastructural assets such as schools, university hostels, hospitals, and roads. Although PFIs can be structured in a variety of ways, they do share a number of characteristics:

- the government continues to deliver so-called core services such as teaching or research;
- the private-sector partner operates the infrastructure (e.g., hostel or research laboratory) under a long-term contract—typically 25 to 30 years, and at the end of the contract period, the asset is turned over to the government agency;
- contracts are often bundled, with the private sector taking on several functions; and (4) contracts include a performance element—ongoing payments to the private operator are subject to agreed performance standards

There are a number of examples of PFI-type arrangements in the education sector, although the bulk of these are at the compulsory school level. Several countries (the United Kingdom, Germany, the Netherlands, Ireland, Canada, and Australia) have undertaken PFIs at the compulsory school level. At the post compulsory level, three developed countries—the United Kingdom, Ireland, and Australia—have made the greatest use of PFIs. The UK program is the largest infrastructure-related public-private partnership program in the world, with 166 education projects valued at over £5.8 billion as of December 2006. Just over 20 percent of these projects, valued at £669 million, have been in UK higher and further education sectors. The largest projects have involved the development of hostels and a sports and leisure facility at the University of Hertfordshire (£190million

The government of Ireland has used PFIs for a small number of projects at the post compulsory level, including the National Maritime College of Ireland (€58 million) and the Cork School of Music (€60 million). In Australia, the two most significant PFI examples are the Southbank Education and Training Precinct in the State of Queensland (AU$550 million) and the Swinburne University of Technology (AU$60 million) project in the State of Victoria. Among developing countries, Mexico and South Africa are using infrastructure public-private partnerships in education. Twenty-eight projects are being developed in these three sectors, including 5 polytechnic colleges. Currently, the Mexican government is piloting this model in the construction of a new campus for the University of San Luis Potosi, with an expected $US30 million investment. The project is expected to expand the university's enrollment capacity from 1,500 to 5,000 students by 2010.

Little evidence exists of the benefits of PFIs in education, although studies carried out by, among others, the UK Treasury and the New South Wales Treasury suggest that they can reduce costs and improve the timeliness of infrastructure delivery relative to traditional forms of procurement. Proponents also argue that PFIs allow organizations to focus on core business, overcome operating restrictions such as inflexible salary scales, and facilitate the introduction of innovative forms of service delivery.

Skeptics argue that the high cost of borrowing for the private sector, as well as high setup and contract monitoring costs mean that PFIs can be expensive relative to traditional forms of procurement, especially for small projects. Poor specification of capital needs, flawed contract design, and weak monitoring of projects can also expose the government to significant financial and operational risks, thus negating one of the main intended benefits of PFIs.

So, PPP mechanisms are already widely used in the USA, this country has the richest legal and practical experience in this area. In the United States there is a set of federal scientific and technological educational programs, one of which is the advanced technology program (ATP). In

fact, ATP is the national innovative program, uniting science and business. ATP finances projects in the framework of PPP in the following hi-tech areas: information technologies - 23%, industrial technologies – 11%, chemistry – 21%, biotechnologies – 20%, electronics - 25 %.

One of the countries with formalized approach to the partnership is Australia. In 1990 the program "Cooperative research centers" was launched there. The program was aimed at connecting the development of science, manufacture and medicine and thus to contribute to the long-term economic development of the country. The program got popularity at once. In 1990, in the process of its formation, 130 applications were submitted. Nowadays 90 CRS are operating in the country. In Australia the programs Kplus and Kind/Knet are also effectively working.

In the whole, the experience of social partnership of some European countries in management of the substantial component of vocational education can be divided into several models (table 2).

Table 2 Models of education

	The Great Britain	**France**	**Germany**	**Netherlands**
Model	The state plays an insignificant role	Dominating role of the state	double-type model	double-type model
Organizational forms	Professional committees, Industrial committees on vocational training	The advisory councils, Advisory commissions	Industrial state structures, Committees on vocational training	National organizations, Committees on vocational training
National structures	Industrial councils on proficiency, Network on qualifications for business	The constant commission of National council on management of vocational training, Advisory professional commission	Committees on vocational training, Federal institute of vocational education and training, Federal service on labor	National organizations on vocational training

As to foreign experience of charities in the field of education, it is not uniform and has certain specificity depending on legal systems of various countries. As a rule, charity funds possess target capital (endowment). Endowment fund is a form of long-term attraction and use of means for socially significant purposes. In many countries income tax is not charged on the profit from endowment; besides, the philanthropists themselves (endowment donors) have profit tax privileges: endowment fees are subtracted from the sums subject to taxation. Such system of financing is mostly widespread in the USA that is promoted by the legislation on taxation. Incomes from endowment are used for financing non-commercial organizations in the sphere of education, science, public health services,

culture and art, as well as in other sectors of social sphere.

In the USA educational grants are given by the state structures, private companies and funds. Among the federal grants given by the Ministry of Education of the USA, first of all, Federal Pell Grants and the Federal Supplemental Educational Opportunity Grant (FSEOG) are marked out. In Great Britain target educational grants can be given out by the state, private companies or charitable organizations. Since 2006 the students with a low income have been given the state grant of base support.

Thereby, the public-private partnership in education will allow providing:

a) for state education system:

- development of the market and strengthening of honest competition in the market of educational services;
- approbation of application of new for educational structures organizational and legal forms of alliance with business;
- elaboration of offers on further perfection of legal base of professional school reformation;
- duplication of the best practices;
- development of multichannel financing mechanisms;
- approbation and widespread adoption of mechanisms of interaction between institutes of higher education and employers;
- enhancement of control system in the sphere of innovative activity (development of the contents and techniques of administration, preparation and improvement of professional skills of administrative staff members).

b) for the investor:

- participation in academic, scientific and management activity of educational institutions in accordance with the advanced international experience;
- creation and perfection of educational standards, curricula and programs and preparation of highly-skilled staff in view of the labour market needs;
- creation and development of educational and industrial infrastructure of companies' innovative activity on the basis of educational establishments;
- opportunity to attract students and the faculty to carry out (in the training process) research works and prepare projects for specific business needs.

c) for the educational establishment:

- creation of additional opportunities for multichannel financing and development of material and technical base of educational institutions;
- creation of a new model of integrated educational complex (a qualitative management, a new infrastructure, technologies and directions of preparation of students and lecturers);
- development of new models of academic, scientific, industrial and institutional integration;
- increase of financial security of scientific researches of scientists, lecturers and students of

educational establishment (additional financing for bringing scientific developments to commercial level with patenting and securing authors' rights);

- development of educational services market.

Nowadays in the higher educational institutions of Russia more and more really active processes of formation of public-private partnership are underway: employers participate in assessment and development of educational programs, in strengthening resource base and expansion of its opportunities (financial endowment), etc. The most vivid example of organization of PPP regulation process in innovative sphere is the pilot program of realization of mega projects. Creation and activity support of Russian venture companies is one more example of organization of public-private partnership in the direction of transition to innovative development. The next coming projects are creation of special economic zone and creation of regional venture funds. These projects are not the only forms of PPP in the innovative sphere, there are a lot of other initiatives.

It must be noted, that public-private partnership shows itself in distance learning as well. For today in developed countries there is an advanced system of remote learning that uses information technologies in preparation of students. The most appreciable tendency of development of distance learning today is the transition to e-learning system, getting education irrespective of the country of residing at any convenient time. As a result of globalization processes and establishment of general standards in the sphere of education, training materials become a part of global system of data storage and management.

In the USA the Association of distance learning USDLA (United States Distance Learning Association) is operating which unites more than thousand educational institutions. One of the most advanced e-learning centers in the USA is Massachusetts Technological Institute within the framework of which free distance learning in 60 disciplines is organized now.

However it is important to note the existence of such problem, as absence of corresponding legal conditions for effective functioning of PPP in Russia, namely:

- political influence on economic decision-making;
- presence of more qualified personnel in the sphere of business rather than in the state;
- high level of corruption in the society;
- poorly developed legal base: the first official PPP programs were created in 2005.

Now, there are five main kinds of contractual PPPs in education:

- Infrastructure PPPs
- Private operation of public schools
- Outsourcing of educational services
- Outsoursing of significant non-educational support services
- Partnerships for innovation and research. Infrastructure PPPs are perhaps the best known. They have been promoted by governments ranging across the political spectrum as a means for mobilizing private resources for the construction or renovation of public educational facilities

It is no coincidence that such PPPs have come to the fore at a time of serious constraints on public budgets and restrictions on government borrowings. They seemed to present an innovative way out

of the tension between growing infrastructure needs and flat if not diminishing public resources. Infrastructure PPPs have often been combined with the private operation of public schools, most commonly through the process of build-operate-transfer (BOT). The argument of need for capital is combined with the argument that private management would improve effectiveness. It is precisely this combination of build and operate that gives rise to the greatest concern. In the best of circumstances, the private company will make a profit while the taxpayer, through the government, will defer costs. But these costs will have to be covered at some time in the future, with interest and including the profit margin. So the total cost to the public purse will be greater over time. The report provides specific examples of cases where build-operate-transfer PPPs have resulted in situations nothing short of scandalous for the communities concerned. When facilities have been below standard, avenues for recourse have been limited. Taxpayers have had to pay extra for repairs, and considerably more for the total project than if a standard procurement procedure had been followed. The business logic of private corporations may even lead to the closing of facilities. Risk is not really transferred to the private entrepreneur, because the government obligation to provide education remains. In a nutshell, the arguments advanced in favor of build and operate PPPs simply do not hold up.

Outsourcing of education services raises somewhat different issues. In this case, a clear majority of unions saw such PPPs as providing financial and technical support, while the majorities rejecting the other arguments were smaller. Clearly, however, a great majority of El member organizations saw such PPPs as changing the role of teachers and, especially, changing the ethos of public education. Outsourcing of significant non-educational support services is perceived by fewer unions, albeit still a majority, as affecting the role of teachers. As might be expected, they do change the role of support staff. Most unions rejected the usual arguments advanced by governments as for other types of PPP. Partnerships for innovation and research between industry and either governments or public institutions are applicable especially at the higher education level. While unions are evenly divided as to whether they provide finance and technical support, clear majorities again reject the arguments that they provide greater iscipline in procurement, or financial support for reforms, or that they save public money.

4.CONCLUSION

Thus, the global experience shows that normal development and functioning of modern national innovative system is impossible without public-private partnership in the scientific innovative and educational spheres. The theoretical literature suggests positive and negative outcomes of the private provision of public services. There are many forms of public-private partnership in education of foreign countries and Russia: outsourcing of educational services, financing of educational services, endowment fund and others. Today the public-private partnership is effectively applied in many courtiers such as Great Britain, the USA, Canada, France, Netherlands, Portugal, Australia and Japan. Experience of PPP in Russia less than in many European countries and there many problems of it (political influence on economic decision-making, presence of more qualified personnel in the sphere of business rather than in the state, high level of corruption in the society and so on).

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DEVELOPMENT OF CRITICAL THINKING FOR MEDICAL STUDENTS IN CHEMISTRY COURSE

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Abstract

The goal of education is not to obtain qualification and certain skills for whole life any more since nowadays it is often necessary to change orientation of professional activity or to combine several fields of operation. Placing emphasis on high level of responsibility, professionalism and tendency for improvement is expected from medical students. A continuous flow of information puts medical students in front of a choice between already known and new. It is therefore necessary to think flexibly and to be ready to admit mistakes – it is necessary to be able to think critically. The main characteristic of such style of thinking as an intellectual system is ability to analyze all problems, to form systematic bonds, to distinguish contradictions and their solutions as well as to anticipate possible versions of solutions for given problems since intellectual development is not possible without reflection and critical thinking during the process of problem solving. While studying chemistry, students have an opportunity to use critical thinking methods for certain purposes – investigation of laws of nature. Development of critical thinking therefore is an integral component rather than the goal of medical education. Education method is based on the development of critical thinking during practical work, development of study process organization skills, critical analysis of information, situation modelling, self-assessment and self-dependence.

Key words: *critical thinking, study process, didactic methods.*

1. INTRODUCTION

Orientating a teaching process towards active learning, enriching experience in the exchange of ideas is encouraged both by critical thinking and upbringing of individual and responsible action. Students should be aware of themselves as people who can conceive new information and ideas as well as find their practical application. Today's life's speed puts forward a demand for a person to be competent with profound, professional knowledge and variety of skills. As the amount of information in all spheres of life increases, the necessity for self-education becomes very urgent for every specialist during all his life.

Simply being involved in the process of critical thinking is not enough; it must be done well and should guide the establishment of our beliefs and impact our behaviour or action. Critical thinking is an important aspect of modern education as well as a necessary element for gaining success in information era. Though old standards based on good results of standardized tests are still suitable, they can no longer be the foundation of judging academic success or failure (Huitt, 2006).

2. THEORETICAL ARGUMENTS OF THE METHOD

The goal of general chemistry and biochemistry – teach students to use their knowledge about chemical structure of organism and molecular processes in order to understand explanations they are given, information presented on other courses and to prognosticate processes. This approach solves the problem of outdated information: knowledge of main laws and methods used in chemistry and biochemistry helps students (future doctors) to understand, critically evaluate and use new information in order to solve problems.

First-year students of Rīga Stradiņš University become acquainted with basics of critical thinking during philosophy course. Chemistry and biochemistry courses give an opportunity to practically develop critical thinking skills by analyzing and systematizing information describing chemical processes. Critical thinking therefore transforms from separate study subject into didactic foundation which makes study process of theoretical subjects a much more efficient process.

At the beginning of their studies students are not often sure if they can organize themselves in new circumstances and some of them even can't. A negative attitude to the course which demands hard work is sometimes observed because the students are not sure of their abilities. That is why it is necessary to improve students' individual work skills and their learning experience by paying special attention to the importance of young people's critical and creative thinking. Only personal awareness of the necessity of knowledge is the basis for further education during all his life. Study process is the process of getting information, the way it is processed and the final result of which depends on personal contribution, primary knowledge and motivation.

Only few students beginning their studies in university understand the meaning of critical thinking and analytical evaluation of study subjects. Most rarely use critical thinking as a tool for gaining new knowledge. To stimulate overloaded students to master chemistry at a high level is a difficult task that can only be accomplished by interaction of both sides: a lecturer and a student. Without complex critical approach for evaluating new and contradictory information the problem of low level of knowledge will not be solved. In order for students to gain knowledge during studies it is necessary to predict not only course contents but learning process in action as well. In order for students to think critically they must understand intellectual values expressed as continuous development, discipline and knowledge (Paul, 2001; Elder, 2001).

The most effective didactic methods for development of critical thinking, as the research shows, are:

- Special assignments where students have to verify given facts and determine their precision, errors or discrepancy;
- Situations where students are directed towards intensified analysis of conditions of assignment;
- Lecture materials with incorporated logic based examples which emphasize the unproductiveness of unambiguous assessments;
- Mastering of science based research principles which include promotion of theories, repeated practical testing and statistic processing, result analysis and conclusion drawing.

The ability to think critically is vitally important. Of course we do not do our critical thinking in a vacuum. When we are confronted with a claim, usually we already have a certain amount of information relevant to the issue which allows us to find more information if necessary. It can be obtained by developing reading and listening skills and ability to evaluate arguments and predict consequences of statements. (Moore, 1992).

Dewey defines critical thinking as an 'active process' in contrast to a 'passive process', which is the kind of thinking in which you just receive ideas and information from someone else (Dewey, 1910).

The definition of critical thinking has changed somewhat over the past decade. Originally the dominions of cognitive psychologists and philosophers, behaviourally-oriented psychologists and content specialists have recently joined the discussion. The following are some examples of attempts to define critical thinking: (Huitt, 2006).

- …the ability to analyze facts, generate and organize ideas, defend opinions, make analytical thinking for the purpose of evaluating what is read;
- ...a conscious and deliberate process which is used to interpret or evaluate information and experiences with a set of reflective attitudes and abilities that guide thoughtful beliefs and actions;
- ...active, systematic process of understanding and evaluating arguments. An argument provides an assertion about the properties of some object or the relationship between two or more objects and evidence to support or refute the assertion. Critical thinkers acknowledge that there is no single correct way to understand and evaluate arguments and that all attempts are not necessarily successful;
- ...the intellectually disciplined process of actively and skilfully conceptualizing, applying, analyzing, synthesizing, and/or evaluating information gathered from, or generated by, observation, experience, reflection, reasoning, or communication, as a guide to belief and action;
- Reasonable reflective thinking focused on deciding what to believe or do.

D. Halpern bases her explanation of critical thinking on connection between knowledge and thinking by using which it is possible to create new knowledge form existing knowledge. Goal of her book was formation and development of skills which characterize clear, precise and targeted thinking (Halpern, 2000).

Each of the separate groups has made significant contributions to our understanding of critical thinking. Contributors from the area of cognitive psychology (such as Paul Chance and Richard Mayer) delineate the set of operations and procedures involved in critical thinking. They work to establish the differences between critical thinking and other important aspects of thinking such as creative thinking. Contributors from the area of philosophy (such as Richard Paul) remind us that critical thinking is a process of thinking to a standard. Simply being involved in the process of critical thinking is not enough; it must be done well and should guide the establishment of our beliefs and impact our behaviour or action. Contributors from the area of behavioural psychology help to establish the operational definitions associated with critical thinking. They work to define the subtasks associated with final outcomes and the methodologies teachers can use to shape initial behaviours towards the final outcomes. They also demonstrate how educators can establish the proper contingencies to change behaviour (Huitt, 2006).

In the world of pedagogy there are two basic interpretations - one which explains critical thinking as analytic thinking and which stresses its cognitive aspects (as logical justification and argumentation skills which are necessary for careful reading, analytic reasoning and clear expression of one's thoughts). Thinking skills are an instrument which can be systematically developed.

The second interpretation which begins to appear in theoretical sources from 1998 – 2000 broadens the interpretation of critical thinking. Apart from rational aspect it also mentions emotional aspect as a significant part of critical thinking. Critical thinking is understood as a specific analytically evaluative way of thinking which is tended on realizing the nature of particular subject and which is characterized by autonomy, reflection, contextualism and interest. Critical thinking includes cognitive, social and communication skills as well as rational and emotional aspects. It is important in point of view of human education paradigm to incorporate both aspects in critical thinking concept. By highlighting only the rational aspect, development of thinkers which are not interested in using thinking skills to benefit society is promoted. Position of such person is authoritarian and cannot be thought of as a critically thinking person (Rubene, 2008).

The question regarding whether critical thinking is as a specific quality which is related to specific scientific discipline or is it a universal thinking quality which can be applied in different situations is very significant.

J. McPeck supports opinion that there is no reason to believe that a person which thinks critically within one field will think critically within others. This opinion is very significant in history of critical thinking development and it has cleared critical thinking concept. However there are counterarguments (McPeck, 1990). Another approach is created by theory of R. Paul, broadening explanation of critical thinking – a universal development of principles of reasoning which can be applied to different fields (Paul, (1990). In an effort to clarify the process of critical thinking, wrote that critical thinking is a unique and purposeful form of thinking that is practiced systematically and purposefully. The thinker imposes standards and criteria on the thinking process and uses them to construct thinking (Paul, 1995).

3. **METHODS FOR CRITICAL THINKING DEVELOPMENT**

Main differences in literature describing critical thinking are examples which apply to all real life spheres and stress practical use of critical thinking. Specific elements oriented on real life application were chosen and approbated based on experience. As a result a complex method with linked didactic methods was developed. It was used during first-year student practical works in chemistry. Method is based on development of reflexively evaluated study experience which promotes self-determination in study process and future professional career.

By analyzing different methods for developing critical thinking (both universal and specific) active forms of work (practical work, seminars, dialogs, and presentations) were emphasised.

During work with first-year students, deviations from traditional university methods are necessary since there is a transition period. Different levels of qualification and the need to adjust accordingly increases significance of subjective conditions. It is impossible to demand instant analysis – one of the most significant components of critical thinking – of new information from all students.

In order for will to study to transform into targeted and systematic work it is necessary to transform studying based on exam results into development of personal competence. During discussions with students a lack of future goals is evident thus preventing from realizing that studying is a way of reaching goals. The goal to matriculate is reached but there are no new goals.

For this specific reason a material oriented on self-dependant learning „General chemistry" was developed. It approbated interactive methods for practical works as well as factors promoting self-organization skills and development of critical thinking.

Students are unable to evaluate whether one method derives from another, is it an advancement of already known, is it an illustration or contradiction. During reading facts which derive one from another are not spotted. Technical terms are not connected with real life analogies. In order to solve this contradiction it is useful to create special texts for studying by adjusting them in order to conform to three phase practical work model: suggestion, perception and reflection.

During excitation phase (individual goal determining phase) students actualize existing knowledge regarding study subject, recognize missing knowledge and set individual goals in order to solve the problem.

During comprehensive phase (individual goal realization phase) students evaluate new material, develop personal conceptions and evaluate evidence and arguments necessary in order to discuss the problem.

During reflection phase (personal attitude development phase) students fully understand the problem and are able to analyze their thinking process and problem causes, prognosticate results and draw conclusions as well as to analyze personal mistakes and effort.

Reading, for example, is a macro skill which coordinates several micro skills. Title is the first thing to consider, then comes introduction, then problems or goals of the book. Unclear sentences and interpretations of concepts are considered afterwards. At the same time it is possible to find examples based on personal experience thus validating opinions of the author. These separate steps are joined together in order to create understanding of information read (Paul, 2001; Elder, 2001).

Perception of reading and writing as instruments for development of critical thinking in university is judged very contradictory. E. Volokov criticizes this method and objects against the use of high school methods in university (Volkov, 2009).

Opinion of pedagogues and psychologists which values reflection of writing as an important condition for developing critical thinking skills, for example, theory of L. Vigotsky about relationship between thoughts and language and inner speech, can be mentioned as a counterargument. Written text gives an opportunity to read it again in case of failing to understand it; however it lacks dialogic bond with reader meaning that process of understanding cannot be corrected by changing direction of dialogue and explaining the unclear (Vigotsky, 1982).

This is the skill necessary for obtaining ideas for further consideration and reasoning. However, not enough attention is paid to it both in school and university.

Best methods for text analysis are SQ3R (Halpern, 2000, Huitt,1997). and SQ4R (Huitt,1997). These methods are based on cognitive psychology and they explain how to receive the largest amount of information from books and extramural courses. SQ4R**:**

1. Survey - Read chapter outlines, chapter headings, recaps, objectives, etc.
2. Question - Formulate questions you believe will be addressed in reading
3. Read - Read material quickly, carefully, actively; try to answer previously formulated questions
4. Reflect - Write in journal, make notes, or simply wonder about material
5. Recite - Explain aloud to yourself or another person what you have read; use study guide; answer questions at end of chapter
6. Review - Go back over what you have learned; use study guide; reread recaps, reviews, or end of chapter summaries

Ability to ask thought-out questions is as important as ability to answer. By mastering and using these skills it is much easier to remember and understand information.

Alison King (Table 1) offers questions for guiding thinking process by receiving answers to which it is possible to perform thorough analysis of information (King,1994).

Table 1. Thought directing questions.

Generic questions	Specific thinking skills induced
What are the strengths and weaknesses of … ?	Analysis/ inferencing
What is the difference between … and … ?	Comparison – contrast
Explain why … (Explain how…).	Analysis
What would happen if … ?	Prediction/ hypothesizing
What is the nature of … ?	Analysis
Why is … happening?	Analysis/inferencing
What is a new example of … ?	Application
How could … be used to … ?	Application
What are the implications of … ?	Analysis/ inferencing
What is … analogous to?	Identification of and creation of analogies and metaphors
What do we already know about … ?	Activation of prior knowledge
How does … affect … ?	Analysis of relationship (cause – effect)
How does … tie in with what we learned before?	Activation of prior knowledge
What does … mean?	Analysis
Why is … important?	Analysis of significance
How are … and … similar?	Comparison – contrast
How does … apply to everyday life?	Application to the real world
What is a counterargument for … ?	Rebuttal to argument
What is the best …, and why?	Evaluation and provision of evidence
What is a solution to the problem of … ?	Synthesis of ideas
Compare … and … with regard to … .	Comparison – contrast
What do you think causes … ? Why?	Analysis of relationship (cause – effect)
Do you agree ir disagree to the statement: … ?	Evaluation and provision of evidence
What evidence is there to support your answer?	
What is another way to look at … ?	Taking other perspectives

The goal of questions is to encourage students to follow their way of understanding the read information by "splitting" it into understandable parts to build a general view. The next step in the analysis of information is creation of a monolith idea where graphic organisers are unreplacable.

The use of graphic organizers helps to visualize already known and to add new information as well as to raise argumentation levels. Although reading is by far the most well studied application, science, social studies, language arts, and math are additional content areas that are represented in the research base on graphic organizers. In these subject areas, graphic organizers have been shown to have benefits that extend beyond their well-established effects on reading Operations such as mapping cause and effect, note taking, comparing and contrasting concepts, organizing problems and solutions, and relating information to main ideas or themes can be broadly beneficial.

A graphic organizer is a visual and graphic display that depicts the relationships between facts, terms, and or ideas within a learning task. Graphic organizers are also sometimes referred to as knowledge maps, concept maps, story maps, cognitive organizers, advance organizers, or concept diagrams (Strangman, Hall, Meyer 2009).

1. A Descriptive or Thematic Map works well for mapping generic information, but particularly well for mapping hierarchical relationships.

2. Organizing a hierarchical set of information, reflecting superordinate or subordinate elements, is made easier by constructing a Network Tree.

3. When information contains cause and effect problems and solutions, a Problem and Solution Map can be useful for organizing.

4. A Sequential Episodic Map is useful for mapping cause and effect.

5. A Comparative and Contrastive Map can help students to compare and contrast two concepts according to their features

Lecturers themselves must understand why the selected graphic organizer is appropriate for particular purpose. Only then it is possible to help students understand adequacy of used graphic organizer for systematization of certain facts, ideas and processes

Thought guiding questions in order to focus thinking process:

1. What is my position regarding the subject and which facts, arguments and processes must be understood?

2. Which layout will help to organize material and to show its meaning?

3. What type of graphic organizer will represent the way of understanding the material?

4. Which problems must be emphasized in order to promote thinking process of students (Clarke, 1990).

Graphic organizers analyzed by John H. Clarke are intended for two main purposes. Organization of information which helps students reach conclusion by inductive thinking (graphics "from bottom to top"). Forming hypotheses, making decisions and solving problems using deductive thinking (graphics "from top to bottom") (Clarke, 1990).

Intensification of student thinking process is done gradually by guiding their cognitions toward contradictions. It can be realized by creating problem situations and problem solving exercises.

Creating problem situations is effective only in cases when there is a logical connection with already known. If contradictions between the new and already known cause amazement then there is will to find out more.

J. Dewey highlights „sense of burden" and psychological experience when coming across a problem. In order to solve the problem, J. Dewey suggests a procedure consisting of five steps:

1. Problem description and analysis: "What is the nature of the problem facing the group?"

2. Generation and elaboration of possible solutions: "What might be done to solve the problem we've described?"

3. Evaluation of possible solutions: "What are the probable benefits and possible negative consequences of each proposed solution?"

4. Consensus decision: "What seems to be the best possible solution we can all support?"

5. Implementation of the solution chosen: "How will we put our decision into effect?"(Dewey 1019).

Given tasks included problems which students often solved incorrectly or about which categorical and unproductive conclusions were drawn (conclusions which involve different incompatible solutions). Problem exercises were developed by incorporating already known information which gained different meaning through different point of view. By solving problem exercises students must learn basic principles: statements, consequences, conclusions, problem investigation, evidence an argument presentation, contradiction and imperfection identification. By thinking critically these are not performed as separate operations but rather as complex. Exercise solutions allow evaluating student level of critical thinking.

Development of critical thinking is a long-term process therefore development of evaluation and self-evaluation is a long term process as well. High level critical thinking shows that skills of integrative thinking which are based on logical justified argumentation, criticism and self-evaluation of a professional (university graduate) are obtained (Ennis, 1998, Norris 1998).

Traditional evaluation system concentrates on evaluation of knowledge and skills rather than evaluation of development. Nowadays an emphasis is placed on the importance of self-evaluation.

American education programme and evaluation researcher D. Pratt claims that humanity is the most important aspect of evaluation quality. Careful and human approach to evaluation corresponds to tasks of human reform of education and ecology of environment for development. (Pratt, 2000).

By analyzing experience one must highlight the importance of admitting mistakes rather than the grades themselves. Mistake analysis is one of several steps necessary for self-evaluation. By evaluating study quality students improve their results. An effective self-evaluation process must include two way communications between students and university lecturers. Evaluation of critical thinking can be related with different levels of critical thinking. First-year students cannot evaluate critical thinking as a universal competence which can be applied to problem solving as well as situation analysis. Separate aspects of critical thinking were evaluated – problem solving skills, evaluation of one's own solution variants and evaluation of solution variants given by others.

In order to determine point of reference, students perform tests regarding chemical processes and general thinking operations in the beginning of every semester.

Evaluation of performed work consists of several intermediary evaluations (problem exercises and information analysis) and self-evaluation (questionnaires). Problem exercises and texts provided for information analysis contain information of several “levels”. Depending on drawn conclusions and their justification, a scale for evaluation of critical thinking skills is developed. Intermediary evaluations provide an opportunity to understand necessary corrections. Students evaluated their reasoning and argumentation skills as well as error and cause analyzing skills. They compared their hypotheses regarding processes and results. Intermediary evaluations showed how successfully students solved given didactic tasks of every lesson and how they dealt with study material in general.

Obtained results showed positive tendencies of studying by realizing didactic methods for development of critical thinking. Only 4% of first-year students did not show increase of critical thinking development. Critical thinking as general competence was shown by 17% of first-year students and 79% showed increased critical thinking level (from low in the beginning of semester to medium in the end).

Results of accomplished work are both stimulation to accomplish even more and a material for pedagogic analysis. It is a problem which can be solved by cooperation of students and lecturers. The objective of lecturers is to provide students with interesting opportunities to develop critical thinking skills. It is necessary for students to find subjects they are interested in and methods for studying as well as flexible studying environment.

Results of survey cannot be considered as representative for all first-year students of RSU. However they give an opportunity to evaluate actual situation in faculty of Medicine.

4. CONCLUSIONS

1. Obtained results showed positive tendencies of studying by realizing didactic methods for development of critical thinking
2. Diagnostics are necessary to improve both lecturers’ and students’ work efficiency and quality. The obtained facts are used for development and realization of new didactic principles in order to improve student thinking process.
3. Effectiveness of different didactic models and methods depends on their suitability for each particular subject and situation. Conformity to different studying forms and skills can be considered as promoting factor for positive attitude towards study material.
4. Obtained critical thinking skills can be successfully used for solving problems not only within chemistry course but in other fields as well.

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SOCIAL NETWORKING PRINCIPLES IN EDUCATION AND TRAINING

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Abstract

Now days there are many actors in the area of education and training including many different providers and users of learning. People learn in very different way and for different reasons. Considering all that it is obvious that the mixture of different learning needs, different learning styles, learning methods and learning contents are needed which cannot be implemented by only one training or education provider. There is obviously a need for networking in education - learning opportunities should be created, developed and implemented in partnerships between different providers of education and training..

Key words: *lifelong learning, education, training, partnerships, networking*

INTRODUCTION

Lifelong learning concept is closely linked to continuous education and to continuing education and continuing professional development. The purpose for implementation of LLL is primarily to raise the educational structure of the population and address the competence deficit of the workforce. But, people learn for personal reasons as well, aiming personal development, self-fulfilment and pleasure. Nevertheless, the main reason people participate in the LLL is probably professional development and career opportunities.

There is a variety of lifelong learners. They follow very different purposes for joining an educational or training program. There are young people searching vocational opportunities, employees seeking career development, older participants wishing to improve obsolete knowledge, students searching for practical experiences, individuals looking for information etc. Individual and organisational learners on the other hand follow very different interests, have different learning styles and require different kinds of knowledge. They require different teaching approaches (Jarvis et al., 2006) and search for different types of knowledge (Čater, 2003; Hislop, 2009).

Jarvis et al. (2006) state that there are three main groups of education and training providers: governmental institutions like schools, universities, people's universities etc.; non-governmental organisations like language schools, religious communities, conference centres etc. and numerous enterprises as a part of for-profit sector. In many cases it is difficult to allocate members into one of these three groups, because one provider can be a member of different groups at the same time (Ličen, 2009). According to Coombs (1985) education and training organisations offer three kinds of learning: formal, non-formal and informal.

Ličen (2009) states that in Slovenia people's universities for example adapt education to local needs and offer different formal and non-formal educational programmes, training centres in some larger companies try to improve professional skills of their employees but in some cases also external participants – for example teachers in partner schools (Dermol, 2010), high- schools and universities promote different degrees studies but conducting some practical trainings as well. Secondary schools

and vocational high schools educate young students and prepare them to enter either tertiary level of education or work life (Košir, 2010). There are many other providers of non-formal education as well - private training companies, training centres within employers' associations, centres within different religious communities, trade associations, non-governmental organisations etc

It seems that networks of education and training providers should provide better learning context – paying attention to all kinds of relevant knowledge, respecting knowledge adult learners already possess, basing learning on learners' work experiences, involving mentors etc. Through specialization which improves teaching competences of learning providers and through cooperation between them better learning experience could be offered to learning individuals and organizations.

EXAMPLES OF NETWORKING

In the real world we can identify many examples of networking – between schools, enterprises, different associations, research organisations and also higher education institutions. There are different reasons for establishing networks, but one of the most important is to enhance the transfer of knowledge and encourage learning.

For example, schools which are members of school networks collaborate to solve the problems or issues of mutual concern, which might be too large to be handled by one school only, or they cooperate to enhance school capacity and student learning (Hadfield & Chapman, 2009). When referring to entrepreneurial clustering, some authors focus on »horizontal« nature of relationship between enterprises, which both compete and collaborate with each other. This kind of clusters is typified by the industrial districts of Marshall (1961). »Vertical supply chain« clusters are seen as webs or relationships established between large enterprises and their core suppliers, but relationships develop also among enterprise with common resource base or/and common resource needs on one hand and between enterprises involved in joint innovation (Marceau, 1999). As Marceau (1999) states, effectiveness of the networks is often improved by the presence of some higher education institutions, industrial parks or research institutions.

Different studies show (Brennan, 2005; EUCEN, 2009) that universities establish links with enterprises, associations and other providers of education or training primarily for educational reasons - to upgrade and update the knowledge of employees, specialists and graduates. They suggest that education and training programmes are mostly attended by experts - younger, with higher educational levels, and higher positions in the labour market. Another reason why universities link with others is to improve accessibility of learning and adapt the learning environment to the needs of employed participants. With increased dialogue between universities and employers it is also possible to promote the exchange of knowledge, use infrastructure opportunities and develop appropriate and complementary education and training programmes. Integration can also contribute significantly to the promotion of learning in society.

METHODOLOGY

We have conducted a quantitative survey in the form of interviews, which we wanted to take the situation of formal and informal education in Slovenia and to identify possible links. Questionnaires were sent to addresses all schools, from secondary school to higher education institutions, all public educational enterprises, all the regional development agencies (hereinafter RDAs), all technology parks and technology incubators, some trade unions and a number of companies in Slovenia.

We've received 15.1 % of all submitted questionnaires. Analysis of returned questionnaires was carried out using SPSS software and descriptive statistical methods. Network analysis was done using the program Pajek (Spider) (Batagelj & Mrvar, 1998, 2002; Batagelj & Mrvar). Spider is the open source program for analyzing and visualizing large network (Jackson, 2008; Wassermann & Faust, 1994).

RESULTS

The analysis of the results shows that not all of the regions in Slovenia participate equally in LLL integration. The recognised networks and linkages mostly involve educational, training and business organisations from Central Slovenia and Podravska regions, and slightly less often organisations from the Savinjska and Gorenjska region. Involvement of organisations from other 8 regions, which are geographically more distant from the Central Slovenia region, is very weak. It is interesting to compare these data with the data about gross values added by Slovenian regions. Namely, there is a significant relationship between these values. The highest gross value added is achieved by Central Slovenia and Podravska Region and slightly lower values by the Savinjska and Gorenjska regions.

Other regions' gross values added are significantly lower (*Slovenske regije v številkah*, 2009).

As we noted in the study, colleges, business support institutions (incubators, technology parks and development agencies) and people's universities as adult education providers are the one which most commonly associate with other organizations. Business support institutions and people's universities also attach much greater importance to networking than some other actors. Universities put very high priority to networking, but confess that the amount of established links is relatively small. Commercial enterprises offering education and training, and other Slovenian companies do not attribute greater importance to integration efforts. According to survey findings they are also quite rarely associated with other actors in education and training.

In the analysis of the data we identified a few organizations in education and training which are most strongly associated with others. These are Faculty of Economics in Ljubljana, Slovenian Chamber of Commerce, Faculty of Electrical Engineering and Computer Science in Maribor, the People's University in Jesenice, Faculty of Mechanical Engineering Maribor, College - Vocational school in Velenje and the People's University of Celje.

When we analyze the strength of relations between various types of organizations (e.g. companies, universities, adult education centres, colleges, etc.), we conclude that the strongest links are established between higher education institutions and enterprises. According to survey results it seems that particularly business faculties and some technical faculties are the most strongly associated with the business sector. As we've already mentioned, we noticed especially strong links between business sector and Faculty of Economics in Ljubljana.

Figure 1 shows core of the highest order or the core of the fourth order. These are links within each organization involved in the picture (it has chosen or been chosen by another organization) with at least four other organizations in this core. This was limited to those organizations that have at least one incoming link.

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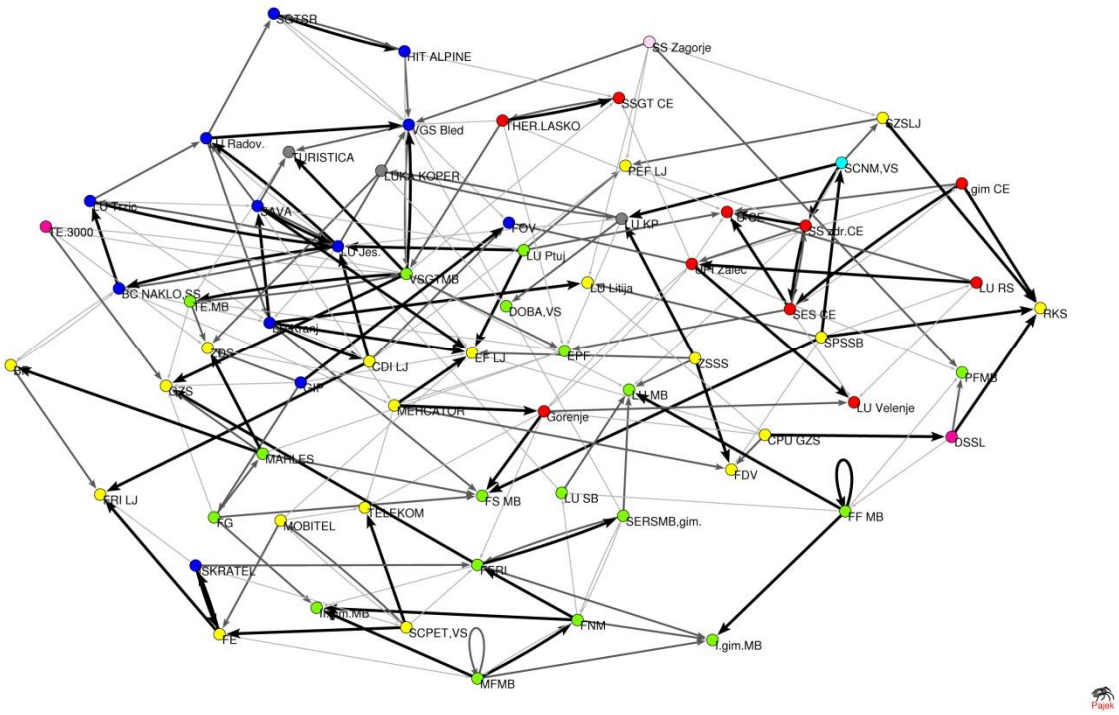

Fig. 1. Core of the highest order as far as the weak component

As can be seen also in Fig. 1 we analysis showed a number of links and networks. On the basis of identified links we can establish the most common criteria of integration. They are also presented in

Table 1:

1) geographic proximity especially in terms of membership of a particular region or urban settlement
2) industry or sectoral activity
3) combination of geographic proximity and industry
4) combination of types of organizations (often associated with each school institutions) and geographic proximity,
5) combination of types of organizations, their sectoral activities and geographical proximity.

Table 1: The review of identified links

geographic proximity	Industry/sectoral activity	type of organisation	Organisations
urban settlement	-	secondary and higher education institutions	various middle and high schools in the inner city areas (humanities, engineering, universal grammar, medicine)
region	electrical engineering and telecommunications	-	secondary schools, colleges and some leading companies
-	hospitality-tourism activities	-	business, hospitality and tourism faculty, some secondary schools, employers, chamber of commerce
-	communication	-	consulting and training companies in the area of communication, school of economics and Business Rhetoric and University of Maribor
region	transportation, distribution and health services	-	Ports, shipping company, Post of Slovenia and various schools related to transport and logistics (two colleges and one university), middle, and high medical school and hospital
region	construction	-	Road company, construction companies, higher vocational school, the Faculty of Organizational Sciences, and the Council of Trade Unions
region		secondary and higher education institutions	Secondary grammar schools, Faculty of Health Sciences, Faculty of Arts and Youth Centre

Through the analysis of LLL providers and their relationships in Slovenia, we discovered some important findings regarding networking and clustering in the area of LLL:

- Universities strongly support integration with other education and training organisations and enterprises.
- Over 90% of universities supports participating of their experts in the implementation of education or training in other educational organisations, but in enterprises there is a weak support for such cooperation.
- Universities while designing and implementing education and training programmes very often cooperate with other educational institutions, on the other hand their involvement in commercial training is much less frequent. The companies, however, avoid any participation in the design and implementation of education and training programmes believing it as an insignificant phenomenon.

- Only about one third of enterprises cooperate with educational institutions (including universities) in the development and preparation of education and training programmes. On the other hand, universities attach much more weight to co-development and co-preparation of educational and training programmes. Accordingly, we find that almost two-thirds of universities are involved in co-developing and co-preparing training programmes with business sector.
- Enterprises that are nevertheless involved in the co-development of education and training programmes, expect that the programmes are work based. In addition they are willing to contribute their infrastructure, latest technology and all the necessary equipment.
- Enterprises, unlike higher education institutions, do not attach a special importance to the opportunities for obtaining ECTS credits or various certificates.
- In Slovenia there is quite an increasing awareness of student placement importance within universities but considerably less within enterprises. In enterprises they attribute slightly higher importance to the existence of student's mentor, and to additional practical training which company offers to students. On the other hand this aspect is quite underestimated in terms of higher education institutions.
- Integration of individuals from businesses, universities and other organizations in the form of project work groups, to share knowledge, solve specific problems, learn, etc. is very rare. This is especially true for businesses, but also among universities such form of integration uses only one third of them.
- Procedures for the recognition of prior experiential learning and encouraging employees to involve in such procedures are relatively widespread in companies and institutions of higher education as well. However, companies are quite holding up to a possible involvement of employees in regular education programmes.
- The e-learning possibilities are fairly widespread among the universities, but not among businesses. Quite often it comes to the cooperation between enterprises and universities, which have the potential of e-learning units. On the other hand, we note that e-learning programmes are usually not ECTS credit validated, nor do they allow access to the regular courses at higher education institutions.

DISCUSSION

In the Slovenian situation it is possible to identify several possible models of networking - geographical model, industry model and homogeneous model. Monotype model, a hybrid model and diffused model could not be identified in Slovenian context. The models are explained in the table 2.

Recognized models of networking should be nurtured further, because one the most important conditions to build a successful netwoprk is to develop it on the basis of already existing links, established informal contacts and a high enough degree of trust between the involved organizations.

In order to build a successful network it is also important to establish a central unit, which would be responsible for the coordination of organizations involved in the network. It is some kind of translator between the higher education and the business environment. The role of this unit is also to establish channels of communication within the organizations involved in the

network. Central unit should act on a regional level or at the level of urban settlement and should be closely bound to universities involved in the network.

Table 2: Models of networking

Model	Geographic proximity	Type of organisation	Industry
Geographical	Proximity	Diversity	Diversity
Industry	Diversification or proximity	Diversity	Similarity
Monotype	Diversification or proximity	Similarity	Diversity
Hybrid	Diversification	Diversity	Diversity
Homogeneous	Proximity	Similarity	Similarity
Diffused	Diversification	Similarity	Similarity

We also identify some of the mechanisms through which universities link with other organizations and with their help design the forms of LLL. We emphasise the importance of short courses, which may carry ECTS credits, but may also provide certain professional certification. Education and training programmes could be custom made, developed together with other organizations, involving external lecturers and trainers. Given the expectations of participants of these types of programmes, they should be very practical and designed in conjunction with their work. Slovenian Higher Education Act actually provides opportunities for the development of short training programs with a minimum 10 ECTS and a maximum 60 ECTS (Higher Education Act, 2006). This is a good opportunity, which may also serve as an integration mechanism to link businesses and educators.

We've already mentioned that experts, professionals and graduates are important participants of LLL, and networking is an opportunity to monitor further development of experts. As shown by the survey among participants of LLL, they are often involved in some kind of education programme within 2 to 5 years after finishing some school. Therefore training programmes could be prepared for them in terms of upgrading the existing knowledge or offering some complementary skills. Case studies of foreign universities in this regard mention alumni clubs, which offer great opportunity to analyse learning needs and design corresponding courses (Law on Higher Education, 2006).

The mechanism, which was mentioned by participants as important when deciding about joining some formal education programme is the recognition of prior experiential learning. It is an important mechanism which also encourages universities to link with other organizations (in particular companies, employers and professional associations, etc.). Implementation of procedures for the recognition of prior experiential learning may be in close conjunction with the central unit responsible for LLL and networking.

It is worth mentioning another mechanism of integration – placement, which is an important part of education programmes. Through the placement universities connect with companies, learn, share knowledge, gain complementary skills for the students and also assist the companies in recruiting, etc.

In addition to practical education and training programmes and links with the work the use of combined and interactive teaching methods appears to be an important framework for LLL. In the first

case a combination of face-to-face instruction and e-learning is used, in the second case, individual learner-driven and interactive teaching methods dominate. Both approaches represent a good opportunity for networking with other educators and business sector on one hand and for meeting the needs of potential participants of LLL on the other.

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