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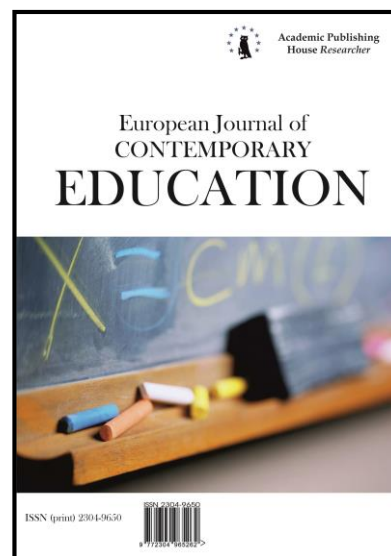
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## Education of Social Skills among Senior High School Age Students in Physical Education Classes

Arturas V. Akelaitis<sup>a,\*</sup>, Romualdas K. Malinauskas<sup>a</sup>

<sup>a</sup> Lithuanian Sports University, Lithuania

### Abstract

Research aim was to reveal peculiarities of the education of social skills among senior high school age students in physical education classes. We hypothesized that after the end of the educational experiment the senior high school age students will have more developed social skills in physical education classes. Participants in the study were 51 pupils of the ninth grade ( $15.15 \pm 0.36$ ). Experimental group consisted of 25 and the control group of 26 senior high school age students. Bulotaite and Gudzinskiene communication skills questionnaire; Social Skills Rating System (Student form); Snaider's social self-control evaluation methods and Legkauskas subjective social adaptation scale were used. Repeated measures (RM) multivariate analysis of variance ( $2 \times 2$  (Group  $\times$  Time) MANOVA) was used in order to analyse the effects of the educational program. During the experiment the applied measures of educational impact had a statistically significant effect on the components of experimental group senior high school age students' communication, cooperation, assertiveness and social adaptation skills in physical education classes.

**Keywords:** social skills, educational program, physical education classes, senior high school age.

### 1. Introduction

Social skills matter, particularly in the educational lives of children and youth (Elliott, Frey, & Davies, 2015). Social skills matter because they facilitate the development of mutually supportive relationships with others and enable academic skills and positive emotional growth (Caprara, Barbaranelli, Pastorelli, Bandura, & Zimbardo, 2000). According to the 2013 Youth Risk Behavior Survey, large percentages of high school students engage in risky behaviours that jeopardize their futures. Furthermore, many students have social-emotional skills deficits that lower their academic

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\* Corresponding author

E-mail addresses: [Arturas\\_akelaitis@hotmail.com](mailto:Arturas_akelaitis@hotmail.com) (A.V. Akelaitis),  
[romas.malinauskas@lsu.lt](mailto:romas.malinauskas@lsu.lt) (R.K. Malinauskas)

performance and disrupt the educational experiences of their peers (Benson, 2006). Students with poor social and emotional skills are more at risk of experiencing learning difficulties and engaging in such behaviours as anti-social behaviour, substance abuse, violence and criminality, and to leave school without any certification or vocational skills, with consequently poor employability opportunities (Adi, Killoran, Janmohamed, & Stewart-Brown, 2007; Bradley, Doolittle, & Bartolotta, 2008; Colman, Murray, Abbott, Maughan, Kuh, Croudace, & Jones, 2009). Students do not know what to do when they get angry, enter the conflict situations or experiencing sadness. This leads to the emergence of addictions, decrease of learning ability, failure to establish a close relationship (Zins, Bloodworth, Weissberg, & Walberg, 2004).

Social and emotional learning is defined as the process through which we recognise and manage emotions, establish healthy relationships, set positive goals, behave ethically and responsibly and avoid negative behaviours (Elias et al., 1997). Numerous reviews and meta-analyses have investigated the effectiveness of social-emotional skills interventions for school-age children across all grades (Zins et al., 2004; Payton et al., 2008; Weare & Nind, 2011; Durlak, Weissberg, Dymnicki, Taylor, & Schellinger, 2011; Slee et al., 2012; Sklad, Diekstra, De Ritter, & Ben, 2012).

Based on reviews of the social skills intervention literature and factor-analytic research for purpose of scale development, Gresham and Elliott (1990) characterized social skills as a multidimensional construct that comprises cooperation, assertion, responsibility, empathy, and social self-control behaviors. Elliott, Frey and Davies (2015) indicated that there are seven fundamental and functional response classes of social skills that can be reliably assessed and targeted for intervention: communication, cooperation, assertion, social self-control, responsibility, engagement and empathy. In our study, we used the following five social skills: communication, cooperation, assertiveness, social self-control and social adaptation.

*Communication* – the process of exchanging information, from the person giving the information through verbal and non-verbal methods, to the person receiving the information (Iksan et al., 2012).

*Cooperation* – includes behaviors such as helping others, sharing things and respecting rules and guidelines (Gresham & Elliott, 1990).

*Assertiveness* – includes behaviors such as asking others for information or responding to the actions of others (Gresham & Elliott, 1990).

*Social self-control* – includes behaviors that are manifested in conflict situations, such as responding appropriately to provocation or in situations where there is no conflict but where it is necessary to compromise attitudes (Gresham & Elliott, 1990).

*Social adaptation* – the ability to adapt to the social environment (Dictionary of Psychology, 1993).

It is therefore particularly important to carry out an investigation of senior high school age students. This age period is attributed to middle adolescence (15–18 years) (Holmbeck, Paikoff, & Brooks-Gunn, 1995). Lithuanian education system involves all senior high school age (9–12 grade) and some eighth grade students in this period. Adolescence is a time of personal and social development that requires a sophisticated repertoire of social – emotional skills for healthy adjustment. Teenagers often face considerable difficulties negotiating the biological, cognitive, and physiological changes associated with puberty (Yurgelun-Todd, 2007). As adolescents increasingly interact with peers, they must simultaneously contend with peer pressure. Teenagers also must navigate the vicissitudes of identity development and the search for purpose and meaning as they transition into adulthood (Erikson, 1993).

Physical education is perhaps the most social of school subjects (Laker, 2000), and physical education lessons involve many varied and intense emotions. Student's character and personality can be tested in competitive games, and the positive management of feelings may be governed by a particular ability (Tugade & Fredrickson, 2001). Contemporary physical education, through its dynamic social nature and its different codes, provides a variety of opportunities for student interaction that requires performance of social skills such as self-control, goal setting, accepting, helping and cooperating with others (Hellison, 2011). Research evidence suggests that quality physical education contribute positively to students' social and moral development (Hellison & Martinek, 2006), fair play behaviour (Vidoni & Ward, 2009), team building, cooperation, and development of social skills (Hunter, 2006).

*Study originality/meaning.* In our country this study is one of few studies which address senior high school age students' education of social skills in physical education classes. In the context of physical culture and sports only middle school age students' social adaptation peculiarities during physical education classes (Klizas, 2010), basketball school students' social skills education peculiarities (Sniras, 2005) and young basketball players' self-efficacy and its education peculiarities (Brusokas, 2014) studies were carried out, however, there is lack of publications that would analyze by senior high school age students' education of social skills in physical education classes. Therefore, this study provides new knowledge of the education of social skills in the field of research.

*Study hypothesis* – after the end of the educational experiment the senior high school age students will have more developed social skills in physical education classes.

*The aim of the study* – to reveal peculiarities of the education of social skills among senior high school age students in physical education classes.

## **2. Research methods**

*Instruments.* To determine senior high school age students' social skills in physical education classes following questionnaires were used:

Bulotaite and Gudznskiene (2003) communication skills questionnaire aimed to students' verbal and non-verbal communication skills assessment. The questionnaire consists of 30 items which students need to assess by the 4-points scale: 1 - „*I fail to do that*”, 2 - „*I do not really lucky*”, 3 - „*I do pretty well*”, 4 - „*I do great success*”. Communication skills composite score is composed of verbal and non-verbal communication skills scores totals. This study research sample Cronbach alpha coefficient was .71, each subscale internal consistency was also tested. Cronbach alpha coefficients ranged from .66 to .77. The Lithuanian version of the communication skills survey questionnaire has a reported internal consistence of .71 (Akelaitis, 2015).

Social Skills Rating System (Student form) (SSRS-S; Gresham & Elliott, 1990), comprising a self-report questionnaire for the 7th to 12th grade levels, consisting of 39 items to which each student responded based on two parameters: the frequency of the behavior and their perceived importance of the behavior. For the 39 items, the assessment method was based on the four dimensions defined by Gresham and Elliott (1990): cooperation, which includes behaviors such as helping others, sharing things and respecting rules and guidelines; assertiveness, which includes behaviors such as asking others for information or responding to the actions of others; empathy, which includes behaviors that show respect for the feelings and points of view of others; and self-control, which includes behaviors that are manifested in conflict situations, such as responding appropriately to provocation or in situations where there is no conflict but where it is necessary to compromise attitudes. In this study, we used only the cooperation (10 items) and assertiveness (9 items) skills intended parts of the questionnaire. Each item is rated on a 3-point frequency scale (0-never, 1-sometimes, 2-many times), based on respondents' perception of the frequency with which they exhibit each behavior. In addition, the questionnaire includes a rating of importance on a 3-point scale (0-not at all important, 1-important, 2-very important). In the current study a Cronbach alpha of .70 was found for the SSRS-S total score (cooperation subscale – .67, assertiveness subscale – .66). The Lithuanian version of the SSRS-S ranges from .66 to .76 (Griciute, Gaizauskiene, & Vysniauskyte-Rimkiene, 2008).

Snaider's social self-control evaluation methods (Rajgorodskij, 2000), consists of 10 items (e.g., “*I can be friendly with people, which I don't like*”) which have to be replied by „yes” or „no”. Points from 7 to 10 show strong social self-control, from 4 to 6 – average, and from 0 to 3 – weak. This study research sample Cronbach alpha coefficient was .66. The Lithuanian version of the Snaider's social self-control evaluation methods has an internal consistency value of .64 (Malinauskas & Malinauskiene, 2004).

Subjective social adaptation scale (SSAS) (Legkauskas, 2000) was used to disclose satisfaction of the respondents with their social relations. The questionnaire consists of 14 items (e.g., “*I have enough friends at school*”), which students need to evaluate by interval Likert scale of 1 to 6, where 1 means „*strongly disagree*” and 6 – „*strongly agree*”. Some of the items (3, 8, 12, 14) were reverse coded. In this study the alpha coefficient was .88. The Lithuanian version of the SSAS has a reported internal consistency of .88 (Legkauskas, 2000).

*Educational experiment* was used as a method to verify the efficiency of the educational programme. The essence of the educational experiment was the social skills enhancing programme (Table 1) for senior high school age students in physical education classes.

*Statistical Analysis.* Research data were statistically processed using *SPSS 18.0 (Statistical Package for Social Sciences)*. Descriptive statistics, means (*M*) and standard deviation (*SD*) were calculated for each of the items of the tests. We calculated the reliability of each dimension given by the index of Cronbach alpha internal consistence. A preliminary analysis used the Student *t* test for independent samples, comparing the experimental group with the control group with the aim of checking whether the two groups were homogeneous. Then, considering the recommendation of Arnau and Bond (2008), repeated measures (RM) multivariate analysis of variance (2 × 2 (Group × Time) MANOVA) was used in order to analyse the effects of the educational program. Wilks's lambda was used to evaluate all multivariate effects; the significance level was set at .05. Effect sizes for *F*-statistics were expressed as partial eta-squared ( $\eta_p^2$ ). According to Tabachnick and Fidell (2007) effect size based on  $\eta_p^2 = .01$  corresponds to a small effect,  $\eta_p^2 = .09$  corresponds to a medium effect, and  $\eta_p^2 = .25$  represents a large effect.

*Sample and procedure.* The educational experiment has been carried out during 2015/2016 academic years. For the educational experiment, the random serial sampling method was used to for an experimental group of 25 and the control group of 26 senior high school age students (overall 51 subjects). There were no significant differences between the experimental (15.14 ± 0.35) and the control (15.15 ± 0.36) groups by age ( $t(49) = -.60; p > .05$ ) and gender (experimental group: 11 boys and 14 girls; control group: 12 boys and 14 girls) ( $\chi^2(1) = .02; p > .05$ ). Both groups of subjects were from the same secondary school of Kaunas district. The educational experiment aimed at evaluating the social skills of senior high school age students in physical education classes before the educational programme and after it. The educational experiment was meant to enhance senior high school age students' social skills in physical education classes. The experimental group participated in educational program of social skills that included thirty-five 15 minutes long (total: 8.75 hours), structural physical education classes. For the each component of social skills to develop, we used the same number of training sessions (7 sessions). Education influence on control group was not applied. Table 1 shows the educational program of social skills for senior high school age students in physical education classes.

**Table 1.** The educational program of social skills for senior high school age students in physical education classes

No.	Educated social skills	Training sessions of social skills	Descriptions of training sessions
1.	Communication	„Giving compliments”	Role playing and having a compliment circle where student can compliment each other about something that they did during the day allows students opportunities to practice using compliments
2.	Cooperation	„Pyramids”	Group members will attempt to build the different types of pyramids using the bodies of all the group members
3.	Assertiveness	„Eye contact”	Students are encouraged to use eye contact while telling their personal stories to the other members of the group
4.	Social self-control	„Green light, red light”	When a student hears the words “Red light!” he’s supposed to stop perform the previous sport exercise

5.	Social adaptation	„Forgive your opponent”	One person dribbles the ball while the other tries to take it away. Student after losing the ball has to say „I'm not mad at you, because you're stronger this time”
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To develop the social skills of senior high school age students in physical education classes we used these stages of education: 1) description of a skill; 2) demonstration; 3) practice; 4) feedback; 5) reinforcement of educated skill. It is necessary describe each of these stages.

*Description of a skill* – during this stage of education the educator (physical education teacher) provides examples of educated social skills.

*Demonstration* – when students learn how to do something new, they acquire new skills or concepts. To support student’s acquisition of new social skills, we need to explain and demonstrate the skill and encourage student as they attempt to learn the skill. Skills can easily be lost at this stage.

*Practice* – once students acquire a new skill, they need to be able to use the skill proficiently or fluently. The educator (physical education teacher) provides multiple opportunities for them to practice and master this skill, as well as prompt students to use their new skills in new situations.

*Feedback* – it is providing information about how successful a student was applying a new skill in a simulated situation, emphasizing how much his/her behaviour coincided with the model’s behaviour. In this stage of education it is particularly important to provide positive social incentive – evaluation, praise.

*Reinforcement of educated skill* – when students apply their new skills to new situations, people, activities, and settings they demonstrate generalized use of these skills. For example, a child might learn a new skill in physical education class and then generalize that skill by using it at home (a different setting) or a student might learn a new skill with a physical education teacher and generalize it by using it with their parents (different people). Students need to be explained in what situations they can apply the developed skill. For this purpose, they are given homework after each training session. The aim of the homework is to reinforce the educated social skill and to encourage applying it in the natural environment (Joseph & Strain, 2004; Bierman, 2004; Vysniauskyte-Rimkiene, 2006; Brusokas, 2014).

We used several methods to teach senior high school age students’ social skills in physical education classes: *modeling appropriate behavior, small groups, agility games and group discussions.*

### 3. Results

Student’s *t* test for independent samples showed that according to the components of social skills, the experimental and the control group before the experiment did not differ significantly: communication ( $t(49) = -.56; p = .58$ ), cooperation ( $t(49) = -.75; p = .46$ ), assertiveness ( $t(49) = -.62; p = .54$ ), social self-control ( $t(49) = .42; p = .68$ ), social adaptation ( $t(49) = -.35; p = .73$ ).

Overall RM MANOVA results showed significant effect of the educational programme on the components of social skills among senior high school age students in physical education classes, i.e. the influence of group by time interaction was significant (Wilks Lambda = .67;  $F(5,45) = 4.37; p = .002; \eta_p^2 = .33$ ).

Univariate tests of RM MANOVA confirmed effects of the educational programme on four components of social skills. After the end of the educational experiment experimental group students demonstrated better communication ( $F(1,49) = 7.03; p < .05; \eta_p^2 = .13$ ), cooperation ( $F(1,49) = 5.05; p < .05; \eta_p^2 = .09$ ), assertiveness ( $F(1,49) = 8.06; p < .01; \eta_p^2 = .14$ ) and social adaptation ( $F(1,49) = 16.31; p < .001; \eta_p^2 = .25$ ) skills in physical education classes. All of these significant changes demonstrate the impact of the educational programme on the social skills among senior high school age students in physical education classes. Univariate tests indicated that there no significant effect of the educational programme on the social self-control skills among senior high school age students in physical education classes ( $p > .05$ ). The results are summarised in Table 2.



**Table 2.** Mean scores of social skills among senior high school age students in physical education classes before and after educational experiment ( $M \pm SD$ )\*

Social skills	Experimental group		Control group		Univariate tests of RM MANOVA		
	Before experiment	After experiment	Before experiment	After experiment	Group $\times$ Time		
					<i>F</i>	<i>p</i>	$\eta_p^2$
Communication	54.84 $\pm$ 13.83	63.00 $\pm$ 9.73	56.65 $\pm$ 8.82	55.31 $\pm$ 3.77	7,03	.011	.13
Cooperation	12.52 $\pm$ 3.95	14.80 $\pm$ 3.00	13.35 $\pm$ 3.96	12.88 $\pm$ 2.41	5,05	.029	.09
Assertiveness	10.96 $\pm$ 3.52	13.32 $\pm$ 2.51	11.58 $\pm$ 3.60	11.00 $\pm$ 2.40	8,06	.007	.14
Social self-control	4.76 $\pm$ 1.48	6.00 $\pm$ 2.08	4.58 $\pm$ 1.65	5.38 $\pm$ 1.47	0,31	.578	.01
Social adaptation	58.48 $\pm$ 9.25	68.16 $\pm$ 10.10	59.38 $\pm$ 9.28	57.81 $\pm$ 6.49	16,31	.000	.25

Notes\*. ( $M \pm SD$ ) – mean and standard deviation; ( $\eta_p^2$ ) – effect size.

#### 4. Discussion

The findings of the educational experiment confirm our research hypothesis that after the end of the educational experiment the senior high school age students will have more developed social skills in physical education classes. It was found that after the end of the educational experiment experimental group students demonstrated better communication (a medium effect,  $\eta_p^2 = .13$ ), cooperation (a medium effect,  $\eta_p^2 = .09$ ), assertiveness (a medium effect,  $\eta_p^2 = .14$ ) and social adaptation (a large effect,  $\eta_p^2 = .25$ ) skills in physical education classes. All of these significant changes demonstrate the impact of the educational programme on the social skills among senior high school age students in physical education classes. This finding was similar to the findings of Ang and Hughes (2002), Alwell and Cobb (2009), Durlak, Weissberg, & Pachan (2010), Durlak and colleagues (2011) whose investigated the effectiveness of social skills interventions (effect sizes ranged from medium ( $\eta_p^2 = .09$ ) to large ( $\eta_p^2 = .26$ )).

In meta-analysis of more than 200 studies of universal, school-based social emotional education programs from primary to secondary school, Durlak and colleagues (2011) also found that students who participated in such programs showed significant improvements in their social and emotional skills (effect size was large, Hedge's  $g = 0.26$ ), attitudes towards school (effect size was medium, Hedge's  $g = 0.11$ ), positive social behavior (effect size was medium, Hedge's  $g = 0.17$ ), academic performance (effect size was large, Hedge's  $g = 0.32$ ) and social relationships as well as a decrease in conduct-related problems (effect size was medium, Hedge's  $g = 0.14$ ) and emotional distress (effect size was medium, Hedge's  $g = 0.15$ ).

Various reviews of studies have found consistent evidence on the positive impact of school-based social emotional education programmes on students of diverse backgrounds and cultures from preschool to secondary school in social and emotional health (Zins et al., 2004; Payton et al., 2008; Weare & Nind, 2011; Durlak et al., 2011; Slee et al., 2012; Sklad et al., 2012). The largest average effect sizes appear to be in social and emotional skills education, but the programs also enhanced academic achievement and reduced internalized and externalized conditions, such as anxiety, depression, substance use and aggressive and antisocial behavior (Payton et al., 2008; Weare & Nind, 2011; Durlak et al., 2011; Slee et al., 2012; Sklad et al., 2012). Weare & Gray (2003) reported a wide range of academic, social and emotional benefits, such as improved positive behavior, better learning and academic progress, improved social cohesion and inclusion and better mental health. Meta-analytical review of 75 experimental or quasi-experimental studies on the effectiveness of universal school-based social emotional education programs in the USA and other parts of the world, including Europe, Sklad and colleagues (2012) reported the overall impact

on all the seven outcomes measured, namely, enhanced social skills, positive self-image, academic achievement, mental health, prosocial behavior, reduced antisocial behavior and substance abuse. Hallam, Rhamie and Shaw (2006) found that the education of social and emotional skills had a significant impact on student's well-being, confidence, social and communication skills, relationships, prosocial behavior and positive attitudes towards school.

*Study limitations.* Limitations of the study is that it analyses only senior high school age students' peculiarities of the education of social skills in physical education classes, although further study is worth to analyse middle or primary school age students' peculiarities of the education of social skills in physical education classes as well and compare data of these age groups students.

## 5. Conclusion

By means of the educational experiment we established the effect of the social skills education programme for senior high school age students in physical education classes on their social skills: during the experiment the applied measures of educational impact had a statistically significant effect on the components of experimental group senior high school age students' communication, cooperation, assertiveness and social adaptation skills.

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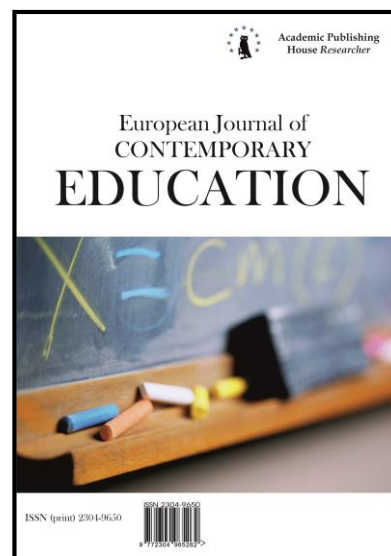
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## How Students Acquire Self-Control: Primary School Teachers' Concepts from Turkey

Bahri Aydin <sup>a</sup>, Rushan Ziatdinov <sup>b, \*</sup>

<sup>a</sup> Department of Educational Sciences, Abant Izzet Baysal University, Turkey

<sup>b</sup> Department of Industrial and Management Engineering, Keimyung University, Republic of Korea

### Abstract

Self-control is a basic skill which enables individuals to be happy and successful, and it can and needs to be improved through education. One of the objectives of maintaining discipline in a classroom is to facilitate students in developing self-control, and the opinions of teachers may be taken into account regarding this. Moreover, teachers have a crucial role in helping students to develop these skills. The aim of our work is to assess how Turkish primary school teachers can help students acquire these skills. The research was conducted using data from one hundred and three primary school teachers from ten schools in Bolu, Turkey, utilising a screening model. Two sample events relating to how students can acquire self-control were given to teachers in a form. The opinions of the teachers were then represented visually as sector charts using a computer algebra system Mathematica v.10, based on the data provided.

**Keywords:** self-control, self-discipline, classroom discipline, teacher behaviour, primary school, classroom management.

### 1. Introduction

The economic, social, cultural and political development of a country depends on the quality of the population the country raises. One of the factors affecting this quality is classroom management by teachers and especially teachers' disciplinary approach in the classroom. Classroom management can be analysed in five dimensions as the physical order of a classroom environment, plan-program activities, activities for time management, arrangement of relationships and the regulation of attitudes (Başar, 1994). There have been many definitions

\* Corresponding author

E-mail addresses: [bahriaydin@ibu.edu.tr](mailto:bahriaydin@ibu.edu.tr) (Bahri Aydin), [rushanziatdinov@gmail.com](mailto:rushanziatdinov@gmail.com) (Rushan Ziatdinov)

within the framework of classroom management in addition to recent significant works in this area by Turkish researchers. With these definitions kept in mind, classroom management enables students to achieve the educational aim of the course (Özyürek, 2001; Gündüz et al.; 2004; Erden, 2008) removes obstacles that prevent teachers and students from studying (Özsoy, 2003; Başar, 1994), provides and sustains an appropriate learning environment for the students (Özsoy, 2003; Karip, 2003; Gündüz et al., 2004), provides supervision and guidance of behaviour (Özyürek, 2001; Çelik, 2002; Erden, 2008), enables students to participate in activities (Özsoy, 2003; Başar, 1994; Şişman, 1999), prevents unfavourable attitudes (Şişman, 1999), maintains motivation (Karip, 2003), enables instructional periods to be used appropriately (Özsoy, 2003; Başar, 1994; Sarıtaş, 2000; Çelik, 2002; Şişman, 1999; Karip 2003), manages resources and students well (Özsoy, 2003) helps interaction to be used effectively (Özyürek, 2001; Sarıtaş, 2000; Karip, 2003), to designate classroom rules (Çelik, 2002; Karip, 2003), arranges the physical environment (Şişman, 1999; Karip 2003; Özyürek, 2001), and it is also instrumental in helping students to control themselves emotionally and behaviourally (Celep, 2000).

To remove obstacles in the way of studying, the supervision and guidance of attitudes, and to prevent unfavourable behaviours is the definition of classroom management in relation to discipline. Discipline is defined as: to teach favorable behavior to the student and make sure that the student practices it (Başaran, 1983). Teacher reaction to student behavior, which disturbs the learning environment and prevents learning experiences (Ünal & Ada, 2000; Karip, 2003), the rules, provisions and precautions that are set in place to provide a harmonious living environment for people who have come together with shared common goals (Sarıtaş, 2000), to get behaviour under control in order to have individuals and groups reach their goals (Büyükkaragöz et al., 1994), to provide education to help people acquire internal control (Başaran, 1989), precautions that are taken to enable people to abide by the general conduct of the society in which they live, and employ behavior appropriate to the rules and law (Demiray, 1980), order that is formed within the individual and effectuated with his/her own will (Eren, 1989), to teach children favorable behavior and habits, and to provide a chance for moral development, which means controlling oneself or developing internal control (Yavuzer, 1998), the teacher's best way of showing reactions to unwanted student behavior (Borich, 1996).

Discipline does not mean punishment. Discipline, which means "to educate" in Latin, is more often used to teach youth to comprehend and develop self-control, and to teach these rules with love and within explicit principles (Thompson, 1996). There have been many definitions of discipline. Some of the concepts which are observed within these definitions may be evaluated. These concepts are: unwanted behavior, the student's self-control, the application of rules, establishment of a learning environment, participation in appropriate learning activities, teacher reaction to unwanted behavior, the increase in the period of learning, and teaching responsibility (Aydın, 2002).

Discipline in classroom has been the topic of many research projects especially in recent years. The reason might be that about two million students a year are suspended from school due to problems in the classroom emanating from their behavior (Allen, 2005) and many teachers leave the profession due to the stress of classroom management (Robbins, 2010). Discipline in traditional classroom management is based on a behavioral approach, and relies on the guidance of a teacher. A system of rewards and results lead the student to behave. This limits the need for self-discipline (Freiberg et al., 2009). However, according to some theorists, it does not explicitly require students to develop self-control, which in time they must learn for themselves. To provide an example, according to a humanist approach, instead of guiding the behavior of students, it is necessary to get rid of the reasons for the poor behavior. In order to do that teachers and administrators must change their perception of a student. The first step in developing student self-control is for teachers to be able to understand events from the perspective of the students (Combs, 1985).

What is the desired human profile? Do we want to raise individuals with limited experiences of creating and taking initiatives, and are submissive and obedient or do we want to develop free thinking individuals who discipline themselves (Freiberg et al., 2009)? Depending on the answer to this question, the perception of maintaining discipline in the classroom will vary.

The objectives of discipline may be defined differently by different researchers. The aim of discipline is not "to punish", but "to teach" students to maintain their self-control (Cummings, 2000). Laursen (2003) talks about two objectives of discipline: "1. To provide children with a safe

and consistent environment where they can learn rational rules, limitations and consequences, 2. To develop self-discipline and self-control”.

The aim of the discipline is to facilitate all students in building better relationships with each other, learning easily, guiding themselves more and taking responsibilities (Charles, 2008). One of the primary aims of a national education system is to develop self-discipline. Self-discipline means individual's undertaking moral responsibilities of his/her own behavior and carry them out with his/her own will (Bear et al., 2008).

When the aims of discipline are analyzed, one the key concepts is self-control. Self-control contributes to a classroom environment where unfavorable behavior does not take place without the intervention of the teacher.

Self-control, disciplining oneself, guiding oneself, auto control, managing oneself, inner control, self-inspection, inner discipline, and self-order are interchangeable concepts. Self-control is a person's ability to overcome basic emotional reactions and instincts. A person with this skill can manage and moderate their emotions. Clear thinking can be employed and the individual person can focus on what to do and achieve the best outcome under pressure (Akbaş, 2006; Okur, 2008).

Just like critical thinking, problem solution, entrepreneurship, and communication, self-control is one of the characteristics expected from the people in modern society. Borba defines moral intelligence as a student's appropriate behavior and one of seven features that provides an individual with the ability to manage pressures that potentially can harm the character of a person (Charles, 2008). These seven basic features are empathy, conscience, self-control, respect, kindness, tolerance and honesty. To Borba, the first three features form the essence of morality.

Self-discipline, that is an individual's knowledge of oneself, is the ability to decide on appropriate action without the necessity of someone intervening. Students must be allowed to make mistakes and learn from them in order to develop and maintain their own discipline, which paves the way for their social and emotional development (Freiberg et al., 2009).

Classes must meet the expectations (innovation, individualism, initiative, self-control) of the new century. Education, in Information Age, is different for our students. It must be built on the principle of mutual respect and interest. It must be focused on teaching students responsibilities and self-discipline (McLeod, 2003). Individuals, whose self-control is high, are more successful in limiting unwanted stimulations, keeping expressions of emotions under control, sustaining attention and fulfilling tasks that are not enjoyable but important for learning (Bertrams & Oliver, 2009). Students are taught certain skills which are social and academic. Self-discipline is perhaps the most significant skills in paving the way for students to be successful (Lane et al., 2004). According to Arıcak et al. (2005), the most reliable way of preserving and maintaining discipline in the classroom is to raise individuals whose self-discipline is developed.

To teach students self-control and responsibility is the most important role of a teacher. These skills are necessary not only in schools but also in democratic social life. Time and effort must be spent to teach our students how to be self-reliant, free and productive individuals in the society (McLeod, 2003).

Students do not come to the classroom with their self-control and self-governance skills completely formed (McLeod, 2003). To Gordon, it is possible for students to develop self-control in the classroom (Charles, 2008). Furthermore, self-control is a characteristic that teachers and parents say “if only, we could gain to our children/students”.

Turkey today is very different from that of previous decades. There have been radical developments and changes in education from the primary school to high school level and wider society as a whole. Students and parents show different characteristics from students and parents of previous generations. Students no longer carry out every instruction given by teachers and parents say and they are no longer accepting of punishment if they do not fulfill what is required of them. Today's generation of students is aware of their rights and does not readily accept authority. Individuality is at the fore. When students are faced with a problem concerning a teacher, the parents use open communication channels. Therefore, teachers must learn, develop and practice new methods of maintaining discipline. Old methods are insufficient in light of the behavior of the new generation. Old problems require new solutions just like new problems demand new approaches. Most importantly these approaches must be a way to maintain self-control of the students.

Aim of the Research: this research aims to designate how teachers can enable their students to acquire the skills of self-control.

Research question: What are the current opinions of teachers regarding the ability of primary school students to maintain self-control?

## 2. Methods

### Participants

The research sample consisted of teachers with a first degree selected from four primary schools in Bolu, Turkey. A total of 103 teachers from 10 schools took part in the research. During the time period in which the study was conducted, compulsory education consisted of 8 years in Turkey. Class teachers taught the grades of 1–5. In grades 6–8, branch teachers would teach. The data in this study was gathered through class teachers in the 1–5 grades. In Bolu, there are almost eight hundred teachers, and sixty elementary schools. The teachers employed in the districts were not included.

### Data Collection Tool

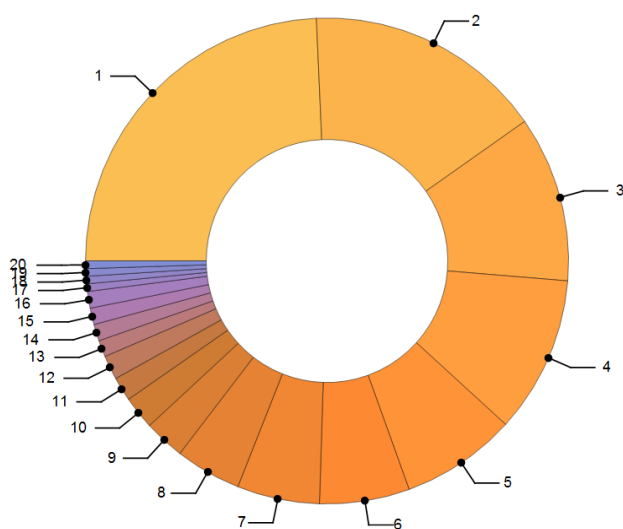
In the research, the primary school teachers were presented with two sample events in relation to students' maintenance of self-control and were then asked as to what type of reactions are to be shown. The first sample events and question was “as a teacher while you are not in the classroom, what do you think is required to be done to in order have your students continue their studies as if, the teacher is in the classroom?”, and the second sample event and question was “as a teacher, what do you think that should be done to have your students go to their desks themselves without their teachers warning them “go in” when the bell rings?”. The researcher distributed the form consisting of the 2 questions to 103 teachers from 10 schools and collected the completed forms.

### Analysis of Data

A Content Analysis method was used to analyse the data set. The statements of the teachers were encoded in the research. Percentages of the encoded statements were illustrated in the captions of the diagrams relating to the figures. There were teachers who answered the two questions completely as well as those who left them blank or gave more than a single answer. Along with a specialist, the researcher carried out the encoding process.

## 3. Findings

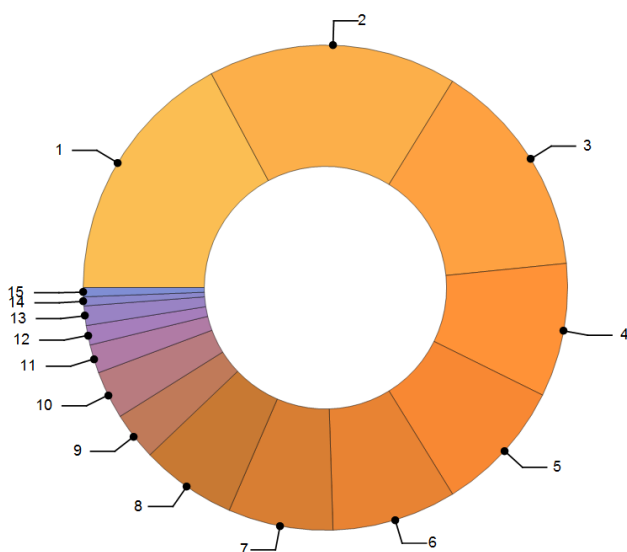
The findings relating to the sample events presented to the teachers are illustrated in Fig. 1 and 2. The first figure shows the opinions of the teachers who asked their students to continue with their work as if the teacher was present in the classroom; the second figure includes opinions about the students who are expected to take their place without a warning to 'go in'.



**Figure 1.** 1. Assigning tasks to students (interesting homework, giving test or worksheet) (24.2 %). 2. Having students acquire sense of responsibility (15.9 %). 3. Having students perceive the significance of the teacher and the activity (11 %). 4. Giving a student or a group the task of supervising (10.4 %). 5. Designating the rules with the students and letting



students adopt the rules (7.7 %). 6. Having students adopt habit recreational activities (6 %). 7. Teaching students what to do when the teacher is not in the classroom (5.5 %). 8. Rewarding students when they complete their tasks (4.4 %). 9. Stating the confidence in students (2.7 %). 10. Explaining that they have no rights to disturb their friends and others in the classroom (2.2 %). 11. Teacher's request from students not to make the teacher upset and that teacher statement that he/she becomes happy when the students behave appropriately (1.6 %). 12. Adopting this habit in Grade-1 (1.6 %). 13. Paying attention to students demonstrating exemplary behavior (1.1 %). 14. Believing that behavior must be taught in the family (1.1 %). 15. Requesting students to remain silent after explaining the reason of not being in the classroom (1.1 %). 16. Preparing classroom environment in a way that appeals to the students (letting them watch slide show, preparing corners of activity applications such as journal, newspaper) (1.1 %). 17. Seeking help of colleagues (0.5 %). 18. Asking them to show empathy (0.5 %). 19. Saying that he/she will come to check (0.5 %). 20. Stating that the behaviors will be evaluated with grades (0.5 %).



**Figure 2.** 1. Preparing classroom rules with the students (17.2 %). 2. Explaining the reason and significance of going in when the bell rings (16.6 %). 3. Rewarding (thanking students coming to class on time) (14.6 %). 4. Having them perceive the significance of going in before the teacher and preparing for the lesson (8.9 %). 5. Making the lesson fun (8.9 %). 6. Punishment (asking the reason by yelling, assigning homework of extra writing) (8.3 %). 7. Adopting this habit in Grade-1 (7 %). 8. Teacher's punctuality in going to class (6.4 %). 9. Having them be aware of using time efficiently (3.2 %). 10. Assigning student(s) in coming to class on time (3.2 %). 11. Typifying the students showing exemplary behavior (1.9 %). 12. Warning students to prepare for the next lesson (1.3 %). 13. Having the tone of bell sound in a way to attract the attention of the students (1.3 %). 14. Continuously checking the students in the process of having the students adopt this behavior (0.6 %). 15. Individual talking to students who do not abide by the behavior (0.6 %).

#### 4. Discussion

Assigning tasks to students while teacher is not present in the classroom may contribute to the students' acquisition of self-control. Students may adopt the skill of self-control by the teacher giving responsibilities to the students first in the classroom and then outside the classroom.

Giving students set tasks such as a test, homework or worksheet is in a way to give students responsibilities. It is important for students to be held responsible for certain behaviors as a way of learning and gaining self-control. Responsibility is child's fulfillment of his/her tasks in accordance with the age, gender and level of development starting from the early childhood ages (Yavuzer, 1998). According to Jones, the teachers, who want their students to gain more sense of responsibility, often assign their students tasks of arranging classroom materials, helping

maintenance of plants and animal care, etc. on a more regular basis (Charles, 2008). When the literary background is analysed, the occasions that allow students to have responsibilities are stated as to helping to designate classroom rules and procedures and additionally to help student obey them. This produces rational results enabling classroom harmony, helping students to participate in designation of academic objectives, choose learning activities, study with groups, study independently in the class, study independently outside the class, evaluate the behaviors of the peers, assist the peers in correcting their behavior, and to take part in class meetings (Duke & Jones, 1985; Yurtal & Yontar, 2006). Yurtal and Yontar (2006) found out in their research that teachers want their students to fulfill individual studies, homework-project and group studies but most of all to adopt a habit of responsibility.

In Aydın's (2009) similar research project on second degree teachers, it can also be seen that assigning tasks and responsibilities to students is one of the primary methods employed in the development their self-control. However, the first degree teachers stated the primary importance of the 'teachers' arrival to class on time and thus being a positive role model along with the use of rewards at the beginning of the process as being of great importance.

Kounin attributes the success of democratic teachers to their unification of independence and responsibility (Charles, 1996). Furthermore, he states that giving responsibility may contribute to the self-discipline. Ginott defines discipline as guiding oneself, a small series of achievements that form responsibility and lead to interest in study (Charles, 1996). Glasser states that self-discipline and responsibility help students to reach the required level of independence (Charles, 1996).

Specificity of rules is a significant device that gives students information about how they are expected to behave in the classroom. However, it is arguable whether the rules are to be set by the teachers or the students. For instance, Canter states that the rules must be set by the teachers and that it is necessary to teach these rules (Charles, 1996). On the other hand, setting the rules with the students input helps students to take responsibility for their behavior (Bakioğlu, 2009). Setting the rules at the beginning of the academic year, in a way, contributes to the self-control of the students.

Teachers also stated that the application of award and punishment systems in help students adopt habits self-control. There are different opinions on the use of reward and punishment. To illustrate this point, Gordon thinks that reward and punishment frameworks are largely devised for external inspection (Charles, 1996). External inspection harms students and inhibits their ability to gain self-control. According to the behavioral approach, self-control can be gained by using reinforce. Here, teachers have to get to know their students and decide as to which is the most effective reaction.

Assigning tasks to a student while the teacher is not in the classroom may cause the deterioration of the relationship between the student and his friends. If the students are to remain silent without doing anything and the assigned student is to write the names of the students, who are talking, "on the board or on a piece of paper" to be submitted to the teacher on their return and then if the students, whose names are listed, receive punishment from the teacher, the relationship between the assigned student and those who receive punishment will worsen. Moreover, assigning a student as an inspector to control other students externally, may not contribute to the acquisition of self-control.

Teachers must be role models to students with their own behavior. To Redl and Wattenberg, one of the key aspects of teaching is to be a role model in the classroom (Charles, 1996). To Ginott, students must maintain discipline themselves before teachers discipline them (Charles, 1996). The teachers' role as a model may contribute to the students' adoption of self-control.

In the research, some of the teachers used the statement of "explaining the reason and significance of going in when the bell rings". However, when teachers tell the students what to do and therefore solve their problems, it may cause students to be dependent on others for their actions. Dependence may harm the students' development of self-control. For instance, a primary school teachers' warning of "it is cold outside, do not forget your jacket" is an explanation and allows them to avoid taking the decision themselves. If on the other hand, a teachers says "look at outside, what should you do in order to protect yourself" it may help students to explore the appropriate solution (Charles, 2008). Additionally, teachers' introducing an element of fun into the decision making process may pave the way for the students to be able to guide their own behavior willingly and thus gain develop self-control.

Bear et al. (2008) recommends the following strategies and techniques to develop self-discipline; unconditional affinity, show respect and support, include adolescents into the process of decision making, include parents in the process, model to students the qualifications and characteristics you desire them to show, take individual differences into account, emphasize that the individual is responsible from his own conduct, use reward and punishment, try to get your students acquire social and emotional efficiencies within the process of teaching, and do not forget that they are adolescent and can only operate within the parameters of their age group.

It is also stated by teachers that self-control must be gained within the family setting. To Erikson, the period between 18 months and 3 years in terms of the student developing feelings of shame/doubt weighed against their own autonomy (Wolfolk, 2007) is critical. This period is the beginning of self-control and self-confidence for the individual. This is the period in which children need to develop skills such as eating and going to bathroom by themselves. If the parents, because of their worries or distractions, use commands such as “do not run, you may fall; do not eat by yourself, you may pour” or “too little he/she may be harmed”. Or if they act on behalf of the children and overprotect, the child may doubt his/her own skills. Furthermore, if autonomy does not develop, the child begins to carry out conducts that his/her parents command, which then prevents the child from adopting self-control.

## 5. Conclusion

This research is aimed at exploring self-control of school students, which is one of the key objectives of maintaining classroom discipline. In the research, opinions of primary school first degree teachers were sought and analyzed.

Self-control is one of the basic skills which helps individuals to be happy and successful, and it needs and can be improved through education. Teachers have a crucial role in enabling students to gain and develop these skills. Teachers may help students to gain self-control skills by giving responsibilities to them, cooperating with students to make classroom rules, helping students to adopt healthy free time habits, explaining the reasons and importance of the expected behavior, and using reward systems.

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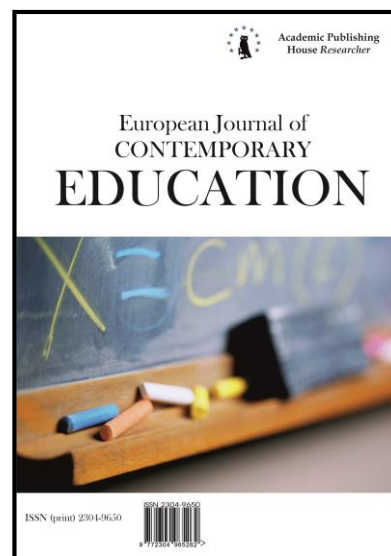
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## The Formation of Elementary Schoolchildren's Cognitive needs at the Lessons of the Russian Language by Means of Subjectivization

Galina A. Bakulina <sup>a, \*</sup>, Liudmila N. Vakhrusheva <sup>a</sup>, Olga B. Shelygina <sup>a</sup>, Svetlana V. Savinova <sup>a</sup>

<sup>a</sup> Vyatka State University, Russian Federation

### Abstract

The purpose of the article is to present of an innovative type of exercises in the Russian language, referred to as the complex intellectual-linguistic. The novelty of these exercises is: a) in an unusual arrangement of linguistic material which creates an educational research situation; b) in giving non-traditional tasks, aimed at simultaneously interconnected intellectual, linguistic and language development of students. The paper theoretically proves the possibility of stimulating effect of complex intellectual and language exercises on the formation of elementary schoolchildren's cognitive abilities; characterizes types of this kind of exercises, discloses the specificity of their composition and use on different stages of the lesson of the Russian language in elementary school, presents the results of their application in the educational process.

**Keywords:** needs, cognitive needs, cognitive interest, complex intellectual-linguistic exercises.

### 1. Introduction

The relevance of the problem investigated is caused by processes taking place in the public life of our country in general and in education in particular (democratization of public life, growing importance of the subjective factor in all spheres of human activity), which highlighted the need for all-round development of the personality of the child, increasing his creativity in the educational process, an active search for effective ways of acquiring knowledge in specific academic disciplines, among which the Russian language takes an important place.

\* Corresponding author

E-mail addresses: [usr11490@vyatsu.ru](mailto:usr11490@vyatsu.ru) (G.A. Bakulina), [l-vahr@yandex.ru](mailto:l-vahr@yandex.ru) (L.N. Vakhrusheva), [usr11344@vyatsu.ru](mailto:usr11344@vyatsu.ru) (O.B. Shelygina), [ssavv@yandex.ru](mailto:ssavv@yandex.ru) (S.V. Savinova)

The need for mental efforts and experiences are inherent to elementary schoolchildren. Socio-biological basis for this phenomenon is a natural process of the child's brain maturation. However, the task of forming cognitive needs of elementary students on this objectively given basis must not be decided spontaneously but through conscious, purposeful actions of the teacher. The main condition for stimulating children's cognitive needs, their rational formation is a learning process organized so that it converts the student in the subject of an active mental activity.

This opportunity is provided by a method of training elementary schoolchildren by means of subjectivity, the work on which was basically completed by the author in 2000. Subjectivity is understood as a qualitatively new level of organizing the educational process, providing a direct, immediate pupil's participation in planning and organizing lessons in the Russian language on all or most structural stages.

Being trained by this method, the student performs several functions simultaneously. On the one hand, he acts in his usual role of a pupil. On the other hand, he is given a part of the teacher's functions. Working on the exercises proposed by the teacher, the student determines and articulates the theme of the lesson, states the content of the calligraphy minute and vocabulary and spelling work and, finally, composes tasks to the exercises accomplished on the next stage (consolidation) and so on. Thus, the pupil acts not only as the object, but also as an active subject of the educational process.

One of the principles of teaching methods by subjectivity means, taking into account the complexity, diversity, relationship of various sides of pupil's intelligence is a multifaceted impact on him, which is realized through implementing complex intellectual-linguistic exercises.

Thus, these exercises provide an opportunity to intensify educational and cognitive activity of elementary schoolchildren by increasing their role in the educational process and, at the same time to intensify a multifaceted, nature aligned effect on his intellect.

The purpose of this article is to give presentational characteristics of the essence, content of complex intellectual-linguistic exercises and techniques of their practical use. Accordingly, the tasks solved by the author are:

- 1) theoretical substantiation of the possibility of forming effectively cognitive needs of elementary schoolchildren at the lessons of the Russian language with the help of complex intellectual-linguistic exercises;
- 2) description of types of complex intellectual-linguistic exercises for various structural phases of the lesson of the Russian language (calligraphy minute, spelling and vocabulary work, consolidation and review of the material studied), disclosing the specificity of their composition and use;
- 3) synthesis of practical results of using complex intellectual-linguistic exercises at the Russian language lessons in elementary school.

## **2. Materials and methods**

During the research the following methods were used:

- 1) theoretical analysis of philosophical, pedagogical, psycholinguistic, methodical literature, which allowed to establish the nature, types, properties of cognitive needs, specificity of their formation in elementary schoolchildren;
- 2) monitoring the process of teaching the Russian language in elementary school, and its understanding to reveal reserves of increasing pupils' cognitive activity in the organization and conduct of the lesson;
- 3) modeling the process of teaching elementary schoolchildren the Russian language on the basis of subjectivity, the integral part of which was the construction of complex intellectual-linguistic exercises and the development of their methodological security;
- 4) pedagogical experiment, which took place from 1998 to 2000 in five secondary schools in the city of Kirov (№№ 17, 28, 53, 61, 70) and which allowed to check the efficiency of teaching elementary schoolchildren the Russian language by means of subjectivity;
- 5) generalization of pedagogical experience of elementary school teachers in the schools of Kirov, Moscow and other regions of the country, who used teaching methods and means of subjectivity, in particular, complex intellectual-linguistic exercises in the educational process.

### 3. Discussions

The concept of the needs in modern Russian scientific literature was considered by many researchers. They highlighted several meanings of the concept: as an object of the environment necessary for the life of the individual (Leontyev, 1975); as a state of mind, reflecting the need for something, the lack of something (Rubinstein, 2000: 529); as a fundamental quality of the person that determines its relation to the objects of the world; as a form of communication with the outside world (Imedadze, 1984); as a program of life (Dodonov, 1973), etc. Regardless the meaning, in which the concept of the needs is used, they are related to the internal intrinsic forces of the organism stimulating him to various forms of activity.

Considering the nature of the needs, as a rule, the socio-historical, objective character of human needs, their qualitative difference from the basic physiological needs of animals and their irreducibility to the last are emphasized. A man is born with a certain range of needs of biological and social origins. Depending on the way of human life and activities, in the process of ontogenetic development his existing needs are improved and at the same time new ones are acquired.

The needs of living beings are extremely diverse. There are different approaches to their classification (Leontiev, 1994). Most typically, three types of needs: biological, social, ideal are distinguished. Biological needs are the needs experienced by the organism in something necessary for its life and located in the environment: food, water, those or other environmental conditions. The activity driven by them always aims at achieving an optimal functioning level of the basic life processes. Biological needs are peculiar to the man and animals, but have an instinctive character for the majority of the latter.

Social needs express the social nature of the man. This is a demand in labor, in communication, in freedom, in public activities. They are aimed at ensuring the interaction with other members of his species. Zoo social needs of animals are allocated as an analogy of social needs (albeit at a lower level).

Ideal (or spiritual) needs – specific education characterizing the level of individual development. These are needs for cognition; the need for novelty; the need to overcome, etc. The meaning of life for a person with well-developed spiritual needs lies in inclusion into creative work.

The effective formation and development of social and spiritual needs are substantially dependent on meeting certain conditions. A.G. Kovalev believes the most important are as follows:

1. The need may arise and strengthen only during certain systematic activity that develops in the personality a habit of a particular type of operation.
2. The need develops upon the condition of its extended reproduction, which is provided by the variety and the development of ways and means to satisfy it.
3. An important condition for the needs development is a transition from reproductive to creative activities, which not only strengthens the positive emotional attitude of the individual, but also leads to the recognition of these activities as the person's calling (Kovalev, 1969: 138-139). The above said applies fully to such kind of spiritual needs as the desire to acquire new knowledge.

A powerful leverage of awakening, forming and developing cognitive needs of the child is interest. As a difficult and very significant for the human formation phenomenon interest has many definitions. It is considered as a manifestation of mental and emotional human activities; as the orientation of the individual concentrated in his/her ideas (attention, thoughts) on a specific object (Rubinstein, 2000); as a specific personal attitude to the object caused by perceiving its vital significance and emotional appeal (Kovalev, 1969); as a special psychological need of the individual in certain objects and activities viewed by the subject as desired experiences and means of achieving the desired objectives (Dodonov, 1978); as a factor stimulating internal efficiency, activity, diligence (Ananiev, 1980); as an active cognitive and emotional relationship of the man to the world (Soloveitchik, 1968); as an integral formation, special quality providing spiritual wealth of the personality helping to select personally meaningful and valuable from the environment (Shchukina, 1988); as a property of the person manifested in a passionate and abiding passion for certain activities (Dodonov, 1973); as a form of motives expression (Markova, 1979), and others.

Our case uses as a working one the definition formulated in the "Russian Pedagogical Encyclopedia": "Interest is the desire to know an object or a phenomenon, to master this or that activity. Interest is one of the most important motivation for acquiring knowledge, expanding views, it is an important condition for a truly creative approach to work." The basis of interest is

human needs ([The Russian Pedagogical, 1993: 373](#)). However, the very formation of cognitive needs depends crucially on how clear the student's interest to the activities related to the mastering new knowledge is pronounced. Interest has a large and diverse effects on human activity. It provides productivity of any of its kind; it gives the opportunity to be engaged in any activity for a long time without reducing the level of fatigability and satiety. Being an expression of the general personal orientation interest covers all mental processes: perception, memory, thinking. Directing them in a certain way it nevertheless activates the individual's work.

People's interests are extremely diverse. They differ in content, focus, stability, efficiency, etc. According to the content and direction public and political, educational, aesthetic, reading, sports interests and others are distinguished. They depend on the object that attracts the individual, and have their own sub varieties. Cognitive interests in the broad sense appear in the form of training and special research interests in specific subjects. However, they are divided into direct and indirect (procedural and process-targeted interests in the terminology proposed by B.I. Dodonov ([Dodonov, 1978](#))). Direct interest presupposes interest in the process of the work itself. Indirect interest is connected with the results of the work. The proper ratio of both types is most favorable for the active work of the individual.

According to the efficiency levels are divided into passive and active. In the first case, the person confines to a simple perception of the object of his interest. An active interest contributes to the beginning of activities aimed at mastering the object of the interest. It is an active interest that serves an effective factor in developing the personality, forming knowledge, skills, abilities and character. Interests are distinguished by their stability. Stable interests are often associated with advanced skills of the individual, a deep awareness of his/her duty and mission. Fixing they become attributes, characteristic features of the person. As for training, then, according to S.L. Rubinstein, interests are both a prerequisite and the result of this process. Therefore, on the one hand, interests are tools used by the teacher to make learning more effective; on the other hand, the formation of cognitive interest is a part and the purpose of teaching ([Rubinstein, 2000](#)).

Pupils' cognitive interest is formed and developed in the educational activity, and it is influenced not only by certain components but by its entire objective-subjective nature: content, organization of educational process and the results obtained.

Stimulation of pupils' cognitive interest through the content of teaching material is ensured by its novelty, updating already known knowledge, practical significance of the knowledge acquired, etc. Cognitive interests are activated through the variety of independent work forms, mastering new methods of training activities, creating problematic situations, including students in educational creative process by selecting manageable, interesting and quite diverse, new in content and form tasks contributing to intense intellectual activity, requiring thought, reasoning, grounding, proof. It stimulates cognitive interests and reduces routine, monotonous, reproductive activity in favor of activities of learning and exploratory nature.

### **Specificity of forming cognitive needs of elementary schoolchildren on different structural phases of the lesson of the Russian language**

The interest to the Russian language as a school subject in terms of its content is originally manifested by elementary schoolchildren to a much lesser extent than to other disciplines of the school cycle, as the students have mastered to a certain extent the object of study – the language – before school. New information is usually far from their life experiences. Introducing students to the latest developments in linguistics, is of some interest to high school students, but is ineffective in primary school. Accordingly, the real source of developing cognitive interests in this case should be educational activity itself which can give good results with its certain reconstruction ([Bakulina, 2000](#)).

#### **Formulating the theme of the Russian language lesson by students**

In the traditional version the theme of the upcoming lesson of the Russian language is formulated by the teacher. However, this function can be delegated to children. This requires creating by the teacher a searching situation which varies at each lesson by its content, students' mental operations, providing diversity, increased attention to the studied material, improving speech and mental abilities. The example of the exercise to determine the topic of the reading lesson by students the first grade.



Writing on the board:

... луг

... лов

... рок

Teacher. Read the words written on the blackboard. Explain their meaning. (Students complete the task).

Teacher. Add to every word the same letter to get three new words. State the topic of the lesson.

Pupil. "П" can be added to each word. We get three new words: *плуг, плов, прок*. So, the topic of the lesson is "Letter "П" and the sounds it represents."

The example of the exercise to determine the topic of the lesson of the Russian language by students the second or third grade.

Proverbs written on the blackboard:

*Горькая правда лучше сладкой лжи.*

*Хлеб – батюшка, водица – матушка.*

*Маленькая ложь большую ведет.*

Teacher. Read aloud the proverbs on the board. (Students complete the task).

Teacher. Unite the two sayings on several grounds simultaneously.

Pupil. It is possible to unite the first and the third proverbs. They have the same meaning: the truth is better than a lie. These proverbs have nouns and adjectives. In the second proverb there are only nouns.

Teacher. Determine what features adjectives used in the first and third proverbs have. State the topic of today's lesson.

Pupil. Adjectives used in the first and in the third proverbs are opposite in their meaning. So, the topic of the lesson is "Adjectives, opposite in meaning"

### **A minute of calligraphy**

Working with complex intellectual-linguistic exercises for a calligraphy, can be supported by introducing multifunctional tasks in the educational process. These are tasks which contribute to interrelated, interdependent linguistic, speech and mental development of elementary schoolchildren. Performing this kind of tasks pupils determine the content of the structural phase of the lesson, improve their knowledge and skills in the field of the language. The development of the most important mental qualities is stimulated: oral coherent speech, logical thinking, the various properties of attention, different types of memory, etc. The role of students in organizing their educational activities increases noticeably. Several groups of exercises can be distinguished here. Exercises of each group are focused on forming certain intellectual qualities of the child.

The first group includes exercises aimed mainly at the development of speech and attention. Example:

"Look carefully at this picture.

Tell me what letter we are going to write at our minute of calligraphy today. You can find it here more often than others. What letter is this and how many times is it shown?"

Possible answer: "Today, we will write the letter P. It is depicted more often than others – to be exact, six times."

Gradually, the number of teacher's leading questions helping to identify the required letter reduces in the tasks of this group of exercises, as in most others. This significantly increases of

Р	Я	У	Х
О			Р
Р			Б
Н	В	Г	Р
Р			
М			

pupils' speech and mental load as in this case they are both to find themselves a correct answer and also tell how they have determined the theme of the minute of calligraphy. In this case, the content of the teacher's task and student's response are changed. The teacher's task may be: "Take a good look at this picture. Tell me what letter we are going to write at our minute of calligraphy? How have you defined it and how many times is it shown?" A possible answer: " Today at the

minute of calligraphy, we will write the letter P. To find it, we have determined what the letter is shown in the picture more often than others. It counts six times. "

The second group includes exercises aimed primarily at the development of analytical and synthetic thinking and speech abilities. Example: "Take a good look at the series of letters: *m n κ e η*. Tell me what letter we are going to write at our minute of calligraphy today? In this series, there is an odd letter. Explain why?" "A possible answer: "Today we are going to write the letter "e". In this series, this letter is odd because it is a vowel, and the rest letters are consonants. "

The third group consists of exercises, where the emphasis is put on the development of abstract thinking and speaking. Example: " You'll determine the letter, which we are going to write today, decoding this record:

5 3 1  
Д В ?

A possible answer: "Letter Д comes fifth in the alphabet, letter В is the third. The first letter is А. So, today we are going to write letter А".

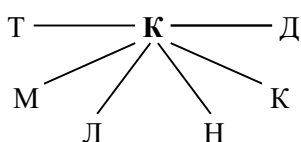
The fourth group consists of exercises aimed at the development of speech, the ability to compare, to compare and find the general from the particular linguistic phenomena, to abstract. Example:

Б	О	Р	Т
З	У	Б	Р
О	Б	О	З
Б	О	Р	Ш

"Read the words written in the square. Compare them with each other. Determine what letter we are going to write at our minute of calligraphy today and explain why?"

Possible answer: "In every word of this square there is letter "б". So, today we are going to write letter "б".

The fifth group includes exercises focused primarily on the development of linguistic intuition, speech, quick wits. Example: "You can find the letter, which we are going to write at our minute of calligraphy in every word in this scheme. What letter is this? In what words of this scheme can it be seen?"



Possible answer: "Today, we will write letter "о". It is found in all the words of this scheme: *ком, ком, кол, кон, кок, код*".

Doing exercises of the fourth and fifth groups after the formulating the theme of the minute of calligraphy by children, it is necessary to familiarize them with the lexical meaning of new words. But in this case, the first word should be given to pupils. At the teacher's request they say words unknown to them and try to explain what it means. The teacher, if necessary, clarifies or corrects children's responses.

The sixth group consists of exercise, the main purpose of which is the development of speech, intuition and quick wits. Example: "Define the letter, which we are going to write at the minute of calligraphy, focusing on the series:

П, В, С, Ч, П, С .... Explain your answer. "

Possible answer: "In this series, the first letters of the names of days of the week are written: понедельник – П, вторник – В, etc. After суббота comes воскресенье. The word "воскресенье" begins with letter В. So today we'll write letter "В". Likewise, you can encrypt the names of numbers, months, make series, consisting only of vowels in the forward and reverse alphabetical order; consisting of consonants in the forward and reverse alphabetical order; consisting of letters of the alphabet, going through one, two, three, etc.; consisting of letters of the alphabet, going from its beginning or the end, etc.

The seventh group of exercises deals with giving specifications of the required letter and sounds which it denotes. Example: "Define the letter, which we are going to write at our minute of calligraphy; it is found in each of these words (the words written on the blackboard: *енот, сетка,*

*ежуха, пенал*) and can divide them into two equal groups. What letter is this? What two groups can it divide the words into?" Possible answer: "Today at the moment of calligraphy, we will write letter "e". It is found in each of these words. But in the words "сетка", "пенал" it denotes sound [э]. This is the first group of words. In the words "енот", "ежуха" there are two sounds [й], [э] - this is the second group."

The eighth group of exercises includes partial phonetic analysis. Example: "Read the words written on the board: *бумага, гуря, ряд*. Identify the letter that we are going to write at the minute of calligraphy today. In one word, it refers to the vocal pair soft pair consonant. What is the letter? In which word is it?" Possible answer: "Today we are going to write letter "з". It is in the word "гуря" and here it is a vocal pair soft pair consonant. "

Doing this kind of tasks search begins with finding the letters in one word composed of not more than three or four letters. Gradually, pupils move to finding a letter in the word consisting of a larger number of letters. Further complication is done by gradually increasing the amount of initial words, one of which is with the desired letter. The words are chosen in such a way that each of them has the letter giving a sound that is different from the desired in one indicator.

The ninth group of exercises include of morphological segmentation of words. Example: "Define the letter that we are going to write at the minute of calligraphy. It is found in the root of each of these words. What is the letter?" The words: *закваска, подголосок, мясистый*.

Possible answer: "Today, we will write letter "с ". It is in the root *квас* of the word "закваска", in the root *голос* of the word "подголосок"; in the root *-мяс* of the word "мясистый". Selection of words in the given group of exercises begins with two units, each of which has one or two components. Gradually the number of words increases and their structure is complicated.

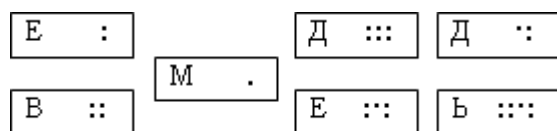
The tenth group of exercises is connected with partial morphological analysis. Example: "Read these words aloud. Determine what letter we are going to write at the minute of calligraphy. It refers to the same orthograms in all nouns of this series: *детский, тростник, лестница, вестник, отвечаю, местность, трудный*. What is the letter?" Possible answer: "Today, we will write the letter "т". In all nouns of this series: *тростник, лестница, вестник, местность*, it is a silent consonants ". Selection of words in this group of exercises starts with two or three units of one part of speech. Gradually the number of words and the variety of parts of speech increase.

### Conducting spelling-vocabulary work

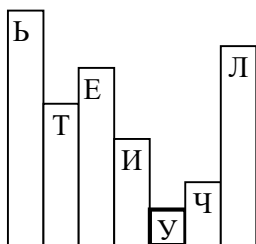
On the basis of completing complex intellectual-linguistic exercises pupils independently determine and formulate the topic of spelling and vocabulary tasks. This activity is aimed at the development of pupil's mental abilities, the intensification of the speech process, and a significant increase of its role in the presentation of a new "hard" word. All exercises are arranged in groups, each having its own distinctive, characteristic features.

The first group includes exercises involving the identification of the desired word through the work with its constituent letters. When doing these children develop attention span, distribution and scope, short-term arbitrary memory, language, analytical and synthetic thinking. For example, the teacher suggests: "Identify and name the new dictionary word, which we will learn at the lesson. To do this, place the rectangles in the order of increasing the number of points in each of them and connect the letters available in them".

Gradually, the number of the teacher's specific instructions to help pupils determine the required word is reduced. So, the teacher says: "You will be able to name the new word which we will learn in the classroom, if you find a rectangle with its first letter and set the sequence of the other letters of the desired word:



Searched word  
«МЕДВЕДЬ»



What word have you read and how did you do it?" A possible answer: "We read the word "учитель". We started with a rectangle that is highlighted brighter than others. It is the smallest one. Further we searched higher rectangles and connected letters written in them. "

While developing the ability to complete tasks with a limited number of oral instructions, the teacher introduces exercises providing their complete lack into the educational process. For example, the teacher suggests the pupils: "Take a good look at this writing and identify the two words which we will learn the lesson:

О З А Б В Т Е Р А Д К

What are these words? How did you find them?" Possible answer: "Today we'll learn the words "завтрак" and "обед". To determine them, we had to connect the letters with points on the top. Then combine letters with points at the bottom".

The second group consists of exercises, providing pupils' work with symbols, ciphers, codes. They allow to develop abstract thinking and along with it to improve a number of other mental qualities. Example: "What are the two words which we'll learn at the lesson? They are encrypted with the numbers.

The first word: 3,1,11,6,12,13,1

The second word 3, 1.5, 13, 4, 7, 10, 9, 8.

Each number corresponds to a certain letter:

What are these words? "(Searched words are "капуста" and "картофель")

1	2	3	4	5	6	7	8	9	10	11	12	13
А	Г	К	О	Р	У	Ф	Ь	Л	Е	П	С	Т

The third group includes exercises linking the searched word with the studied linguistic material. In this case versatility and efficiency of their use increases significantly. Depending on the content of the material, the didactic purpose set by the teacher in the classroom, there may be a variety of options. Example of the task to consolidate knowledge on phonetics, "Cross out letters for deaf consonants in the chain, and you'll learn a word, which well learn at the lesson

ПФБКТХЕШСРЧЁЦЗЦА

(Searched word «берёза»)

In order to improve spelling vigilance when studying various topics of the course of the Russian language, the teacher can use such a task: "Read the writing on the board: *выд...вить, охр...нять, б..лезнь, кр...ситель, зн...чение, умн...жать, аб...жур, сл...мался, л...скает.* Connect the first letters of the words written with vowel "а" in the root, and you'll know the words which we will learn at the lesson" (Searched word "вокзал".)

For further development of the basic properties of attention and memory tasks of this type gradually become more complex due to the growing number guidelines when searching for the original word. For example, the teacher reads word combinations: *скалистая местность, пожарная служба, морская глубина, вагонная дверь, обтачная ткань, багряная рябина, окаменелая почва, далекая деревня, дорогое украшение, акварельная краска.*

He offers children a task: "Write the word combinations. Connect the first letters of feminine adjectives, the root of which is written with unstressed vowel "a", and you will learn a new word from the dictionary". (Searched word "свобода".)

The following example organically combines a variety of activities: an unconventional phonetic analysis, partial morphological segmentation of the word, work on spelling, etc., in the process of which spelling skills are improved, multidimensional analytical and synthetic work is carried out, attention scope and focus, operational memory are developed. For example, the teacher says: "You can call the new word which we will learn at the lesson if you complete my tasks correctly to identify the letters of the desired word.

Task 1. The first letter is the consonant in the third syllable of the word «*солома*».

Task 2. The second letter indicates the unverifiable unstressed vowel in the word «*песок*».

Task 3. The third letter indicates the voiceless pair soft consonant in the word «*вернуть*».

Task 4. The fourth letter is the last in the root of the word «*север*».

Task 5. The fifth letter is the ending in the word «*яблоко*».

An additional advantage of this group methods is that their use enhances pupils' knowledge and skills of the studied topics of the Russian language and does not require unforeseen time-consuming, since these exercises are nothing other than the non-traditional kinds of vocabulary dictations, parse, creative works, which are simply transferred from one structural phase of the lesson to another.

To further increase children's cognitive activity the exercises based on developing logical thinking are used. The teacher can offer this type of task: "You can name the new word from the dictionary, which we will learn at the lesson, if you determine the nature of the semantic relation between the words in these pairs:

магазин – продавец

больница – врач

театр – актер

космический корабль – ?

What is the semantic relationship between words of each pair? What word will we learn at the lesson?" Possible answer: "In each pair, the first word refers to the place of work, the second – to the associated profession. In the store there is a seller, in the hospital - a doctor, in the theater - an actor, on a spaceship – an astronaut. So, today we will get acquainted with the word "astronaut".

### **Consolidating the studied material**

Consolidating the studied material is done by means of complex intellectual and linguistic exercises. The complexity of this type of exercises has many aspects. Firstly, it is expressed in the fact that they stimulate pupils' mental and linguistic development at the same time. Secondly, the formation of each of the two components is also carried out comprehensively. With regard to pupil's intelligence these exercises intensify the development of a number of its qualities (attention, memory, thinking, speech, etc.). In its turn, pupils acquire linguistic knowledge, skills during the active speech and mental activity. At the same time while doing each assignment the pupil makes several mental operations (e.g., comparison, grouping, generalization) and involves different kinds of speech: internal and external, oral and written, monologue and dialogue.

Complex influence on the pupil's consciousness in this kind of exercise is implemented through a specific set and unusual layout of the language material, as well as through non-traditional setting of the tasks. Let's consider typical kinds of complex exercises used at the lessons of the Russian language.

Exercise 1. Formed complex: speech, attention span, analytical and synthetic thinking, quick wits, the ability to construct arguments, the ability to group. Example task on the topic "Introduction to the syllable": Read; instead of a question mark pick the right word; Justify the answer. Write words by grouping them according to the theme of the lesson:

вода            куст            нора

крот            роса            ?

Exercise 2. Formed complex: speech, attention span and allocation, the ability to carry out comparison operations, the ability to construct arguments. Example task on the topic "Capital letters in the names and surnames of people": Read the words in the left and right columns. Write in the line words missing in the right column. Find an odd one among them. Justify your answer.

(М, м)аршак (П, п)оэт  
 (П, п)оэт (М, м)ихаил  
 (А, а)лексей (Б, б)орисов  
 (Р, р)епин (С, с)ергей  
 (С, с)емёнов (И, и)ванов

Exercise 3. Formed complex: speech, attention span, logical thinking, abstract thinking, the ability to find concepts of the same type, analytical and synthetic thinking, the ability to group. Example task on the topic "The number of nouns": Read. Combine these words in pairs on species basis. Write down the pairs changing the number of nouns. Underline the endings.

*баран, корова, овца, лошадь, свинья, кабан, бык, конь*

Exercise 4. Formed complex: speech, attention span, logical thinking, the ability to generalize, the ability to give definitions of concepts. Example task on the topic "Soft sign at the end of nouns after a hushing sound": Fill in the gaps of the definitions appropriate by the meaning words. Write down the sentences. Insert the missing letters, open the brackets.

*Врач(ь, -) – это ... , который ... .  
 Карандаш(ь, -) – это ... , которым ... .  
 Скрипач(ь, -) – это ... , который ... .  
 Ландыш(ь, -) – это ... , который ...*

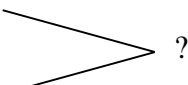
Exercise 5. Formed complex: speech, attention span, logical thinking, abstract thinking, the ability to generalize, the ability to determine the sequence of concepts submission. Example task on the topic "The number of nouns": Read. Organize the words and phrases of each line in the table according to the model. Specify the gender and number of nouns.

Narrow concept	Middle concept	Wide concept
<i>резиновые сапоги</i>	<i>сапоги</i>	<i>обувь</i>

*одежда, шуба, зимняя одежда;  
 кукла, матрешка, игрушка;  
 кустарник, орешник, растение;  
 шапка, головной убор, меховая шапка.*

Exercise 6. Formed complex: speech, attention span and focus, logical thinking, the ability to move to a higher level of generalization, abstraction by means of a comparative analysis of the two items, the ability to classify. Example task on the topic "The number of nouns": Read. Compare the pairs words with the same number. Find the exact name to each pair, and then give one common name to the two. Specify the gender and number of nouns.

*куры, индюки – ?  
 канарейка, соловей – ?*



Exercise 7. Formed complex: speech, attention span and focus, logical thinking, analytical and synthetic thinking, the ability to determine the sequence between objects and phenomena in space and time, to trace cause-effect relationships. Example task on the topic "Gender of nouns": Read the words. Name an object or phenomenon which preceded in time the object or phenomenon denoted with the given word. Write down the pairs of words. Determine the gender of nouns.

*осень – ... вата – ...  
 корова – ... бабочка – ...  
 кефир – ... металл – ...*

Exercise 8. Formed complex: speech, attention span and scope, logical thinking, analytical and synthetic thinking, the ability to establish the sequence of events, creative imagination. Example task on the topic "Changing verbs by tenses": Read the first and last sentence of each chain. Make two missing links reflecting the sequence of events. Write down the links. Find the common features of the verbs.

*1. Поднялся ветер. 2. \_\_\_\_\_ . 3. \_\_\_\_\_ . 4. Деревья обнажились*

Exercise 9. Formed complex: speech, attention span and focus, logical thinking, analytical and synthetic skills, ability to establish cause-effect relationships between objects and phenomena. Example task on the topic "Spelling unstressed vowels in the root of the word." In each pair of the sentences one indicates the cause of a phenomenon, and the other is its consequence (result). Determine what role each sentence plays and write them in the following order: first the cause, then the effect. When writing sentences, avoiding the repetition of the same words, replace them with others of similar meaning.

*Сова и филин охотятся ночью. Дневной свет для глаз совы и филина ярок и неприятен.*

*Муравьи приносят лесу большую пользу. Муравьи уничтожают личинок вредных насекомых.*

### Conclusion

Thus, the use of complex intellectual-linguistic exercises on the major structural phases of the Russian language lesson in elementary school, according to teachers-practitioners (Vshivtseva, 2000; Dembitskaya, 2006; Obukhova, 2000), has a number of advantages.

It provides a high level of cooperation between the teacher and the pupil. The teacher doesn't just declare and externally demonstrate respect to the pupil's personality; without losing the overall management of the educational process he delegates pupils a part of his educational and organizational functions in reality. The implementation of the latter really turns the pupil from an object into a subject of educational and cognitive activities. Joint activities of the teacher and the pupil at the minutes of calligraphy, spelling and vocabulary work, etc. has another important aspect. The learning process turns into intellectual creativity, suggesting their parallel (though in different ways) personal development for both. At the same time the practical application of the proposed exercises requires teachers' additional time and effort. However, experience shows that these costs are paid back in a certain sense by the joy of creative labor, experienced by their wards, and those results in studies they achieve.

Pupils' interest to the subject grows, their attitude to training sessions changes to the better, tendency to show their active participation in cognitive activities manifests clearly. On the whole pupils' general intellectual and language development of students intensifies (Obukhova, 2006; Teplyakova, 2006; Ushakova, 2011).

The article may be useful for practicing elementary school teachers, methodologists, students of pedagogical universities, graduate and postgraduates students engaged in the study of this problem.

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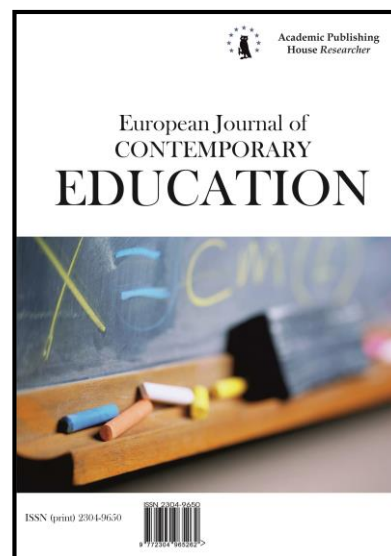
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## Curricular Transformation of Education in the Field of Physical and Sport Education in Slovakia

Elena Bendíková <sup>a</sup>

<sup>a</sup>Matej Bel University, Banská Bystrica, Slovakia

### Abstract

The study presents basic information on the curricular transformation of physical and sport education in Slovakia after the year 1989, which is related to the education process in the 21<sup>st</sup> century. What is more, it points to the basis for modern transformation in relation to sports as well as to insufficient undergraduate teacher training and its consequences for the performance of newly qualified teachers. These findings are partially included in the grant VEGA no. 1/0376/14 Physical Activity Intervention for the Prevention of Health of the Population of Slovakia.

**Keywords:** Physical and Sport Education, Teacher, Transformation, Education, Pupil.

### 1. Introduction

One of the priorities of every person is taking care of their health. Health is a category protection of which is embedded in law. In the Slovak Republic, it is the Act No. 355/2007 on Protection, Support and Development of Public Health. Unlike in the past, these days individual responsibility for one's own health is being more and more emphasized. In the past, health was determined largely by an influence of biological factors. However, today it is being more and more affected by social factors. Health cannot be gained as a genetically determined and constant condition. The genetic basis is only a biological potential that can develop in a positive or a negative way (Bendíková, 2014).

The contemporary lifestyle has become hypokinetic. Insufficient physical activity may lead to "lifestyle diseases", which can have far-reaching effect on health in the school population in Slovakia. As a result, the curriculum transformation process at primary and secondary schools has been more intensive since the beginning of the millennium. This process includes changes in the content and concept of the physical education syllabi. Nowadays, teaching of physical education at schools in Slovakia falls behind other subjects in terms of quality and quantity. However, this is the problem that also other European Union member states are facing. This is related to civilization

development and process in which physical activity is becoming neglected due to other priorities such as individualism, new technologies and inactivity. In this regard, health benefits of physical activity must be regarded as the basis for changes in understanding of physical and sport education in modern education process.

### **Materials and Methods**

The research method of the present study is the systematic review.

## **2. The basis for the modern transformation of physical education after the year 1989**

Transformation of the educational system in terms of curricula, organization and management required changes in education acts, related binding regulations and new legal rules in consideration of current international documents and recommendations regarding education and training. In the years 1991, 1994 and 1996, proposals of *the new concept of the educational system development* were made. However, they were not approved and implemented globally. In 2002, a new concept called *Millennium – National Programme of Education and Training for the Next 15–20 years* was approved as the basis for a new act on education and training in primary and secondary schools in the Slovak Republic (*the National Education and Training Programme, 2001*). Proposal of education law was a subject to open discussion and it was supposed to be adopted by the end of 2004. Even though transformation and innovation of the educational system was based also on several documents of the Commission of the European Communities and the European Council ([Lisbon, 2000](#); [Göteborg, 2001](#); [Barcelona, 2002](#); [Copenhagen, 2002](#); [Maastricht, 2004](#) and [the world summits on physical education in Magglingen 2005](#)), some long-term tasks were not fulfilled on time or were fulfilled only partially. The basic objective was for education and training to be a priority in practical policy of the state and to be one of the decisive factors of social and economic development. However, this objective was not attained. Despite establishment of self-governing bodies, it was not possible to achieve more efficient support from social partners of schools and their active participation in education and training and its management. The educational system did not receive enough funds to secure the required level of material and technical conditions for its development and operation. These funds were even reduced. As a result, the schools had run into debt and lacked especially modern information technologies. Salaries of teaching staff have fallen far behind and they do not reach average salaries in other sectors. Consequently, qualified teachers are leaving schools and the qualification structure of teachers and professionalism in teaching are deteriorating. Proposals of new educational concepts (1991, 1994, 1996) and proposals of new education law for primary and secondary schools were not approved and implementation of the Millennium concept was delayed. Scientific and pedagogical research and creative use of foreign knowledge and experience necessary for solution of strategic tasks of the educational system were not adequately developed either ([Bendíková, 2012](#)).

*New education act in Slovakia.* In 2008, the Ministry of Education, Science, Research and Sport of the Slovak Republic proposed a new education act, which was adopted by the National Council of the Slovak Republic on 22 May 2008. On 19 June 2008, the *National Education Programme (NEP)* was approved at the session of the Ministry of Education. This programme determined general objectives for schools, educational curricula and standards for individual educational stages specified by the International Standard Classification of Education (ISCED) according to UNESCO, which is binding in the European Union and accepted also by other international organisations (e. g. OECD) ([Table 1](#)) ([Bendíková, 2012](#)).

On 1 September 2008, a new Education Act came into effect. This started the education reform in kindergartens and at primary and secondary schools. The national education programme for individual educational stages is published by the Ministry of Education, Science, Research and Sport of the Slovak Republic. According to the new education act, the national education programme is the hierarchically highest education project, which includes graduate profiles, curricula for individual stages and their particular syllabi. This programme is the first two-level framework of school participatory management. What is more, it is the basis for development of individual *education programme* for schools.

**Table 1.** International standard classification ISCED in Slovakia

<b>Stages ISCED</b>	<b>Educational stages- description</b>	<b>the Slovak educational system</b>
<b>ISCED 0</b>	Pre-primary education – all kinds of education preceding the primary educational stage	Education provided in kindergartens.
<b>ISCED 1</b>	Primary education – education at primary level	1 <sup>st</sup> stage of primary school (grade 1–4).
<b>ISCED 2</b>	Lower secondary education – education at lower secondary level. It is a continuation of primary education prior to higher secondary education.	2 <sup>nd</sup> stage of primary school (grade 5–9) and lower grades of four-year and eight-year gymnasia and music schools (until the grade that corresponds with the 9 <sup>th</sup> grade).
ISCED 2A	2 <sup>nd</sup> stage of primary school	
ISCED 2B	Complete compulsory education within incomplete vocational education	
ISCED 2C	Training in a particular field	
<b>ISCED 3</b>	Higher secondary education – education that follows completion of lower secondary education before entering the tertiary stage	Higher secondary education includes four-year gymnasia and higher grades of eight-year gymnasia (general education), secondary technical schools (including higher grades of music schools) and secondary vocational schools (vocational training).
ISCED 3A	Secondary (general) education with school-leaving certificate (gymnasia)	
ISCED 3B	Secondary technical education with school-leaving certificate	
ISCED 3C	Secondary technical education	

Besides the national programme, the model education programmes for schools along with methodology of their development were adopted. The national education programme should present approximately 70 % of the curriculum and it should be binding for schools. Education programmes for schools should present about 30 % of the curriculum and schools develop them according to their specializations, traditions, personnel and school-goers' interests (Antala, Labudová, 2006; Bendíková, 2012). As a result, every school has an opportunity to offer an education programme with its own structure of subjects and its own curriculum, which is approved by the subject committee for physical and sport education. The curriculum and the subjects are included in the school operation plan. Until now, all schools have followed the curricula adopted by the state. These curricula contained defined education goals and syllabi for individual subjects. The national education programme contains (curricular) fields of education (areas of educational content and development of key competences). The education fields have interdisciplinary character. The national education programme divides education into selected school subjects. Schools can add other subjects to individual fields of education. Lower secondary education comprises *eight fields of education*, which are based on definitions of curricula and key competences.

*Compulsory subjects in individual fields of education* (for lower secondary education they are divided into eight fields)

FIELD OF EDUCATION	SUBJECTS
LANGUAGE AND COMMUNICATION	SLOVAK LANGUAGE AND LITERATURE
	FIRST FOREIGN LANGUAGE
	SECOND FOREIGN LANGUAGE
MATHEMATICS AND WORK WITH INFORMATION	MATHEMATICS
	INFORMATION TECHNOLOGY
MAN AND NATURE	PHYSICS
	CHEMISTRY
	BIOLOGY
MAN AND SOCIETY	HISTORY
	GEOGRAPHY
	CIVICS
MAN AND VALUES	ETHICAL EDUCATION
	RELIGIOUS EDUCATION
	PSYCHOLOGICAL AND SOCIAL TRAINING
MAN AND CULTURE	ART
	MUSIC
	EDUCATION THROUGH ART
MAN AND WORLD OF WORK	THE WORLD OF WORK, TECHNOLOGIES
<b>HEALTH AND PHYSICAL ACTIVITY</b>	PHYSICAL AND SPORT EDUCATION

Besides school subjects, the education programme also defines interdisciplinary topics that occur in all the fields of educations. These topics are obligatory components of education curricula. They can be implemented in several ways, for example as an integrated part of curricula for individual fields of education and adequate school subjects or as a separate school subject taught within extending classes (when schools are building their profile). Other effective and suitable forms are projects (their duration corresponds with the number of classes allocated to a particular topic) or a course. However, interdisciplinary topics and their teaching can become effective only when activating and interactive teaching methods are used. Every school decides on how and when the interdisciplinary topics will be taught.

The National Education Programme introduced the following *interdisciplinary topics* at the lower level of secondary education:

- *Multicultural education*
- *Media education*
- *Personal and social development*
- *Environmental education*
- *Traffic education – safety in road traffic*
- *Protection of life and health*
- *Development of projects and presentation skills*

There are seven fields of education for the higher level of secondary education.

*Compulsory subjects in individual fields of education*

FIELD OF EDUCATION	SUBJECTS
LANGUAGE AND COMMUNICATION	SLOVAK LANGUAGE AND LITERATURE
	FIRST FOREIGN LANGUAGE
	SECOND FOREIGN LANGUAGE
MATHEMATICS AND WORK WITH INFORMATION	MATHEMATICS
	INFORMATION TECHNOLOGY
MAN AND NATURE	PHYSICS
	CHEMISTRY
	BIOLOGY

MAN AND SOCIETY	HISTORY
	GEOGRAPHY
	CIVICS
MAN AND VALUES	ETHICS/RELIGION
	RELIGIOUS EDUCATION
	PSYCHOLOGICAL AND SOCIAL TRAINING
ART AND CULTURE	ART AND CULTURE
HEALTH AND PHYSICAL ACTIVITY	PHYSICAL AND SPORT EDUCATION

The National Education Programme introduced the following interdisciplinary topics at the higher level of secondary education:

- *Multicultural education*
- *Media education*
- *Personal and social development*
- *Environmental education*
- *Protection of life and health*
- *Development of projects and presentation skills*

Teaching of physical education has undergone the following significant changes (Antala, 2009; Bendíková, 2012):

↳ *Change in the name of the subject.* Within the education reform, the subject physical education was renamed to physical and sport education (PSE) at the 2<sup>nd</sup> stage of primary schools and at secondary schools, while at the first stage of primary education its name remained the same.

↳ *Curriculum of physical and sport education* was included in the field of education called *Health and Physical Activity*, which sets objectives of the subject as well as individual key and subject competences: *motor, cognitive, communication, learning, interpersonal, attitude.*

↳ *Diversity of the PSE curriculum.* Traditional content has been replaced by new modules. *The curriculum* is divided into four modules, all of which have their defined objectives:

1. *Health and its disorders.*
2. *Healthy lifestyle.*
3. *Fitness and motor performance.*
4. *Sports activities within the workout routine.*

The output of these modules should be motor competence along with an integrated attitude towards physical activity, sports and health care in everyday life.

*Changes in the focus and goals of physical and sport education.* As far as the goals of physical and sport education are concerned, there has been the shift from performance-oriented teaching towards development of individual competences, values and attitudes. Much more emphasis is being placed on health care and healthy lifestyle – physical and sport education should connect knowledge, habits, attitudes, abilities and skills regarding physical activity, sports, health and healthy lifestyle, which are developed through physical and sport education classes.

↳ The latest education reform 2008 determined *the minimum number of two* classes for physical and sport education. That means that there are 66 classes in a school year cycle in all grades. The education programme provides a possibility to extend this number to three or even more classes per week (Antala, 2009) (Table 2).

In this regard, Bendíková (2009a, 2009b) draws attention to the fact that two compulsory classes of physical education were introduced under Maria Theresa's rule. The basis of the physical and sport education curriculum at primary schools is the thematic units divided into basic and optional, whereas at secondary schools teachers develop programmes for individual groups of students in each grade while implementing the following individual modules (Labudová, Nemček, 2009; Bendíková, 2012):

**Table 2.** Numbers of compulsory physical and sport education classes

<b>Educational stage</b>	<b>1990 number of classes/week</b>	<b>1997 number of classes/week</b>	<b>2008 number of classes/week</b>
<b>1<sup>st</sup> stage of PS</b>	3 classes	3 classes	2 classes + possibility of EPS
<b>2<sup>nd</sup> stage of PS</b>	3 classes	3 classes	2 classes + possibility of EPS
<b>secondary schools</b>	2–3 classes	2–3 classes	2 classes + possibility of EPS

Legend: EPS – education programme for schools, PS – primary school

*Health and its disorders* – students acquire knowledge continuously during school classes. Teachers can use one or two theoretical classes in each year for this purpose. Physical activity related to this module makes up about 10 % of the total education content.

*Healthy lifestyle* – students acquire knowledge continuously during school classes. Teachers can use one or two theoretical classes in each year for this purpose. Physical activity related to this module makes up about 10 % of the total education content.

*Fitness and motor performance* – recommended allotment for this module is up to 30 % of the total number of classes in each year and it is applied continuously or by means of block teaching. During the four-year study, all motor skills should gradually develop by means of different sports activities included in the fourth module.

*Sports activities within the workout routine* – this module makes up about 50 % of the total number of classes. In each grade, teachers choose at least two of the areas included in this module. They try to choose sports activities which their school is equipped for, which pupils are interested in, which are traditional for the school or which the teachers are specialized in. Outdoor sports activities should be done at least twice in four years (for example as a skiing or snowboarding course, advanced swimming course, etc.). All the four areas should be done in the course of our years. We suggest including different activities in the first and second term, especially in the first year, and using a wide choice of physical activities.

### 3. Discussion

From the earliest days until now, sports as well as physical education at schools have undergone plenty of social and economic changes the significance of which depended on a particular historical period. What is more, sport has developed into a dynamic economic branch making up three percent of the world market. Movement, physical activity, physical education and sports came into existence along with the man and they are changing and developing along with people in the way that is characteristic for each individual period. Problems related to sports in Slovakia are vague and their solution brings about long discussions about positive and negative effects on people and the society. Let us raise a question that regards physical and sport education at schools and professional sports. Is physical and sport education at schools a dominant and primary basis for professional sports? Isn't it a kind of Achilles' heel of sports in Slovakia? Professional sports develop from the base, in which many officials in charge do not look for innovations. They just try to implement the old system in a new form and with new terminology, which is also the case of the current education reform that was done hastily. Physical and sport education should support life philosophy, provide space for meaningful leisure time, help develop pupil's and student's personality in terms of health and social relationships and it should also help fight against intolerance, racism and drugs. If this is true, why are strong elements of centralism still prevalent in physical and sport education at schools? This centralism is a relic of the past and it is still insensitively transferred into the new modern environment without considering significant social changes in our country. Slovakia has naturally a limited base for sports. Therefore, its quality must be the highest possible. It is based on physical and sport education at schools, which is an (in) exhaustible talent pool for professional sports. As a result, it is necessary to synchronise physical

education at schools with the training of children and adolescents at centres for talented youth, which means to improve cooperation with sports associations in Slovakia.

Research in Slovakia points to deteriorating general motor skills and physical condition and fitness of pupils as well as worsening health oriented fitness (Bendíková, 2012; Labudová et al., 2012; Labudová et al., 2015). Consequently, this might have a negative impact on economy as well as health and social policy of the state in several aspects. We, therefore, believe that the current transformation of physical and sport education in Slovakia, including education in modules, makes it possible for pupils and students to engage in physical activity aimed at improving their health and physical condition and mainly increasing their interest in physical activity (Antala, Labudová, 2006). This might be achieved by pupils' active attitude towards their own health, by giving them a chance to present their own opinions and physical activities as well as by development of individual fitness programmes. Such steps can lead to crucial cooperation between theory and practice, where physical and sport education directly or indirectly enables diversification and implementation of innovative curricula (Bendíková, 2009a).

Liberalized curricula of physical and sport education make teachers select new untraditional physical activities and, thus, diversify their choice. One of the benefits of the education programme for schools should be more diverse classes (exercise with fitness balls, overball, expanders, baseball and flowin, pilates, zumba aerolates, indiacca, tchoukball, floorball, speed badminton, rope skipping...), which have a positive impact on physical, functional, motor, social and mental development of pupils (health-oriented physical fitness).

In quality and quantity terms, the school is one of the decisive factors influencing preferences of its pupils (Bendíková, 2009b). Lack of interest in physical activity and physical and sport education at schools is also caused by insufficient revitalisation and innovation of the curricula. Consequently, there is a growing number of lifestyle diseases in school population. Physical and sport education and its development should reflect and respect leisure time preferences of children and adolescents. New concept of this school subject requires "breaking" of contemporary "traditional" management of the teaching process and changes in its structure. Effective methods of teaching applied along with traditional teaching techniques include creative activities and methods focused on experience, emotions, positive attitude towards physical activity as well as the role of pupils and students in a teaching process. Pedagogy based on positive experience and leisure time is gaining ground. Therefore, physical and sport education teachers should apply different types of motivation and emphasize health benefits of particular exercises while using adequately selected didactic methods.

Extent of curriculum liberalization depends especially on physical and sport education teachers, on their qualifications and theoretical and practical capabilities, their assertiveness in relation to other subjects, diversified choice and, last but not least, on pupils' interests. All these liberalization elements require further education of teachers and development of teaching materials and basic documents for pedagogical practice. Undergraduate education of teachers is focused on general knowledge that does not correspond with reality in the field of education and training. Furthermore, this education has its shortcomings that have been well known in theory and practice and at some faculties of teacher training in Slovakia they are accepted and remedied by new teacher training curricula and new organization of teaching practice. Validation and suitability of teacher training make space for revitalisation of study programmes, which are the core of professional identity and status of teachers. This process requires taking theory into practical physical education lessons. Therefore, undergraduate and further training of teachers needs to be reformed. What is more, practical experience shows that most of physical education teachers were not trained at universities how to apply experience-based teaching, since ten or twenty years ago teacher training was focused on delivering and measuring performance during physical education classes.

The concept of a new attitude towards the teaching profession should be based on a system that will ensure teachers' professional growth and increase their competences and quality of their performance. These are opinions expressed by graduates. Quality of teachers and support for their work are the most important requirements within the curricular reform. Nowadays, the teacher training focuses on competences such as goals of the teaching process based on questions "how, why, when ...", which should be included in competences of graduates from faculties of teacher

training. These competences ought to be connected with qualification, psychological and diagnostic, communication, diagnostic, planning, organizational, advisory, consultation and self-reflection capabilities.

#### 4. Conclusion

Even though the current reform of the school system is being implemented at different levels and has different forms, it will be necessary to add the latest scientific knowledge to mandatory curriculum of physical and sport education. Such knowledge can make education and training more effective, which should lead to improved competences of pupils with focus on their health. All these changes should result in modern education and training, where the school plays a decisive role in leisure time preferences of pupils along with the family and where motivation sets pupils for certain goals, orientation and physical activity and, thus, makes them follow their aspirations.

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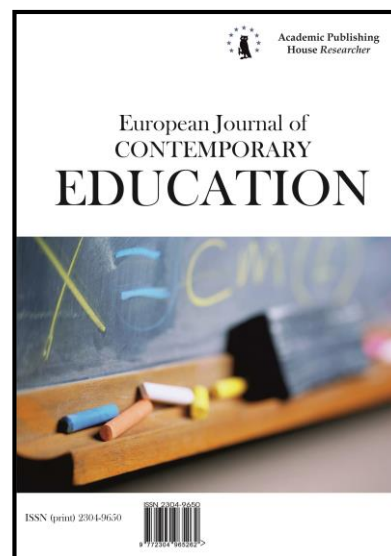
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## Public Education in the Russian Empire during the Last Third of the XIX Century: Parish Schools

Aleksandr A. Cherkasov <sup>a,\*</sup>, Michal Smigel <sup>b</sup>

<sup>a</sup> International Network Center for Fundamental and Applied Research, Russian Federation

<sup>b</sup> Matej Bel University, Slovakia

### Abstract

The article deals with the parish schools development in Russia in the last third of the XIX century. Particular attention is paid to the analysis of the church school development during the period of office of I. D. Delyanov as the Minister of Education (1880–1890) and the transition of the parish and peasant literacy schools under the jurisdiction of the Holy Synod, thus giving the primary education an ecclesiastical character. The measures taken by the government and by the Synod in order to raise the parish educational level, the place of the parish schools in the educational process (spiritual, moral and intellectual education) and the contribution towards reducing the illiteracy of the population are considered in this work.

The works of the researchers of late XIX – early XXI centuries are used as materials. The materials of the periodical press are the most essential, for example, the “Pribavleniya k tserkovnym vedomostyam”. Personal materials, such as letters and recollections were also used in the work.

In conclusion, the authors sum up that in the last third of the XIX century the parish school underwent a complex transformation and became an important part of the pre-revolutionary national educational system. Due to this it was involved in the educational activities, especially for children.

**Keywords:** parish schools, church school, the Russian Orthodox Church, The Holy Synod, the primary public education, the Ministry of Education, I. D. Delyanov, the Russian Empire.

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\* Corresponding author

E-mail addresses: [sochi003@rambler.ru](mailto:sochi003@rambler.ru) (A.A. Cherkasov), [michal.smigel@umb.sk](mailto:michal.smigel@umb.sk) (M. Smigel)

## 1. Introduction

The beginnings of literacy in Russia and their progress took place since the acceptance of Christianity and were spread out with the direct participation of the Russian Orthodox Church. The classes were held at the monasteries and in the church parishes, conducted by priests, monks and clergies (Miropol'skii, 2011: VI-VII). This order lasted for centuries until Peter I (1682–1725) reformed all the spheres of the Russian society. Under Peter I the public education came under the control of the government and the result benefited the nobility, however the educational situation was deteriorated for the majority of population. The centralized program of establishing the state system of the primary public education was missing until the rule of Catherine II (1762–1796).

The organization of primary public education was initiated by the decree of Catherine II on February 16 (27), 1781. The school reform was carried out in 1782–1786 (the "Plan of the Austrian educational system" of 1774 taken as a model). In 1786 the "Charter of public schools" was adopted, proclaiming the goals and objectives of the public education, first achieved by the religious education, and after – by the "civil" one. Thus the government reiterates its appeal to involve the Russian Orthodox Church in public educational activities. Three types of secondary schools were established in Russia by the beginning of the XIX century: small (2-forms), middle (3-forms) and main (4-forms) comprehensive schools.

On the accession of Emperor Paul I (1796–1801) the further implementation of the reform provisions were carried out, which did not lead to any great changes in the educational system. In 1800, in order to meet the demands of the Holy Synod, the Emperor opened public schools with a traditional set of religious subjects: Reading, Writing, Brief catechism, Brief holy history, Regulations and Singing.

After Empress Catherine II, Emperor Alexander I (1801–1825) continued to spread the ideas of humanism. In 1802 the Ministry of Public Education was established by the Decree of Emperor Alexander I. The publication of the "Charter of schools, subordinated to the universities" (November, 5, 1804) was the result of the educational reforms of 1803–1804, which determined the four kinds of schools to be established for the Russian Empire citizens: parish schools, district schools, provincial schools or gymnasiums, universities. Education was to be free and available to all classes. At the same time the priests were not employed in the state schools. The "Charter" (1804) stated that the priests were to be involved in the primary education, but the parish school was considered to be an administrative and territorial unit, not a church subordinate (as it was controlled by the Ministry of Education through the county schools' superintendent) (Yashchenko, 2015: 146, 148). At the same time, the opening of the parish schools on the landowners' territory was the duty of the landowner, and on the state owned land – the duty of the clergy. The landowners rarely opened schools for their serfs, and on state owned lands no support to parish schools from secular authorities was provided (State interest was mainly focused on the district and provincial schools' system and was funded from the Treasury), consequently, the parish school maintenance was carried out by the parish priest and on the expense of the local population (Bychkova, 2009: 13-14).

A new political setting was formulated during the reign of Nicholas I (1825–1855), focusing on the further development of the national system of upbringing and education. Nicholas I centred on the spread of religious education, which contributed to the strengthening of the Russian Orthodox Church in the public education. In particular, the necessity of the studies of Russian language and Orthodox disciplines was emphasized. The spread of literacy among the non-Russian population of the Empire was a separate area of the internal policy. In 1828 a new "Charter of gymnasiums and schools system, administered by universities" was published. It was the main act that defined the organization of the primary education during the reign of Nicholas I. In 1833, count S. S. Uvarov was appointed the Minister of Public Education position and designed an ideological educational doctrine, based on the three main principles: orthodoxy, autocracy and national character. Minister Uvarov sought to raise education in Russia to the European level, preserving Russian traditions and national education superiority over the foreign one (Yashchenko, 2015: 147).

The Holy Synod Decree on October 20, 1836 was to fill in the gaps of the parish schools "Charter" of 1828, and emphasized that "the primary education of village children was the duty of the parish clergy" (Bychkova, 2009: 15-16).

The network of primary schools in Russia grew gradually. If by the end of the first quarter of the XIX century there were 349 parish schools, by the year 1841 their number grew up to 1021, and in 1858 – up to 2270, situated mostly in the cities (Konstantinov i dr., 1982). By the Imperial decree of 1842 the Ministry of State Property was instructed to provide financial support for the opening of the parish schools (Bychkova, 2009: 15-16). Meanwhile, before 1861 the clergy established 18587 primary schools (Plekhanov, 2007: 70), which later got the name of "parish schools" (as well as the "priest schools", "church schools", "schools for the peasants' children").

In the second half of the XIX century the primary education structure was the main problem in the relations of the Holy Synod and the Ministry of Public Education.

Under the influence of the social movement of the 1860s the Imperial government was forced to carry out the peasant (the abolition of serfdom), judicial, military, rural and school reforms. First of all, the abolition of serfdom in 1861 contributed to the increase of the parish schools. According to some reports, about 21400 parish schools were opened only by the initiative of the clergy during the period from 1859 to 1865 (Vasil'kova, Vasil'kova, 2000: 158). However, the struggle to transfer the parish schools under the Ministry of Education erupted in Russia in the 1860s. At this time the disputes on the public school curriculum gained a wide public resonance. The intelligentsia (and later the Zemstvos) considered it necessary to bring public school to the European standards, criticized parish schools for their religious restrictions, advocated a scientific learning approach, as well as the need to update the educational content and to introduce new subjects (Sidorov, 2006: 29). The Synod tried to keep the Orthodox Church school free from the influence of Western Europe and offered a general model of primary national education in Russia. The clerical authority addressed this issue to the government in 1859.

Since the beginning of 1860 the Ministers of Public Education E. P. Kovalevsky (1858–1861) and A. V. Golovnin (1862–1866) tried to lobby all the primary schools transfer under the Ministry of Public Education administration. They also specified the introduction of the universal primary education in Russia. The action taken by Alexander II was indecisive. The public schools were to be administrated by the establishing authorities, as it was stated by the highest order on January 18, 1862. The parish schools were administrated by the Synod, and their establishment was entrusted to the Ministry of Public Education on the agreement with the relevant authorities. The authority of the Synod and the Ministry in relation to the primary school was not specified, leaving a broad field for rivalry.

In legislative terms the question of the primary public education foundation was raised again in 1864. According to the Zemstvo reform on January 1, 1864, the Zemstvos were given the right to open, administrate and manage local schools. The Zemstvo school, that acquired considerable independence from the state and the Church, was the most notable result of the Educational Reforms of the 1860s (Kalachev, 2011: 23).

"Regulations for the primary public schools" was later adopted on June, 14, 1864. It referred to the schools of all departments – the Ministry of Public Education, the Holy Synod (parish schools) and others. According to the "Regulations" all schools, regardless the department to which they belonged, had a unified curriculum (Law of God, Church and Civil lectures, Writing, Arithmetic, Choir) (Bychkova, 2009: 16). Although the religious and moral education played the main goal of primary public schools, the parish schools, however, were administrated by the school boards. The school boards consisted of the Ministry of Education and Internal Affairs officials, as well as the representatives of institutions that supported schools financially. The diocesan hierarch was appointed the provincial school boards chairman as a compromise with the clergy office.

According to A. V. Kalachev: "The church lost this battle during the second half of the 60–70s. The church school, unsecured and left in disgrace was unable to withstand the Zemstvo's financial possibilities and the influence of high society administration. In fact, the clergy was on the sidelines in the primary education. Parish schools gradually began to decline, disappear, and many were transferred under the Zemstvos' full authority. According to the report of the Synod Procurator, there were 21,420 parish schools in 1865, and only 4,348 left in 1880. Many of these schools languished" (Kalachev, 2011: 23-24). However in rural areas, despite the disorder, poverty and lack of parish schools, and often even the impossibility to attend them due to the distance, the peasants mostly preferred parish schools (Bychkova, 2009: 17).

The new Minister of Education D. A. Tolstoy (1866–1880) combined his post with the duties of the Holy Synod chief procurator, his appointment intended to establish the "unity of direction"

between the Orthodox clergy and the education authority, which failed to be achieved by any other measures. The measures to introduce compulsory primary education with the right to choose an educational establishment were taken with the personal participation of the Minister. All primary public schools that were previously run by different ministries and departments, were now made subordinates to the Ministry of Education ("[Regulations for the primary public schools](#)", 1874) and a greater ministerial inspectors' control of all the educational institutions was provided. However, the exception was made for the primary schools opened by the clergy - they were under the jurisdiction of the Holy Synod and their establishment was again encouraged ([Yashchenko, 2015: 147](#)).

The revival and spread of parish schools took place during the reign of Alexander III, (1881–1894), with the beginning of a new stage of reforms of the Russian Empire's system of primary education. These measures were designed to weaken the influence of the radical democratic and liberal ideas in the society. Since 1882, after Ivan Davydovich Delyanov's appointment to the post of the Minister of Education, the positions of the Church in the education strengthened. The parish schools' funding was provided by the state and the "Regulations for the parish schools" were developed and adopted at the state level (1884). During 1884 the "revived" parish schools were transferred under the subordination of the Holy Synod. The number of parish schools in Russia grew again under the influence of the new educational policy, and in the mid-1890s their number was estimated to be more than 31,000. In addition, literacy and church schools were also administrated by the Holy Synod ([Sidorov, 2006: 29](#)). The essential feature of the parish schools functioning was their availability, due to the free education.

## **2. Materials and methods**

2.1. The works of the researchers of late XIX – early XXI centuries are used as materials. The materials of the periodical press are the most essential, for example, the "Pribavleniya k tserkovnym vedomostyam". Personal materials, such as letters and recollections were also used in the work.

2.2. The scientific methods (analysis and synthesis, concretization, generalization) were applied in solving the researched problems, as well as the traditional methods of historical analysis. The historical-situational method used in this research, involves the examination of the historical facts in the context of the studied era in conjunction with the "neighbouring" events and facts. This method was applied in the study of the factors that influenced the parish school development during the period of 1860-1870.

The diachronic comparison is used to compare the same institution position during different periods of its activity. Thus, the functioning of the parish school in Russian Empire can be studied in four consecutive periods: 1864–1881; 1882–1897; 1898–1905; 1906–1917.

## **3. Discussion**

As noted by V. M. Bychkova, "XIX century became a century of endless reforms in Russia. The reforms were carried out not only during the reign of every new emperor, but also during the period of office of every new Minister of Education. Religious education suffered from these reforms, which had a character of a pedagogical experiment» ([Bychkova, 2009: 14](#)).

In the second half of the XIX century there were new frequent appointments for the Minister of Education position: A. V. Golovnin (1861–1866), D. A. Tolstoy, (1866–1880), A. A. Saburov (1880–1881), A. P. Nikolai (1881–1882), I. D. Delyanov (1882–1898), N. P. Bogolepov (1898–1901), P. S. Vannovsky (1901–1902), N. E. Zenger (1902–1904), V. G. Glazov (1904–1905), I. I. Tolstoy (1905–1906), P. M. Kaufman (1906–1908), A. N. Shvartz (1908–1910), L. A. Kasso (1910–1914), P. N. Ignatyev (1915–1916). In 1917 N. K. Kulchinsky, A. A. Manuylov, S. F. Oldenburg, S. S. Salazkin alternately took the position of the Minister of Education.

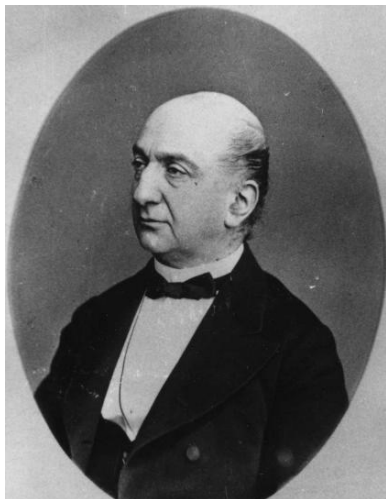
M.V Boguslavsky characterizes the educational setup of the second half of the XIX century as a "radically new situation" ([Boguslavskii, 2008](#)). He points out that "the unique social and cultural situation opened up favourable prospects to reform the Russian education" (preparation and the abolition of serfdom, the era of the reforms of the 1860s).

The Church began to take an active part in the education of the younger generation. Let us consider the opinion of M. V. Boguslavsky: "In the late 50s - 60s the public largely influenced the education, in the 70s – it was influenced by the state and in the second half of the 80th – 90th (XIX century – *Author*) – by the Church» ([Boguslavskii, 2008](#)).

Our work pays attention to the "revival" and the development of the parish school in the 1880–1890 during the period of office of the Minister of Education I. D. Delyanov (Fig.).

#### 4. Results

The Ministry of Education could not achieve all the educational goals due to the vastness of plans, therefore there was a need to "attract" other interested authorities, the public, etc. "Certainly, the Orthodox Church, being the main educational institution in the Russian Empire could not stay apart from all these changes" (Boguslavskii, 2008).



**Fig. I.** D. Delyanov, the Minister of Public Education

A. V. Kalachev emphasized that the ruling circles became gradually concerned of the general moral decline due to the development of capitalism and the populist activities in Russia, including those of a terrorist character. The opinion that the school failed to fulfil its main task – the religious and moral education of the younger generation, gained more and more supporters in the government. Mainly, the Zemstvo school was accused of prioritizing the general knowledge, to the lack of moral upbringing and the religious outlook formation.

In addition, after another attempt on the life of Alexander II, the government realized that the fight against revolutionary terror could not be won by taking only repressive measures. In April 1879 the Special Council was held in order to clarify the reasons of the "destructive doctrines" rapid spread among the younger generation and to develop the efficient practical measures to put their "corrupting influence" to an end. The members of the Special Council addressed the issue of the primary school reform that would provide a "proper influence on public education" to the Orthodox clergy.

Later this issue was often discussed at the meetings of the Ministers' Committee. On March 17, 1881, on one of those meetings, which was held during the reign of a new tsar, Konstantin Pobedonostsev (the Procurator of the Holy Synod from 1880 to 1905), didn't only focus on the issue of strengthening of the clergy's role in all primary schools, but also on the role of the parish schools in the public education. He noted that these schools "due to the conditions of their education and supervision represent much more guarantees for the proper and trustworthy education in the religious and national terms than other public schools, and therefore they deserve a special support and promotion from the government» (Kalachev, 2011: 24).

One of the first tasks that I. D. Delianov carried out as the minister was the transferring of parish and peasant literacy schools under the jurisdiction of the Holy Synod, giving thus the primary education an ecclesiastical character, but undoubtedly, the ideas of the Holy Synod's Procurator K. P. Pobedonostsev affected this action. The parish school was the embodiment of the idea of common purpose of education and the faithful life for the Procurator.

In a letter to Emperor Alexander III K. P. Pobedonostsev wrote that along with the "destruction of the tavern as the first strong demand / the required action in order to save Russia" (Oranienbaum, 1973) there was another one. "To save and to raise the people, you need to give them a school that would educate and bring them up in its true spirit, a simplicity of thought,

without taking them from the environment where their life and work take place" (Oranienbaum, 1973). Then the chief prosecutor expresses the consent on this matter to I. D. Delyanov. That is remarkable, because Evgeny Mikhailovitch Feoktistov – the censor, the Privy Councillor (since January 1, 1883), the Head of the Central Administration of Press of the Ministry of Internal Affairs and the Senator (since May 23, 1896) – writes: "The public loved Ivan Davydovich for his kindness, though, that very kindness was some sort of a loose and passive one; he was ready to plead for anyone: for decent people, and for the people at all dishonest, so that his recommendations were not often paid attention to, and he did not take any offense on that. An undoubtedly being an honest man, distinguished by an extreme simplicity of his lifestyle, never proud of his position, he was always available to anyone who wanted to see him, so that his office doors were always open for people..." (Feoktistov, 1991).

E. M. Feoktistov described I. D. Delyanov: "Delyanov was an example of how a man could reach a very high position without any outstanding merits; he wasn't only a non-hard worker, and it is amusing to admit that he wasn't even a businessman in the ordinary meaning of the term; no one, of course, heard him expressing any ideas that would be a result of a mature and independent thought; but he couldn't be called foolish, and he was not, of course, a clever man; like all his fellow Armenians, he was cunning on a large extent, knew Petersburg at his fingertips, was on good terms with everyone, had no enemies, because even a quarrel with him was somehow strange: he was capable to disarm anyone with his imperturbable good nature" (Feoktistov, 1991).

I. D. Delyanov believed that primary school should be "the most important tool of religious education" and thus a wide network of primary schools established under churches, had to be a subordinate to the clergy office. According to K.P. Pobedonostsev, they had to pay attention on upbringing and not on education as done in secular schools.

So, in the letter to Alexander III K. P. Pobedonostsev wrote "At this moment the regulations for parish schools are already finished. But when they will be actuated, it will be necessary to seek help from the state Treasury. God knows whether this petition will be successful, but this investing of course, will be a lot more profitable than the millions spent on many scientific institutions" (Pobedonostsev, 1883).

K. P. Pobedonostsev believed the church school was a means to maintain the people's loyalty without any deep economic, social and administrative reforms (Tal'berg, 2000). Therefore, during the office of K. P. Pobedonostsev neither the rights of the clergy and parishioners were extended, nor the necessary changes in the church structure were carried out. Some researchers believe that this doomed his plans.

Let us give an opinion on the influence of church education. "Implanting of the parish school had a triple objective: first, the formation of the Orthodox worldview; second, the strengthening of the Orthodox autocratic monarchy and the union of the tsar and the people in faith, and third, the preservation of national traditions, relevant to the Orthodox understanding and to life needs, strengthening of national consciousness, the unity of the various segments of the population. In the context of intelligentsia's commitment to the formation of an outside-of-the-Church, often an anti-clerical civil society, Pobedonostsev tried to create an alternative – a religious civil society, the parish school being a part of it" (Pobedonostsev, 2011).

**Regulations for the parish schools (1884).** In September 1882, the Holy Synod commission was established, on the decision of the Committee of Ministers and by the suggestion of Pobedonostsev, which included representatives of the Synod, the Ministry of Education and capital Zemstvos, headed by S. A. Rachinsky, with the goal to discuss and draft the future "Regulations", coordinating the parish and literacy schools statuses. The Committee was in session for two years and during that time worked out the basic regulations of the parish schools, outlined the principles of work of the governing authorities and of the funding sources (Goncharov, Plokhova, 2012: 105). In May 1884 "the Committee report hearing was held along with the consideration of the parish school Regulations". The chief prosecutor presented the "Regulations for the parish schools" to be approved by the Emperor on July 8, 1884. K. P. Pobedonostsev in his note to the "Regulations" stated, pointing out the role of the Church in the spread of primary education in the nation: "... only simple education, connected to the church literacy, is clear and compassionate to the peasant population" (Yashchenko, Vorob'ev, 2013: 73).

On June 13, 1884 Alexander III adopted the "Regulations for the parish schools" (valid until 1917), according to which the parish schools were to become the main form of peasant children

education. "These schools, – the document stated (§ 1), – are intended to assert the Orthodox doctrine of the Christian faith and morals among the people, to give the initial useful knowledge". This underlined the religious foundation of primary education. Also the "Regulations" specified that "the education in parish schools is to be performed by the local priests or other members of the clergy under the agreement, as well as by the specially appointed teachers, with an approval of the Diocesan Bishop and under the supervision of a priest" (§ 10). Moreover, "teachers' positions in the parish schools are to be replaced mostly by individuals who received religious schools or female clerical schools education" (§ 12) (Khrestomatiya, 1936: 73). Following the adoption of the "Regulations", a systematic funding of parish schools began.

Parish schools management (from 1891-1892, and of the so-called literacy schools) was carried out by a specially created authority – the school boards of the Holy Synod, which was in charge of all the church schools, using equal to the Ministry of Education programs for primary schools. Therefore, these schools – according to A. V. Kalachev – with a full justification can be considered the state ones, because by the beginning of the XIX century, the Synod, in fact, became one of the "ministries" of the central government authorities in Russia (Kalachev, 2011: 24). School boards took over the full authority and supervision of the church school: the general management, the methodological support and the approaches to the formation of teachers' staff. Locally the parish schools fell under the control of the dioceses and the diocesan school boards. The network of parish schools was not a narrow ethnic one, offered only for the Russian Orthodox population, but covered the national composition of the country. It provided the schools for non-Russian population of the country as well, which was especially important for the multinational provinces. Following the logic of the Synod, the new schools were to operate within the framework of the general missionary policy (Goncharov, Plokhova, 2012: 105).

On the educational side, the parish school was defined as a primary religious and comprehensive facility. It was supposed to perform a dual function. On the one hand, to form spiritual and moral qualities of the child's personality (faith in God, love for the Fatherland, respect for elders, hard work, diligence, sense of duty and moral responsibility). On the other hand, during the students' development, the parish school had to give "useful practical knowledge" (reading, writing, arithmetic) to children.

If earlier the content of education in the parish schools did not have any clear outline, the school year could be extended or shortened at random and many schools did not have their own facilities, now the situation changed (Kalachev, 2011: 24). The government and the Synod undertook measures to raise the level of the parish education. The status and the curriculum of the one-class (the course of 2 years increased up to 3 years in the 1890s) and the two-class (the course of 4 years increased up to 5 years at the beginning of the XX century) was defined; a secular component took an important place in the parish school's educational process. The Law of God (Prayer study, Holy history and Worship study, Brief catechism), Church singing, Church and civic readings and Writing and Basic arithmetic were taught in one-class school. In a two-class school the Beginnings of the church and country history, Geography, Drawing and Art were among the added courses.

The result of the approval of the "Regulations" of 1884 was the design of a new educational parish school curriculum in 1886. In 1898, the development of special programs for two-class parish schools was completed, which, in addition to providing public education, focused on the school staff training (Yashchenko, Vorob'ev, 2013: 73-74). The educational curricula of parish schools largely coincided with those of other elementary schools, and by the beginning of XX century they became completely identical. Since the mid-1880s the network of parish schools started to develop and strengthen, thus by the end of the XIX century, they were accounted for about a half of all the Russian primary schools.

The first place in these schools, of course, was given to the "upbringing in the Orthodox Church spirit" with the God's Law being the core of the curriculum. A particular attention was paid to Singing, which was not a compulsory subject, but was welcomed due to the power of emotional influence it had on parishioners – on students and their parents. The students were required to read prayers in the morning and evening, before the studies and after, to go to church on Sundays and holidays, to participate in religious and moral readings and to sing in the church choir (Kalachev, 2011: 24).

On May 4, 1891 the "Regulations for the literacy schools" were adopted, according to which, this type of elementary school (opened in the villages and towns at the expense of the parish villagers themselves, and where – before – any literate person could be a teacher) was transferred under the Synod's authority. In 1892, there were about 16 thousand peasant literacy schools, later reorganized into parish schools (Plekhanov, 2007: 70).

Practically, in addition to religious education and teaching children basics of reading and writing, the task of strengthening of Orthodox faith among the whole parish population was assigned to the primary church school. For this purpose (when needed and on the amount of available funds) parish schools intended to open additional evening classes of one-class and two-class schools; daily lessons for adults; special handicraft and needlework classes, as well as Sunday schools for those who can not study daily. On weekends and holidays teachers had to conduct religious and moral readings for students and their parents (Kalachev, 2011: 24). In literacy schools students studied for two years and received minimum knowledge. In particular, they studied common prayers, reading in Russian and Old Church Slavic languages, performing simple arithmetic operations with small numbers. Literacy school leavers could continue their studies in the second part of a parish or ministry school (Goncharov, Plokhova, 2012: 105).

Since the mid-1890s the development of libraries was significant in parish schools, thus copying the all-European trend (Tišliar, 2013). The school board Publishing Committee of the Holy Synod was engaged in supply and organization of school libraries. The literature of the religious and moral content, books on medicine and hygiene, on church and civil history, on agriculture and crafts as well as fiction were provided for the libraries for extracurricular reading. For example, only in 1896 (in honour to the coronation of Nicholas II) diocesan authorities initiated opening of more than 900 libraries in parish schools in various parish districts of Russia. Each of these libraries had from 100 up to 500 books (Funtikova, 2002: 74-75). In the early twentieth century, the number of parish schools continued to increase and thus the number of church libraries increased as well (more than 30 thousand in 1906) (Vanchakov, 1908: 11-12).

**The number of parish schools** began to increase and reached 5517 in 1884 after a period of decline due to the prevailing development of the Zemstvo schools (reduction from 21420 to 4348) in 1865–1880. Ten years later there were already 29,746 schools, and in 1901 – 43,602. The number of students increased from 137,313 to 1,764,912 during the period from 1884 to 1901 (Table 1). T. I. Zhitenev believes that "the term 'school' was imprinted in the late XIX century, due to the wide spread of parish schools" (Cherkasov, 2011).

**Table 1.** Church schools and students in number in 1884-1908. (Pribavleniya k tserkovnym, 1904; Chekhov, 1912: 105)

Years	Number of schools	Number of students
1884	5.517	137.313
1894	29.746	917.442
1901	43.602	1.764.912
1908	39.929	1.927.555
1914	~ 38.000	~ more than 2 million

With the beginning of the Russian-Japanese War (1904–1905) the government reduced the funding of the church schools and their number began to decrease. In 1914 the number of parish schools has reached 38 thousand with more than 2 million students (Cherkasov, 2011).

M.V. Boguslavsky noted that "for the first time the question raised was not about a simple increase in the number of students, but of a radical increase – only regularly enrolled students' number should be up to 4–5 million people" (Boguslavskii, 2008). Due to the fact that Russia was beginning to emerge into the continuous education, M.V. Boguslavsky pointed out the steps towards a multiple increase of the education funding, the creation of a powerful new material base of the educational process, its infrastructure, as well as the designing of the educational policy reform of all the education sectors, especially in terms of the formation of its new legal framework (Boguslavskii, 2008).



**Financing.** Local church schools funding during the given period rose from 434,000 roubles in 1884 to 6,707,900 roubles in 1901.

In 1884 the funding from the State Treasury was 55.5 thousand roubles, in 1901 – 6.826.000 roubles. In 1884 nothing was provided from the provincial gatherings (the non-Zemstvo provinces), while in 1901 – 826,900 roubles. The total budget of church schools increased from 489,500 roubles (in 1884) to 14,360,800 roubles (Pribavleniya k tserkovnym, 1904).

In 1901 local funding had the following sources: churches and monasteries – 1333855 roubles, parish patronage – 406524 roubles, township, village and stanitsa communities – 1773659 roubles, Zemstvos – 442969 roubles, cities – 136433 roubles, private donations – 2082526 roubles and other local sources – 531918 roubles. (Pribavleniya k tserkovnym, 1904). At the beginning of the First World War appropriations for public education decreased, and during the war, this source of funding was reduced (Shevchenko i dr., 2016: 370).

**Expenses.** In 1901 from the total of 13697200 roubles spent, 12,487,100 roubles or 91.2 % was spent on the maintenance of schools, 195 800 roubles (1.4 %) – on the in-service training for religious schools' teachers, 512200 roubles (3,7 %) – on the inspection, 241700 roubles (1,8 %) – on the Holy Synod school board, Chancery of the diocesan school boards and district offices and 260400 roubles (1,9 %) – on expenses of other origin (Pribavleniya k tserkovnym, 1904).

**Teachers.** As a rule, at the early stage of parish schools development the children were taught by the clergy, who generally had no pedagogical training (basic pedagogy began to be taught in seminaries only in the second half of the 1860s) and using ineffective teaching methods. Thus, the education given in parish schools was of a distinct religious character. But in the 2nd half of XIX century the parish school curriculum began to expand gradually, acquiring a more secular and scientific character at the beginning of the XX century. At that time (1859–1865) the Holy Synod recognized the need for the pedagogical training of the clergy, thus the basics of the pedagogy along with religious subjects was added to the curriculum of the seminaries during the mid-1860s (Sidorov, 2006: 28-29). Later the Educational 'committee of the Holy Synod was established, responsible for the religious and educational facilities, for opening and maintenance of religious schools, the development of their regulations, the organization of the academic part, preparation of tutorials etc. A definite step in the parish school development and improvement of the quality of education was the Order of the Synod on 26 November 1888, when "the parish school teacher" title was introduced (Goncharov, Plokhova, 2012: 108).'

The rapid growth of the parish schools number, the increased requirements for the provided education, the development of extra-curricular education – all this required a significant number of teachers, who could teach (for relatively low wages), all subjects of the course, including Singing and the Law of God. Meanwhile, some secondary religious schools' (religious schools, diocesan female colleges, seminaries) graduates considered the school only as a temporary job: men – mostly until taking a vacant position in the parish and women – until getting married. For many graduates of the Ministry of Education secondary schools, the work in the church school was unattractive due to the low wages and a lack of prestige of work in the rural areas (Kalachev, 2011: 24).

In this regard, the Office of the Orthodox confession faced a shortage of teaching staff in the 1890. Various measures were taken to solve this problem, including the coercive ones. For example, a compulsory distribution of theological seminaries graduates' for the positions of parish schools teachers was introduced (they had to work at least 2-3 years and only then could take a position in the clergy). Along with this, the Holy Synod ordered deductions in the amount of one-third of income from the priests, who were not engaged in teaching in 1892.

In the mid 1890-s the 2-class parish schools with a three-year training course began to open in the dioceses in order to improve the parish schools. The graduates were prepared to be the literacy school teachers. To meet the rapidly growing demand for the professionally trained personnel who could replace the priests, the church-teachers' training schools were established, a period of education in which was also 3 years. At the same time church school's teachers received extended rights granted to the Ministry of Education schools' teachers – the exemption from the active military service, benefits for children's education etc. (Kalachev, 2011: 24-25). A positive role in the teaching improvement had the growth of the parish school state funding, which increased from 3.5 million roubles in 1896 to 16.7 million roubles in 1908 (15.8 million roubles in 1911). The number of church-teachers' training schools reached 448 with 22526 students in 1908 (Chekhov, 1912: 105).

All these measures helped to significantly raise the level of church schools at the beginning of the 1900 and even the opponents of these educational institutions were forced to admit that the church school advanced, improved the teachers' structure, the educational content and was geographically accessible to the most of the villagers. Thus, the parish school became an actual rival to the Zemstvo school at the end of XIX – early XX century. In some periods (1861–1869, 1892–1894) the number of parish schools even exceeded the number of the Zemstvo schools (Plekhanov, 2007: 69). At this time, for example in the Central Europe – the Austria-Hungary, an opposite trend has been observed. Parish schools have been losing their positions to the exclusion of the secular ones (Kmet, 2010: 23).

**Table 2.** Schools and students in number in 1905 (Chekhov, 1912: 105)

Schools	Number of schools	%	Number of students	%
Min. of Public Education	48.288	52	3.660.628	63
Holy Synod establishments	42.696	46,5	1.983.817	35,5
Other establishments	1.517	1,5	93.844	1,5
Total	92.501	100	5.738.289	100

In 1904, according to statistics, the characteristics of the teachers' staff in parish schools were as follows. In the European part of the Russian Empire and the Caucasus out of the total number of 22110 teachers, 8619 (38.9 %) were less than 21 years old, 6879 (31,1 %) – 21–25 years old, 3168 (14,3 %) – 26–30 years old, other 3444 – more than 30 years old.

Of the 15191 female teachers 6642 (43.9%) were less than 21 years old, 4505 (29,8 %) – 21–25 years old, 1948 (12,8 %) – 26–30 years old, other 2096 – more than 30 years old (Pribavleniya k tserkovnym, 1904).

Most of the church schools teachers were single. There were 5799 male married teachers (26 % of the total), 202 widowed (1 %); 949 female married teachers (6 %) and 591 widowed (4 %) (Pribavleniya k tserkovnym, 1904).

The teachers had 6024 male and 6092 female children. The majority of children under age wasn't studying anywhere (3799 boys and 4033 girls), or was enrolled in primary schools – one-class and two-class (1172 boys and 976 girls). 548 boys were enrolled in higher types of schools (246 – in church or city schools, 79 – in teachers' schools, 25 – in the specialized secondary schools and 180 – in secondary and higher education institutions). 342 girls were enrolled in higher types of schools, including 38 – in the preschools, 19 – in teachers' schools, 285 – in secondary schools. 505 boys and 741 girls were not enrolled in any type of schools; some of them took a course in secondary (or diocesan literacy school) or lower schools (Pribavleniya k tserkovnym, 1904).

In 1907, as a result of the advancement of the church school, only 4788 out of the total number of 48433 teachers didn't have any pedagogical training – i.e. about 10 % (Plekhanov, 2007: 72).

**Elimination of parish schools in 1917.** The Provisional Government Decree on 20 June 1917 defined that the schools of various departments were to be united under the administration of the Ministry of Education in order to introduce a universal education standard. This meant that the Orthodox Church was deprived of one of its educational functions. All primary schools were to be transferred from the jurisdiction of the Holy Synod under the Ministry, including the schools funded by the government, as well as educational institutions that trained teachers (2-class and church-teachers' training schools). More than 37 thousand religious schools were rejected (which at that time was a half of all the primary schools of the country), while about one thousand schools was under the control of the Synod (not included in the school network and funded locally). This step was the actual destruction of the church school, since the schools was requisitioned along with the buildings and the libraries (Zhitenev, 2014).

The complete elimination of the church school took place after the October Revolution. The Decree of the Commissariat for public education № 126 on December 11, 1917 "The transition of upbringing and educational sphere from the clergy office under the jurisdiction of the Commissariat for public education" was much more decisive than the decree of the Provisional Government on June 20, 1917: "The transfer shall be subject to all the parish (primary one-class,

two-class) schools, teachers' seminaries, theological schools and seminaries, women's diocesan schools, mission schools, academies and all other bearing different names lower, middle and high schools and institutions of the clergy office, with the staff, grant of funds, movable and immovable property, which means with buildings, outdoor constructions, with the land under the buildings and school grounds, with mansions (if there will be), libraries and all kinds of benefits, values, funds, securities and interests on them and with all intended for the above mentioned schools and institutions" (*Sobranie uzakonenii*, 1942: 129).

## 5. Conclusion

The parish school in the last third of the XIX century underwent a difficult transformation and became an important part of the pre-revolutionary public educational system. Due to this it became actively involved in the educational activities of the population, especially for children. At the same time the establishment of parish schools was initiated by the government, though all the arrangements were made by the clergy, who played an important role in improvement of the educational level of the country during the period of the church schools functioning, up to December 1917. T. E. Zhitenev points out that " during this period about a third of the students received education in parish schools, so these schools were not only a very important part of public education, but also had a significant influence on the social life development in the country" (*Zhitenev*, 2004).

Thus, the period of I. D. Delyanov at the post of the Minister of Education (1882–1897) was the time of the primary parish schools' active development. Schools advanced both in quantity and financial support. They had a number of compelling advantages over the other types of rural schools. First of all – they were available, completely free of charge for the public and low-cost to the state. The spiritual, moral and intellectual education was carried out with an emphasis on historical, religious, moral and cultural traditions of the Russian people, on universal Christian values in the best parish schools. In general, the parish school took its rightful place in the process of the national education democratization and helped to overcome the illiteracy of the rural population.

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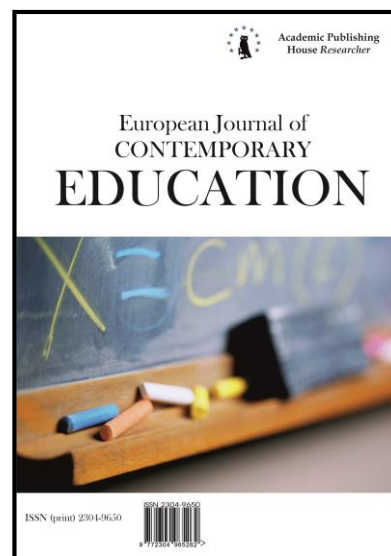
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## Standardization or Localization: A Study of Online Learning Programmes by Tertiary Institutions in Ghana

Josephine Djan <sup>a, \*</sup>, Babu George <sup>b, c</sup>

<sup>a</sup> Pentecost University College, Ghana

<sup>b</sup> Fort Hays State University, USA

<sup>c</sup> Swiss Management Centre University, Switzerland

### Abstract

Many universities in Ghana have had a desire to ensure equitable access to formal tertiary education for the growing number of the working public who have sought to improve or better their educational status in tertiary institutions. For many of these working public or individuals, it is almost impossible to stay off work to enrol in these tertiary institutions but rather would most likely prefer to improve their educational and knowledge acquisition status in the comfort of their homes and in a relaxed and calm environment. This study is aimed at distinguishing between whether tertiary institutions should be evenly and commonly regulated and the learning process standardized for all individuals or to be specifically adapted for the individual needs of the target market.

**Keywords:** E-Learning, technologies, tertiary education, distance education, stakeholder perception, standardization, customization, Ghana.

### 1. Introduction

Highly sought after job positions have become very competitive in this market-driven global world due to the influx of new technological devices and gadgets which aid in communication and interaction and this has given rise to the continuous retraining, upgrading and educating of professionals who are already in the workforce. Many organizations aspire to become the best within their industry and would rather recruit personnel who are top of the range in their educational and professional status. It has therefore become imperative that people become more

\* Corresponding author

E-mail addresses: [jdjan@pentvars.edu.gh](mailto:jdjan@pentvars.edu.gh) (Josephine Djan), [bpgeorge@fhsu.edu](mailto:bpgeorge@fhsu.edu) (Babu George)

and more current in upgrading or topping up their educational status to be abreast with and meet the job positions they aspire to be in.

These technological changes in equipment and processes have induced many organizations to recruit more qualified and competent personnel into the work environment. Many universities are therefore strategically positioning themselves to cater for this need among the working populace, by providing more market driven upgrades in education for the youth, train new graduate entrants into the work force, and keep on educating and re-training, allowing for the top up of degrees and certificates for those already in the work force for the acquisition of new knowledge and appropriate skills. It is therefore of interest to universities to establish their presence, evenly distribute their programs of study across board for all interested parties or tailor-cut to suit the particular audience who desire to improve their skills and competencies across the nations into cities, towns, villages, and communities.

## **2. The Research Problem**

Ghana's human resource capabilities have been drained by the migration of the youth to greener pastures (Graham, 2013). This has created a huge deficit in the country's human resource development as recent challenges of national development and the increasing global competition between the country's firms and industries is growing stiffer by the day (Ntim, 2014). Technology available has changed work processes in organizations has also contributed to working tasks becoming very competitive and professionally demanding.

It has therefore become imperative and convincingly necessary for individuals and the working public to upgrade their educational status while still keeping their jobs as competition amongst job seekers has become very keen. Mariola (2002) reported that "successful online courses require student and faculty comfort with online instruction and the availability of technical support ...". Online and distance learning has become an answer to this growing need in the whole world, and many working students have taken on this advantage to keep their jobs, earn income, fulfil family obligations and at the same time acquire education to better their skills and proficiencies on the job (Morley, 2012). Many universities and tertiary institutions in Ghana have also appreciated this need and some have taken giant leaps to grant solutions to this growing necessity. There is still an educational acquisition cavity that needs to be transformed into a more visible, resource-enhanced form of attaining knowledge that is open to providing lasting learning prospects in distance education to all working Ghanaians to meet the various learning needs for academic, personal, and professional growth (Ametepee & Anastasiou, 2015; Senadza, 2012).

The search for more lucrative jobs and higher positions within the workplace has augmented the need for higher learning as well as learning while working (Atuahene & Owusu-Ansah, 2013). This research study was conducted to find solutions to the problems identified by universities in general but with special emphasis to those in Ghana. The research problem here is about how or whether the Ghanaian universities are using their stance and status to deliver the needed service that is expected of them by the working public. Again, the problem of how far and longstanding will online or distance learning verve to help in the nation's human resource development. A related problem to investigate is whether there is a future for online or distance learning studies for Ghanaian universities and whether the program will be standardized for the clientele to be accessed and assessed on a level ground or localized for special and peculiar clients who needed a specialized service.

The research objectives of this study are formally stated below:

- To ascertain the future and next level of learning opportunities that Ghanaian Tertiary Institutions will attain in the next five years
- To determine which of the strategies; Standardization of Localization will lead to the desired goals of internationalization of online or distance learning.
- To strike a correlation between technology change and business behavior.

## **3. Literature Review**

Online / Distance learning has made a major impact in the world of education (Keegan, 1994). Recent studies show that online learning is an effective and reputable way to earn a college

degree (Littlefield, 2010). Distance / online education has many benefits and advantages as compared to the traditional on-campus learning. In this present day and age, many students and the working class are opting for distance and or online education because of its user-friendliness and convenience (Bullen, 2007). This learning experience provides learners with a less time bound advantage, ease of remoteness and gives learners the flexibility to learn and work in their own time and at their own pace due to personal circumstances, family or work obligations (Cantelon, 1995). Distance education is often less expensive than traditional education. Like this it can open learning opportunities to those who would otherwise not be able to study and facilitates the social inclusion of people with disadvantaged backgrounds (such as economic situation, development regions, disability and so forth (Steinmann, 2009).

With fewer restrictions on capacity limits, online and distance education also benefits the universities as it allows the institutions to expand their offer - and to reach those who usually would not be able to enroll with them (De Wet, 2014). Typical distance learners are regular students as we all know them, but also parents, physically challenged people, and business men who are looking for ways to enhance their skills next to their busy schedule. Allowing any institution across the world to target anyone interested in their subject while reducing additional obstacles to international studies such as visa requirements, travel costs and travel time, makes online and distance education the next step to a truly globalized world of education (Steinmann, 2009).

Adding an international dimension can help prepare students to interact in a global economy (Altbach, 2015). This is particularly important to prepare business students since many businesses have a global presence (Healey, 2008). Furthermore, international online learning communities not only promote interactions outside a student's "home borders" (Higgitt et al., 2008), but also cross border communities that can improve the quality of case discussions (Bonk et al., 2000), who suggest a pedagogical approach often used within business school curricula. Indeed, in their comparative analysis of learning effectiveness via three forms of electronic communication, Yoo, Kanawattanachai, and Citurs (2002) found that the form of electronic communication mattered less than the number of people collaborating on the quality of a case analysis. Thus, they propose that technology will go beyond just reducing geographic distance and provide opportunities to enhance knowledge because of the easier exchange of diverse perspectives. Distance is no longer an issue in distance education, observe Boling, Hough, Krinsky, Saleem, and Stevens (2012).

"Today, with the academic learning environment rapidly evolving, an increasing number of institutions have adapted technological advancements on their college or university campuses. Traditional brick and mortar educational institutions are now competing with the convenience and practicality of online degree programs and study. To remain competitive and technologically relevant, the School of Business and Industry has sought to enter into the online degree program market through the implementation of an Online Managerial MBA Program" (Suarez-Brown et al., 2012).

The issue of educational technology has played a major part in improving the learning outcomes of individuals by personalizing the learning experience, even at the elementary level (Bell & Federman, 2013). The immediate responsiveness to computer based programs, and the self-paced private learning environment that educational technology warrants seeks to promote higher levels of motivation among students worldwide. It has also provided greater access to education such as in the case of increased accommodation for students with severe physical disabilities and for students living in remote locations. Of the many indicators in the use of technology on education, the major index of the use of technology in education is distance education or online learning. In online and or distance education the use of technology is of essence the most important element in making distance learning a reality (Nicolson & Uematsu, 2013). Technology is not an appendage, but a requisite element needed to complete the distance learning process.

Technologies like broadband Internet and social media have helped make MOOCs possible and "reduce the friction that is holding together the building blocks" of higher education, said panel moderator Bernd Girod, Senior Associate Dean for Online Learning and Professional Development and the Robert L. and Audrey S. Hancock Professor in the Stanford School of Engineering. Widom, the Fletcher Jones Professor of Computer Science at Stanford and an NAE member is currently teaching her second "Introduction to Databases" MOOC. Although she said

she finds it gratifying to be able to reach tens of thousands of people who can't enroll in her similar Stanford course, she and others question whether the MOOC model in its current form is sustainable (Beckett, 2013).

Beckett (2013) continues to ascertain how some wonder how the numerous businesses that have sprung up around MOOCs will stay afloat while delivering a free product. Others point out the potential problems with verifying student identity and preventing cheating, especially if course credit is offered. Some worry that the growth of online education could endanger small colleges; others see an opportunity for institutions offering top-tier programs to license course content to others and improve the quality of education on a large scale (Baepler et al., 2014). Regardless, most agree that online education in some format holds enormous promise. There are lots of opportunities ahead and it is an exciting time for higher education, notes (Beckett, 2013).

#### **4. The Study**

Data needed for this research was collected through a self-administered survey questionnaire, interviews, and secondary data drawn from a variety of data sources. A random sample of eighty students who are currently enrolled in online distance programs in Ghana and sixty students who have already completed some or the other online program in Ghana completed the survey instrument. In-depth recorded interviews (including questionnaires) with the executives of three different universities who offer the online or distance learning program were conducted. Information from publications, including university brochures and catalogues provided essential secondary data. Information from universities in Ghana websites and reviews from past students and prospective students were used to corroborate the findings.

Published data was sourced from the following centers;

1. Institute of Continuing and Distance Education (ICDE), University of Ghana, Legon;
2. University of Education, Winneba, Ghana;
3. Kwame Nkrumah University of Science and Technology. Kumasi, Ghana;
4. University of Cape Coast, Ghana;
5. Wisconsin University – Ghana.

The data thus gathered were employed for:

- a) Establishing the choice between standardization or localization;
- b) Determining consumer requisitions and preferences;
- c) Initialising commitment and change in the managerial attitude to standardize or localize online and or distance learning;
- d) Encouraging Ghanaian university decision makers to venture into aggressive advertising and awareness creation for excellent knowledge sharing programmes for customers;
- e) Establishing a relationship between change in technology and online and or distance learning.

The following key questions were included in the interviews:

- Do you agree that online / distance learning has impacted knowledge transfer in this present day?
- In your opinion, do you think that online / distance learning should be designed to adapt to the various target market groups in specific countries or they should be uniformly designed for all?
- How would you rate the future of online / distance learning on education?
- Who do you think are the best beneficiaries to online / distance learning?"
- What would you consider as the one most important element that has made online/distance learning easy and possible?

#### **5. Analysis of Data and Findings**

There were five Tertiary institutions in Ghana who offered the online or distance learning programme at the time of this research. Students and faculty from different course disciplines including accounting, finance, management, marketing, international business and information systems opted to participate in the survey. Each of these institutions received fifteen survey questionnaires totaling seventy-five questionnaires excluding personal interviews and published data.



Results collected from the Institute of Continuing and Distance Education (ICDE), University of Ghana, Legon show that nine out of fifteen respondents agreed that online and or distance learning has helped impact the increasing number of individuals who desire to improve their educational status while twelve of the respondents also believed that technology was the backbone to online / distance learning distribution and that without technology, online learning would never be achievable. In the same way at the Kwame Nkrumah University of Science and Technology (KNUST) eight respondents agreed to the notion that online/distance learning has impacted the present generation and thirteen also believe that technology is the backbone of distance / online learning. Likewise, at the University of Education, Winneba eight respondents agreed that online/distance learning has impacted the present generation and twelve also believe that technology is the backbone of distance / online learning. Also at the University of Cape Coast, ten of the respondents agreed that online / distance learning has impacted the present generation and thirteen also believe that technology is the backbone of distance / online learning. At Wisconsin University in Ghana seven out of the fifteen respondents agreed that online/distance learning has impacted the present generation while twelve out of the fifteen also believe that technology is the backbone of distance / online learning.

Of the five questions asked in the questionnaire, the second question; “In your opinion, do you think that online / distance learning should be designed to adapt to the various target market groups in specific countries or they should be uniformly designed for all?” The results are summarized, according to institution, as follows:

**Table 1.** Standardization Vs Localization

	Standardized	Localized
ICDE	10	5
KNUST	9	6
UCEW	11	4
WISC	10	5
UCC	13	2
Total	53	22

ICDE: Institute of Continuing and Distance Education (ICDE), University of Ghana, Legon

KNUST: Kwame Nkrumah University of Science and Technology. Kumasi, Ghana

UCEW: University of Education, Winneba, Ghana

WISC: Wisconsin University Ghana

UCC: University of Cape Coast, Ghana

All five tertiary institutions believed that the distribution process and programs for distance and online education should implement the standardization strategy. The total percentage ratio of the five institutions preference of the standardization over localization strategy is depicted by 66.7: 33.3; 60:40; 73.3:26.7; 66.7: 33.3; 86.7:13.3 = 70.7:29.3. This depicts that about seventy per cent and more of the population sample desire a standardized structure of the online / distance learning programme.

Faculty respondents were asked how they would rate the future of online / distance learning. Responses were content analysed and the findings are summarized in table 2. It is evident that that the optimism thumbed. In fact, no one responded in highly pessimistic terms.

**Table 2.** Optimism about the future of online programs

	Highly optimistic	Optimistic	Status quo expected	Pessimistic
ICDE	2	9	2	2
KNUST	3	11	0	1

UCEW	2	10	2	1
WISC	4	9	1	1
UCC	1	9	2	3
Total	11	48	7	8

ICDE: Institute of Continuing and Distance Education (ICDE), University of Ghana, Legon

KNUST: Kwame Nkrumah University of Science and Technology. Kumasi, Ghana

UCEW: University of Education, Winneba, Ghana

WISC: Wisconsin University Ghana

UCC: University of Cape Coast, Ghana

We did a demographic analysis of the ideal targets for e-learning. In aggregate, as expected, working adults were the primary interest groups in the online programs. Out of the 65 people who answered this question, 52 were working adults. The results are summarized in [table 3](#).

**Table 3.** Target groups for e-learning

	Young working adults	Older working adults	Any tertiary education aspirant	Anybody and everybody
ICDE	4	8	2	1
KNUST	5	7	2	1
UCEW	3	9	3	0
WISC	3	10	1	1
UCC	2	11	2	0
<b>Total</b>	<b>17</b>	<b>35</b>	<b>10</b>	<b>3</b>

ICDE: Institute of Continuing and Distance Education (ICDE), University of Ghana, Legon

KNUST: Kwame Nkrumah University of Science and Technology. Kumasi, Ghana

UCEW: University of Education, Winneba, Ghana

WISC: Wisconsin University Ghana

UCC: University of Cape Coast, Ghana

We also observed a significant positive relation between comfort with the use of technology and the optimism in the e-learning effectiveness. Respondents who were passionate about technology in general also rated high about the utility of online education. The following correlation matrix, given in [table 4](#), highlights this.

**Table 4.** Technology friendliness Vs perceived e-learning effectiveness

Description	ICDE	KNUST	UCEW	WISC	UCC
Optimistic about online education	9	8	8	7	10
Comfort with the use of technology	12	13	12	10	13

ICDE: Institute of Continuing and Distance Education (ICDE), University of Ghana, Legon

KNUST: Kwame Nkrumah University of Science and Technology. Kumasi, Ghana

UCEW: University of Education, Winneba, Ghana

WISC: Wisconsin University Ghana

UCC: University of Cape Coast, Ghana

The Pearson correlation coefficient derived from the above table is  $r = 0.716$ , and the regression coefficient, adjusted  $R^2 = 0.51$ . In each of the institution from where the data came, this shows a strong positive relation between technology and online learning. In summary, this means

that optimistic views about technology is a significant factor in determining the learner comfort to use technology for education. Making students feel good about the promises of technology is, thus, an important key in facilitating their good use of e-learning technologies.

## 6. Conclusion

In accordance with the results, it could be inferred the stakeholders preferred standardization strategy over localization. This can be interpreted to mean that students would prefer a common platform for communication, promotion, and distribution of the course program. This also means their preference for being graded on a common scale. Over seventy per cent of the respondents from the sample population preferred a standardized program that every individual around the world would be able to access the same program without restrictions and changes. It was also ascertained that online learning in Ghana has a very great future as about eighty per cent of the respondents believed in the prospects of e-learning technologies for tertiary institutions to take advantage of.

A significant positive correlation between an individual's mastery over technology and his or her optimism about e-learning effectiveness implies that an important way to make e-learning widely accepted is by means of offering training in the use of technologies. Learners are more likely to appreciate e-learning if they know how to use e-learning technologies. Thus, in addition to developing quality content, attention should also be given to training the learners in the use of technologies.

Finally, standardization Vs localization is also a political issue (Beyer, 2002): before concluding this paper, we must admit that not every stakeholder class has been interviewed for the study and the findings might be inadequate to that extent. It is not the students or their teachers that make decisions about educational policy, even though their voices are important. Enriching this study with views of the political class and that of the bureaucracy will make its findings more valid.

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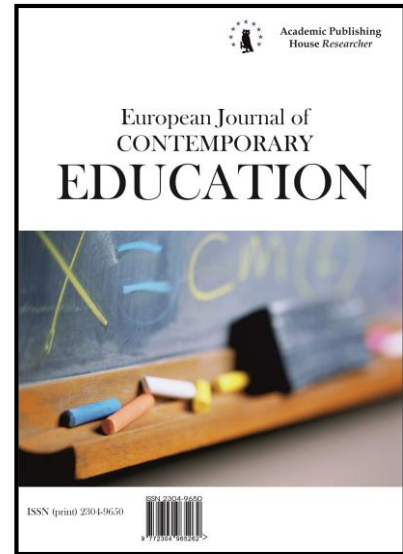
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## Resources of Mathematics Self-Efficacy and Perception of Science Self-Efficacy as Predictors of Academic Achievement

Deniz Kaya <sup>a, \*</sup>, Hüseyin Cihan Bozdağ <sup>a</sup>

<sup>a</sup> Ministry of National Education, Turkey

### Abstract

The main objective of this study is to determine the predictive power of mathematics self-efficacy resources and perception of science self-efficacy on academic achievement. The study, adopting a relational screening model, was conducted with a total of 698 students in sixth, seventh and eighth grade level of a state secondary school. Mathematics self-efficacy resources and science self-efficacy scales were used as data collection tools. Additionally, the half-terms report card grade point averages prior to the term when the study was conducted were also taken into account to determine students' academic achievements. Data analysis was performed by Pearson product-moment correlation technique and multiple linear regression analysis. According to the obtained results, resources of mathematics self-efficacy and perception of science self-efficacy were found to be significantly correlated with academic achievement in high, medium and low levels of influence. Belief in learning ability, belief in skills, mastery experiences, social persuasions and physiological states, which have significant impacts on the academic achievement, account for 48 % of the variance in the academic achievement. Indirect experiences, however, do not have a significant effect on academic achievement. Besides this, when examined the relationship between dimensions of science self-efficacy perception and mathematics self-efficacy resources; a significant relationship was observed between the belief in learning ability and mastery experiences, indirect experiences and physiological states, belief in skills and mastery experiences, indirect experiences and social persuasions.

**Keywords:** Academic achievement, Mathematics, Science, Sources of self efficacy, Perception of self efficacy.

\* Corresponding author

E-mail addresses: [denizkaya50@yahoo.com](mailto:denizkaya50@yahoo.com) (Deniz Kaya), [chnbzd@gmail.com](mailto:chnbzd@gmail.com) (Hüseyin Cihan Bozdağ)

## 1. Introduction

In today's information and technology community; training/upbringing of individuals with high-level mental skills is of great importance. This has made the educational policies of many nations, on a global scale, the focus of an innovative concept in line with a competitive environment, a scientific continuity, and economic and technological developments. In particular, due to the change in social needs, the emergence of new competition areas and the need for individuals that can constantly renew themselves, basically people-oriented education systems have gained momentum. In this context, the creation of high-quality learning environments, the provision of quality learning materials accessible to all students and the placement of a coherent educational approach has now become a necessity for many nations. The indicator of all these developments is the fact that training generations who can understand the nature of mathematics and science is once again understood. Today, it is vital for many research organizations, including the discourses raised in many international reports, to understand the nature of mathematical and digital competences and science for full participation in the information society and competition with the modern economy (Eurydice, 2011; NAEP, 2002; NCTM, 2000; OECD, 2012; TIMSS, 2011). Because; science and mathematics fields consisting of many products of thought systematics, in addition to having universal values for centuries, are considered the most reliable tools that are not linked to the concept of time and space. In this context, that the basic objective of science and mathematics courses is to train high-level and productive individuals in terms of mental skills for many developed/developing countries today has made the importance of these two fields more understandable.

The data from Trends in International Mathematics and Science Study [TIMSS], to which 42 countries participate in order to assess the knowledge, skills and literacy of students in mathematics and science, and Programme for International Student Assessment [PISA], to which 65 countries participate, have revealed that Turkish students' achievements in science and mathematics are not at the desired level (MNE, 2015). According to the 2011 TIMSS report, while there were 28 countries whose average score in mathematics achievement test was below the midpoint of the TIMSS scale (500 points), Turkey was ranked 24th. In the same report, while there were 24 countries under the midpoint of the TIMSS scale in science and technology achievement tests, Turkey was ranked 21st (MNE, 2015). Also, in the national final report of the PISA 2012 survey; while the overall average score of 65 countries in terms of students' math performance was 487, Turkey's score was 448 points. When the proficiency levels cut-off point ranges defined in PISA 2012 are considered, Turkey took place on Level 2, and was ranked 52nd in terms of the student percentages on this level (MNE, 2015; OECD, 2012). The obtained results led many researchers to better know, recognize and understand the affective and cognitive features whose impact on students' science and mathematics achievements is well known (Akyüz 2014; Anıl, 2011; Delil and Yolcu-Tetik, 2015; Ergin-Aydemir and Sünbül, 2016; Pahlke, Hyde and Mertz, 2013; Yurt, 2016). In this context, there have been many studies on the positive impact of affective properties on achievement, which have attempted to explain this concept based on theoretical grounds (Bandura, 1997; Bloom, 1998; Pajares, 1996; Schunk, 2011; Zimmerman, 1999). Indeed, considering the impact of affective characteristics on science and mathematics achievement, many study findings support the theoretical explanations proposed in this direction (Abalı-Öztürk and Şahin, 2015; Ayan, 2014; Chen and Usher, 2013; Çalık, 2014; Çaycı, 2013; Dadlı, 2015; Donahue, 2016; Ilgaz, 2011; Larson, Stephen, Bonitz and Wu, 2014; Peters, 2013; Usher and Pajares, 2009; Yurt, 2014; Yurt and Sünbül, 2014).

One of the most important affective characteristics of students that have an influence on science and maths achievement is undoubtedly their belief of self-efficacy. The self-efficacy belief represent the individual's the competence to deal with possible situations, his judgment for his learning and achievement skills, the capacity to manage and the resistance he shows against the difficulties encountered in the mission given (Bandura, 1997; Pajares, 1996; Zimmerman, 1999). Bandura (1997) explains the self-efficacy belief with four basic sources connected to each other including; Mastery Experiences, Indirect Experiences, Social Persuasions and Psychological and Affective States. Mastery experiences refer to the experience gained resulting from the successes and failures of the individual. Since mastery experiences are permanent and show continuity, it is the most effective and powerful one of all the self-efficacy resources (Bandura, 1997). When individuals have the belief to be successful that is foreseen by their mastery experiences, they

begin to find immediate solutions to the challenges and adversities, and can get out of difficulties in a more resistant way (Bandura, 1993). In this way, individuals develop beliefs for their next duties by interpreting the performance they show, and get the opportunity to guide their behavior in line with the beliefs they develop (Pajares, 1996). Indirect experiences are resources of information where individuals do not limit their self-efficacy beliefs and perceptions only to their own mastery experiences. If individuals are not sure of their own skills, or their experiences are limited, they can also shape their self-efficacy beliefs by observing others' experiences (Pajares, 1996). In this way, individuals will get indirect experience by following those around them (friends, teachers, siblings, parents, etc.). The results of the competency levels of the people observed by the individuals may have a strong and weak impact on their self-efficacy beliefs (Schunk, 2011). In particular, in cases where individuals need to recognize their own capacities and to have feedback for their own competence levels, indirect experiences have been shown to have an effect on the performance (Bandura, 1997). And, social persuasions are the tendency of individuals to maintain their successful performances in the past with the persuading words coming from their environment (family, friends, teachers). Social persuasions support the development of self-efficacy of the individuals with enough effort to achieve success (Pajares and Urdan, 2006). Additionally, although not providing the potential required for the development of self-efficacy on its own, social persuasions are reported to contribute positively to demonstrating an effective performance (Bandura, 1997). Another source of self-efficacy is the psychological and affective states, which refer to the perceptions -moods- of individuals that they develop for their own competency systems. According to this source of information, if individuals exhibit a low performance, their level of anxiety and stress rises; and for this reason, they experience hesitations about fulfilling a task (Bandura, 1997). In this context, the individuals with a high level of self-efficacy see the performance they have as a driving force in achieving a job; while those who doubt their own potential have lower self-efficacy perceptions believe that their performance has a weakening effect on them (Pajares, 1996). The most powerful aspect of the self-efficacy belief is to help the individual think about what he can do well in which situations; see himself self-sufficient; transform his skills and capacity into behavior by recognizing them; and gain a personality (Schunk, 2011). Self-efficacy also helps to improve the level of learning and behavior of the individual by increasing the self-belief (Bandura, 1997). The results of several studies carried out in this direction show that self-efficacy beliefs are the source of the positive attitudes, and are a significant predictor of many academic performances (Schunk, 2011; Usher and Pajares, 2009). While there are many fields of study where self-efficacy is effective, the fields of science and mathematics are the leading ones (Chen and Usher, 2013; Dadlı, 2015; İnce, Gülten and Kırbaşlar, 2012; Larson et al, 2014; Yıldırım, 2011; Yurt, 2014). When examining related literature, various study results for both science and mathematics self-efficacy sources and perceptions are encountered (Abalı-Öztürk and Şahin, 2015; Bassi, Steca, Fave and Caprara, 2007; Blake and Lesser, 2006; Çaycı, 2013; Güneri, 2013; Ilgaz, 2011; İrel, 2007; Pajares and Graham, 1999; Sottile, Carter and Carter, 2001; Usher and Pajares, 2006; Pietsch, Walker and Chapman, 2003; Uzar, 2010; Yurt, 2014; Yurt and Sünbül, 2014).

When the related studies are taken in terms of the context of science; it is reported that the self-efficacy perceptions of the students are high (Ilgaz, 2011, Israel, 2007; Kim and Park, 2000), a positive (Aydin, 2010; Bassi et al., 2007; Çaycı 2013; Dadlı, 2015; Güneri, 2013; Lane, Lane and Kyprianou, 2004) and low level (Lodewyk and Winne, 2005) relationships between the academic, course and conceptual achievements of the students. The results obtained by Dadlı (2015) from 881 eighth grade students show that a medium-level, positive and significant relationship exists between the self-efficacy beliefs of 8th grade students for science courses and their academic achievements. In a study conducted by Ilgaz (2011) on a total of 1286 students on 6th, 7th and 8th grade levels, it was concluded that the science self-efficacy of the students both in general and in the scale subscales was high. Similarly, Israel (2007) identified that there was a significant relationship between measurement averages of science self-efficacy and science achievement test averages of a total of 488 students, whom he classified according to their science self-efficacy scores [high, medium and low]. Of the groups classified according to the science self-efficacy score; he also found that science achievement test averages of the group with "high" scores were significantly higher than those of the group with "low" and "medium" scores. In the study conducted by Sottile et al (2001), the relationship between the science course achievements and

self-efficacy perceptions of secondary school students was investigated. In addition to a positive relationship between the academic self-efficacy perception and achievement, a significant linear relationship was encountered between science course achievement and self-efficacy. On the other hand, Güneri (2013) determined, as a result of his study conducted on 450 secondary school students that the self-efficacy scores of the students were high both in general and in the subscales of beliefs to succeed and learn. Another research was conducted by Bassi et al, (2007) on 130 Italian adolescents whose ages ranged from 15 to 19. As a result, the individuals with high academic self-efficacy perception do a job more wishfully and spent more time on a job than those with a lower perception of self-efficacy. In addition, the individuals with high self-efficacy beliefs allocate more time for homework while those with lower self-efficacy beliefs devote more time to resting and relaxation.

When examining the studies conducted in terms of mathematics self-efficacy resources; it is observed in the majority of the studies that the mastery experience, which is the most effective among self-efficacy sources, are in high – and medium – level relationships with other sources (Arslan, 2012; Chen, 2010; Hampton and Mason, 2003; Klassen, 2004; Lopez and Lent, 1992; Usher and Pajares, 2009, Uzar, 2010; Yurt, 2014). Examining the literature in terms of indirect experiences and social persuasions, low level (Gainer and Lent, 1998; Özyürek, 2005; Uzar, 2010), medium level (Arslan, 2012; Usher and Pajares, 2006; Matsui, Matsui and Ohnishi, 1990) and high level (Chen, 2010; Klassen, 2004) relationships are seen. It is also possible to meet various study results suggesting that indirect experiences do not have a significant impact on mathematics achievement (Arslan, 2012; Yurt, 2014), that the physiological states show a low relationship (Arslan, 2012; Joët, Usher, and Bressoux, 2011, Usher and Pajares, 2006), and that physiological and emotional responses are in a negative relationship (Uzar, 2010). On the other hand, the existence of a low-level (Özyürek, 2005), mid-level (Arslan, 2012; Klassen, 2004; Yurt, 2014) and high-level (Gainer and Lent, 1998) relationships was also identified between social persuasions and physiological states. In addition to them, there are also studies that did not find a significant relationship between the indirect experiences and physiological states (Usher and Pajares, 2006), and self-efficacy sources (Matsui et al., 1990). When the related literature is examined, it is seen that self-efficacy sources are in different relationships with each other. For example, in the study conducted by Uzar (2010) on a total of 491 students at 6th, 7th and 8th grade levels, which investigated the impact of the mathematics self-efficacy sources on the mathematics achievement, it was determined that average scores taken from the sources increased as the mathematics scores increased, for the subscales of mastery experiences and social persuasion sources. It was determined that average scores taken from the scale got higher as the grades got higher in students except for those whose mathematics grades were five in terms of the indirect experience source, and that the average scores of the scale did not show a regular order according to the mathematics grades in terms of the source of physiological and emotional state. In addition, it was concluded that the effect size index was 0.44 for the source of mastery experiences; 0.45 for the result driven from other people's experiences with an extensive impact; 0.25 for the social approval source; 0.29 for the physiological and emotional source with a small impact. According to the study conducted by Pietsch et al (2003); the students who had a high level of mathematics self-efficacy had a high-level of mathematics performance, the students who had a low self-efficacy had a low math performance. A similar study was carried out by Blake and Lesser (2006) on 2508 secondary school students. As a result of the study which investigated the relationship between the students' academic self-efficacy and performance of math exam, the students who had high self-efficacy were observed to have high test scores, too. Usher and Pajares (2006) investigated the relationship between the academic self-efficacy belief and the academic achievement of 468 6th-grade students (238 female, 230 male), and the impact of the sources of self-efficacy belief on individuals. According to the results of the study, it was determined that the academic self-efficacy was associated with academic achievement; and that - considering the sources of self-efficacy – the impact of social persuasion, mastery experiences and psychological states in forming the self-efficacy beliefs of girls was higher than in forming the self-efficacy beliefs of boys. On the other hand, as the results of the study carried out by Yurt (2014) with 350 seventh grade students; a significant high and mid-level correlation was found between the resources of mathematics self-efficacy and mathematics achievement. It has been determined that mastery experiences, social persuasion and physiological state, which are sources of self-efficacy, are significant predictors of



math success, while indirect experiences do not have significant effect on math achievement. The impact of the predictors of mathematics achievement on the success has been expressed as 59 %.

As a result, the self-efficacy belief triggers final achievement and the perception that a task can be managed when believed (Bandura, 1997; Schunk, 2011). Thus, it is known that a strong self-efficacy belief has positive effects on the academic performance of the individual (Schunk and Pajares, 2009). Additionally, self-efficacy was reported to an important predictor of academic achievement by many studies (Abalı-Öztürk and Şahin, 2015; Andrew, 1998; Carroll et al, 2009; Güneri, 2013; Schunk, 2011; Yurt and Sünbül, 2014). The above mentioned discourses are supported by the fact that the variable of math self-efficacy was a significant predictor of the academic achievement according to the study of Abalı-Öztürk and Şahin (2015) with 1363 fifth grade students; and that science self-efficacy beliefs were significant predictors of concept achievements according to the study of Çaycı with 363 fifth grade students. In addition, according to the model developed between Turkey and Finland based on the 2003 PISA report, Akarsu (2009) concluded that the self-efficacy was a strong predictor of mathematics achievement in both countries. Secondary education is the most important step in which many students shape their future. The self-efficacy beliefs of the students in this period are known to have positive effects on their academic performance (Bandura, 1993; 1997). In this context, there are many studies in the literature not only on resources of mathematics self-efficacy but also the perception of science self-efficacy. However, no study is available which considers a combination of mathematics and science self-efficacy beliefs and that investigates their relationship with the academic achievement. In the light of all the statements above, the main objective of this study is to determine the predictive power of mathematics self-efficacy resources and perception of science self-efficacy on academic achievement. In this regard, the following questions were sought to be answered by the study carried out:

1. What kind of relationship exists between the resources of mathematics self-efficacy and perception of science self-efficacy?
2. What kind of relationship exists between the resources of mathematics self-efficacy and perception of science self-efficacy, and the academic achievement?
3. What is the predictive power of mathematics self-efficacy resources and perception of science self-efficacy on academic achievement?
4. What is the relative order of importance of the mathematics self-efficacy resources and perception of science self-efficacy on the academic achievement?

## **2. Method**

### **Research Model**

In the study conducted, since the relationships between the resources of mathematics self-efficacy and perception of science self-efficacy, and the academic achievement; a descriptive approach was adopted in the relational model. Relational screening models are models aiming to determine the existence or degree of change between two or more variables (Karasar, 2013).

### **Study Group**

The research was conducted with a total of 698 students from sixth (267, 38.2 %), seventh (231, 33.1 %) and eighth (200, 28.7 %) grades in a public secondary school in İzmir. The mean age of the students was 12.93, and 52.6 % (n=367) of the students consisted of males, and 47.4 % (n=331) of females.

### **Variables**

*The Perception of Science and Technology Self-Efficacy:* In line with the recommendations of Bandura (2006) to determine the science self-efficacy perceptions of students, the Science and Technology Self-Efficacy Scale, developed by Ilgaz (2011) and consisting of the dimensions of *Belief in Learning Ability* and *Belief in Skills* was used. In the scale, including no negative items; scoring of the items was made according to the direct score data in units of 10 between 0 and 100. To determine the construct validity of the scale, the Exploratory and Confirmatory Factor Analysis methods were used. In order to determine the distinguishing characteristics of each individual, the significance and item-total correlations between the top-bottom groups of %27 which were defined

by the total score were considered. The item-corrected item-total correlations of the items in the scale vary 0.48 and 0.73. In addition, the reliability of the scale was determined by the Cronbach alpha coefficient of internal consistency, and the reliability values of the factors were expressed as 0.82 and 0.83. The scale was applied to students by the researchers in a single session, and the application lasted about twenty minutes.

*The Resources of Mathematics Self-Efficacy:* In order to determine the resources of mathematics self-efficacy of students, the Mathematics Self-Efficacy Resources Scale, which was developed by Usher and Pajares (2009) based on the Social Cognitive Theory of Bandura (1997), and adapted to Turkish by Yurt and Sünbül (2014), was used. The scale, which consists of Mastery Experiences, Indirect Experiences, Verbal Persuasions and Physiological States, comprises a total of 24 items, including 6 items in each dimension. The scoring of the scale items varies according to the degree of agreement on the item from 1 to 100. 1 and the low scores close to 1 indicate a low agreement level, 100 and the scores close to 100 indicate a high agreement level. The only negative item in the scale is item 3. The lowest score for each subscale of the scale is defined as 6, and the maximum score as 600. To determine the construct validity of the scale, the Exploratory and Confirmatory Factor Analysis methods were used. To determine the reliability of the scale, the Cronbach alpha coefficient of internal consistency [0.80-0.94], test-retest reliability [0.62-0.87] studies were conducted. In addition to them, according to the results of the criteria validity study, it was indicated that the scale served its purpose. The scale was applied to students by the researchers in a single session, and the application lasted about thirty minutes.

*Academic Achievement:* The half-terms report card grade point averages (all classes) prior to the term when the study was conducted were used to determine students' academic achievements. According to this; three terms for sixth grade, five terms for seventh grade and seven terms for eighth grade were taken into consideration. The student academic grade point average was 67.89 and the standard deviation was 15.17, mode and median were 76 and 68, respectively.

### **Data Analysis**

In the study conducted, the relationships between the resources of mathematics self-efficacy and perception of science self-efficacy, and the academic achievement were calculated with the Pearson Product Moment Correlation technique. In this context, in order to investigate the influence of both mathematics self-efficacy resources and science self-efficacy perception on the academic achievement; a multiple linear regression analysis was performed. However, before the multivariate analysis, some assumptions have to be met. These assumptions are: to examine (i) the impact of the end values, (ii) the compliance between the premises of the analysis technique to be applied (normality, linearity), (iii) a highly significant relationship between independent variables (multicollinearity problem) (Çokluk et al., 2014). The identification of omnidirectional outliers, in other words, whether the normal distribution assumption is met or not can be examined by calculating the Mahalanobis distance values (Büyüköztürk, 2011). The Mahalanobis distance values belonging to the data sets were examined in comparison with chi-square values, and it was understood that the two values complicated the normality and linearity assumptions. At the same time, this situation was analyzed by examining the collective splash matrix graph of the dependent and independent variables. The extreme values resulting from incorrect data input can be corrected easily, but if they are caused by other reasons, it is not easy to determine this; furthermore, this case impairs the compliance of the current regression model with the theoretical model (Can, 2016; Çokluk et al., 2014). Therefore, the values belonging to these two values were extracted from the data set, and the regression analyses were performed again. According to the findings, both the standardized residual values and the splash diagrams created for the predicted values were seen to be in a linear relationship.

Another assumption of the regression analysis is the absence of multiple connection problems between the predicting variables (independent) located in the data set. The multiple connection problem is the existence of strong relationships between the independent variables ( $r > 0.90$  and above) (Çokluk et al., 2014). To test the multicollinearity problem; it is usually recommended in the literature that variance increase factors (VIF) be examined; tolerance values (TV), the condition index (CI) and the correlations between the independent variables be calculated (Büyüköztürk, 2011; Can, 2016; Çokluk et al., 2014; Field, 2005). Accordingly, if VIF values equal to 10 and greater ( $VIF \geq 10$ ), TV values equal to 0.10 or smaller ( $TV \leq 0.10$ ) and CI

values equal to 30 and greater ( $CI \geq 30$ ), then a multiple correlation problem exists (Çokluk et al., 2014). The high correlation between the independent variables in this study is 0.75. The VIF values of the variables range from 1.02 to 2.65; CI values from 1.00 to 19.45, and TV values from 0.37 to 0.97. As a result, considering the VIF, CI and CV values obtained; it can be said that no multiple connection problem exists between the independent variables. In this respect; the regression analysis was performed with 698 data, with the exclusion of the two values in the data set.

### 3. Results

In Table 1, the correlation values belonging to the relationships between the resources of mathematics self-efficacy and perception of science self-efficacy, and the academic achievement are given. According to the findings obtained from the study, it was concluded that significant relationships existed between the resources of mathematics self-efficacy and perception of science self-efficacy, and the academic achievement. The relationship between the academic achievement and belief in skills has the highest correlation ( $r=0.563$ ,  $p<0.01$ ). This is followed by the relationships between mastery experiences and academic achievement ( $r=0.547$ ,  $p<0.01$ ), academic achievement and belief in learning ability ( $r=0.515$ ,  $p<0.01$ ), academic achievement and social persuasions ( $r=0.493$ ,  $p<0.01$ ); academic achievement and indirect experiences ( $r=0.455$ ,  $p<0.01$ ) and academic achievement and physiological states ( $r=-0.30$ ,  $p<0.01$ ). In addition, the relationships between the mathematics self-efficacy resources and science self-efficacy perception were found to be significant ( $p<0.01$ ;  $p<0.05$ ) and they were determined to take values -0.09 to 0.75.

**Table 1.** The correlation values between the resources of mathematics self-efficacy and perception of science self-efficacy, and the academic achievement

Variables	$\bar{x}$	Ss	D1	D2	D3	D4	D5	D6	D7
Science	D1 Academic achievement	67.89	15.17	1					
	D2 Belief in learning ability	75.09	20.36	0.52**	1				
	D3 Belief in skills	73.41	20.16	0.56**	0.75**	1			
Mathematics	D4 Mastery experiences	55.53	20.97	0.55**	0.43**	0.52**	1		
	D5 Indirect experiences	64.32	24.34	0.46**	0.37**	0.49**	0.67**	1	
	D6 Social persuasions	52.32	26.61	0.49**	0.36**	0.46**	0.73**	0.65**	1
	D7 Physiological states	33.55	26.24	-0.30**	-0.13**	-0.12*	-0.09*	-0.12*	-0.12*

\*\* $p<0.01$ , \* $p<0.05$ ,  $N=698$

According to the results of the multiple regression analysis which predicted the beliefs in learning ability and skills, mastery experiences, indirect experiences, which are thought to have an impact on students' academic achievement, social persuasions and physiological states, these variables exhibited a significant relationship with academic achievement ( $R=0.689$ ,  $R^2=0.475$ ) ( $F_{6-691}=104.23$ ,  $p<0.01$ ). The six variables specified explain 48% of the change in academic score, together. According to the standardized regression coefficients, the relative order of importance of the predictor variables on academic achievement is; mastery experience ( $\beta=0.245$ ), belief in skills ( $\beta=0.220$ ), belief in learning ability ( $\beta=0.169$ ), social persuasion ( $\beta=0.114$ ), indirect experiences ( $\beta=0.019$ ) and physiological states ( $\beta=-0.217$ ), respectively. According to the correlation values mentioned above; it is observed that the relationship between the academic achievement and belief in skills is the highest, and that there is a significant negative relationship between the predictors of the academic achievement and physiological states. In this context, it can be said that the students' physiological states will get lower as their academic scores get higher. *B* coefficients located in the

regression equation also gives us the change that each predictor creates with the academic achievement, when other predictors are held constant. For example, a standard deviation increase in the belief in learning ability, when other predictors are held constant, causes an increase of 0.126 units in the academic achievement. Similarly, when other predictors are held constant; a standard deviation increase in belief in skills will cause an increase of 0.166; a standard deviation increase in mastery experiences, 0.177; a standard deviation increase in social persuasions, 0.065; and a standard deviation decreases in physiological states, 0.125 units in academic achievement. Additionally, when the significance values of regression coefficients is taken into account; the predicting variables of beliefs in learning ability and skills ( $p < 0.01$ ), mastery experiences ( $p < 0.01$ ), social persuasions ( $p < 0.05$ ) and physiological states ( $p < 0.01$ ) are seen to be significant predictors of academic success.

**Table 2.** Multiple regression analysis results on the predicting power of mathematics self-efficacy resources and science self-efficacy perception on academic achievement

Predictor Variable(s)	B	Standard Error	$\beta$	t	Double r	Partial r
Constant	36.460	1.920	-	18.994**	-	-
Belief in learning ability	0.126	0.031	0.169	4.057**	0.515	0.153
Belief in skills	0.166	0.034	0.220	4.908**	0.563	0.184
Mastery experiences	0.177	0.032	0.245	5.470**	0.547	0.204
Indirect experiences	0.012	0.025	0.019	0.470	0.455	0.018
Social persuasions	0.065	0.024	0.114	2.690*	0.493	0.102
Physiological states	-0.125	0.016	-0.217	-7.756**	-0.302	-0.283
R=0.689 R <sup>2</sup> =0.475						
F <sub>6-691</sub> =104.23						

\*\* $p < 0.001$ , \* $p < 0.05$ , N=698

According to the results of the multiple regression analysis performed between the belief in learning ability, with the dimension of science self-efficacy perception, and mathematics self-efficacy resources, it is observed that the variable in question had a significant relationship with the mathematics self-efficacy resources ( $R=0.455$ ,  $R^2=0.207$ ;  $F_{4-693}=45.225$ ;  $p < 0.01$ ). Mathematics self-efficacy resources explain about 21% of the change in the beliefs in science learning ability. According to the standardized regression coefficients, the relative order of importance of the predictor variables on belief in learning ability is; mastery experiences ( $\beta=0.302$ ), indirect experiences ( $\beta=0.128$ ), social persuasions ( $\beta=0.051$ ), and physiological states ( $\beta=-0.077$ ). Similarly, when the results of the multiple regression analysis performed between the belief in learning ability, with the dimension of science self-efficacy perception, and mathematics self-efficacy resources are examined, it is observed that the variable in question had a significant relationship with the mathematics self-efficacy resources ( $R=0.562$ ;  $R^2=0.316$ ;  $F_{4-693}=79.946$ ;  $p < 0.01$ ). Mathematics self-efficacy resources explain about 32% of the change in the beliefs in science skills. According to the standardized regression coefficients, the relative order of importance of the predictor variables on belief in skills is; mastery experiences ( $\beta=0.294$ ), indirect experiences ( $\beta=0.224$ ), social persuasions ( $\beta=0.098$ ), and physiological states ( $\beta=-0.059$ ).

**Table 3.** Multiple regression analysis results on beliefs in learning ability and skills, and resources of mathematics self-efficacy

Predictor Variable(s)	B	Standard Error	$\beta$	t	Double r	Partial r
Belief in learning ability	51.836	2.390	-	21.693**	-	-
Mastery experiences	0.294	0.052	0.302	5.668**	0.433	0.210
Indirect experiences	0.107	0.040	0.128	2.654*	0.374	0.100
Social persuasions	0.039	0.040	0.051	0.991	0.363	0.038
Physiological states	-0.060	0.026	-0.077	-2.258*	-0.125	-0.085

	<i>B</i>	Standard Error	$\beta$	<i>t</i>	Double <i>r</i>	Partial <i>r</i>
Belief in skills	43.426	2.198	-	19.761**	-	-
Mastery experiences	0.283	0.048	0.294	5.932**	0.521	0.220
Indirect experiences	0.185	0.037	0.224	4.988**	0.492	0.186
Social persuasions	0.074	0.036	0.098	2.037*	0.463	0.077
Physiological states	-0.045	0.024	-0.059	-1.850	-0.123	-0.070

R=0.455 R<sup>2</sup>=0.207  
F<sub>4-693</sub>=45.225

R=0.562 R<sup>2</sup>=0.316  
F<sub>4-693</sub>=79.946

\*\*p<0.001, \*p<0.05, N=698

#### 4. Discussion, Conclusions and Recommendations

This study was conducted primarily to investigate the relationships of mathematics self-efficacy resources and science self-efficacy perceptions with each other and with academic achievement. Considering the results obtained from this study; significant relationships at a high influence level in dimensions of mastery experience, beliefs in learning ability and skills; significant relationships at a medium influence level in the dimension of social persuasion; and significant relationships at a low influence level in the dimension of physiological states can be seen. Especially, the belief in skills in the perception of science self-efficacy dimension and mastery experiences in the resources of mathematics self-efficacy dimension were seen to have significant relationships at an extensive impact level. The results similar to these dimensions are consistent with the results in the literature. In this regard, when examined the related studies in terms of mathematics self-efficacy resources; it was stated that the mastery experiences, which were defined as the most important and powerful resource by Bandura (1997), were reported to be in highly significant relationships with indirect experiences (Chen, 2010; Uzar, 2010; Yurt, 2014), social persuasions (Chen, 2010; Usher and Pajares, 2009; Yurt, 2014) and physiological states (Gainer and Lent, 1998; Usher and Pajares, 2009; Yurt, 2014). On the other hand, it was concluded that the relationships between the mastery experiences and physiological states; social persuasions and physiological states; and indirect experiences and physiological states were at a rather low level. The studies with similar inconsistent results can be found in the literature (Usher and Pajares, 2006; Gainer and Lent, 1998; Uzar, 2010; Yurt, 2014). While there are many reasons these inconsistent results obtained from the research, the socio-cultural environment where the school on which the measurement tool was applied was located can be considered as the most important one. The most important indicator of this situation is that the school where the study was conducted had student profiles from multiple geographic locations. Thus, the results of the study investigating the students' mathematics self-efficacy resources may vary according to students' age group and cultural characteristics. When the study results are discussed in terms of science, it has been shown that there is a high correlation between beliefs in skills and learning ability. These results are similar to the results of the studies carried out by Kim and Park (2000), Güneri (2013) and Ilgaz (2011).

Another result obtained from the research is that mastery experiences dimension, belonging to the mathematics self-efficacy resources, and belief in skills dimension, belonging to the science self-efficacy perceptions, are the most powerful variables predicting the academic achievement. According to the results obtained, it can be said that the students with a successful mathematics experience and science skills have higher academic self-efficacy beliefs. These findings support the discourses of Bandura (1997) and Pajares (1996) on self-efficacy resources. In addition, the belief in skills, one of the dimensions of science self-efficacy beliefs, can basically be included in the mastery experiences resources voiced by Bandura (1997). In this respect, considering the self-efficacy belief both in mathematics and in science, it is seen that mastery experiences have a significant impact on students' success. Secondary school students' all course grades, including mathematics and science, academic achievement, experiences in mathematics and science applications, performances in courses, project works, class activities, ability to process and comment, and judgments for success and belief in learning ability constitute the mastery

experiences of students in mathematics and science. When the study results are examined, it is understood that a positive mastery experience, high beliefs in learning ability and skills are closely related to the self-efficacy and academic achievements of the students. On the other hand, a negative mastery experience, low perceptions of their beliefs in learning ability and skills cause a decrease in the self-efficacy and academic achievements of the students. In addition to these, students' perceptions of success that have a belief in their learning ability are affected positively. Furthermore, the academic achievement of the students with successful and unsuccessful mastery experiences in mathematics is affected more when compared with their social persuasions, indirect experiences and physiological states. In this regard, the fact that mastery experiences are the most important source of academic achievement is consistent with the results of many studies ([Lopez and Lent, 1992](#); [Usher and Pajares, 2009](#); [Yurt, 2014](#)).

Another result obtained from research is that the belief in learning ability, one of the science self-efficacy perceptions, has an extensive effect just as like the belief in skills. When examining the literature, according to the results of the studies conducted by Güneri (2013) on 450 students and by Ilgaz (2011) on 1286, beliefs in learning ability and skills were found to be high. Given the self-efficacy beliefs in terms of mathematics; after mastery experiences, social persuasions were shown to be in a mid-level significant relationship with academic achievement. Examining the studies in the literature, it is possible to come across studies reaching similar findings ([Arslan, 2012](#); [Klassen, 2004](#); [Yurt, 2014](#)). However, there are also studies in the literature that obtained different results ([Özyürek, 2005](#); [Chen, 2010](#); [Klassen, 2004](#)). It is known that social persuasion help the development of self-efficacy perception of individuals who make an effort to succeed ([Pajares and Urdan, 2006](#)). Secondary students' receiving positive feedback from friends (we believe you can do it), encouraging discourses of their teachers (I trust you), and being appreciated by their family and immediate surroundings can create a positive impact on their academic performance. It was also understood in the study that physiological states had negative low impact on academic achievement. This shows that a negative resource of physiological state negatively affects academic achievement by decreasing the students' beliefs. Another striking result of the study is that indirect experiences do not have a significant effect on the academic achievement. Similar results of studies conducted in the literature support this conclusion ([Arslan, 2012](#); [Usher and Pajares, 2009](#); [Usher and Pajares, 2006](#); [Yurt, 2014](#)). However; although indirect experiences do not have a significant effect on the academic achievement, the corporate disclosures referred for them ([Bandura, 1997](#); [Pajares, 1996](#); [Schunk, 2011](#)) are inconsistent with the findings. While there are many reasons for this situation, one of the possible causes is the assumption that the level of impact of the individuals whom students take as a model on students is limited. Another possible assumption may be that the individual taken as model use a combination of many features of his in achieving a job. In this regard, cannot efficiently take advantage of people who are taken of the students of the study model or models they observe no difficulty in converting performance to achieve a rich life can be restricted to a certain extent indirectly.

Beliefs in learning ability and skills, mastery experiences, social persuasions and physiological states, which have significant impacts on the academic achievement, account for 48 % of the variance in the academic achievement. In particular, the effect of belief in skills and mastery experiences on the variance in the academic achievement is more than the other variables. In order to develop the self-efficacy perceptions of the students for science and to make them gain a successful belief in skills, curiosity and interest in science courses must be awakened, first. Then, a sense of accomplishment must be tasted by the students by creating a learning environment where they can feel comfortable. In this regard, there are a number of responsibilities of science teachers. First, learning environment that is suitable for the learning speed of each student should be created, science applications that require skills should be given more weight. In this direction, especially student-oriented preparation of experiment-oriented class-activities can be helpful. On the other hand, mathematics teachers should also take into account the individual differences of students and must take care to create a learning environment that is suitable for the learning speed of each student. He must first make math attractive to students to make them gain a successful mastery experience. Selection of samples must be made at a level that students can accomplish in order to be able to ensure an active student participation in the class, and students' mathematics self-efficacy beliefs should be prepared for other learning situations in a healthy manner. The most important of all is that students should be helped to discover the new knowledge

by creating an environment that provides opportunities for students' self-evaluation in situations where students make errors to prevent the decrease in their self-efficacy perceptions.

Finally, given the relationship between science self-efficacy perception and mathematics self-efficacy resources; a significant relationship has been detected between the belief in learning ability and mastery experiences; and indirect experiences and physiological state. On the other hand, it is observed that the relationship between belief in learning ability and mastery experiences had a wide effect at a medium level. In this regard, it can be said that science learning ability self-efficacy perceptions of the students develop in a positive way depending on the increase in their mastery experience self-efficacy resources in mathematics. Examining the relationship between the belief in skills, one of the science self-efficacy dimensions, and mathematics self-efficacy resources, it is seen that a significant relationship exist between mastery experiences, indirect experiences and social persuasions. On the other hand, it has been detected that the relationship between belief in skills and mastery experiences, and indirect experiences and social persuasions is above the medium level and has a extensive impact close to medium level. In this respect, it can be said, depending on the increase in students' mastery experience in mathematics, indirect experiences and social persuasions self-efficacy resources that their science skills self-efficacy perceptions develop in a positive way. In light of these findings obtained from the study, it can be said that improving students' beliefs in learning ability and skills in their science self-efficacy perceptions, and mastery experiences, social persuasions and physiological states creates a positive impact on the academic achievement. In this context, mathematics and science teachers should support students' self-efficacy beliefs and efforts to get help, and make them gain the self-efficacy belief necessary for the next performance task. In addition, course teachers should support the students' belief in learning ability, desires to succeed, sense of pleasure from mastery experiences, and consider the importance of creating an effective learning environment by being a model, providing an emotional and psychological support suitable for their development.

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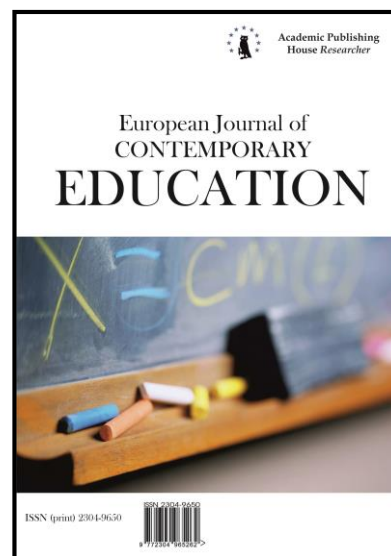
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## Integration of Educational and Sports technologies in Youth Wellness Tourism

Andrei A. Malyshev<sup>a,\*</sup>, Leonid S. Khodasevich<sup>a</sup>, Marina A. Maznichenko<sup>a</sup>, Sergei M. Romanov<sup>a</sup>

<sup>a</sup> Sochi State University, Russian Federation

### Abstract

The article reveals the potential of the youth tourism, addressing a number of problems of higher education: formation of a general cultural competence, preservation and strengthening of students' health, enhancing educational progress, motivating the physical self-improvement, contributing to the formation of healthy lifestyle values and developing social adaptation skills. The need to integrate these tasks with educational, sports, medical and biological technologies is scientifically grounded. The application of sports and wellness tourism in the educational potential of curricular and extracurricular activities of the University was developed as a theoretical model. This work describes the progress and results of its experimental testing. The results show that the sports and wellness tourism practices in higher educational establishments (on the basis of integration of educational, sports, medical and biological technologies) contribute to the formation of a general cultural competence, improve students' health, increase their fitness and motivate the physical self-improvement, as well as contribute to the development of physical qualities, in both men and women.

**Keywords:** higher education, sports and wellness tourism, educational potential of sports and wellness tourism.

### 1. Introduction

A relevant problem of the modern Russian society is the decline in health, and as a result, the decrease of working efficiency. Medical and biological indicators of the Russian younger generation's health are on decline. This is due to the environmental issues, the increase of stress in the society, the lack of the promotion of a healthy lifestyle in families, schools and in media (Kozlov, 2014), a widespread smoking habit (Pugachev et al., 2012), reduction of employment rate

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\* Corresponding author

E-mail addresses: [andreysport83@rambler.ru](mailto:andreysport83@rambler.ru) (A.A. Malyshev), [nic\\_kir@mail.ru](mailto:nic_kir@mail.ru) (L.S. Khodasevich), [maznichenkoma@mail.ru](mailto:maznichenkoma@mail.ru) (M.A. Maznichenko), [8622385053@rambler.ru](mailto:8622385053@rambler.ru) (S.M. Romanov)

and a lack of youth's interest in education (Kuzmenyuk, 2010; Proskuryakova, Zinchuk, 2012). In addition, the current epidemiological situation on drug abuse is a serious problem for the society (Popov, Verbetsky, 2014; Hadland et al., 2009), especially in connection with an increase of the psychoactive substances abuse among the young people (Zaretsky et al., 2008; Allaste, Lagerspetz, 2002; Pecoraro et al., 2013). The physical and mental health condition of the young people is causing a serious concern (Kotova, 2007; Shafii, Shafii, 2003; Weinstock et al., 2004): only 15 % of school leavers can be considered healthy; 50 % have 2-3 chronic diseases; 30 % of young men cannot be drafted into the army (Dartau, 2010; Dolgikh et al., 2013; Pashin, 2012).

This situation is due to the low motivation for physical self-improvement, lack of motion activity, as well as not practicing physical culture and sports and the inability for taking care of one's health.

One of the ways of eliminating this issue is the inclusion of the vocational formation of competences associated with the application of physical culture potential in the achievable targets, in order to improve performance, to provide full social and professional activities, to reduce risks of health threats during the professional activity.

These competencies are included in the general cultural mandatory list in almost all the current Federal State Educational Standards of higher education. So, for the bachelors of 38.03.01, Economics there are the following general cultural competences:

- Ability for self-organization and self-education (GCC-7);
- Ability to use the methods and means of physical culture to provide full social and professional activities (GCC-8)

For the bachelors of 43.03.02, Tourism:

- Ability for self-organization and self-education (GCC -7);
- Ability to choose the proper level of physical fitness to provide full social and professional activities, promote active longevity, healthy lifestyle and disease prevention (GCC -7).

However, despite the objectives in the mandatory results' requirements, according to the current Federal State Educational Standards of higher education, the practical implementation of the system of higher education in Russia is in need of improvement. The analysis of the scientific literature shows that students' health is not improved but in some cases is on decline during the educational process (Dartau, 2010; Pashin, 2012; Pozdeyeva, 2008). According to 58 % of boys and 29 % girls one of the reasons for that is the inefficient organization of physical education at the University. Special medical groups students, the number of which in some Universities is more than 50 % cause concern (Romanovsky, 2015). Firstly the health decline leads to the formation of students' respiratory system defects as well as musculoskeletal and digestive systems diseases, to a lesser extent – to the diseases of the nervous and circulatory systems (Kobylyatskaya et al, 2015). The most important indicator of the cultural identity is the active form of leisure (active recreation and sports), but the proportion of students choosing it in recent years has decreased from 31 to 17 % (Romanovsky, 2015).

Sports and wellness tourism has a high potential for the formation of these general cultural competences, as well as for solving a number of urgent problems of the higher education. However, this potential has not been studied and therefore is not fully used in the educational practices and the integration of the educational, sports and biomedical technologies is not carried out. The article fills this gap.

## **2. Materials and methods**

In this study, we relied:

- On the psychological, pedagogical as well as on the medical and biological studies of sports and wellness tourism potential (Boeva et al, 2013; Gaptar, 2014; Ignatiev, Ignatiev, 2007; Kozlov, 2014; Fedotov, Vostokov, 2003; Malashenkova, 2009, etc.);

- On strategic and normative documents of higher education of the Russian Federation: The concept of the long-term socio-economic development of the Russian Federation up to 2020 (approved by the Decree of the Russian Federation, November 17, 2008 № 1662-r), the Concept of the Russian education modernization for the period of up to 2020, the Federal State Educational Standards of higher education, the Guidelines for updating the existing Federal State Educational Standards of higher education with the professional standards, the Guidelines for the development of the basic professional educational programs, and other professional programs, with the relevant

professional standards (approved by the Ministry of Education of Russia 01/22/2015 number DL-1/05 vn), etc.

The following methods were used to achieve the objectives:

- Theoretical: the analysis of the scientific literature, synthesis, integration, modeling;
- Empirical: pedagogical experiment, anthropometry (height, weight, body mass index – BMI), spirometry (vital capacity of lungs, forced vital capacity of lungs, the amount of exhaled air for 1 second forced expiratory – the FEV<sub>1</sub>, peak expiratory flow – the PEF), cardio interphalography on the "Varicard" complex (heart rate – HR, integrated indicator of the functional state), functional tests (PWC 170 test, the maximum oxygen consumption – the MOC, somatic health status).

### **3. Discussion (including the analysis of the scientific literature on the subject).**

At present sports and wellness tourism exists as a part of the physical culture, elements of which are: physical education, sport, physical recreation and rehabilitation.

This kind of tourism is performed in the form of recreation and public activities, having a great pedagogical impact on the young people.

The sports and wellness tourism is established as one of the most effective and attractive means of recovery, as it is proven by the long-term practice.

Sport and wellness tourism includes (Kozlov, 2014; Fedotov, Vostokov, 2003):

- educational process by means of tourism, widely used in the system of extracurricular education;
- self-conducted wellness tourism;
- commercial tourism with the organization of active travel for leisure, excursions, various forms of hobbies and entertainment;
- weekend trips as wellness and cognitive activity;
- sport activities in the system of physical culture and sports;
- search and research activities in the cultural and historical life of our society.

In the scientific literature sports and wellness tourism is often seen as a pedagogical process (Ignatiev, Ignatiev, 2007), which aims at achieving the following objectives:

- development and improvement of biological body forms and functions, motor skills, mental, physical, moral, volitional and social qualities;
- the formation of motor skills and the development of physical qualities;
- improving the morphological, functional, moral and volitional manifestations of a person;
- physical development and tourism training aiming to the physical improvement.

The essence and potential of sports and wellness tourism is determined by the efficiency of its impact on the prevention of diseases (Boeva et al, 2013; Gaptar, 2014).

In this regard, the specific characteristics of sports and wellness tourism are (Malashenkova, 2009):

1. the possibility of forming a complex of physical and spiritual qualities, ways of the inner cognition and the environment perception, maximizing the beneficial effects of the natural environment, the possibility of self-affirmation;
2. a healthy lifestyle formation;
3. the ability to target all social and age groups.

Sports and wellness tourism as a means of active upbringing influences positively the formation of vital human skills, motor skills, develops the moral, volitional and intellectual qualities of an individual.

The analysis of sports and wellness tourism's organization and strategic targets of the higher education in the Russian Federation made it possible to determine the **pedagogical potential of sports tourism in higher education**, which is:

- formation of general cultural competences, represented in the Federal State Educational Standards of higher education in all areas of training (capacity for self-organization and self-education, the ability to use the methods and means of physical training to ensure full social and professional activity);

- increasing the work and educational efficiency,
- increasing the motivation of physical self-improvement;
- preservation and strengthening of young people's health, healthy lifestyle values shaping;
- stimulating young people's interest in the historical and cultural heritage of Russia, protection of the environment.

The analysis of the scientific works on the nature and conditions of the organization of sports and wellness tourism show that the most important condition for the efficient use of the sports and wellness tourism's pedagogical potential in the system of Russian higher education is the **integration of the three types of forms, methods and technologies**: educational, sports and medical-biological.

**The basis for the integration** of these technologies is the **direction of their use**:

1. Formation of the general cultural competences related to the ability of the methods and means of physical training in order to ensure full social and professional activity.
2. Increase in the overall performance of an individual, as a consequence – increase of the educational progress, formation of the general cultural competences related to the ability to self-organize.
3. Preservation and strengthening of students' health, shaping healthy lifestyle values.
4. Increase in motor activity, motivation and developing skills of physical self-improvement.
5. Social adaptation skills development.
6. Stimulation of cognitive interests, including the interest in the historical and cultural heritage of Russia and protection of the environment.

**The theoretical model of pedagogical potential of sports and wellness tourism in the curricular and extracurricular activities of the University** was developed for a more efficient application of pedagogical potential of sports and wellness tourism. The structure of the model consists of the following units:

**Target and-functional unit** reveals:

- *functions of sports and wellness tourism as a means of increasing the effectiveness of curricular and extracurricular work at the University:*

*Curricular activities:*

- 1) **The activation** function: increase in mental performance, the level of the functional state of the cardiovascular, respiratory and muscular systems and as a result - a progress in educational disciplines.
- 2) **Informative**: increase in educational motivation, of cognition of nature and culture of the region and country.
- 3) **Self-educational**: motivation of the physical self-improvement, promotion of the techniques of self-knowledge and the environment.
- 4) **Resultative**: increase of students' fitness, formation of common cultural competences related to the use of methods and means of physical culture in order to provide full social and professional activity, the ability for self-organization and self-education.
- 5) **Developing**: motor skills development.

*Extracurricular activities:*

- 1) **Wellness**: healthy lifestyle promotion, preservation and strengthening of the young people's health;
- 2) **Preventive**: prevention of bad habits, addictions, socially significant diseases.
- 3) **Integrative**: a complex formation of physical and spiritual qualities.
- 4) **Patriotic**: promoting patriotism, stimulating young people's interest to historical and cultural heritage of Russia.
- 5) **Developing**: development of physical (strength, endurance, accuracy and movement speed, etc.), psychological (will power, patience), moral (mutual aid skills) qualities.
- 6) **Ecologic**: stimulating interest in environmental protection, maximize the abilities of the beneficial effects of the natural environment, mastering eco-sports technologies, ecotourism.
- 7) **Socializing**: the development of psycho-physical, moral, volitional and social qualities, social adjustment skills.

- 1) *Goals of using sports and wellness tourism's educational potential* in the organization of educational and extracurricular activities at the University:
  1. General cultural competences formation.

2. Professional and self-improvement motivation development.
3. Teamwork and mutual aid skills development.
4. Development of students' skills in sports and wellness tourism's potential in professional and career growth.

**The informative unit** of the model reveals additional elements to be included in the educational and extracurricular activities in order to achieve the efficient application of the sports and wellness tourism's educational potential:

*Curricular activities:*

– a significant amount of additional training classes of sports and wellness tourism, including thematic workshops on environmental tourism technology, trips to the nature, excursions, one-day hiking is introduced to the "Physical education" discipline;

– sections on physiology and hygiene of mental work, the scientific organization of the educational work of the student, by means of sports and wellness tourism are included in variative propaedeutic disciplines ("Introduction to the profession", "Fundamentals of the student's work", etc.);

– project activities of students, including the development and implementation of professional socially-oriented projects using sports tourism potential, including volunteer projects (for example, a series of guided tours, trips for students) is included in the content of various educational disciplines.

*Extracurricular activities:*

– students' tourist club organization;

– sports and wellness tourist club organization;

– conducting training sessions designed to develop endurance, activation of motor activity and the development of other qualities and skills necessary for hiking during the club meetings;

– organization of tourist rallies and other University sporting events, including sports and wellness tourism competitions;

– Participation of the University volunteer organization in projects related to sports and wellness tourism.

**Structural logic unit** of the model discloses *an algorithm (sequence) of the use of sports and wellness tourism in the educational potential of the curricular and extracurricular University activities:*

Step 1. Diagnostics of the body functions with the complex of medical and biological technologies: anthropometry (height, weight, body mass index - BMI), spirometry (vital capacity of lungs, forced vital capacity of lungs, the amount of exhaled air for 1 second forced expiratory - the FEV<sub>1</sub>, peak expiratory flow - the PEF) cardio inter-phalography performed on the "Varicard" complex (heart rate - HR, integrated indicator of the functional state), functional tests (test PWC 170, the maximum oxygen consumption - MOC, somatic health status).

Step 2. Discussion of the diagnostic results with students individually and in groups. Giving medical recommendations for health improvement.

Step 3. Testing students in accordance with the GTO (Ready for Labor and Defense) complex standards.

Step 4. Discussion of the GTO complex standard results individually and in group conversations and discussions. Recommendations of sports, psychological and pedagogical character for physical self-improvement, efficiency increase, applying of methods and means of physical culture to provide full social and professional activity.

Step 5. Conducting a series of thematic lessons on the use of sports and wellness tourism's ability to deal with the students' personal and professional problems, including classes on the natural environment tourism techniques.

Step 6. The organization of a systematic increase of the students' motor activity, including training classes at the gym, walks in the nature, excursions, one-day hiking trips etc.

Step 7. Students' development and implementation of projects on the use of sports and wellness tourism potential addressing personal and socially relevant problems, including volunteer projects.

Step 8. Re-diagnostics of students' health condition. Discussion on the changes and affecting factors.

Step 9. Repeated testing in accordance with the GTO complex standards. Discussion on the

changes and affecting factors.

**Instrumental and process unit** of the model reveals a pedagogical toolkit of using the potential of the sports and wellness tourism in the curricular and extracurricular activities of the University. This toolkit includes three groups of forms, methods and technologies:

- *psychological and pedagogical*: lectures, master classes, individual and group discussions, counseling based on the results of diagnostics of physiological indicators of health, psychological trainings, discussions, development and implementation of social projects, professional and personal self-designing, sporting events, celebrations, festivals, tours, etc.;
- *sport*: GTO complex standards performance testing, highly active motor activity in the ecological environment, walks in the nature, one-day hiking trips, thematic lessons on the tourism technique in the natural environment, etc.;
- *biomedical*: diagnostics of the functional state of body systems of students, medical recommendations based on the results of diagnosis, functional tests, anthropometry, spirometry, cardio intervalography, etc.

**Organizational and administrative units** of the model describe the main subjects involved in the organization of curricular and extracurricular activities including the use of pedagogical potential of sports and wellness tourism, as well as the forms and organizing and coordinating methods.

The following University units can be involved in the organization of the curricular and extracurricular activities applying the educational potential of the sports and wellness tourism:

- Head of the sports club;
- Heads of the sports sections;
- Head of the Department and instructors of the "Physical Education" discipline;
- Head teacher and specialized departments' lecturers of Tourism (if any);
- Dean of the Faculty of Tourism (if available), and his deputies;
- The director and staff of the health center (dispensary staff, basic University clinics);
- Doctors of the University medical centers;
- Head of the University educational work;
- Head of the Volunteer Centre;
- Chairman of the Student Council sports section;
- Leaders of student associations, related to sports and wellness tourism;
- The social partners of the university, for example, City children and youth tourist center;
- Other interested parties.

Methods of organization and coordination of these subjects:

- Understanding the concept and the pedagogical potential of sports and wellness tourism, acquaintance with the forms, methods and technologies;
- Concilia on discussing results of diagnostics of the students' body systems functional conditions;
- Development of guidelines for the organization of sports and wellness tourism;
- Master classes;
- Scientific and practical conferences;
- Methodological seminars;
- Counseling;
- Design and update of social network webpages of the University tourist club, etc.;
- Design and a constant update of methodological materials' databases on sports and wellness tourism activities, etc.

A 6-months period pedagogical experiment (January-July 2016) was carried out for the purpose of the experimental testing of the model among 20 men and 30 women aged 18-21 years at the Federal State Educational Establishment for Higher Education "Sochi State University" tourist club. Participants of the experiment attended training gym classes on a regular basis (2 times per week). They performed environmental trips (12 times), excursions (3), one-day hiking trips (3) and thematic classes on tourism technology in the natural environment (6) considering their level of physical and technical training for recreation.

To evaluate the efficiency of sports and wellness tourism classes the following methods were used: anthropometry (height, weight, body mass index – BMI), spirometry (vital capacity of



lungs, forced vital capacity of lungs, the amount of exhaled air per 1 second forced expiratory – the FEV<sub>1</sub>, peak expiratory flow – the PEF) cardio intervalography on the "Varicard" complex (heart rate – HR, integrated indicator of the functional state), functional tests (test PWC 170, the maximum oxygen consumption – MOC, somatic health status).

The participants of the experiment were tested according to the GTO complex standards, which included the following tests: leaning forward (cm); keeping the "Fish" static position (sec); running 100 meters (sec) for both men and women; running 3,000 meters, (min, sec) for men; running 2,000 meters (min, sec) for women; pulling-up from the high beam hanging position (number of times) for men; flexion and extension of arms from the back-leaning rest on the floor position (number of times) for women; straight legs-leaning forward from the standing position on a gymnastic bench (cm below the bench level); standing long jump (cm); 700-gram sport equipment throw (grenade) (meters) for men; body lifting up from the back-leaning rest position (number of times per 1 minute) for women. The results of the "hiking and the tourism skill check on a distance of 15 km" in both men and women, "5 km cross-country, without time limit" for men and "3 km cross-country, without time limit" for women tests were also taken into account for obtaining a GTO badge.

#### **4. Results**

Before the pedagogical experiment, students' fitness was slightly lower than the "Bronze badge" of the GTO complex standard in all the conducted tests and conformed to the average level of age standards for both men and women. Prior to the pedagogical experiment, the average result of the "Running 100 meters" test for men was worse than the "Bronze badge" of the GTO standard by 0,1 seconds; the "Running 3000 meters" test – by 8 seconds; the "Pulling-up from the high beam hanging position" test – by 0,7 times; the "Straight legs-leaning forward from the standing position on a gymnastic bench" test – by 1,9 cm; the "Standing long jump" test – by 3,6 cm; the "700-gram sport equipment throw (grenade)" test – by 1,3 meters (table 1).

For women, prior to the pedagogical experiment the average result in the "Running 100 meters" test was worse than the GTO complex standard "Bronze badge" by 0.2 seconds; the "Running 2,000 meters" test – by 3 seconds; the "arm flexing and extending from the back-leaning rest on the floor position" test – by 0,87 times; the "Straight legs-leaning forward from the standing position on a gymnastic bench" test – by 0,78 cm; the "Standing long jump" test – by 1,6 cm; the "Body lifting up from the back-leaning rest position" (number of times per 1 minute) test – by 1,3 times (table 1).

The improvement in all fitness evaluation characteristics of both men and women was observed after the experiment (table 1). At the same time a significant improvement ( $p < 0.05$ ) in men was recorded in "Running 3,000 meters", "Pulling-up from the high beam hanging position", "Straight legs-leaning forward from the standing position on a gymnastic bench", "Standing long jump" and "700-gram sport equipment throw (grenade)" tests. A significant improvement ( $p < 0,05$ ) in women was observed in "Running 2,000 meters", "Arm flexing and extending from the back-leaning rest on the floor position", "Straight legs-leaning forward from the standing position on a gymnastic bench", "Standing long jump" and "Body lifting up from the back-leaning rest position (number of times per 1 min)" tests. In "Running 100 meters" test the improvement in both men and women was not significant ( $p > 0,05$ ).

The obtained results asserted that the proposed methodology of the sports and wellness tourism helps students to improve their fitness, specifically increase the level of their endurance, flexibility, strength and speed abilities in both men and women.

The application of the proposed methodology for conducting classes on sports and wellness tourism contributed to the achievement of the GTO complex standards by youth. At the same time, the average men fitness level was below the GTO "Bronze badge" standard before the start. After the pedagogical experiment the average result in the "Running 100 meters" test in men conformed with the requirements of the "Silver badge" of this complex; the average result in the "Running 3,000 meters" test was 10 seconds worse than the "Silver badge" standard, but conformed with the "Bronze badge" requirements; the average result in the "Pulling-up from the high beam hanging position" test was only 0.1 times worse than the "Silver badge" standard, but conformed with the requirements of the "Bronze badge"; the average result in the "Straight legs-leaning forward from the standing position on a gymnastic bench" test exceeded the "Silver badge" standard; the average

result in the "Standing long jump" test exceeded the "Bronze badge" standard; the average result in the "700-gram sport equipment throw (grenade)" corresponded with the "Bronze badge" and was only 0.7 meters less than the "Silver badge" standard.

**Table 1.** Students' fitness level before and after the pedagogical experiment

Tests	Men		Women	
	Before	After	Before	After
Running 100 meters (sec)	15,20±0,53	14,80±0,46	17,7±0,69	17,3±0,69
Running 3 km (min, sec)	14,08±0,23	13,40±0,21*	-	-
Running 2 km (min, sec)	-	-	11,38±0,19	11,12±0,20*
Pulling-up from the high beam hanging position (times)	8,30±1,25	9,90±1,10*	-	-
Arm flexing and extending from the back-leaning rest on the floor position (times)	-	-	9,13±1,30	10,60±1,21*
Straight legs-leaning forward from the standing position on a gymnastic bench (below the bench level - cm)	4,10±1,73	7,10±1,20*	7,20±1,37	9,00±1,31*
Standing long jump (cm)	211,40±3,81	220,70±4,06*	168,40±4,12	177,70±4,35*
700-gram sport equipment throw (m)	31,70±1,94	34,30±1,91*	-	-
Body lifting up from the back-leaning rest position (times per 1 minute)	-	-	32,70±2,55	36,30±2,99*

Note \* – deviation of indicator differences before and after the pedagogical experiment ( $p < 0,05$ ).

Prior to the sports and wellness tourism practice, all the average women physical fitness characteristics were below the "Bronze badge" of the GTO complex standard. After the pedagogical experiment the average results in the "Running 100 meters" test for women exceeded the "Bronze badge" standard; the average result in the "Running 2,000 meters" test exceeded the "Silver badge"; the average result in the "Arm flexing and extending from the back-leaning rest on the floor position" test exceeded the "Bronze badge" standard; the average result in the "Straight legs-leaning forward from the standing position on a gymnastic bench" test exceeded the "Bronze badge" standard; the average result in the "Standing long jump" test exceeded the "Bronze badge" standard and was only 2,3 cm away from the "Silver badge" standard result; the average result in the "Body lifting up from the back-leaning rest position" test exceeded the "Bronze badge" standard.

Thus, the average the average men physical fitness characteristics complied with the GTO complex "Silver badge" standard after the application of the training techniques of the sports and wellness tourism in 33.3 % of tests ("Running 100 meters" and "Straight legs-leaning forward from the standing position on a gymnastic bench"), and 66,7 % of tests – with the GTO complex "Silver badge" standard ("Running 3000 meters", "Pulling-up from the high beam hanging position", "Standing long jump" and "700-gram sport equipment throw (grenade)"). In addition, at the end of the pedagogical experiment 2 of the experiment participants obtained the GTO complex "Golden badge", 4 – "Silver badge" and 6 – "Bronze badge". Whereas the "Bronze badge" of the GTO complex was obtained by 4 people, "Silver badge" – by 2, and the "Golden badge" was not obtained prior to the pedagogical experiment.

The average women fitness level began to comply with the GTO complex "Silver badge" standard after the application of the training techniques of the sports and wellness tourism in 16.7 % of tests ("Running 2,000 meters), and in 83,3 % of tests – with the "Bronze badge" standard

(“Running 100 meters”, “Straight legs-leaning forward from the standing position on a gymnastic bench”, “Arm flexing and extending from the back-leaning rest on the floor position”, “Standing long jump” and “Body lifting up from the back-leaning rest position”). In addition, at the end of the pedagogical experiment 2 participants obtained the GTO complex "Golden badge", 4 – "Silver badge" and 6 – the "Bronze badge". The "Bronze badge" was obtained by 4 of its participants, "Silver badge" – by 2, and the "Golden badge" was not obtained prior to the pedagogical experiment.

Prior to the pedagogical experiment the average health indicators of surveyed men and women in general were within the age normal values (Table 2). For example, the BMI index for men was  $24,00 \pm 3,98$  kg /m<sup>2</sup> at age rate of 20-25 kg / m<sup>2</sup>. For the surveyed women the figure was  $21,36 \pm 2,56$  kg / m<sup>2</sup> at age rate of 19-24 kg / m<sup>2</sup>

Vital lung capacity (VLC) for men was at  $5,20 \pm 0,52$  l, which at age normal value of 4.8 liters was slightly higher (by 0.4 l) than the normal values. The VLC indicator in women equaled  $3.74 \pm 0.57$  l, at the age rate of 3.6 liters was slightly higher (by 0.2 l) than the normal values. Forced vital lung capacity (FVLC) normally corresponds to 90-92% of vital lung capacity. FVLC indicators of men and women before the pedagogical experiment corresponded to the normal values which, in combination with the normal values of the amount of air exhaled per 1 second in forced expiratory (FEV 1) and peak expiratory flow (PEF) showed no difficulties in breathing.

**Table 2.** Students’ health indicators before and after the pedagogical experiment

Indicators		Men		Women	
		Before	After	Before	After
BMI, kg/m <sup>2</sup>		24,00±3,98	23,51±3,98	21,36±2,56	20,80±2,56
VLC, l		5,20±0,52	5,45±0,55*	3,74±0,57	3,95±0,53
FVLC, l		4,77±0,50	5,00±0,44	3,40±0,59	3,57±0,61
FEV 1, л		4,72±0,48	4,98±0,54	3,18±0,49	3,40±0,53
PEF, л/сек		9,31±1,27	9,38±1,03	5,56±0,95	5,63±0,88
Heart rate, beats/min		77,1±2,51	71,4±2,88*	83,0±3,30	75,4±3,04*
Integral functional state index (according to Varicard), %		70,1±3,48	79,4±3,50*	69,9±4,15	78,9±3,54*
Maximum oxygen consumption, ml/min/kg		41,8±4,1	47,2±4,0*	34,1±4,3	38,8±4,4*
Keeping the “Fish” static position, sec		65,2±6,9	74,4±8,2*	61,3±6,4	70,1±9,2*
Bourdon test	Efficiency, the number of characters	747±23,3	785±29,0*	717±21,0	758±24,3*
	Sustainability, the number of errors by one processed character	0,035±0,0011	0,014±0,0012*	0,035±0,0011	0,014±0,0012*

Note \* – deviation of indicator differences before and after the pedagogical experiment (p<0,05).

The functional state integral indicator of the participants of the experiment that was defined by the cardio intervalography was within normal limits and was amounted to  $70,1 \pm 3,42$  % in men and  $69,9 \pm 4,12$ % in women. However, in 16 % of cases there was a slight deviation of the values of this index from the standard, and in 8 % – a significant deviation, which was a reason for a medical consultation. In addition, single cases of tachycardia were recorded. The average heart rate level while resting in men was  $77,1 \pm 2,47$ , and in women –  $83,0 \pm 3,28$  beats / min prior to the pedagogical experiment.

The study of the maximum oxygen consumption prior to the pedagogical experiment didn’t reveal any deviations. So, male participants’ MOC level was  $41,8 \pm 4,1$  ml/min/kg, and female –  $34,1 \pm 4,3$  ml/min/kg, with a minimum limit value of this index – 42 for men and for women – 35 ml/min/kg.

During the “Keeping the “Fish” static position” test prior to the pedagogical experiment, the average male result was  $65,2 \pm 6,9$  seconds, and female –  $61,3 \pm 6,4$  seconds, indicating a low level of the back muscles development, and therefore a high probability of spinal disorders.

The Bourdon test results prior to the pedagogical experiment showed an average level of mental performance and sustainability focus in surveyed men and women (Table 2).

So, prior to the pedagogical experiment, both men and women had normal height and weight indicators, an average level of mental performance; had no respiratory system abnormalities. At the same time, a drop of the MOC level, the weakening of the back muscles and the increase of heart rate were observed. Moreover, cardiointervalography revealed individual deviations of the functional state of the cardiovascular system.

After the pedagogical experiment the experts pointed out an improvement of all health-related indicators, in both men and women (table 2), including a BMI decrease on the deviation level ( $p > 0,05$ ). In men, BMI had a decrease of  $0,49 \text{ kg/m}^2$  (from  $24,00 \pm 3,98$  to  $23,51 \pm 3,98 \text{ kg/m}^2$ ), and in women – of  $0,56 \text{ kg/m}^2$  (from  $21,36 \pm 2,56$  to  $20,80 \pm 2,56 \text{ kg/m}^2$ ). Perhaps the participants' weight loss during the pedagogical experiment was due to the prolonged cyclical aerobic work, which is a characteristic of the sports and wellness tourism and is considered to be a positive fact.

A slight increase in VLC and all related indicators (FVLC, FEV 1, PEF) was revealed after the pedagogical experiment on the deviation level ( $p > 0,05$ ). In men VLC had an increase of  $0,25 \text{ l}$  (from  $5,20 \pm 0,52$  to  $5,45 \pm 0,55 \text{ l}$ ), and in women – of  $0,21 \text{ cm/kg}^2$  (from  $3,74 \pm 0,57 \text{ l}$  to  $3,95 \pm 0,53 \text{ l}$ ). Changes in the VLC-related indicators were relevant, appropriate and did not go beyond the normal range. Some increase in respiratory volumes was probably due to the strengthening of respiratory muscles during the active sports and wellness tourism exercises.

A normalization of the cardiovascular functions was observed after the pedagogical experiment. A significant decrease in heart rate was observed at rest, both in men and women ( $p < 0,05$ ). Resting heart rate in men during the sessions of sports and health tourism has decreased by  $5,7 \text{ beats / min}$  (from  $77,1 \pm 2,47$  to  $71,4 \pm 3,12 \text{ beats / min}$ ), and in women – by  $7,6 \text{ beats / min}$  (from  $83,0 \pm 3,28$  to  $75,4 \pm 3,02 \text{ beats / min}$ ).

Furthermore, there was a significant increase in MOC in both men and women ( $p < 0,05$ ). During the sessions of sports and wellness tourism MOC in men increased by  $5,4 \text{ ml / min / kg}$  (from  $41,8 \pm 4,1$  to  $47,2 \pm 4,0 \text{ ml / min / kg}$ ), and in women at  $4,7 \text{ ml / min / kg}$  (from  $34,1 \pm 4,3$  to  $38,8 \pm 4,4 \text{ ml / min / kg}$ ). Such a significant increase in MOC presumably was due to the weight loss of the examinees, as well as to the respiratory and cardiovascular systems reserve capacity increase due to exercises.

Wearing hiking backpacks and other physical exercises that were a part of the experiment significantly strengthened spine-supporting back muscles, as proved by the results of the “Keeping the “Fish” static position” test. A significant increase of this index was observed during the pedagogical experiment, both in men and women ( $p < 0,05$ ). The “keeping of the “Fish” static position” test time grew by  $9,2 \text{ seconds}$  (from  $65,2 \pm 6,9$  to  $74,4 \pm 8,2 \text{ seconds}$ ) in men, and by  $8,7 \text{ seconds}$  (from  $61,3 \pm 6,4$  to  $70,1 \pm 9,2 \text{ seconds}$ ) in women during the sports and wellness tourism practice.

The sports and wellness tourism activities affected and improved intellectual working capacity as well. There was a significant increase in results of the "Bourdon" test, both in men and women ( $p < 0,05$ ) in terms of efficiency and stability during the pedagogical experiment. The number of processed symbols in men increased by  $38 \text{ characters}$  (from  $747 \pm 23,4$  to  $785 \pm 30,0 \text{ characters}$ ), and in women - to  $41 \text{ characters}$  (from  $717 \pm 23,9$  to  $758 \pm 31,1 \text{ characters}$ ) during the sports and wellness tourism practice. The number of mistakes significantly decreased.

## **5. Conclusion:**

1. The results of the research show that sports and wellness tourism activities for the students of higher educational establishments increase their fitness level, develop physical qualities and improve functional body systems;

2. Dynamics of indicators of health and fitness during the pedagogical experiment had no distinct gender differences, proving the applicability of the proposed method for both men and women.

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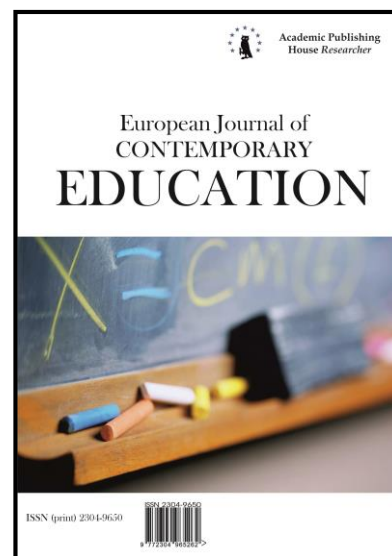
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## **The Efficiency of Higher Education Institutions as a Basis for Forming Competent Personnel for Region Economy**

Olga N. Sezonova <sup>a, \*</sup>, Svetlana A. Galchenko <sup>a</sup>, Valentina N. Khodirevskaya <sup>a</sup>

<sup>a</sup> Kursk State University, Russian Federation

### **Abstract**

The modern market relations open provide new opportunities of development for higher educational institutions, however the majority of universities aren't ready for effective and independent business management yet. At the turn of the 21st century many educational institutions faced such problems as scarcity of federal financing, fundamental changes in demand for educational services, decrease of the requirements to educational services and qualification of their consumers, and also lack of necessary knowledge and experience to manage universities in new conditions. The growing level of competitive struggle between educational institutions added complexity to the situation that led to a disproportion in training of personnel for regional economy. That's why the successful functioning of modern higher educational institutions should considerably depend on their fast and easily adaptation to constantly changing external environment. In our opinion the most suitable method that allows to judge on the efficiency of higher education institutions is rating assessment. Within the research we offer to create a rating of higher education institutions of Central Federal District using the integrated indicator that allows to consider the heterogeneity of the estimated criteria. The used technique allowed to determine 7 cluster groups depending on the specifics of development of higher education institution (leaders, diversifiers, accumulators of scientific research, the international orientation, accumulators of financial resources and conservatives). In article conclusions that are made in the article show that the revealed disproportion in development of higher education institutions has an influence on the processes of forming and development of professional and competent personnel for the region and as a result on the level of social and economic development.

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\* Corresponding author

E-mail addresses: [Sizaya@ya.ru](mailto:Sizaya@ya.ru) (O.N. Sezonova), [svetabuzunova@mail.ru](mailto:svetabuzunova@mail.ru) (S.A. Galchenko), [kamen-25@yandex.ru](mailto:kamen-25@yandex.ru) (V.N. Khodirevskaya)

**Keywords:** regional economy, monitoring of the higher education, efficiency of higher education institutions, regional specifics of the higher education, competent personnel, social and economic development of the region.

### **1. Introduction**

Modern information space of Russian economy is at the stage of active development, that necessitates systematic control and scientific analysis of the received results. All this reveals the relevance of monitoring researches in various spheres of social and economic life of society. And the sphere of education is not an exception, starting from 2012 annual monitoring of efficiency of higher educational institutions has been carried out in order to reveal the prospects of development of the higher school. In our opinion, the detailed analysis of results of monitoring is one of the methods to determine not only the level of scientific and educational capacity of the region, but also a basis for competent personnel training for regional economy.

The purpose of the research is to carry out an efficiency evaluation of the work of higher educational institutions of Central Federal District that are to provide highly qualified and competent personnel that should meet market requirements.

Research tasks are to study the methods of rating assessment that are used for higher education institutions, to search for new methods of ratings with use of the integrated indicator allowing to consider the heterogeneity of the criteria.

### **2. Materials and methods**

"Action plan" of development of professional education includes a number of measures that lead to strengthening of the potential of highly skilled personnel training. One of such measures is monitoring of educational institutions approved by Russian Federation Presidential Decree of 7 May, 2012 No. 599 "About the measures in realization of federal policy in the fields of education and science" ([Russian Federation](#)). Lack of motivation to achieve competitive results among higher education institutions was one of the reasons to start monitoring the efficiency of their work.

It should be noted that the indicators in monitoring generalize a set of quantitative assessments of solvency of the higher education institutions that are used both in domestic and in foreign ratings. Among domestic rating agencies are such as, RAEX ([Second annual rating](#)), National Research University Higher Schools of Economics and RIA Rating ([Monitoring of the quality](#)), All Russia Public Organization Business Russia ([Business rating](#)), Federal education agency (FEA) ([The ratings of higher](#)), Kommersant ([Rating of higher](#)), the independent agency "Reuters" ([The rating of the Russian](#)). Among all international global academic rating agencies there are three most known: Academic Ranking of World Universities (ARWU) – the Shanghai rating ([Academic Ranking](#)); QS World University Rankings – the rating of QS ([QS World](#)); Times Higher Education World University Ranking – Thomson Reuters (THE), the rating of Times ([Times Higher Education](#)).

On the basis of the carried-out comparative analysis of the components of domestic and foreign ratings it is possible to draw an inference that the indicators in the monitoring generalize a set of quantitative assessments of solvency of higher education institutions, but don't allow to carry out an overall complex assessment.

The subject of the research is the work efficiency of higher educational institutions in the territory of Central Federal District.

Author's calculation methodology of an integrated indicator of efficiency assessment of work of higher education institutions is offered for determination of private quantitative assessment of scientific and educational capacity of the region ([Sezonova, 2015: 236](#)). The data of annual monitoring of efficiency of work of higher education institutions are the basis for calculations, the data of monitoring fall within 7 groups: educational, research, international, financial and economic activities, salary of the faculty, employment of the graduates and a category of additional indicators ([Information and analytical](#)).

Each of these groups of indicators has its median values reflecting efficiency of higher education institution in this or that type of activity:

1. The indicators that refer to «Educational Activities» allow to estimate students' average grade in Unified State Examination, percentage of the first-year students (winners and prize-winners of the All-Russian Olympiads of School Students and employer-sponsored students), the bachelors and specialists, specific weight of the students taking master degree, the number of



postgraduate students calculated per 100 students, and the percentage of academic staff having degree of the candidate and doctor of science.

2. Indicators of research activities reflect the number of publications and citations of scientific works in Russian and international systems: RSCI, Web of Science/Scopus; the amount of research and development calculated per 1 member of academic staff, the proportion of funds received from IP management and the percentage of young scientists in academic staff.

3. International activities include a set of the indicators characterizing the ratio of foreign students-graduates in student body.

4. Financial and economic activities – the income of higher education institution from all sources and from revenue-producing activities calculated per one member of academic staff, the ratio of the average salary of the academic staff in higher education institution to the average salary of the region and the income of higher education institution from all sources calculated per the number of students.

5. An indicator "The salary of the faculty" provides the calculation of one of the leading indicators reflected in "action plan" – the ratio of the salary of the faculty to the average salary in the region.

6. The indicator "Employment", allows to estimate the proportion of the graduates who found employment within the calendar year following the year of graduation in total number of graduates having studied according to the main educational programs of the higher education.

7. The additional indicators take into consideration the sector profile of higher education institution. Now the following specifics of higher education institutions are taken into account: military, medical, sports, transport, creative and agricultural.

### 3. Research tools

Taking into consideration the foregoing it is possible to claim that within the development of scientific and educational capacity of the region there is a necessity to increase the competitiveness of Russian education in the world due to training of highly qualified personnel. All the innovations in the field of education and budget policy pursue this objective. However, the increase of financing directed to the development of education will allow to achieve desirable results only if certain purposes and ways of their achievement are set, and in particular, national universities should increase their competitiveness and at least five national higher education institutions should enter top hundred in world rating list in accordance with the "action plan".

At the same time it should be noted that each group of the criteria used in the monitoring ambiguously reflects the efficiency of higher education institutions. It is offered to weight the data of monitoring and to calculate an integrated indicator in order to balance the criteria:

$$K_{\text{эф}} = \sum_{i=1}^n X_i \times w_i \tag{1}$$

where  $X_i$  – an indicator of efficiency of higher education institution,  $w_i$  – a weighting value in general set.

Collation of criteria according to their importance assumes the use of the method of pair comparisons. To get objective results of weighting 12 independent experts in the sphere of education were interviewed in order to determine the degree of importance of each criterion in the monitoring of efficiency of higher education institutions, at the same time additional indicators were not taken into consideration as the higher education institutions had different sector profiles. As a result the average values of each criterion of efficiency of higher education institution were calculated (table 1) as a basis for the method of pair comparison (David, 1978: 18) (tab. 2).

**Table 1.** Criteria of assessment of the efficiency of higher education institution

Criterion	Average value	Criterion	Average value
1. Educational activities - (O)	9,2	4. Financial and economic activities - (F)	6,7
2. Development and research - (H)	8,5	5. International activities - (M)	6,2
3. Salary of teaching staff – (S)	7,9	6. Employment - (T)	6,3

For pair comparison of criteria of the work of higher education institutions the system of assessment  $B_{ij}$  is used:

$$B_{ij} \begin{cases} 1, \text{ if the compared criteria are equivalent;} \\ 0, \text{ if the criteria of the line are less than the criteria of the column;} \\ 2, \text{ if the criteria of the line are greater than the criteria of the column.} \end{cases} \quad (2)$$

**Table 2.** Matrix of binary reference of the criteria under consideration

B <sub>ij</sub>	Indicator	O	H	M	F	S	T	S <sub>i</sub>	W <sub>i</sub>
	O		1	2	2	2	2	2	11
H		0	1	2	2	2	2	9	0,25
M		0	0	1	0	0	0	1	0,03
F		0	0	2	1	0	2	5	0,14
S		0	0	2	2	1	2	7	0,19
T		0	0	2	0	0	1	3	0,08
Total:								36	1,00

Thus, during steps of carried-out comparative assessment with use of expert poll, it was determined that the greatest impact on an integrated indicator of efficiency has such criteria as educational and research activities.

#### 4. Results of a research

The tendencies of development of higher educational institutions of all the regions of the Central Federal District with the exception of Moscow and the Moscow region were analyzed in the research. The basis of selective observation was formed by higher educational institutions with:

- quantity of the executed monitoring indicators not lower than three;
- the student body at least 1000 people;
- the integrated group of specialties (major) "Economics and management".

Totally 57 higher education institutions were selected by results of the research with the exception of the branches.

The threshold value of efficiency is 248,58, received by calculation of an integrated indicator for median values of each of criteria. The received median value is applicable to most higher education institutions of the CFD with only one exception – Belgorod region. The geographical location and level of economic development of the subject of the Russian Federation where the higher education institution is located has been taken into consideration since 2015 in making the assessment of the amount of Research and Development. Threshold values for various groups of regions fluctuate from 51 to 70 thousand rubles, and the higher education institutions of Belgorod region and of Republic of Udmurtia turned out to be in one group, for example.

On the basis of the data the calculation of the corresponding integrated indicators was made, a table fragment with the received results is in [table 3](#).

The results made it possible to group higher education institutions according to their development in education market. For building-up an interval distribution series, we applied Sterdzhess's formula ([The choice, 1995: 65](#)) that allowed to determine 7 clusters of higher education institutions using the integrated indicator:

$$n = 1 + 3,3221 \lg N = 1 + 3,3221 \lg 57 = 6,83 \approx 7. \quad (3)$$

The value of an equal interval is:

$$i = \frac{X_{\max} - X_{\min}}{n} = \frac{630,11 - 196,35}{7} = 61,96. \quad (4)$$

Positioning and group of higher education institutions by integrated criterion of assessment of efficiency are provided in the picture.

**Table 3.** Integrated indicator of the efficiency of higher educational institutions of Central Federal District

Higher Education Institution	Indicators, $x_i$						Integrated indicator, $K_{sp}$
	Educational activities, credits	Development and Research, Thousand rubles.	International activities, %	Financial and economic activities, Thousand rubles.	Salary of teaching staff, %	Employment, %	
Weight, $w_i$	0,31	0,25	0,03	0,14	0,19	0,08	1,0
Median value	60	51,28 – 70,1	1	1327,57	133	75	248,58
1. Belgorod National Research University	63,71	831,28	16,76	2620,28	153,69	75	630,11
2. Bryansk State Agrarian University	53,32	196,75	13,68	3269,54	184,74	70	564,56
3. Kovrov State Technical Academy n.a. V. A. Degtyarev	55,68	55,18	18,77	2096,74	153,73	90	361,57
4. Voronezh State Agricultural University	54,21	60,75	1,56	2141,12	150,57	30	362,80
5. Ivanovo State University of Chemistry and Technology	60	311,96	3,92	1868,73	163,46	75	395,39
6. Kaluga State University	63,05	54,36	2,05	1331,08	140,97	80	252,73
7. Kostroma State University n.a. N.A. Nekrasov	59,63	203,33	7,52	1433,76	145,76	85	304,76
8. Kursk State Agricultural Academy	55,64	64,98	1,04	1726,96	156,22	65	310,18
9. Lipetsk State Technical University	59,61	90,18	3,5	1637,51	140,59	80	303,49
10 Orel State Agrarian University	60,09	245,92	2,74	1926,22	171,11	75	388,37
11. Ryazan State Radio Engineering University	62,48	660,31	2,14	2006,67	157,73	85	502,21
12. Smolensk University for the Humanities	51,35	138,44	7,35	1842,16	147,75	0	336,72
13. Tambov State University n.a. G.R. Derzhavin	62,93	192,91	15,81	2079,92	142,95	75	392,56
14. Tver State University	64,5	244,63	2,87	2161,43	175,53	80	423,59
15. Tula State University	60,98	137,27	8,06	1937,57	159,2	80	361,37
16. Yaroslavl State University	71,03	251,58	0,69	1790,92	193,02	85	379,14



Disruptive development in several activity areas corresponds to I and II clusters (Leaders), the integral index is 2,5 times higher than the threshold value. Two higher educational institutions were included in this cluster: Belgorod state national research university, Bryansk state agricultural university.

The III cluster (Diversifiers) – harmonic development of educational institutions, at the same time at least three indices exceed threshold values more than twice. This group included 4 educational institutions (The Belgorod state agricultural academy n.a. V. Ya. Gorin, Bryansk institute of management and business, Institute of management, business and technologies, Ryazan state radio engineering university). Research and development, financial and economic activities and international activities are the most developed. Value of an integral index is ranging within 506 to 568 points.

The IV cluster (Accumulators of scientific research) – variation of intensive development of higher education institution with a focus on development and research. This category includes higher education institutions with the index of research and development activities 4 times higher than the threshold value and the integral index is 1,3 times higher. This group included 6 educational institutions.

The V cluster (The international orientation) – development with the high level of international activity index, the index is on average 7 times higher than the median value. This cluster includes 16 higher educational institutions which are in the range within 320 to 382 points.

The VI cluster (Accumulators of financial resources) – the higher educational institutions ranging within 258 to 320 points are characterized by intensive development of higher education institutions with a focus on the maximizing financial results in profile activities. On average index value is 1,2 times higher than the median. 20 higher education institutions were included in this group.

The VII cluster (Conservatives) – results of development are obviously not seen, at the same time the most part of the studied indices are higher than median values that proves their efficiency. But in accordance to the calculation of an integral index seven higher educational institutions are below the median line.

## 5. Conclusion

It should be noted that, despite high values of an integrated indicator of efficiency of higher education institutions, the disproportion of not only regional development, but also at the level of federal districts seems to be obvious and was reflected in the previous researches. It can be detected by fluctuation of indicators of scientific and educational potential and, as a result, it has negative effect on the effective functioning of system of development of professional competences of the personnel. The point to be emphasized is that one of methods to solve the problem of disproportionate social and economic development of regions is to develop cluster economy which is determined by a number of factors, such as favorable mineral and scientific and educational base, high development of infrastructure, convenient geographical location, and also historically developed links of business entities or industries (Khodirevskaya, Sezonova, 2013a: 254).

Thus, the revealed regional disproportion of accumulating and realization of educational potential not only is closely connected with social and economic factors of the development of the regions of the Russian Federation, but also influences the processes of development of professional and competent staff (Khodirevskaya, Sezonova, 2013b: 102).

It is important to emphasize that if the regional economy has necessary resources for development and raising of living standards, then it will lead to growth of reward from the got professional education and to improvement of quality of a labor power which is shown through skill level and competence. If quality of social and economic parameters in the region is reduced, then can lead to a mismatch of processes of accumulating and realization of educational potential.

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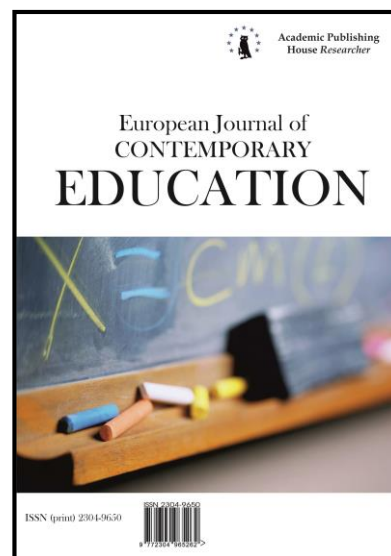
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## Specifics of Information Basis of Educational Activity of a Bachelor Student

Yury N. Slepko <sup>a,\*</sup>, Natalia A. Baranova <sup>b</sup>, Elena A. Fayurshina <sup>c</sup>, Nicholas W. Mitiukov <sup>d</sup>

<sup>a</sup> Yaroslavl State Pedagogical University of K.D. Ushinsky, Russian Federation

<sup>b</sup> Udmurt State University, Russian Federation

<sup>c</sup> East-European Institute, Russian Federation

<sup>d</sup> International Network Center for Fundamental and Applied Research, Russian Federation

### Abstract

The discussion of the results of an empirical research of the problem of forming the information basis of educational activity of students studying in pedagogical higher education institution is carried out in the article. The information basis of educational activity is considered by the authors as a subsystem of psychological system of activities implemented in the conditions of educational and professional teaching. It is considered in the context of forming other subsystems of activities (motives, purposes, the program, decision making, educational and important qualities) allocated in a single system in system-genetic approach of V. D. Shadrikov. The authors select the concept of professional formation and realization of personality of Yu.P. Povarenkov and his understanding of psychological structure of the subject of work as a basis for the analysis of forming the information basis of educational activity in the conditions of educational and professional teaching. According to the authors of the article, these approaches allow to carry out the analysis of educational and professional development at the personal (psychological) level whereas other existing approaches are limited only to the subject level of the activity analysis. Formation of information basis of educational activity includes qualitative and quantitative changes on different study courses and stages of educational and professional activity. Using methods of correlation analysis, multiple regression analysis, analysis of the correlation relation the authors set the task to analyze the process of forming the information basis of educational activity in a more detailed way. The methods used in work allowed the authors to specify the existing ideas not only concerning the relationship between success of educational activities and

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\* Corresponding author

E-mail addresses: [slepko@inbox.ru](mailto:slepko@inbox.ru) (Yu.N. Slepko), [natik-231@yandex.ru](mailto:natik-231@yandex.ru) (N.A. Baranova), [fayurshini@list.ru](mailto:fayurshini@list.ru) (E.A. Fayurshina), [nicoo2@mail.ru](mailto:nicoo2@mail.ru) (N.W. Mitiukov)

psychological features of its information basis, but also study the influence of the latter on success of students' education. Also, the authors carried out the analysis of interference of the activities realized in teaching process on psychological features of its information basis.

**Keywords:** educational activity, information basis of educational activity, system-genetic approach, success of educational activity.

### **1. Introduction**

Efficiency of any kind of activity such as playing, educational or professional is determined by specific features of formation and organization of psychological system of activity. However, information basis of activities (further – IBA) as one of its components, has a special role in its forming and functioning. After V. D. Shadrikov, we understand IBA as "a set of the information characterizing subject and subjective conditions of activity, and allowing to organize activity according to a vector "purpose-result" (Shadrikov, 2007: 65-66).

### **2. Literature Review**

Let us concretize the idea of importance of IBA in more detail.

First, adequacy of IBA enables to establish compliance between the idea of the purpose of activity and its result. Secondly, its accuracy gives the chance to allocate concrete indicators of result which have been planned at the stage of purpose statement. Thirdly, completeness of IBA creates conditions for considering all aspects of activity necessary for obtaining the result corresponding to the purpose. Respectively, information about subject and subjective conditions of activity also represents those data which the person has to consider for obtaining necessary result.

In narrow sense it is possible to understand information necessary for activity realization as operating of information units necessary for performance of activity at the subject and effective level (Shadrikov, 2007: 23). However, recent studies of V. D. Shadrikov and V. A. Mazilov on the problem of man's inner world (Druzhinina, 2002, Mazilov, 2015, Shadrikov, 2015, Shadrikov, 2013) allow to allocate two types of information providing efficiency of activity in IBA. "When information connected with activity is transferred to the worker by other people or the text, it will be information–value. When information, necessary for activity, is perceived by the worker, taken from his experience, inner world, it will be thought-value. There is a deep connection between these types of information but they shouldn't be confused" (Shadrikov, 2013: 193). The interrelation of information-value and thought-value is even stronger when "in case of obtaining information from other models and technical means, a man always transfers it into subjective information, allocating it with his understanding and connecting with subjective motivation and experience" (Shadrikov, 2013: 193). Work with information at this level is implemented in psychological aspect of activity - "as implementation of the conscious purpose, manifestation of will, attention, intellectual properties, etc." (Shadrikov, 2007: 24).

Taking into account the fact that the subject of this research is the analysis of IBA formation in the process of studying in pedagogical higher education institution, it is necessary to concretize a number of moments.

1) Information-value is acquired by the student at the sensory-perceptual level. At this level there are regularities of formation of sensory-perceptual mechanisms by means of which perception (reflection) of signals bearing professional and important information is carried out (Shadrikov, 2013: 193). Efficiency of reflection of information-value at this level is determined by properties of productivity of mental processes among which thinking holds a specific place. From our point of view, the latter is connected with the fact that pedagogical activity, being the subject of development while studying in pedagogical higher education institution, requires students to address specific competencies in solving problems. Respectively, "the quantity of tasks solved in the set time and the speed of solution of the given tasks can act as indicators of productivity of thinking... We will characterize quality of thinking according to correctness of the objectives solution. Time spent for the correct solution of tasks, and probability of the correct solution of tasks in the set time interval can serve as indicators of reliability" (Shadrikov, 2013: 186).

Due to the limited size of this publication we shall not go into more detailed distinctions between pedagogical tasks and the problems of other types of activity. Still it should be noted that the concept of cognitive style of mental activity can be used to describe and explain the features of pedagogical thinking (Druzhinina, 2002: 283-284).



2) As we have said, information received on the sensory-perceptual level is transferred into subjective information by the student. It is filled with his own understanding and it is connected with the subjective motivation and emotions. As a consequence, the information "moves" to the cognitive level of IBA, where its functional significance and value for the activities performed are established. Again, taking into account the fact that pedagogical activity has significant specifics in comparison with other types of activities, we can assume that the qualitative characteristics of subjective information is related to the students' understanding of themselves and others, attitude to themselves as future teachers, perception of importance for their own evaluations of the activities of the others (students, parents, administrators), etc. Accordingly, this information side can be reflected in the features of self-attitude as a way of the relationship to yourself, expectations of others' relationships, readiness of taking specific actions in relation to yourself.

### Problem definition

Considering the above, the following objectives have been set in the present research.

- 1) To study IBA formation of students in pedagogical higher educational institution at the sensory-perceptual level. The activity of thinking takes a leading role in solving cognitive tasks at this level.
- 2) To study IBA formation at the cognitive level, seen in subjective information changes.
- 3) To describe features of the interaction processes of IBA formation at two levels during the teaching of students in pedagogical higher educational institution.

### 3. Methods of research

The students of pedagogical higher educational institution (n = 118) specialising in "Primary education" were enrolled as a sample of the study. The following methods and techniques were used in order to achieve the objectives.

1) To study the features of IBA formation at the sensory-perceptual level, we used the test of J. Kogan, "Comparison of similar drawings» (Carretero-Dios, 2009, Kagan, 1965). It allows to evaluate the degree of extreme manifestations of cognitive style "Impulsivity – reflexivity." This style characterizes the speed of human decision-making in situations when one needs to select the correct option. In this case the differences between different types of people appear not only in speed, but also in quality of an analytical activity in the situation of decision-making (Druzhinina 2002: 284).

2) To study the features of IBA formation at the cognitive level a "self-attitude questionnaire" by Stolin V.V., Pantileeva S.R. (Stolin, 1988) was used. The results of its use allow to describe three levels of self-attitude differing in the degree of generality: 1) global self-attitude; 2) self-attitude differentiated by self-esteem, self-sympathy, self-interest, expectations and attitude towards yourself; 3) the level of specific actions (preparedness) towards yourself (Stolin, 1988).

3) To study the success of educational activity the results of academic progress (further – AP), and the results of expert evaluation of formation of psychological system activity component – information base of educational activity – were used. The experts were lecturers constantly working with students. Now let us analyze the results.

### 4. Analysis of the results

*I. IBA formation at the sensory-perceptual level.* From our point of view, IBA at the sensory-perceptual level can be considered as ways of working with information coming from external sources to the student. The latter include the flow of information from lecturers, other students, other sources (different types of literature, etc.). Accordingly, determining the style of cognitive activity as a way of working with information we can consider it in a reflexive – impulsive vector of reflection of the incoming information. The results of the study of cognitive style formation presented in Table 1 and in Drawing 1 allow to identify a number of important points.

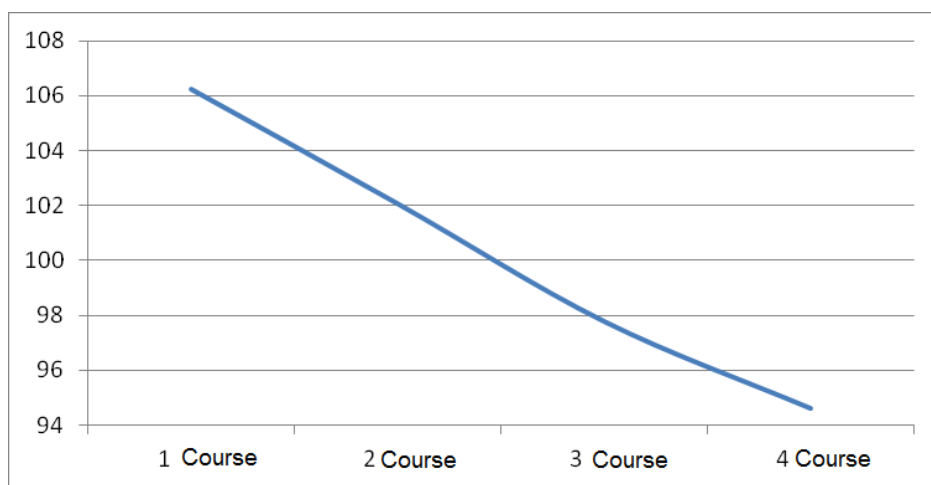
**Table 1.** Dynamics of formation of cognitive style "reflexivity-impulsivity"

Course of study	Mx*	MSE	Cv
1 course	106,2	6,059	5,70
2 course	102,1	14,413	14,12

3 course	97,8	14,425	14,75
4 course	94,6	15,077	15,93

**Note. Hereinafter:**  $M_x$  – arithmetic mean;  $MSE$  – standard deviation;  $C_v$  – variation coefficient.  
 \* - Index is calculated as difference between the number of mistakes in the test, and time of task performance. In order to transfer data from the negative to positive scale data were standardized (z- data-transform) and then transferred to a scale with mean score = 100 and sigma = 15.

First, the dynamics of cognitive style formation is characterized by gradual transition from impulsivity to reflexivity of solving problems for each course. Assessing differences between the courses, we have found out that for each course changes are quantitative in nature (differences between the courses were not statistically reliable –  $p > 0,05$ ). Qualitative, natural changes occur only after the second year of study, when differences between impulsivity and reflexivity are statistically reliable at a high level of significance –  $p \leq 0,001$ .



**Drawing 1.** Dynamics of formation of cognitive style "reflexivity-impulsivity"

Secondly, qualitative nature of changing a way of work with information on the second year leads to the change of connection of this method with success of activity (SA). If on the first year of study the differences in progress between "reflexive" and "impulsive" students were not statistically reliable, then on the second and third year students with predominance of reflexive cognitive style (2 course: significance of differences  $p \leq 0,05$ , 3 course –  $p \leq 0,01$ ) become more successful. The growth of reliability of differences and the figure of T-Vilcokson from the second to third year indicates an increase in the importance of reflexivity in ensuring the success of educational activity. On the 4th course differences cease to have the character of authenticity, which may indicate both adaptation of impulsive students to solution of tasks in this way, and decrease of success of reflective students study.

Third, connection between cognitive style and success of activity can be explained by the following. Development of individual method of working with information of impulsive students may be the reason of successful study. Analysis of the correlation relation between these figures can prove it. The results are shown in Table 2. We see that throughout the entire period of study is the level of formation of cognitive style determines the success of study, and not vice versa.

In our opinion, there is no contradiction between the fact that, on the one hand, the older the course, the more reflexive students become. On the other hand, cognitive style determines success of activity on each course. Terms of activity on each course remain the same for all students. The question is how these conditions are accepted by students, ie, how they work with information. Therefore, it means mental activity determines success of activity, and not vice versa. In our view, this confirms the idea expressed above by V.D. Shadrikov that "in the case of obtaining information from other models and hardware man always transforms it in subjective information, giving it his understanding and connecting it with subjective motivation and emotions» (Shadrikov, 2013: 193).

Accordingly, the problem is not only how the student works with information (reflexive-impulsive), but also how it is converted to a subjective level and how it is connected with the inner world. Let us move on to the analysis of the last point.

**Table 2.** Evaluation of mutual influence of cognitive style "reflexivity-impulsivity" and the success of educational activity

CS «R-I»	1 course		2 course		3 course		4 course		SA (y)
	$x \rightarrow y^2$	$y \rightarrow x^3$	$x \rightarrow y$	$y \rightarrow x$	$y \rightarrow x$	$y \rightarrow x$	$y \rightarrow x$	$y \rightarrow x$	
	<b>0,77</b>	0,48	<b>0,99</b>	0,65	<b>0,77</b>	0,68	<b>0,96</b>	0,76	

**Note.**

- 1 - method of calculating the correlation relation - n is means of assessing the effect;
- 2 - influence  $x \rightarrow y$  - assessment of the impact of cognitive style formation on SA;
- 3 - influence  $y \rightarrow x$  - assessment of the impact of SA on cognitive style formation;
- \* And **bolding** - predominant influence of cognitive style on SA, and vice versa is marked.

*II. IBA formation at the cognitive level.* Having chosen self-attitude as an indicator of IBA formation at the cognitive level, we mean the existence of three levels of a student's attitude to himself. 1) "Integral sense of "for" or "against" actually "I" (integral self-attitude); 2) differential attitude to yourself in the form of self-respect, sympathy, interest and expectation of attitude to you from others; 3) readiness to treat to yourself in a certain way and use this relation in behavior and activities (Stolin, 1988). The results of the study of self-attitude formation, shown in Table 3, allow to distinguish the following important points.

Firstly, an integral component of the self-attitude (S) throughout the study period remains almost unchanged. Differences between the 1st and the 2-4th courses are statistically unreliable. It suggests that sudden, dramatic changes in the self-understanding do not take place at university. The changes relate to certain aspects in self-attitude, which are reflected in the results obtained.

**Table 3.** Self-attitude formation in the period of study in higher education institution

	1 course		2 course		3 course		4 course	
	Mx	Cv	Mx	Cv	Mx	Cv	Mx	Cv
S	90	6	91	6	91	5	91	5
I	77	12	76	19	80	14	82	11
II	80	12	81	14	71	21	84	14
III	56	20	54	26	59	17	51	18
IV	90	11	82	22	90	14	90	16
1	73	20	76	23	71	18	84	11
2	79	22	76	27	76	19	65	23
3	81	16	78	21	79	20	82	19
4	77	13	72	17	79	11	75	17
5	51	28	62	33	58	37	56	41
6	87	16	86	17	88	16	90	16
7	71	24	68	28	76	22	71	20

**Note. Hereinafter:** S – integral sense of "for" or "against" of "I"; I – self-esteem; II – self-sympathy; III – expected attitude from others; IV - self-interest; 1 – self-confidence; 2 – attitude of others; 3 – self-acceptance; 4 – self-leadership, self-sequence; 5 – self-blame; 6 – self-interest; 7 – self-understanding.

Secondly, in the dynamics of self-attitude formation, it is possible to allocate three tendencies connected with the period of study at university.

1) *expected attitude of others* (decline on the 2nd year, increase on the 3rd, decline on the 4th), *self-sequence* (decline on the 2nd year, increase on the 3rd or 4th courses), *self-blame* (increase on the 2nd, decline on the 3rd and 4th year) are characterized by the *cyclical* formation.

2) *self-respect* (qualitative increase from the 2nd year to the end of study), *self-interest* (qualitative increase from the 2nd year to the end of study) and *self-confidence* (qualitative increase from the 3rd year to the end of study) are characterized by *positive development* (growth).

3) *self-sympathy* (sharp increase on the 4th year) and *the perception of the relation of others* (continuation of qualitative decline on the 4th year) are characterized by *decline within three years of study*.

Due to the limit of the article the explanation of the received results is the task of another research. However, the results of the analysis of the correlation relationship of components of self-attitude and the success of educational activity are of particular interest. In Table 4, we see that during the entire period of study (with a few exceptions on the third year) the success of study affects the global, differentiated and expressed on the level of actions student's attitude towards himself.

**Table 4.** Evaluation of mutual influence of the self-attitude components and the success of educational activity

Components of self-attitude	1 course		2 course		3 course		4 course		SA (y)
	$x \rightarrow y^1$	$y \rightarrow x^2$	$x \rightarrow y$	$y \rightarrow x$	$y \rightarrow x$	$y \rightarrow x$	$y \rightarrow x$	$y \rightarrow x$	
S	0,44	0,43	0,65	<b>0,81</b>	0,51	<b>0,58</b>	0,49	<b>0,61</b>	
I	0,36	<b>0,65</b>	0,78	0,80	<b>0,48</b>	0,39	0,38	<b>0,76</b>	
II	0,43	<b>0,54</b>	0,59	<b>0,96</b>	0,38	<b>0,58</b>	0,69	<b>0,76</b>	
III	0,25	0,28	0,28	<b>0,69</b>	0,37	<b>0,57</b>	0,49	<b>0,68</b>	
IV	0,24	<b>0,55</b>	0,38	<b>0,71</b>	0,24	<b>0,63</b>	0,38	<b>0,47</b>	
1	0,23	<b>0,53</b>	0,27	<b>0,72</b>	0,41	0,39	0,43	<b>0,66</b>	
2	0,14	<b>0,55</b>	0,44	<b>0,93</b>	0,41	<b>0,51</b>	0,51	<b>0,58</b>	
3	0,28	<b>0,53</b>	0,27	<b>0,60</b>	<b>0,43</b>	0,25	0,27	<b>0,49</b>	
4	0,13	<b>0,46</b>	0,61	<b>0,82</b>	0,34	<b>0,64</b>	0,32	<b>0,75</b>	
5	0,24	<b>0,43</b>	0,69	<b>0,85</b>	0,35	<b>0,60</b>	0,42	<b>0,85</b>	
6	0,27	<b>0,58</b>	0,17	<b>0,83</b>	0,40	<b>0,65</b>	0,49	<b>0,60</b>	
7	0,27	<b>0,47</b>	0,42	<b>0,55</b>	<b>0,45</b>	0,41	0,57	<b>0,79</b>	

**Note**

1 - influence  $x \rightarrow y$  - assessment of the impact of self-attitude on SA;

2 - influence  $y \rightarrow x$  - assessment of the impact of SA on self-attitude formation;

\* And **bolding** - predominant influence of the self-attitude on SA, and vice versa is marked.

Thus, there is a problem. At the sensory-perceptual level, ways of working with information (cognitive style) determine the success of educational activity (Table 2), while at the cognitive level the success of activity determines the student's attitude towards himself. That is, the transition of information from objective into subjective is followed by the fact that at the subjective level the success of activity determines understanding and linking of information with subjective motivation and emotions. Here the problem is in need of understanding the following. What is the mechanism of the transition from the influence of the subject on the success of activity (cognitive style on academic progress) to influence of the success of activities on the subject (of academic progress on the understanding of information)? We can assume that only the analysis of the system, including motives, goals, and other components, will allow to understand this mechanism.

**5. Conclusion**

Summarizing the brief analysis of IBA formation in the period of study at university, it is necessary to draw a number of conclusions.

1) It has been established that IBA formation at the sensory-perceptual level is characterized by consistent growth of reflexivity importance in ensuring the success of educational activity of students.

2) IBA formation at the cognitive level is accompanied by multidirectional tendencies connected both with the student's course of study, and increase or decline of the success of his activities. Changing of self-attitude is characterized by increase, decline, stagnation on various courses of study, and depends primarily on the success of educational activity.

3) The received results allow to formulate the problematic question of how the transition of information from objective (sensory-perceptual) to the subjective (cognitive) level takes place. The solution of the question may be connected with the following possible areas of further study of the problem. First, review of the results obtained in connection with the peculiarities of formation of other components of the psychological system of educational activity (motives, goals, programme, decision-making, educational and important qualities). Secondly, expansion of the object of study (IBA) through the analysis of other cognitive styles (for example, "field dependence – field independence", "rigid – flexible cognitive control," "concrete – abstract conceptualization", etc) (Mazilov, 2015). Thirdly, the inclusion in the analysis of IBA formation the definition of the role of other mental functions (feeling, perception, memory, vision, imagination, attention) and different properties of their productivity (Shadrikov, 2013: 183-186).

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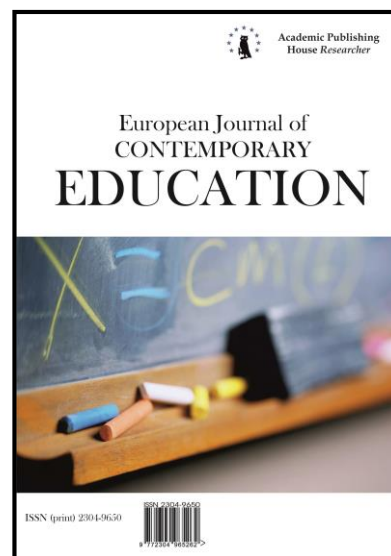
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## **A Model for the University Operating as a Center for the Formation of a Local Environment for Adult Ongoing Education**

Irina I. Ukraintseva <sup>a,\*</sup>, Maksim S. Romanov <sup>a</sup>, Nataliya I. Neskromnykh <sup>a</sup>, Anna L. Khovyakova <sup>a</sup>

<sup>a</sup> Sochi State University, Russian Federation

### **Abstract**

This paper features the results of a study conducted as part of the project ‘The Development of Universities as Centers for the Formation of a Local Environment for the Ongoing Education of the Adult Population of a City’, undertaken by Sochi State University in 2016 as an assignment commissioned by the Ministry of Education and Science of the Russian Federation.

The paper examines, via a comparative-pedagogical approach, the theoretical and practical foundations of putting together a local environment for adult ongoing education and provides a rationale for the role of universities in the development and operation of a municipal system of ongoing education. The authors share the results of an analysis and systematization of the major trends in adult ongoing education by reference to the current best practices employed domestically and internationally. Based on the findings of a theoretical analysis of relevant research and a problem analysis of the activity of institutions of higher learning operating in local markets for educational services, the authors single out several models for the formation by universities of a municipal educational environment for adult ongoing education and draw a conclusion about the need to develop a more comprehensive, integrative, and consistent model. The paper brings forward a new model for the university operating as a center for the formation of a local environment for adult ongoing education, characterizes its specific components (objective-and-function, content, structural-logistical, instrumental-technological, and organizational-managerial), establishes the prospects for it as a tool for managing the education system, and sets out the key strategies for putting together a local educational environment for adult ongoing education.

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\* Corresponding author

E-mail addresses: [ukrainceva58@rambler.ru](mailto:ukrainceva58@rambler.ru) (I.I. Ukraintseva), [romanovmaxim@mail.ru](mailto:romanovmaxim@mail.ru) (M.S. Romanov), [nesknatali@mail.ru](mailto:nesknatali@mail.ru) (N.I. Neskromnykh), [khovyakova@yandex.ru](mailto:khovyakova@yandex.ru) (A.L. Khovyakova)

**Keywords:** adult ongoing education; formation of a local environment for adult education; educational services.

### **1. Introduction**

The logic outlined in this study is based on the idea that gathering pace at the moment is the global and domestic trend toward urbanization, which is reflected in growth in the number of urban settlements and population being concentrated in them. The Russian Federal State Statistics Service (Rosstat) has the latest share of Russia's urban population at 74 % (as of January, 2015) and predicts the trend is set to continue into the future ([Demograficheskii ezhegodnik, 2015](#)). Researchers are discussing the multiplicity and interpenetration of a city's spaces – industrial, recreational, architectural, geographical, and social. The latest research into urbanization has focused both on factors related to the first geography (location, natural resources, climate, etc.) and on those related to the second geography, and, above all, human capital (education, professional skills, cultural diversity, population mobility, mode of life, etc.) and its impact on the city's development.

Russia's present-day realities are clearly indicative of boosts in the caliber of human capital being an indispensable component of the social-economic development of the nation's cities in particular and the country as a whole. The organization of conditions conducive to the effective preservation, reproduction, and build-up of human capital is viewed as a factor in the competitiveness of cities and is a managerial objective that requires a theoretical pillar of support. From this standpoint, what becomes a crucial strategic factor in the sustainable development of cities in the present-day world is the formation of highly-organized urban environment zones with modern urban infrastructure, cutting-edge information channels and technology, and environmentally favorable living conditions. Putting together and maintaining a mutual equilibrium between all of the city's life-sustaining subsystems is, no doubt, indissolubly associated with the creation and operation of the city's educational environment.

In this context, of relevance is the study of issues related to putting together an environment for the ongoing education of a city's adult population. Furthermore, in resolving the issue of getting the labor market filled with professional personnel, it pays to factor in labor market statistics for every region and city across the nation. The study discussed in this paper was conducted in the resort-city of Sochi. Sochi is a major economic center on the coast of the Black Sea and is one of the largest resort cities in the Russian Federation. The city's current population is over 400,000 (data from the Local Office of the Russian Federal State Statistics Service for Krasnodar Krai ([Sait Territorial'nogo organa](#))). Based on the latest ranking of occupations in the labor market, Sochi's most in-demand professions currently are: Real Estate (19.4 % of all job offers in Sochi), followed by Commerce (19.2 %), Production (7.8 %), Health Care/Pharmacy (4.5 %), Tourism/Hotels/Restaurants (4 %), Construction (3.8 %), Top Management (3.4 %), Domestic Staff (3.4 %), and others (Review of Sochi Labor Market Statistics ([Obzor statistiki rynka](#))).

The city's current social infrastructure is creating the preconditions for reproducing qualified personnel, boosting the people's physical and moral health, and upholding their cultural values. The high development levels of the city's social infrastructure, developed as part of the staging of the XXII Olympic Winter Games and XI Paralympic Winter Games, make it possible to attract qualified personnel from other regions, which enables the city to employ top-level specialists. Having said that, the city is facing the issue of replenishing this resource via the local population. Indeed, burgeoning production, new areas of activity emerging, and increasingly computerized production processes require providing training for the labor force, including teaching them new knowledge and professional skills, which explains the growing demand for vocational education programs. Another problem, as the authors see it, is the contradiction between being willing and being prepared to invest in vocational training. Among those who are interested in implementing educational practices related to ongoing vocational learning for adults are, above all, employers represented by the management of state-run and private institutions. However, not many employers are prepared to invest in vocational training and retraining for their staff. Staff members are oftentimes compelled to personally bear the costs of their vocational training, which, no doubt, affects the timeframes on completing an ongoing education program, its efficiency, and, ultimately, one's resulting command thereof. It is also worth considering the fact that education is not just about short course completion timeframes but requires a consistent approach and enough study

time to ensure the best results.

Thus, right now the city's educational policy ought to be aimed at resolving the issues facing its labor market and enhancing the caliber of its human capital, while the interaction between the urban environment and the city's adult residents ought to be considered through the prism of putting together specific models for transforming its educational environment.

An instrument of this kind, in the authors' view, is the university, which can be viewed as a center that creates the necessary and sufficient space for diverse educational services so as to help meet the various educational needs of the city's adult residents. It is universities that are capable today of playing the role of providers of academic and socio-cultural learning oriented toward the city's interests and the continual development and education of the population – with a view to enhancing one's professional skills and helping one adapt to suit the ever changing conditions in the market.

In regulating the city's development, of growing relevance is the development of a model for the operation of a university as a center for the formation of an educational environment for the city's adult residents.

## **2. Materials and methods**

This study's object is to explore in detail the process of formation of a local environment for adult ongoing education. Its subject is a model for the university operating as a center for the above. For purposes of this study, the authors chose to employ the following methods: conducting a theoretical analysis of the literature; exploring and summarizing best national and international practices; conducting a comparative analysis of the organization by universities of adult ongoing education; modeling the process and conditions of the formation by universities of a local environment for adult ongoing education. The process under examination was modeled in alignment with a set of approaches developed to assist in its application in pedagogical research (A.P. Tryapitsyna, Yu.S. Tyunnikov, V.Z. Yusupov, etc.), including a systemic approach, which ensured the analysis of the study's subject as an integral structure consisting of other systemic-structural units; a competency-based approach, which helped bring the process of formation of the educational environment more in line with the social order placed with the education system, the expectations of regional employers, and the educational needs and expectations of adult citizens.

The logic underlying the study's quest was constructed in such a way as to proceed *from* the interdisciplinary study of the municipal environment for adult ongoing education as a systemic-localized field for the multidimensional movement of man across the educational space and interaction between the various social institutions and particular subjects in the process of formation of the urban educational environment *to* the identification of approaches to the development of universities as centers for the formation of an educational environment that may create the conditions for the various categories of adults, including those with disabilities, to be able to engage in useful activity.

## **3. Discussion**

The issue of ongoing education is one of an integrated interdisciplinary nature. It has been theoretically conceptualized by philosophers, sociologists, pedagogues, psychologists, and representatives of other sciences.

In current scholarly discourse, the term “ongoing education” is construed in different ways: as lifelong education (Kolesnikova, 2013), continuing education (Beili, 2013), further education (Babanova, Babanova, 2013; Naumova, 2009), etc. Apart from the general features of adult ongoing education and the continuity of the way educational activity is plotted as a whole, researchers have identified the specific features of the ongoing education of this age group related to the characteristics of the very subject of ongoing education – an adult person (Rezinkina, 2016). In its personal aspect, adult ongoing learning can be viewed as “moving along a trajectory of learning, with your creative potential growing progressively as you engage in the various stages in learning (the general educational stage, professional training, self-education, and further education)” (Rezinkina, 2016: 50).

The concept of continuous education involves three key objects: a person (the “forward motion vector” – the professional skill vector; the “upward motion vector” – the development vector; the “horizontal motion vector” – the occupational reorientation vector), educational



programs/processes (characterizes the continuity of educational activity in transiting from one of its types to another, from one of a person's life stages to another); the organizational structure of education (a networked mix of educational institutions and the interrelationship between them; the educational services space) (Anoshkina, Rezvanov, 2001; Lomakina, 2014; Sistema podderzhki, 2013). Ongoing education possesses the major features of a system: universality, continuity, integrativeness, etc. (Belkina, Sergeeva, 2011: 161).

Foreign and domestic researchers have correlated the idea of ongoing education with the historical, social, and cultural context of society's development, brought to light the conceptual ideas of the system of plotting ongoing education, identified its various characteristics (internal, quantitative, functional, etc.), described its structure, identified its major types (formal, non-formal, and informal education) and stages, and identified the major factors necessary for implementing it (P.F. Anisimov, T.G. Brazhe, A. Brooking, K. Wain, S.G. Vershlovskii, B.S. Gershunskii, Yu.A. Zakharov, V.A. Ermolenko, N.E. Kasatkina, Yu.N. Kulyutkin, S.S. Lebedeva, A.M. Novikov, M. Knowles, M. Newman, V.G. Onushkin, S. Parson, V.E. Robak, A.I. Subetto, J. Habermas, M. Hatton, R. Edwards, etc.). Foreign (European) research has brought to light the following concepts: lifelong learning, adult education, continuing education, recurrent education, continuing professional education, learning organization, and learning society. Both domestic and foreign researchers have admitted that ongoing education is intended to ensure one's vertical and horizontal mobility throughout one's life.

The Russian scholarly literature has developed several methodological approaches providing an insight into the concept of "educational environment": cultural-social (N.V. Krylova, V.I. Slobodchikov, S.V. Tarasov, etc.), information (M.I. Bashmakov, S.I. Pozdnyakov, P.A. Reznik, etc.), psychological (V.A. Klimov, V.A. Yasvin, etc.), and systemic-synergetic (A.I. Bochkarev and V.N. Gruzdeva). To describe the educational environment, researchers have identified a set of its significant characteristics (being integral, multi-aspect, systematic, personalized, etc.) and specific criteria for assessing it (scope, intensity, modality, steadiness, generality, dominance, coherence, mobility, etc.) and provided an insight into the role played by the educational environment in the city's development.

Of special significance to the conduct of this study are works that bring to light the social-cultural and professional-personal determinations of further vocational education (Yu.S. Tyunnikov (Tyunnikov, 2015)), the conceptual foundations and technology of the design of a municipal system of adult ongoing education (L.V. Rezinkina (Rezinkina, 2016)), share the findings of contrastive analysis of national and international models for adult ongoing education (V.V. Kravchenko (Kravchenko, 2012) and others), and share the results of plotting adult learning routes (A.E. Maron, L.Yu. Monakhova, E.G. Koroleva (Maron i dr., 2015; Koroleva, 2015), and others).

However, despite the vast volumes of amassed theoretical and empirical material, thus far there has been insufficient research into issues related to the design and formation by universities of a local educational environment in alignment with the current and prospective needs of regional markets for labor and occupations and the educational needs of adults. There is a pressing need for developing the theoretical-methodological foundations of and a conceptual model for the university operating as a center for the formation of an environment for adult ongoing education, as well as working out relevant research-and-methodology support for it.

#### **4. Results**

In the context of this study, a model is to be construed as an analogue for a piece of reality that acts as a system of particular elements and linkages binding them together.

The authors picked as their object for pedagogical modeling the process of operation of universities as centers for the formation of a local environment for the ongoing education of the city's adult population. The model is intended to reflect the nature of the interaction between vocational education and the labor market, developers and consumers of educational services (individuals, employers, and employer associations), and institutional intermediaries between them and examine the relationships between subjects of adult ongoing education.

At the preliminary-analysis stage, the authors explored the relevant literature and the current best national and international practices related to organizing adult ongoing education under conditions of a municipal environment; conducted a SWOT-analysis of present-day universities as

focal points for the educational potential of cities and centers for the formation of a local environment for adult ongoing education; determined the current trends in the adult ongoing education of citizens; identified the various models reflecting the specificity of activity on the formation of a local environment for adult education. The following inferences were drawn based on the findings of the preliminary analysis:

- in Russia's large cities, there are several universities that qualify to be a center for the local environment for adult ongoing education, each oriented toward a specialized sector of educational services. In smaller cities, this could be a single university which would design its educational programs based on the specificity of the city's entire population. If need be, it could serve as an institutional intermediary between consumers of educational services and a college based in a different region through the organization of learning using distance technology or employ other forms of interaction;

- a system of adult ongoing education that will run under real-life conditions of the municipal educational environment ought to be created factoring in the characteristics of specific regions so as to ensure an appropriate caliber of the educational environment to help actualize the residents' personal and professional needs; it ought to be able to react promptly to new social-economic realities (Rezinkina, 2016) and be adequately preemptive in reacting to such developments;

- the environment for adult ongoing education ought to be developed factoring in the latest trends in the operation and development of the city's local market for educational services. Thus, for instance, when it comes to smaller cities, one could factor in the following characteristics (as identified by T.A. Polyanskikh): the limited functions of the market's subjects; the narrow product range of educational services; the network-like organization of higher vocational education; colleges operating in local markets for educational services lacking a well-thought-out, coherent marketing policy (Polyanskikh, 2007: 12);

- an analysis of national and international models for adult ongoing education (competency-based, socio-cultural, institutional-environment, personalized, integrative-differentiated, cluster, adaptational, andragogical, acmeological (Anis'kina, Mel'nik, 2015; Bordovskaya, 2015; Ermolenko, 2008; Kravchenko, 2012)) helped to not only gain a deeper insight into real objects and processes they are intended to help conceptualize but come to the conclusion about the need to construct a new, more comprehensive, integrative, and consistent model that would be devoid of the above shortcomings and would bring the educational environment formation process more in line with the latest needs of the regional labor market and the educational expectations of adult residents;

- when it comes to the modeling of municipal systems of adult ongoing education, the following approaches may take on particular relevance: a systemic approach, which ensures the unity and interconnectedness of adult formal, non-formal, and informal education; a competency-based approach, which makes it possible to bring the process of formation of the educational environment more in line with the needs of the regional labor market; a personalized approach, which helps create the preconditions and conditions for the subject being able to transit to a new, higher level of professional and personal development;

- the design of the educational environment may be pursued along two major directions: professional orientation (in terms of its subject content, the environment line is in keeping with one's deepening cognitive needs and the latest trends in the development of human civilization) and socialization (the environment line represents the communicative, culture-forming content of education, the ever-expanding range of one's relationships and ties with the outside world) (Khodyakova, 2013). "When the process lacks one of the lines, its outcomes turn out to be much poorer; in its extreme manifestations, this lack renders the process subjectless, preventing it from ensuring one's mastery of the necessary knowledge and notions ..., or makes it strictly pragmatic, preventing it from helping actualize one's humanistic, socio-cultural essence" (Khodyakova, 2013).

The authors' model for the university operating as a center for the formation of a local environment for adult ongoing education is distinguished by the following characteristics: 1) it is a model for adult proactive education and development that is oriented toward the personal expectations, educational needs, and axiological objectives of adults, the needs of the regional labor market, and a prospectively thought-out regional order for personnel trained in the various professional areas; 2) it is an adaptive model that helps detail or generalize information that is part

of the model's components and transform it in keeping with the characteristics of the regional labor market and the municipal education system.

Based on what has been proposed by scholar N.V. Bordovskaya, the major system-forming factors underlying the authors' model include: sets of adult educational needs that determine the structure and content of social orders placed with municipal education; the availability of educational programs constructed with continuity in mind and educational institutions that would enable the plotting of individual learning routes within adult ongoing education factoring in people's educational needs and prior academic and professional experience; specific mechanisms for stimulating adults to engage in academic activity throughout their professional career and life's journey (Bordovskaya, 2015).

Modeling the process of operation of the university as a center for the formation of a local environment for adult ongoing education, based on the pedagogical-design algorithm developed by Yu.S. Tyunnikov (Tyunnikov, 2000), includes the following design components: objective-and-function, content, structural-logical, instrumental-technological, and organizational-managerial (Figure 1).

*The objective-and-function block* is a deployed system of objectives and coordinated principles for the formation of a local environment for adult ongoing education. The block is developed based on the following logic: one formulates and provides a rationale for the prime objective (the development of the system of adult ongoing education), which then is broken down into structural components; then the structural components of the prime objective are broken down into separate elements (i.e., we construct an "objectives tree").

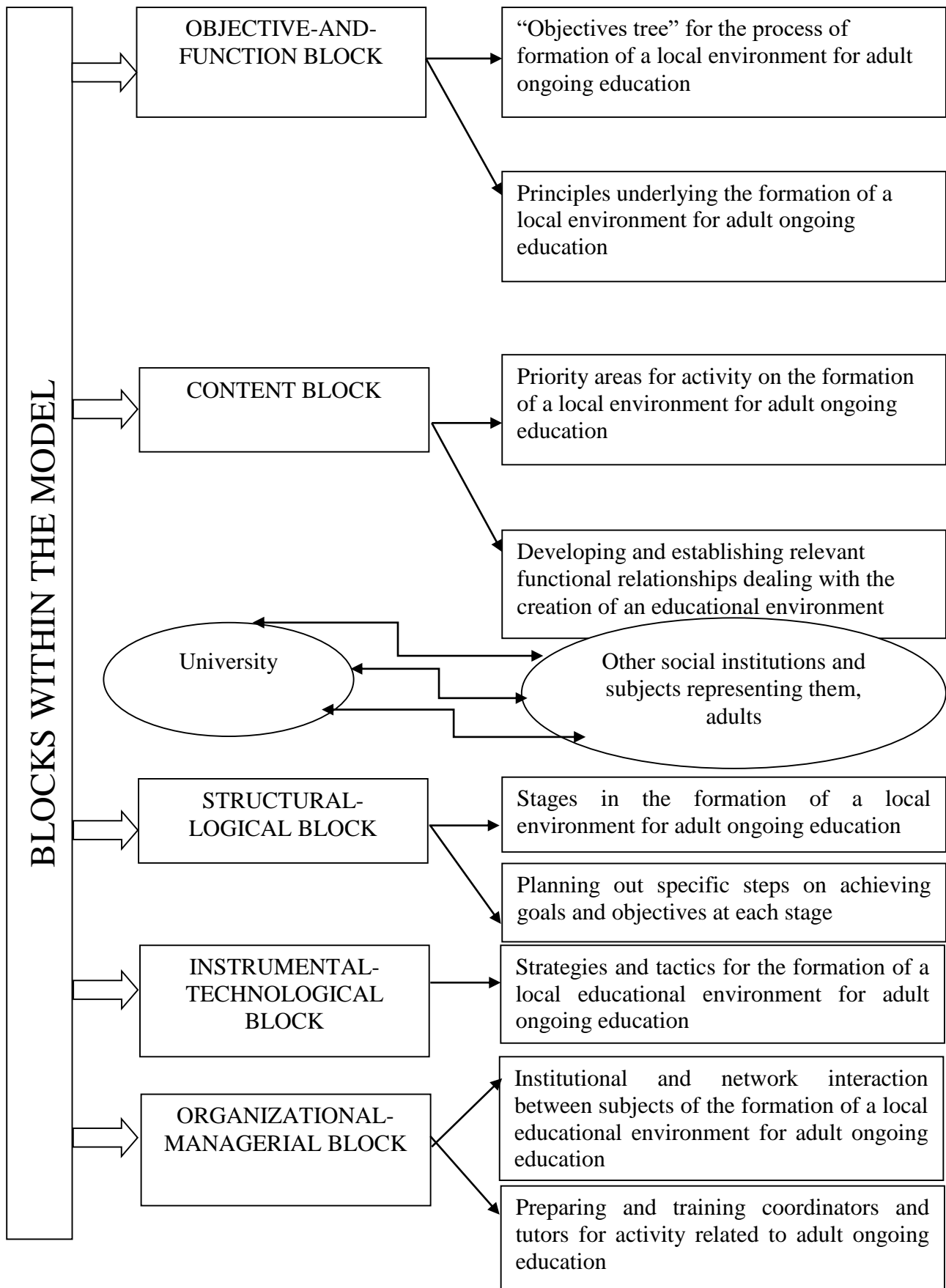
To note, what needs to be designed is not particular goals and objectives but a coordinated system they make up, which, if implemented, will enable the multidimensional personal and professional development of the city's adult residents moving about the local educational space and will create the conditions conducive to this kind of development; a goals and objectives system being designed ought to be in alignment with the key ideas underlying the concept of "education throughout life" and ought to be constructed factoring in the distinctive characteristics of the various regions so as to ensure an appropriate caliber of the educational environment to help actualize the residents' personal and professional needs and meet the current and prospective needs of the regional labor market.

Among the crucial principles on which the system of adult ongoing education ought to be predicated are: integrality, continuity, integration, flexibility and manoeuvrability, seamlessness and infiniteness, being multi-tiered, individualization, cyclicity, variative forms and methods of learning, educational preparation being in alignment with real personal and social needs, universality and complementarity, openness and practical orientation, innovativeness (Astakhova, 2011: 89–90), being multi-staged, multi-functionality, and the proactive education and development of a person.

*The content block.* The procedure for the content-based development of the process being modeled involves: identifying priorities for the activity of universities related to the formation of a local environment for adult ongoing education; developing relevant functional relationships between interacting subjects in the context of putting together an educational environment. This block of the model features 3 types of relationship.

The first type of relationship characterizes actions that underlie the college's dealings with regional/municipal authorities and the labor market concerning the development of the system of further vocational education and personal development of adults, and resolving the issue of employment in the city. These relationships, which are present in any region, include:

– direct and reverse relationships between colleges and the regional/municipal labor market, which are aimed at identifying the needs and expectations of the regional labor market and boosting the caliber of designed and implemented programs for the professional and personal development of adults;



**Fig. 1.** Model for the operation of the university as a center for the formation of a local environment for adult ongoing education.

- the college's dealings with the employment service regarding the current and prospective state of the region's labor market and the prospects for employment;
- the reverse relationship between the college (a supplier of educational services) and consumers of educational services, which reflects the strengths and weaknesses of these services.

The availability of sustainable and regular first-type relationships can be viewed as a crucial element in the integration of regional markets for educational services and labor, as a necessary condition for being able to react promptly to new social-economic realities.

The second type of relationship creates an open, saturated educational environment and helps actualize in the system of ongoing education the differentiation principle, which expresses the requirement to let learners choose from several variants of educational programs based on their potential, changing needs, and prospects for professional and personal growth. This type of relationship provides a tangible boost in the caliber of interaction between developers and consumers of educational services, although in regions, however, this kind of relationship has yet to develop to the fullest. Activity on its establishment and development may be viewed as one of the factors in the innovation development of the university as a center for the formation of a local environment for the ongoing education of the city's adult population. This kind of relationship incorporates the following:

- continual monitoring of educational requests coming in for programs for professional education and personal development;
- adapting existing educational programs to the individual educational needs of adults and the needs of specific employers and developing new programs, including those geared to people with disabilities;
- collecting information on educational services for the city's adult population using crowd-sourcing technology and structuring it;
- creating and maintaining a relevant information resource on the Internet (a single portal);
- informing, through the media, the various social groups of the state of the market for programs for the professional and personal development of the city's adult population;
- providing learners with remote controlled and regulated access to educational programs and the content of learning material;
- providing learners with the opportunity to get online consulting and enjoy other forms of interaction with instructors, including remote on-the-job training.

The third type of relationship is virtually not around today and exists in a rather fragmentary way, although, however, it is regarded to be a crucial element in the formation of a local environment for ongoing education. This includes:

- psychological, methodological, and medical-social support for adults as part of their cognitive-information interaction with information and communication technology (Barabash, 2015);
- counseling adults on their educational needs to ensure they get help when defining their educational request, choosing the content of education they are looking to get, its timeframes and forms (Goncharova i dr., 2013; Gornyakova, 2014; Koroleva, 2015; Safonova, 2010); helping determine where what they want is possible and where it is not;
- assisting adults in designing their individual learning routes.

*The structural-logical block.* The structural-logical development of the process involves: identifying and providing a rationale for specific stages in the joint activity of representatives of the various social institutions (e.g., an interdepartmental team of specialists) or employees of a structural unit within the university (e.g., a center for further vocational education) on the formation of a local environment for adult ongoing education; planning out specific steps on achieving goals and objectives at each stage.

*The instrumental-technological block.* The design of this block is directly associated with the choice of key strategies for the formation of a local educational environment for adult ongoing education and that of relevant tactics at each stage of the process being modeled. The major strategies include: Strategy for Creating an Information Field for Adult Ongoing Education, Strategy for Creating a Zone of Online Adult Education, Strategy for Designing Educational Programs Based on the Regional Characteristics of the Education System and the Labor Market, and Strategy for Providing Support for Adult Consumers of Educational Services across Their Learning Routes.

*The organizational-managerial block.* The procedure for the organizational-managerial development of the process being modeled involves: determining the possibility of engaging in the process of formation of a local educational environment the various social institutions and organizing the institutional interaction of subjects representing them; creating network interaction between participants in the educational process within the information-educational sphere; preparing and training coordinators and tutors for work related to adult ongoing education under conditions of an information society functioning in a climate of burgeoning global mass communications.

## 5. Conclusion

The model developed by the authors as part of this study is a variant of the solution for the issue of the formation of a local environment for adult ongoing education and may become a tool that will help manage the educational system, which is what constitutes this study's practical significance. However, incorporating this model into existing reality requires fine-tuning specific forecasts made by reference to the characteristics of regional reality.

The major focus areas for further research into the matter may include issues related to the development of a model for the scenario management of the formation of a local environment for adult ongoing education.

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