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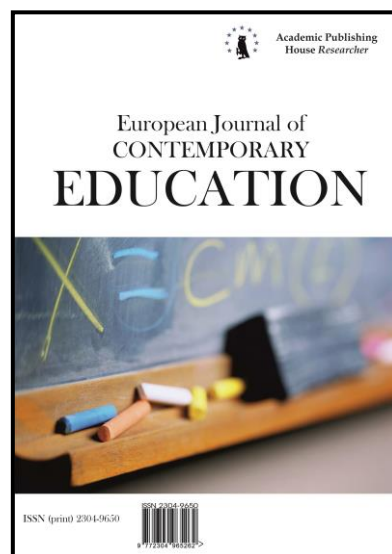
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The Correlates of Turkish Preschool Preservice Teachers' Social Competence, Empathy and Communication Skills

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Abstract

The purpose of the current study was to examine the associations between Turkish preschool pre-service teacher's personal and educational characteristics, and their social competence, empathy, and communication skills. A total of 385 state university Turkish pre-service teachers (age range 18 to 32 years) from the early childhood education field completed a Demographic Information Form on personal and educational characteristics, the Social Skills Inventory (SSI) Scale measuring their social competence, The Scales of Empathic Tendency for measuring empathy skills, and a Communication Skills Evaluation Scale measuring communication skills. Bivariate Pearson-correlations, independent t tests, and one-way ANOVAs were used to test study hypotheses. Results indicated that women scored higher on empathy and communication skills, and having more friends was related to higher social competence and empathy. Pre-service teachers who were members of a social club scored higher on communication skills than their peers. Additional associations among variables, limitations, and future directions are discussed.

Keywords: pre-service teacher, social relationship, teacher training, college students, educational characteristics.

1. Introduction

A large body of research has been conducted investigating pre-service teachers and in-service teachers' social skills related to different factors in Turkish and international contexts (e.g., Bakx,

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van der Sanden, Sijtsma, Croon, & Vermetten, 2006; Ergül, Baydık, & Demir, 2013; Ozerbas, Bulut, & Usta, 2007; Zwaans, ten Dama, & Volman, 2006). Considering importance of pre-service teachers' development of social skills for their concurrent and future personal and professional life, in the current study we aimed to explore the associations between Turkish preschool pre-service teachers' personal and educational characteristics, social competence, empathy, and communication skills. In addition, by conducting this research, we aimed to contribute to the literature base by conducting discrete analyses of personal and educational characteristics on pre-service teachers' social competence, empathy, and communication skills.

Pre-service Teacher Training in Turkey

Preschool teacher training programs consist of a four-year college degree in Turkey. High school graduates are eligible for admittance to these programs if they earn the required score on a university entrance exam (OSS). The preschool teacher training programs have daytime and nighttime training tracks. The classes in the program are based on child development, anatomy and psychology, music, play, drama activities for children, and class management. Besides theoretical classes, a teaching practicum is required during the last three semesters of the program. After graduating from the program, teacher candidates take a public personnel selection examination (KPSS) to be assigned as a preschool teacher by the Ministry of Education (MEB) according to a match of the candidate's KPSS score and the MEB-standardized rubric for teacher promotion ([The Council of Higher Education\[YOK\], 2007; Yuksel. 2012](#)).

2. Literature review

Competence in social skills is an important behavioral element in starting and sustaining positive and effective interpersonal relationships ([Westwood, 1993](#)). Social skills are defined as the ability to behave in accordance with the requirements of the social context in which the interpersonal relationship occurs ([Alber, Heward, 1996; Bakx et al., 2006](#)). The components of social skills are: social competence, being flexible within a context, being target-oriented, and possessing intra- and inter- personal characteristics ([Bakx et al., 2006; Schlundt & McFall, 1985](#)). Social competence, empathy, and communication skills are part of the social development of pre-service teachers ([Ergül et al, 2013; Zwaans, ten Dama, & Volman, 2006](#)). Social skills may help teachers to interact with their students and parents. From this perspective, pre-service teachers' social development has an important role in their personal and professional development.

Social Competence, empathy, and communication skills

Social competence is defined as an ability to integrate feelings and thinking, and to express behaviors in alignment with personal goals within a given context and culture ([Kostelnik, Whiren, Soderman, & Gregory, 2005](#)). Achieving social competence includes the development of social-cognitive and emotional regulation skills ([Eisenberg et al., 2006](#)). These capabilities give an individual ability to adapt to and behave appropriately in situations that require a sensitive response and certain expected behaviors within the situations ([Eisenberg et al., 2006; Sebanc, 2003](#)). Researchers have found associations between social competence in parenting, temperament, peer group influences, interpersonal interactions, and cognitive abilities ([Lindsey & Colwell, 2013; Schlundt & McFall, 1985; Wright, Rosenberg, Egbert, Ploeger, Bernard, & King, 2013](#)).

A decent body of research in Turkey has shown relationships between social competence among both pre-service and in-service teachers' personal characteristics and educational characteristics (e.g., [Akbulut & Sağlam, 2010; Celikten, Sanal, & Yeni, 2005; Yuksel, 1997](#)). For example, in an empirical study with Turkish college students, Yuksel (1997) found that training about social competence development helped college students to develop positive social competence regarding emotional sensitivity with their peers and social interactions with others in their social environment. In this respect, [Bakx et al., 2006](#) found a similar association between college students' personal characteristics and self-perceived communicative competence and learning conceptions. Accordingly, pre-service teachers' personal characteristics such as gender, age, and socioeconomic status may be related to their social competence.

Researchers have also found an association between pre-service teachers' communication skills and their personal characteristics ([Korkut, 1996; Ozerbas et al., 2007; Wright et al., 2013](#)). For example, [Ozerbas et al. \(2007\)](#) investigated the association between Turkish pre-service teachers'

communication skills and socioeconomic status, gender, and year in college. The authors found that socioeconomic status was not significantly associated with pre-service teachers' communication skills, whereas gender and year in college were significantly correlated with communication skills. These findings suggest that personal characteristics of pre-service teachers are associated with their communication skills. Teacher's communication skills may be important for them to build positive relationships with the students in their classrooms (Pianta, 1999; Sumi, 2011).

In addition to social competence and communication skills, researchers have also investigated how pre-service and in-service teachers' personal and other characteristics are related to their empathic skills (e.g., Hojat et al., 2002; Ozcan, Oflaz, & Sutcu Cicek, 2010). Empathy is defined as the ability to recognize other people's emotional states and to develop a response according to the emotional state and need (Reynolds, Scott, & Jessiman, 1999). Ozcan and colleagues (2010) investigated how Turkish nursing college students' empathic skills were related to their communication skills and personal characteristics. They found that higher communication skills were related to empathic skills, and empathic skills appeared to be higher when college students were at their senior year at college than earlier years in the college. Although several studies have indicated associations between several personal characteristics, social skills, empathy, and communication skills of Turkish college students (Oz, 1998; Ozcan et al., 2010; Ozerbas et al., 2007), there has been lack of research investigating a large group of personal and educational characteristics together. Therefore, the purpose of the current study was to extend previous research by examining the associations between Turkish preschool pre-service teachers' personal and educational characteristics and social competence, empathy, and communication skills. Personal characteristics included age, gender, number of friends, socio-economic status, while educational characteristics included year in the college, membership in a social club, and schooling type (daytime-nighttime). We focused on the investigation of both personal and educational characteristics by framing them as correlates of pre-service teachers' social competence, empathy, and communication skills, based on previous research examining the similar nature of these characteristics (e.g., Oz, 1998; Ozerbas et al., 2007).

Based on previous research, there are important associations between pre-service teachers' personal and educational characteristics with social competence, empathy, and communication skills. Due to differences in university students' SES and friendship structure, it is expected that students may have different levels of social competence, empathy, and communication skills depending upon these personal characteristics. Investigating the relationships between educational and personal characteristics such as schooling type and social competence may help both researchers and university authorities provide beneficial guidelines for pre-service teachers' personal and professional development.

The following research questions and hypotheses were addressed in the current study:

RQ1: Does the social competence of pre-service preschool teachers differ depending on their personal and educational characteristics?

RQ2: Does the empathy of pre-service preschool teachers differ depending on their personal and educational characteristics?

RQ3: Do the communication skills of pre-service preschool teachers differ depending on their personal and educational characteristics??

Considering these three research questions, we hypothesized that female pre-service teachers would score higher than male pre-service teachers on social competence, empathy, and communication skills. In addition, pre-service teachers with more friends would score higher on social competence, empathy, and communication skills, as they would engage in social interactions more frequently than their counterpart peers; low SES pre-service teachers would score higher on empathy and on social competence and communication skills; freshmen pre-service teachers would score lower on social competence, empathy, and communication skills than pre-service teachers in later years of college (Ozcan et al., 2012).

3. Methods

Overview: This was a cross-sectional study investigating the associations between Turkish Pre-service Preschool Teachers' personal and educational characteristics, and their social competence, empathy, and communication skills.

Participants: A total of 384, freshman (N = 86), sophomore (N= 108), junior (N= 142), and senior (N = 49) pre-service preschool teachers (331 females), from one state university in the city of Edirne, Turkey. Participants' ages ranged from 18 to 32 years.

Measures:

Demographic Information Form: Participants completed a questionnaire to obtain information about their demographics such as gender, age, marital status, number of friends, schooling type, and social club membership. Number of friends were categorized as 1-2, 3-4, 5-6, 7-8, and 9+. Participants self-reported the number of friends they had based on their own judgement, as well as the other demographic variables. Schooling type refers to when participants attended class, either in the daytime (8 am- 5 pm) or nighttime (5 pm- 11 pm).

Social Competence: Participants completed the Social Skills Inventory (SSI; Riggio, 1986). The SSI is a 90-item Likert-type self-report inventory, consisting of six subscales, with 15 items on each subscale. The Turkish validation of SSI was conducted by Yüksel (1998) who obtained an internal consistency coefficient of .92 and a test-retest reliability coefficient of .94, indicating acceptable reliability for the scale. The inventory is used to calculate an individual's level of global social skills. Higher scores refer to higher levels of social skills. A respondent chooses from 5-likert type options (1= exactly like me 5= absolutely not like me) in response to 90 statements (e.g., I enjoy being social). Test-retest reliability has been reported as .94 (Riggio, 1986). This scale has been widely used with Turkish university students, given acceptable face and construct validity (Yuksel, 1998).

Empathy Skills: Participants completed The Empathic Tendency Scale (ETS; Dokmen, 1988). The ETS is a 20-item questionnaire measuring the potential of an individual in their empathic relationships with their social environment in their daily life. Participants use 5-point Likert type scale (1= totally disagree, 5= totally agree). An example item is: "I do care about others' problems as much as mine." Total scores for empathetic skills range from 20 to 100, with higher scores indicate higher empathic skills. For validation of the ETS, Dokmen (1988) tested face and construct validity by examining its structure with empathy-related theories and found it covered a spectrum of empathic tendencies of college students. For predictive validity, Dokmen (1988) found correlation of .68 between the ETS and the "understanding emotions" subscale of the Edwards Personal Preference Schedule. Internal consistency was .88 for the current study, consistent with the original study ($\alpha = .81$) by Dokmen (1988).

Communication Skills: Participants completed the Communication Skills Evaluation Scale (CSAS; Korkut, 1996). The CSAS is a 5-point Likert type measure with 25 items assessing one's perceived level of communication skills (5=always, 1=never). An example item is: "I listen to others without any bias towards them". Korkut (1996) validated the measure with Turkish college students and found that it discriminated female students and male students on their communication skills ($t = 3.00, p < .05$), favoring females. Korkut (1996) also found a correlation of .80 between the CSAS total score and empathic tendency, indicating predictive validity. The test-retest reliability coefficient was .76, and Cronbach's alpha was .80 (Korkut, 1996). Cronbach's alpha in the current study was .89. The current internal consistency values, along with the descriptive values of scales are presented in Table 1.

Data Collection Procedures: After obtaining permission from the ethics committee of the University, informed consent forms were distributed to pre-service students. Scales were then distributed to participants for whom consents were obtained. Participants completed scales during their class once instruction ended. All scales were completed during the fall semester of 2012.

Data Analyses: Researchers and research assistants entered data into SPSS. Descriptive statistics, t-tests, and ANOVA tests were conducted for the purpose of the study. Significance criteria was p value of .05 (one-tailed for correlations) for all analyses.

4. Results

Preliminary Results

Descriptive statistics of the study variables are presented in Table 1. Results from bivariate correlations showed that pre-service teachers’ social competence was correlated with gender ($r(383) = -.09, p < .05$), favoring girls, number of friends ($r(383) = .16, p < .01$), and membership in a social club ($r(383) = -.16, p < .01$).

Table 1. Demographic information and descriptive statistics of variables

Variable	n (%)	Mean	SD	Range	α
Gender					
Boy	54(14)				
Girl	331(86)				
Age					
18-22	332(86)				
23-27	50(13)				
27-32	3(.8)				
SES					
Low	29(7.5)				
Middle	343(89.1)				
High	13(3.4)				
Number of Friends					
1-2	12(3.1)				
3-4	38(9.9)				
5-6	29(7.5)				
7-8	30(7.8)				
9 and more	276(71.7)				
School Time					
Daytime	226(58.7)				
Nighttime	159(41.3)				
Social Club Membership					
Member	61(15.8)				
Non-member	323(83.9)				
Social Competence		281.57	25.60	203-360	.71
Empathy		73.25	8.96	45-93	.70
Communication		106.50	10.82	42-125	.89
Note. There was no missing data					

Empathy skills were correlated with gender ($r(383) = -.19, p < .01$), favoring girls, number of friends ($r(383) = .17, p < .01$), and year in college ($r(383) = .11, p < .05$). Communication skills were correlated with gender ($r(383) = -.20, p < .01$), favoring girls, SES ($r(383) = -.11, p < .05$), number of friends ($r(383) = .08, p < .05$), and membership in a social club ($r(383) = -.12, p < .01$). (See Table 2 for complete results). As shown, correlations values fall in low and medium range. However, they may still provide practical significance as they help us to understand bivariate associations between pre-service teachers’ social skills and their personal and education characteristics.

Table 2. Correlations among Variables (N= 385)

Variable	1	2	3	4	5	6	7	8	9	10
1. Social Competence	-									

2. Empathy	.49**	-								
3. Communication Skills	.42**	.48**	-							
4. Gender	-.09*	-.19**	-.20**	-						
5. Age	-.01	-.01	-.02	.06	-					
6. SES	-.03	-.01	-.11*	-.11*	.01	-				
7. Number of Friends	.16**	.17**	.08*	.11*	-.09*	-.10*	-			
8. School Time	.09*	-.03	.03	.07	-.11*	-.07	.09*	-		
9. Social Club	-.16**	.04	-.12**	.09*	.05	.01	-.14**	.11*	-	
10. Year in university degree	.01	.11*	-.03	-.01	.21**	.07	.01	-.17**	.01	-
<i>Note.</i> * $p < .05$ (one-tailed). ** $p < .01$ (one-tailed)										

Differences of personal and educational correlates on social competence, empathy, and communication skills

To examine study hypotheses, one-way ANOVA and independent t-test analyses were employed to test the independent variables (gender, age, SES, number of friends, schooling type, membership to social club, and year in college) on preservice teachers’ social competence, empathy, and communication skills.

Results from one-way Analysis of Variance (ANOVA) suggested that pre-service teachers’ social competence ($F(4, 380) = 4.14, p < .01$) and empathy skills ($F(4, 380) = 5.32, p < .001$) differed depending upon their number of friends. Tukey HSD Post Hoc analysis were conducted for all possible pairwise contrasts considering the statistically significant omnibus ANOVA test. The Post Hoc analysis revealed that pre-service teachers with 9 or more friends ($M=284.77, SD= 25.65$) had higher scores on social competence than pre-service teachers with 5-6 number of friends ($M=270.21, SD= 27.98$). In addition, pre-service teachers with 9 or more friends ($M= 34.87, SD= 4.33$) had higher scores than their peers with 5-6 friends ($M=31.86, SD= 4.29$) and 3-4 friends ($M=32.71, SD= 5.24$) on their empathic skills.

Results from one-way ANOVAs also suggested that pre-service teachers’ communication skills differed across their SES levels ($F(2, 3820) = 3.11, p < .04$). The Post Hoc analysis revealed that pre-service teachers with low SES ($M= 108.62, SD= 8.17$) reported higher levels of communication skills than their peers with higher levels of SES peers ($M=99.77, SD= 21.52$).

Results from the Independent t-tests revealed that female pre-service teachers ($M= 73.96, SD= 8.99$) scored higher than male pre-service teachers ($M= 68.93, SD= 9.98$) on empathy skills $t(382) = 3.89, p = .000, d=.53$. Additionally, female pre-service teachers ($M= 107.4, SD= 10.22$) scored higher than male pre-service teachers ($M= 101.02, SD= 12.76$) in communication skills $t(382) = 4.09, p = .000, d= .55$. The pre-service teachers who were members of a social club ($M= 291.16, SD= 25.32$) scored higher than pre-service teachers who were not members of a social club ($M= 279.76, SD= 25.33$) in social competence $t(382) = 3.22, p = .001, d= .45$. Additionally, participants who were members of a social club ($M= 109.21, SD= 9.16$) scored higher than non-members ($M= 106.05, SD= 11.01$) on their communication skills $t(382) = 2.10, p = .03, d= .41$. (See Table 3 for complete results).

Table 3. Differences among independent variables on dependent variables (N= 384)

Variable	Social Competence			Empathy			Communication Skills					
	M	SD	t	p	M	SD	t	p	M	SD	t	p
Gender												
Male	275.91	27.97	1.75	.08	68.93	9.98	3.89	.000	101.02	12.76	4.09	.000
Female	282.50	25.12			73.96	8.59			107.40	10.22		
School Time												
Morning	279.55	24.82	-1.85	.06	73.48	8.64	.34	.55	106.27	10.98	-.51	.60
Night	284.45	26.49			72.93	9.41			106.84	10.61		
Social Club												
Member	291.16	25.32	3.22	.001	74.21	8.17	.92	.36	109.21	9.16	2.10	.03
Non-member	279.76	25.33			73.06	9.11			106.05	11.01		
SES												
	M	SD	F	p	M	SD	F	p	M	SD	F	p
Low	281.59	29.24	.60	.55	72.41	1.61	.75	.47	108.62	8.17	3.11	.04
Middle	281.86	25.51			73.42	.49			106.58	10.37		
High	273.92	18.02			70.62	2.05			99.77	21.53		
Number of Friends												
1-2	276.17	12.98	4.14	.003	72.50	6.05	3.81	.005	105.92	8.28	1.03	.33
3-4	275.39	21.03			70.16	9.49			104.84	15.19		
5-6	270.21	27.98			69.17	8.88			103.76	8.48		
7-8	273.10	26.32			72.00	8.70			105.43	9.61		
9	284.77	25.65			74.28	8.84			107.16	10.53		
Class												
Freshman	283.24	26.36	.77	.51	71.40	8.23	1.89	.13	106.4	11.48	.42	.73
Sophomore	278.62	26.82			73.46	9.15			107.46	11.31		
Junior	281.92	24.48			73.66	9.15			106.08	10.37		
Senior	284.12	24.83			74.86	8.98			105.82	9.94		
Age												
18-22	281.51	25.92	.28	.76	73.31	8.95	.38	.69	106.73	10.83	2.85	.05
23-27	282.58	23.62			72.66	9.32			104.28	10.44		
28-32	271.33	28.87			77.00	1.73			118.00	8.66		

5. Discussion

In this study, we examined the associations of Turkish preschool pre-service teacher's personal and educational characteristics with their social competence, empathy, and communication skills, and differences in these characteristics on their social competence, empathy, and communication skills.

Consistent with previous research, gender appears to be related to the empathy, communication, and social competence of pre-service teachers (Burlison, Samter, 1990; Yiğiter et al., 2011; Yuksel, 1998). In parallel with bivariate results, female Turkish pre-service teachers scored higher than male Turkish pre-service teachers on their empathy and communication skills. This result is consistent with previous research showing that female pre-service teachers showed higher levels of communication skills than did male pre-service teachers in a Turkish state university context (Güven, 2001). In addition, female Turkish pre-service teachers showed higher levels of empathic skills than did male Turkish pre-service teachers. Duru (2002) also found congruent findings that female Turkish pre-service teachers tended to show higher level of empathic skills than male Turkish pre-service teachers (Duru, 2002). In particular, the researcher found that Turkish pre-service teachers who are pursuing social science degrees (e.g., education, art, educational sciences) showed higher levels of empathic tendencies than Turkish pre-service teachers in other areas of study (Duru, 2002). In addition, female Turkish pre-service teachers in elementary teaching departments perceived themselves to be more positive in communication skills as compared to males (Nacar, Tumkaya, 2012). Along with this finding, the results of the current study indicate that female pre-service teachers tended to demonstrate higher scores in communication skills.

The current findings showed that the communication skills of Turkish preschool pre-service teachers differed depending upon their socioeconomic status (SES). In particular, pre-service teachers from low-SES backgrounds reported higher communication skills than pre-service teachers from high-SES backgrounds. This is in contrast to findings by Nacar, Tumkaya (2001) who found that as SES increased, teachers' communication skills increased proportionally. However, the authors (Nacar, Tumkaya, 2001) collected their data from a different demographic group at a university. For this reason, differences in SES may vary across college students and its relation to communication skills.

Another finding from the current study revealed that pre-service teachers who had higher numbers of friends scored higher on social competence and empathy skills, as compared to their counterpart peers with a fewer number of friends. Previous work parallel findings with the current study by stating that college students who had more friends than their peers scored higher on social skills such as social networking, empathic tendency, and altruism (Avci et al., 2013). Although the nature of the current study is not experimental in order to infer causal associations between number of friends and social competence, it is still noteworthy that having friends may be helpful for pre-service teachers to improve their social skills, which can be useful for them to engage in social interaction with both adults and children.

Finally, results from independent t-tests revealed that Turkish pre-service preschool teachers who are members of a social club during college years scored higher on social competence and communication skills than those who are not members of a social club. Similar to having a higher number of friends, this result is similar to previous findings showing that Turkish pre-service teachers from different majors in colleges of education perceived being a member social club during college years as part of their social capital (Toprak, Bozgeyikli, 2011). Thus, active membership in social clubs may benefit pre-service teachers by utilizing opportunities of improving social and communication skills through interactions with other peers as well as community.

6. Conclusion and Implications

The findings from the current study showed that pre-service preschool teachers' social competence, empathy, and communication skills differed across gender, SES, membership to social club, and number of friends. These findings extend previous research by demonstrating that pre-service teachers' social competence, empathy, and communication skills may depend upon their personal and educational characteristics (Alber, Heward, 1996; Brakx et al., 2006).

Implications of these findings suggest that pre-service teachers can use college years to gain social capital, such as social networking, interpersonal communication skills, problem solving skills, and development of empathic skills with one another (Aylor, 2003; Bakx et al., 2006; Nacar,

Tumkaya, 2011). Although the current sample was Turkish pre-service teachers, findings can be translated to another context such that recognizing what kind of characteristics may play a role in pre-service teachers' social competence, empathy, communication skills can help university administration and policymakers to develop effective programs to foster pre-service teachers' social capital. Indeed, the recognition of personal and educational characteristics of pre-service teachers may be important for university administration and student services to create effective and responsive social development programs for pre-service teachers.

Teachers' emotional support such as warmth, sensitivity, encouragement, and attention to students' concerns helps young children to regulate their behaviors and exhibit prosocial behaviors in classrooms (Merritt et al., 2012). From this perspective, pre-service preschool teachers should develop essential social skills, such as social competence, communication skills, and empathy during their college years so that they can use these skills to provide effective and supportive emotional and instructional classroom environment for children in their classroom.

7. Limitations and Future Directions

There are several limitations in the current study that must be mentioned. First, the study sample was drawn from only one state university in Turkey. Future studies with different university student populations may improve generalizability of these findings.

Second, only self-reports were used in the current study. This may have reduced the independent nature and increase social desirability within data. Future studies should use different types of data collection instruments, such as observations and peer-reports of social skills to have independent data for the study variables.

Third, all data was collected within one semester period. Therefore, we were not able to examine how measured constructs have changed over time. Future studies should focus on the developmental aspects of constructs using a longitudinal approach to better investigate change in the measured constructs over time.

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References

- Alber, Heward, 1996 - Alber S.R., Heward W.L. (1996). "GOTCHA!" Twenty-five behavior traps guaranteed to extend your students' academic and social skills. *Intervention in School and Clinic*, 31, 285-289.
- Avcı et al., 2013 - Avcı D., Aydın D., Ozbasaran F. (2013). The relation of empathy-altruism and the investigation of altruistic behaviour with regard to some variables of nursing students. *Balikesir Health Sciences Journal*, 2(2), 108-113.
- Aylor, 2003 - Aylor B. (2003). The impact of sex, gender, and cognitive complexity on the perceived importance of teacher communication skills. *Communication Studies*, 54(4), 496-509. doi:10.1080/10510970309363306
- Bakx, 2006 - Bakx A.A., van der Sanden J.M., Sijtsma K.K., Croon M.A., Vermetten Y.M. (2006). The role of students' personality characteristics, self-perceived competence and learning conceptions in the acquisition and development of social communicative competence: A longitudinal study. *Higher Education*, 51(1), 71-104. doi:10.1007/s10734-004-6377-6
- Burleson, Samter, 1990 - Burleson B., Samter W. (1990). Effects of cognitive complexity on the perceived importance of communication skills in friends. *Communication Research*, 17, 165-182.
- Davis, 2003 - Davis H.A. (2003). Conceptualizing the role and influence of student-teacher relationships on children's social and cognitive development. *Educational Psychologist*, 38(4), 207-234.
- Duru, 2002 - Duru E. (2002). Öğretmen adaylarının empatik eğilim düzeylerinin bazı psikososyal değişkenler açısından incelenmesi [Investigation of pre-service teachers' level of empathic tendency by several psychosocial variables]. *Pamukkale Üniversitesi Eğitim Fakültesi Dergisi*, 2(12), 21-34.
- Güven, ve Akyüz, 2001 - Güven, A. ve Akyüz M.Y., (2001). Öğretmen adaylarının iletişim ve problem çözme becerilerine ilişkin görüşleri [Pre-service teachers' perceptions about communication and problem solving skills]. *Ege Eğitim Dergisi* [Ege Education Journal], 1, 13-22.

Heymann, Earle, 2000 - Heymann S., Earle A. (2000). Low-Income parents: How do working conditions affect their opportunity to help school-age children at risk? *American Educational Research Journal*, 833-848.

Hojat et al., 2002 - Hojat M, Gonnella J.S., Mangione S., Magee M. (2002). Empathy in medical students as related to academic performance, clinical competence and gender. *Medical Education*, 36 (6), 522-527. doi:10.1046/j.1365-2923.2002.01234.x

Mashburn et al., 2008 - Mashburn A.J., Pianta R.C., Hamre B.K., Downer J.T., Barbarin O.A., Bryant D., Early D.M. (2008). Measures of classroom quality in prekindergarten and children's development of academic, language, and social skills. *Child Development*, 79(3), 732-749. doi: 10.1111/j.1467-8624.2008.01154.x.

Merritt et al., 2012 - Merritt E.G., Wanless S.B., Rimm-Kauffman S.E., Cameron C., Peugh J.L. (2012). The contribution of teachers' emotional support to children's social behaviors and self-regulatory skills in first grade. *School Psychology Review*, 40(2), 141-159.

Nacar, Tumkaya, 2011 - Nacar F.S., Tumkaya S. (2011). Analysis of the relationship between the communication of the class teachers and their skills to solve interpersonal problems. *Elementary Education Online*, 10(2), 493-511.

Öz, 1998 - Öz F. (1998) The relationship between empathic tendency, empathic skills and academic performance of senior students of nursing. *Journal of Cumhuriyet University School of Nursing*, 2, 32-39.

Ozerbas et al., 2007 - Ozerbas M.A., Bulut M., Usta E. (2007). Öğretmen adaylarının algıladıkları iletişim becerisi düzeylerinin incelenmesi [the investigation of pre-service teachers 'perceived communication skills level]. *Ahi Evran University Kirsehir Faculty of Education Journal*, 8(1), 123-135.

Ozcan, 2010 - Ozcan C.T., Oflaz F.F., Sutcu Cicek H.H. (2010). Empathy: the effects of undergraduate nursing education in Turkey. *International Nursing Review*, 57(4), 493-499. doi:10.1111/j.1466-7657.2010.00832.x

Pianta, 1999 - Pianta R.C. (1999). *Enhancing Relationships between Children and Teachers*. Washington, DC: American Psychological Association.

Reynolds et al., 1990 - Reynolds W.J., Scott B. Jessiman W.C. (1999) Empathy has not been measured in clients' terms or effectively taught: a review of the literature. *Journal of Advanced Nursing*, 30, 1177-1185.

Schlundt, McFall, 1985 - Schlundt D.G., McFall R.M. (1985). 'New Directions in the assessment of social competence and social skills', In L'Abate, L. and Milan, A. M. (eds.), *Handbook of Social Skills Training and Research*. New York: John Wiley and Sons, pp. 22-49.

Smith, Addison, 2013 - Smith I., Addison C. (2013). The "new" school leader: training instructional leaders for a new generation of teachers and learners. *Academy of Educational Leadership Journal*, 17(2), 135-140.

Sumi, 2011 - Sumi K. (2011). Relations of social problem solving with interpersonal competence in Japanese students. *Psychological Reports*, 109(3), 976-982. doi:10.2466/07.20.21.28.PRo.109.6.976-982

Toprak, Bozgeyikli, 2011 - Toprak E., Bozgeyikli H. (2011). Öğretmen adaylarının sosyal sermaye düzeylerinin karşılaştırmalı incelenmesi [Comparative analysis of social capital level of teacher candidates-Case of Erciyes University]. *Sosyal Bilimler Enstitüsü Dergisi*, 31, 125-147.

Wright et al., 2013 - Wright K.B., Rosenberg J., Egbert N., Ploeger N. A., Bernard D.R., King, S. (2013). Communication Competence, Social Support, and Depression Among College Students: A Model of Facebook and Face-to-Face Support Network Influence. *Journal Of Health Communication*, 18(1), 41-57. doi:10.1080/10810730.2012.688250

Yiğiter et al., 2011 - Yiğiter K., Kolayış H., Yenigün Ö., Taşkıran Y. (2011). Kocaeli Üniversitesi Beden Eğitimi ve Spor Yüksekokulunda okuyan öğrencilerin empatik becerilerinin belirlenmesi [Determination of empathic skills of students at Kocaeli University physical education and sports. *International Journal Of Human Sciences*, 8(2), 936-945.

Yuksel, 1997 - Yuksel G. (1997). Sosyal beceri eğitiminin üniversite öğrencilerinin sosyal beceri düzeyine etkisi [Influence of social competence training on college students' level of social competence. (Unpublished doctoral dissertation). Gazi University: Ankara.



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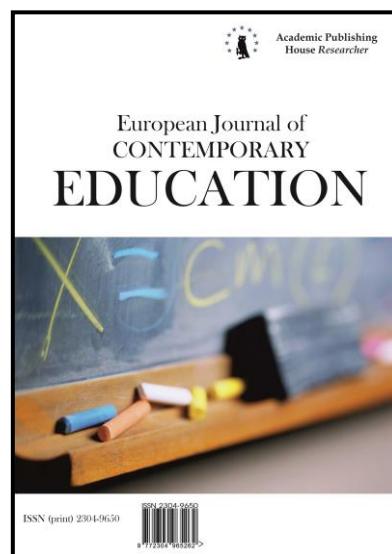
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UDC 37

Teaching Translation and Interpreting in Slovakia: is there anything other than Levý and Popovič?

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Abstract

Institutional translation and interpreting training has a long lasting tradition in Slovakia mainly thanks to such significant translation scholars as Anton Popovič, František Miko, Ján Vilikovský and many others. However the situation has changed after the Velvet Revolution in 1989 and the education needed to start adapting to the new market situation and face new economic conditions. The paper presents the tradition, its main point of departure, describes market conditions and suggests some methods how to improve the training of future translators not neglecting the tradition. It is a very delicate and sensitive issue. But finding the right balance seems to be the effort worth taking. The paper also introduces a project of University Translation Centre which has been designed to tackle this challenge and provide students with variety of practical experience during their studies.

Keywords: translator training, tradition, Slovak translation school, employability, market requirements, University Translation Centre.

1. Introduction

Translator and interpreter training has a long-standing tradition in Slovakia. Its institutional and academic roots can be traced all the way back to the common state of the Czechs and Slovaks, to the times of Czechoslovakia. On 15 September 1961 the University of 17th November was founded in Prague, former Czechoslovakia. The role of the university was to provide university education to foreign students, to prepare them language-wise for studies at different Czechoslovak

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universities, to prepare Czechoslovak experts for working in foreign countries as well as provide university education to Czechoslovak students. This course included training of future translators and interpreters within a translation and interpreting programme. The University consisted of two faculties: the Faculty of Language and Professional Training and the Faculty of Social Sciences. We must mention that the University of 17th November was the third higher-education institution founded in the Eastern Bloc (following Patrice Lumumba People's Friendship University in Moscow and the Herder Institute at Karl Marx University of Leipzig, Germany) with the aim of assisting foreign students, especially those from the Third World. At that time, this institution was the only one offering the study of translation and interpreting in Czechoslovakia. In 1969 a subsidiary of the University of 17th November bearing the same name was established in Bratislava, Slovakia (then part of Czechoslovakia), and the Institute of Translation and Interpreting was created there thanks to efforts by Anton Popovič and others. This institute was then the only institution offering translation and interpreting field of study in Slovakia. Unfortunately, the University of 17th November was closed in 1974 and its fields of study were transferred to other faculties. Translation studies/translatology was moved to the Faculty of Arts at Charles University in Prague and to the Faculty of Philosophy at Comenius University in Bratislava.*

2. Discussion

The status quo and the existing methodology used in translation and interpreting training have built, to great extent, on the traditions of the University of 17th November in Czechoslovakia. Besides creating an institutional and academic base for translation and interpreting training, it also contributed to the successful development of translation studies research in Czechoslovakia at the time, significantly impacting the methodology and contents of translation and interpreting training. The groundwork for translation studies was laid in the 1950s, and Slovak and Czech linguists, literary scientists and theorising translators (Havránek, Horálek, Ilek, Levý, Hausenblas, Kochol, Felix, Čepan, Jesenská, Ferenčík, et al.; Demjanová, 2016) played an important role in its formation. It was then that the fundamental concepts of general translation theory were formulated, taking directions related to linguistics, stylistics, versology and literary science. The scholars involved devoted themselves primarily to literary translation, which reflected the translation trade's focus on literary texts at the time. However, Slovak thought on translation developed intensively and distinctively in the 1970s and 80s. We must note that at that time the works of theorists reflected the influence of Soviet structuralism and literary communication on one hand, e.g. works by semiotician Lotman, as well as the influence of Jakobson's theories of translation. In 1968 the conference *Translation as Art* was held in Bratislava under the auspices of the International Federation of Translators. Popovič was the leading figure of translation studies research at that time as well as the founder of the theory of literary translation. His scholarly activities were the outcome of literary translation activities in the 1950s. Popovič closely cooperated with significant Czech translation theorist Jiří Levý, who had greatly influenced his thinking on translation studies, especially with his work *Umění překladau* (The Art of Translation, 1963). Besides the influence of Levý, works by Popovič also reflected Western translation studies, namely Nida, Holmes and J.C. Catford. As early as the late 1960s, Popovič launched a systematic development of Slovak translation thought, bringing about the semiotic and communication theory of translation. This concept can be already found in his first monographs *Preklad a výraz* (Translation and Expression, 1968) and *Poetika umeleckého prekladu* (The Poetics of Literary Translation, 1971). In his concept, Popovič applies the general communication model AUTHOR – TEXT – RECIPIENT to translation. He considers translation to be a communication confrontation with the original act and expresses this in the model EXPEDIENT – TEXT 1 – TRANSLATOR – TEXT 2 – PERCIPIENT. Popovič believed that the translation process is a confrontation of systems of two expedients, two texts and two percipients, as well as of two different cultural and literary systems. The key concept of the Slovak thinking on translation is shift, which would later become shift in translation. Popovič considered the idea as early as 1970 in his essay *The Concept 'Shift of Expression' in Translation Analysis*, defining it on the basis of Levý's stylistic shift. Up to that

* Important current Slovak translation theorists and practicing translators such as Ján Vilikovský, Alojz Keníž, Edita Gromová, Jana Rakšanyiová, Milan Žitný, etc. graduated from the Slovak subsidiary of Prague's University of 17th November.

point, differences between the source text and its translation had only been assessed empirically and subjectively, though a certain amount of subjectivity is doubtlessly also present in Popovič's shifts. Nonetheless, the concept of shift of expression is an attempt to objectively determine and give a name to what is lost and gained in the translation process. It allows us to delineate translation approaches more precisely, label differences between the original and the translation, even identify the styles of individual translators. The shift of expression also enables us to investigate often disregarded equivalence, given that shifts of expression are used in order to attain equivalence/adequacy at the higher level of the text. Shifts can thus signalize equivalence between the source and target texts, emphasizing the fact that the term is not restricted to describing "negative" changes occurring during the translation process; it also aims to describe the broadest possible array of phenomena that occur when textual-cultural material is transferred from one culture to another. Taken together, Popovič's shifts of expression in translation – which he further divides into categories such as constitutive shifts, individual shifts, retardation shifts, negative shifts, thematic shifts, generic shifts and rhythmic shifts – enable us to compare the source and the target text with the goal of establishing the extent of their commensurability or relation to each other. These are, above all, terminological contributions, but they also contribute methodologically to the theory, history and criticism of translation, and even to translation in practice. Furthermore, we cannot omit Popovič's understanding of translation as intercultural communication, through which he introduced the following concepts: interspatial factors in translation, cultural factors in translation, cultural creolization in translation, temporal cultural factors in the translated text and domestic culture in translation. As already mentioned, in defining these concepts, he drew on those conceived by Russian semiotician Yuri Lotman. We believe that Popovič's theoretic model of translation activity and translation process has not lost its relevance even today and can be very appropriately used in training translators and interpreters, although it requires some "refurnishing". It needs to be built on and further developed; however, it seems to have been forgotten today under the influence of other foreign theories.

When considering the Slovak translation tradition and translation and interpreting training we must also look beyond teaching at institutions. In the 1970s, "besides teaching at institutions, theoretical and critical reflection on translation was promoted in the form of scholarly seminars, conferences and club activities" (Keníž, 2015: 153). These activities also included the Summer School of Translation, which first took place in 1975 and lasted for three weeks. Popovič, the founder of the Summer School of Translation, explains the establishment of the traditional event as follows: "The idea of organising the Summer School of Translation emerged from day-to-day needs in educating the young generation of literary scientists and journalists, as well as from the awareness of the increased significance of translation in the life of our society. Our intention was also motivated by the lack of qualified translation critics at a time when translation practice had reached a decent standard, and its top representatives, especially in poetry, even comprise a new school. Under such circumstances the lack of informed professional criticism and translation theory was especially critical" (Mínáč, 1982: 29). The tradition of the Summer School of Translation has been preserved until this day. It has undergone some organisational changes and now is only held for three days, not three weeks. Every year of the Summer School of Translation is devoted to one particular issue. The School takes the form of lectures, which are then included in the proceedings. The proceedings aim to capture the content of the Summer School of Translation in particular years and to document it. The Summer School of Translation has impacted the development of Slovak translation theory and its penetration into wider translation circles, and today it offers the opportunity for young translators and translation and interpreting students to present themselves, as well as facilitating dialogue between translators and publishers.

We have been recently witnessing an increased interest in "Eastern" translation studies. This is evidenced by international conferences primarily focusing on Eastern European translation studies research: in 2013 the conference *Czech, Slovak and Polish Structuralist Traditions in the Translation Studies Paradigm Today* was held at the Faculty of Arts of Charles University in Prague, Czech Republic as a part of the 12th traditional translation studies event *the Prague International Conference on Translation and Interpreting*, and in the same year the conference *Low Countries Conference II, Transferring Translation Studies* was also held at the Faculty of Philosophy of Catholic University in Leuven, Belgium. In 2014 the conference *Slavic Translatology* was held in Bologna. In 2015 the conference *Going East: Discovering New and Alternative*

Traditions in Translation (Studies) was held in Vienna, and in the same year the conference entitled *Some Holmes and Popovič in all of us? The Low Countries and the Nitra Schools in the 21st Century* will be held at the Faculty of Philosophy of Constantine the Philosopher University in Nitra, where Anton Popovič worked in the past. This makes us wonder: Are all these conferences reflecting Eastern European translation studies just a coincidence? It seems that Western translation studies is seeking new insights and has therefore begun to reinvestigate and show interest in seemingly long-forgotten thought on translation. This claim is supported by the fact that current translation studies research performed in the West might be inspired by Eastern European translation-studies research. In the East, however, we are witnessing an uncritical and indiscriminate uptake of Western theories, as if we did not value our rich own translation-studies tradition (e.g. represented by Czech: Levý, Polish: Balcerzan, Russian: Rossels, Topor, Slovak: Popovič, Miko).

The form of translation and interpreting studies in Slovakia builds on the rich Czechoslovak tradition. The Czechoslovak tradition favoured a combined study of translation and interpreting within a single programme. The model which is currently used in Slovakia also offers the combined study of translation and interpreting to students within one programme. Another distinctive feature of the Slovak model is that students of translation and interpreting study two foreign languages simultaneously. We believe that graduates in the field of translation and interpreting designed in this way are better equipped for practice and have increased opportunities of finding employment in the trade. Such graduates may choose whether they will pursue both professions (translator and interpreter) or work only one field. This is a market requirement reflecting the “smallness” of our language. We are seeing that this form of study is a good choice with regards to the needs of the Slovak translation market and other factors, and this has been proven by the long-standing Czechoslovak tradition. At the moment, the translation and interpreting field of study is offered by four Slovak universities (the Faculty of Arts of Comenius University in Bratislava, the Faculty of Arts of Constantine the Philosopher in Nitra, the Faculty of Arts of University of Matej Bel in Banská Bystrica and the Faculty of Arts of Prešov University in Prešov). The content of the programmes at these institutions is slightly different in structure: some of them emphasise literary translation, some focus on non-literary translation and others accentuate interpreting. Besides traditional university education for translators and interpreters, these university institutions also offer specialised postgraduate forms of study focusing solely on translation, which are designed for practicing translators with any kind of master’s degree. The postgraduate study is a two-year programme completed by a final examination and a final translation of a technical text. Graduates of this form of study are awarded a certificate. Such specialised study may only be offered by university institutions with nationally accredited bachelor’s and master’s degree programmes in the field of translation and interpreting. The curriculum for the programme was developed in 1990 in cooperation with the Institute of Translation, Interpreting and International Relations of Marc Bloch University in Strasbourg.

Market situation and student employability

As mentioned above, in Slovakia there are four institutions officially focused on translator training and some that offer optional or elective translation courses as a part of their curriculum within general linguistic programs (e.g. Košice, Trnava etc.).

The result is market oversaturation. According to the official data provided by the Institute of Information and Prognoses of Education, in 2003 there were 130 graduates of translation and interpreting programs in all language combinations, whereas in 2013 there were 820 graduates*.
(Pym et al., 2012: 37), in a chart summarizing association members and percentage of potential

* It has to be noted that the huge increase may be caused by the introduction of the bachelor’s degree in line with the Bologna Process. Some of these students decide not to continue and not to complete their master’s degree. However, they still possess an official document proving that they have completed their education in TS. It also needs to be noted that only approximately 40 % of graduates are interested in profession they graduated in. Moreover the official information of Central Office of Labour, Social Affairs and Family states that at the end of 2013 there were only 56 unemployed graduates of Translation and Interpreting Studies. However, they were unable to say which positions were the graduates employed at.

demand for translators, conclude that in Slovakia, given the present data, 102 % of potential demand is fulfilled by the members of three associations alone (SSPUL, SSPOL, SAPT). Had the studies also taken into account the current numbers of members for the Slovak Association of Translators and Interpreters (app. 160 members up to date; the authors state data from 2005, which was 82) and the Union of Interpreters and Translators (which is active mainly in the Czech Republic but has also Slovak members), the potential demand would have been exceeded even more. If we add the overall number of annual graduates, we may clearly see that the market is not able to accept such a surge of translators and interpreters, which consequently leads to market deviations and failure of a basic signalling mechanism – the authority of academic qualification. Interestingly enough, when talking about the state regulations guiding the translation profession, Pym et. al. (2012) also say that “A more concerted exception would appear to be Slovakia, where Appendix 2 of the Trades Licensing Act No. 455/1991 was amended in 2007 so that translation, interpreting and teaching became licensed trades. This means that in order to present an invoice for a translation, the translator needs to be professionally qualified as a translator, with a degree either in Translation and Interpreting or in the languages concerned. There are, however, several ways of getting around this, and we would hesitate to claim that this constitutes complete protection of a professional title.” Moreover, we see a great demand for translations. For example, in the area of literary translation, as stated in the survey performed by the European Council of Literary Translators’ Associations (CEATL), “The real ‘European champions’ of literary translation are the Czechs and the Slovaks with a proportion of 80 % in fiction” (Fock, De Haan et al. 2008: 67). This means that as much as 80 % of overall literary production consists of translations. However, Djovčoš, 2012, for example, in his comprehensive study of the translation market in Slovakia, found that only 44.8 % of interviewed translators actually have a degree in translation studies.

In other words, we can say that the Slovak translation market is full of paradoxes. On one hand, we see a significantly oversaturated market that keeps being “resaturated” every year by the hundreds of new graduates, but on the other hand there are a lot of translation requests to “feed” these multitudes. Still, when it comes to decision making on the part of the client, we dare say that academic qualification is not sufficient. They seem to be more interested in practical experience and “real” skills than formal education, as illustrated in the OPTIMALE project, for example, the previously mentioned study by (Pym et al., 2012).*

In order to keep pace with the market demands and avoid contributing to further deviation of the market, the Faculty of Arts has started the project of a Translation Centre in August 2012 in order to provide our students real-life experience with translation situations, teamwork, project management, editing, efficient communication with clients etc. The centre is supervised by the project manager (Marianna Bachledová, previously Zuzana Kraviarová), who also teaches translation and CAT courses. The Centre mainly translates texts for internal university purposes (general documents, scholarly papers, contracts, promotional materials), but also cooperates with state institutions such as the municipal office and the State Scientific Library in Banská Bystrica. Students are divided into teams, each consisting of a project manager, terminologist, translator, editor, and proof-reader. Moreover, the whole process is supervised by the quality manager, who oversees students’ communication and workflow. After a translation is completed, the final product is proofread by a professional native-speaker editor/reviser, who corrects the text and sends it back to students so they can learn from their own mistakes. Professional editors are selected in line with the subject of the text. If the translated text is about economics, the editor will have a background in that field in order to discover as many errors as possible. At the end of the process, the text is sent to the client, who provides us with valuable feedback.

Since its founding, approximately 60 master’s students have worked for the Translation Centre. Over three years they have translated 2524 standard pages[†] and interpreted 90 hours

* For a more detailed analysis see Djovčoš, Martin (2014). Translators and Social Context: The Case Study of Slovakia. In *Meta: journal des traducteurs / Meta: Translators’ Journal*, vol. 59, n° 2, 2014, pp. 330–359.

† It needs to be added that the number doesn’t include an extensive project in cooperation with the Faculty of Political Science and International Relations, where our students worked on translation of 18 books, app.

(consecutive and simultaneous). During the simultaneous interpreting, the student is in the booth with a professional interpreter who mentors him/her.

In 2014, former project manager Zuzana Kraviarová conducted a survey to assess students' satisfaction with this way of gaining practical experience. Overall she managed to collect 29 responses. She was interested in why they had decided to work for the Centre, what they thought about this opportunity, how satisfied they were with the Centre's management and which skills it helped them improve. In the conclusion of her paper she summarises her results as follows:

1. More than 90 % of students who worked for the Centre did so voluntarily and their primary motivation was either personal or professional;
2. More than 95 % of students considered this kind of practice absolutely essential or somewhat important;
3. More than 90 % of students considered the Centre's management to be excellent or somewhat satisfactory;
4. The practice helped students gain new skills in translation and interpreting from and to Slovak, terminology research, editing and work with CAT tools;
5. It also helped them improve their soft skills, mainly communication in a team and working under pressure (time/deadlines, stress etc.);
6. It didn't help them in terms of specialisation in a given field of expertise, translation ethics or finding a paid job.*

3. Conclusion

So is there anything other than Levý and Popovič in Slovakia? Yes there is. Although their theories are still valid, they need to "refurnished" in order to suit new situation. Slovakia has a rich tradition in theorising and teaching translation and interpreting. However, the current chaotic market and defective signalling mechanisms require serious rethinking and reshaping of traditional didactic methods, which nevertheless need to stay an integral part of the process. We have thus presented our reaction to the current situation, and we believe that students with such experience are better prepared for the market and have a better starting position.

References

- [Bilovesky, 2013](#) – Bilovesky V. (2013). Does Integrating Europe Need Polylingualism and Multiculturalism? *European Researcher*, 2013, Vol.(42), N° 2-3, pp. 455-461.
- [Demjanová, 2016](#) – Demjanová E. (2016). Dubbing in Slovakia: A Heuristic Overview of the Process. *European Journal of Social and Human Sciences*, 2016, Vol.(9), Is. 1, pp. 9-16.
- [Djovčoš, 2014](#) - Djovčoš Martin (2014). Translators and Social Context: The Case Study of Slovakia. In *Meta: journal des traducteurs. Meta: Translators' Journal*, vol. 59, n° 2, 2014, pp. 330-359.
- [Erasmus Network for Professional Translator Training, 2011](#) - Erasmus Network for Professional Translator Training (2011). The OPTIMALE employer survey and consultation, 8-9. Visited on 30.10.2012, <http://www.translator-training.eu/attachments/article/52/WP4_Synthesis_report.pdf>.
- [Fock, 2008](#) - Fock H., De Haan, Martin and Lhotová Alena (2008). Comparative income of literary translators in Europe. (Last update 05 December 2008). Brussels: CEATL. Visited on 30 April 2012, <<http://www.ceatl.eu/docs/surveyuk.pdf>>.
- [Keníž, 2015](#) - Keníž A. (2015). Teória prekladu Antona Popoviča z pedagogického hľadiska. In *Teória umeleckého a prekladového textu: tradície a inovácie*. Nitra: Univerzita Konštantína Filozofa, 2015.
- [Kraviarová, 2014](#) - Kraviarová Z. (2014). Prax v integrovanej výučbe odborného prekladu (Practice in an Integrated Model of Specialized Text Translation Teaching). In *Preklad a tlmočenie*

2000 pages. The project is due to be finished by the end of the July, so it is not yet possible to provide the exact number of translated pages.

* It is important to note that during the survey these were still full-time students, so it is understandable that they didn't have a full-time paid job. However, 30 % of those interviewed stated that it helped them get their first paid assignment. At the moment we are conducting a poll among the same students one year after their graduation, and we will be able to see whether it helped improve their employability.

11: Má translológie dnes ešte čo ponúknuť II. Banská Bystrica: Univerzita Mateja Bela, 2014. pp. 32-41.

[Masárová, 2012](#) - *Masárová L.* (2012). Sociological aspects of "quality" in translation service from customer perspective. Master's thesis. Banská Bystrica: Univerzita Mateja Bela, 2012.

[Mináč, 1982](#) - *Mináč V.* (1982). Texty a kontexty. Bratislava: Slovenský spisovateľ, 1982.

[Pym et al., 2012](#) - *Pym A., Grin F., Sfredd C. et al.* (2012). The status of the translation.

[Profession in the European Union, 2013](#) - *Profession in the European Union (2013)*. Brussels: DGT. Visited on 12 June 2013, <http://ec.europa.eu/dgs/translation/publications/studies/translation_profession_en.pdf>.



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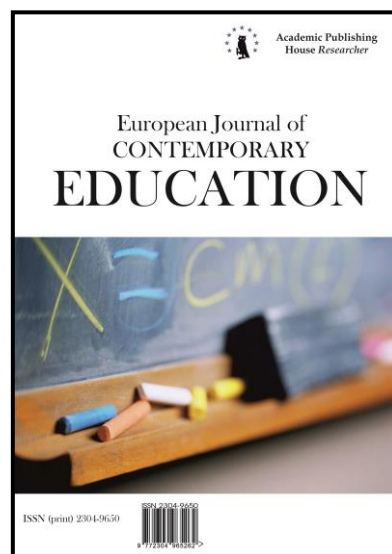
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UDC 37

Modern Media Criticism and Media Literacy Education: The Opinions of Russian University Students

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Abstract

The authors analyze the results of two universities students' survey aimed at finding out the respondents' media competence levels. The findings confirm a general tendency, that commonly, less than a quarter of the young audience reveals a high level development of the media competence's motivational index. A considerably larger part of respondents, about a half, demonstrates a low level of the motivational index. The analysis of the received data proves that a high degree of the media contact frequency and a high level of media competence's motivational index are not directly linked with an ability level to analyze a media text comprehensively. Nevertheless, the levels of interpretational/evaluation parameters of the audience's media competence to a large extent reflect the levels of their informational and motivational descriptors. Moreover, it turns out that the high level of informational index does not necessarily correlate to the level of media competence's evaluation index. On the whole, the survey shows that media competence of modern students needs to be developed. Therefore, university students (not less that school students) do need media literacy courses.

Keywords: media literacy, education, media criticism, students, Russia, university, survey.

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1. Introduction

The students' survey was organized in order to find out levels of the audience's media competence (with emphasis on the synthesis of media education and criticism). Media competence is defined as a complex of motives, knowledge, skills, abilities (descriptors: contact, motivational, informational, interpretation/evaluation, activity), facilitating the choice, use, critical analysis, evaluation, creation and communicating media texts in different forms, types and genres, analysis of the media functioning in society (Ashley et al., 2013; Downey et al., 2014; Fantin, 2010; Fedorov, 2003; Korochensky, 2003; Marchessault, 2014; Myasnikova, 2010; Potter, 2014; Soldatova, 2013; Sourbati, 2009; Sparks, 2013; Tsymbalenko et al., 2013; Wilson et al., 2011; Zircon, 2013).

While developing most of the units of questions and assignments we deliberately chose the close form of a questionnaire (so that a question was followed by several options to choose from). This decision is explained by the fact that most students are as a rule not able to provide clear and brief argumentation for their viewpoint on media preferences. Therefore several most probable variants of an answer were offered. Moreover, close questionnaires take less time to fill out for the respondents, and can fit in within the time limit of a class period.

The differentiation of media competence levels is based on the classification of media competence levels (the audience's development in the media culture sphere). According to it, audiences are offered 5 main units of questions and assignments:

- the unit of questions for ascertaining the media competence's contact index level (frequency of contacts with different types of media, media criticism and media literacy texts);
- the unit of questions to determine motivational level of the audience's media competence (genre, thematic, psychological, therapeutic, emotional, gnoseological, moral, intellectual, creative, and aesthetical motives that effect the audience's choice to contact various media texts);
- the unit of questions to discover the informational level (knowledge of terminology, history and theory of media culture, media education and media criticism) of the audience's media competence;
- the unit of analytical assignments to determine the interpretation/evaluation level of the audience's media competence;
- the unit of assignments to ascertain the activity (practical, hands-on) index of the audience's media competence.

2. Materials and Methods

The following respondents took part in the survey:

- 61 first and second year students of Taganrog Management and Economics Institute (respondents only participating in summative experiment), including 38 young women and 23 young men;
- 59 first and second year students of Anton Chekhov Taganrog Institute (respondents, participating both in summative and formative experiments), including 39 female and 20 male students.

The aim of ascertaining the media competence's contact index level: to determine the frequency of contacts of the audience with various types of media. Gained results reflect the degree of respondents' involvement with media culture, media critics and educators' texts. Each respondent was offered to choose an option characteristic of his/her frequency of contacts with different media (press, TV, radio, Internet, etc.).

While determining the contact level we decided to consider the following scale:

- high level: respondent's daily contacts with media texts;
- medium level: respondent's contact vary from several times a week to a month;
- low level: rare contacts with media or total isolation from media.

It is clear that the content of such contacts is affected by media competence's motivational factor. However, according to our hypothesis, such influence is not direct: i.e. single contacts with media do not necessarily mean that a respondent possesses a wide spectrum of media motives and vice versa.

The aim of determining motivational index levels was to ascertain most popular with the audience contact motives (genre, thematic, psychological, therapeutic, emotional, gnoseological,

moral, intellectual, aesthetical, functional) with media texts (including media critics' texts and media educational texts).

While determining the motivational index levels of media competence development, we defined:

- high level as a wide complex of genre, thematic, emotional, hedonistic, intellectual, creative, psychological, aesthetical motives (including: choice of various genre and thematic spectrum, in particular including non-entertaining genres; pursuit for philosophical/intellectual, aesthetic challenge/dialogue with a media text's creators, criticism; identification, sympathy; quest for aesthetical impressions; quest for new information; for proving own competence in various spheres of life and media culture; search for material for study, research objectives, etc.);

- medium level as a complex of genre, thematic, emotional, hedonistic, intellectual, creative, psychological, aesthetical motives, including: the choice of rather varied genre and thematic range, search for study/research materials; however without significant evidence of pursuit for philosophical/intellectual, aesthetical challenge/dialogue with media text's creators;

- low level: narrow range of genre, thematic, emotional, hedonistic, psychological motives, mainly the choice of entertainment genre; pursuit for compensation, for psychological "treatment"; search for suspense, recreation, absence of aesthetical, intellectual, creative motives of contacts with media texts.

Achieved results help us to account for audiences' real preferences, take into consideration concrete media genres and themes, that the audiences are motivated by, and therefore, are considerably affected (morally and psychologically). These findings need to be compared with the written creative assignments, and interviews, in order to more specifically ascertain audiences' self evaluation of preferences and underpinning grounds, as revealed by the research.

At this stage students were offered a list of media genres and functions (press, radio, television, Internet, video games, etc.) to choose the ones they prefer. Respondents were also presented a list of psychological, therapeutical, emotional, gnoseological, moral, intellectual, creative, and aesthetic motives of contacts with media texts. Knowing media genre and functions direction, chosen by the respondents, with high degree of probability we were able to suppose the types of most important motives of contacts with media. For example, if a person prefers entertainment, blockbuster media, he/she is likely to choose the search for recreation, entertainment, suspense, as his/her main motives for media contacts.

Detection of informational index level was aimed at discovering the audience's knowledge of terminology, history, and theory of media culture, media education, and media criticism. Students were asked to answer 22 questions. While defining media competence's informational index levels, we agreed upon:

- high level: more than 75 % of correct answers;
- medium level: more than 50 % of correct answers;
- low level: less than 50 % of correct answers.

Of course, there is a linkage between levels of contact, motivational and informational factors. A person not contacting with media, cannot possess any information about media culture. However, according to our hypothesis, a high level of contact and motivational descriptors of media competence can combine with a low/medium level of informational index and vice versa.

Undoubtedly, a survey based on the multiple choice questions, is always limited by a chance of getting a correct answer unfairly, a guess, not based on real knowledge. Moreover, some respondents might even cheat. Therefore, the results of the tests were validated later by additional individual analytical and creative tasks, and interviews.

While working on determining the levels of interpretation/evaluation index we agreed upon the following scale:

- high level: media texts analysis is based on the ability to relate with its author, ability to analyze and synthesize space and time form of a media text; understanding, interpretation, and evaluation of the author's concept in the context of a media text's structure; the ability to correlate emotional appreciation with the conceptual judgment, to transfer this opinion onto other media culture types; to connect a media text with own experience and other people's experience;

- medium level: ability to characterize a media character's behavior and psychological state; using fragments of knowledge to be able to explain the logics of the events in the plot, ability to

comment on some components of a media image; absence of the interpretation of the author's stance (or its simplistic interpretation);

- low level: naive comprehension of a media text, poor knowledge of media language, incomprehensibly expressed opinions, conformity to other opinions, neither interpretation of characters' and authors' positions, nor their evaluation.

We gave to the respondents the choice between three topics for writing assignments:

- "Audiovisual media text that impressed me",
- "Audiovisual media text that influenced my self esteem and/or relation to other people",
- "Analysis of a single episode from an impressive media text".

Respondents had to choose one topic and write a 3-4 page essay. According to Usov (1989), the very choice of the topic can indirectly testify of the interpretation/evaluation index level of a respondent's media competence: option c), as a rule, is chosen by respondents with higher level of interpretation/evaluation parameter. With that, it is logical to suppose that the motivational index level of media competence is considerably linked with the interpretation/evaluation index level. That is, the more varied media contact motives are (including intellectual and aesthetic components), the higher his/her level of media competence's interpretation/evaluation index.

While ascertaining levels of media competence's activity factor, i.e. practical/hands-on skills to create and communicate media texts of various types and genres, we agreed upon the following:

- high level: independent/autonomous skills to create media texts of various types and genres;
- medium level: practical skills of media texts creation with the help of teachers/experts/peers;
- low level: practical skills are deficient.

The audience was offered to do several hands-on tasks aimed at a media text creation (video/photo, layout of a poster, etc.). Noticeably, a high level of activity parameter can combine with a low/medium level of interpretation/evaluation index and vice versa.

3. Results

Table 1. Classification of Contact Index Levels

Levels of contact index	Taganrog Management and Economics Institute students: control group (%)			Anton Chekhov Taganrog Institute students: experimental group (%)		
	Female	Male	Total	Female	Male	Total
High	73.7	95.7	82.0	84.5	80.0	83.1
Medium	23.7	4.3	16.4	12.9	15.0	13.5
Low	2.6	0.0	1.6	2.6	5.0	3.4

Table 1 data testify that there is no big difference between the media contact levels of the students in two universities (control and experimental groups). Over 80 % of the respondents show high (daily) level of contact index. However, from the start, we didn't consider the contact index as an ultimate parameter for media competence. Certainly, a respondent never contacting with media, cannot be media competent. Nevertheless, the highest level of contacts cannot guarantee a high level of media competence if a person does not acquire analytical skills.

On the other hand, there are less than 4 % of the students who show a low level of contact index providing evidence that our category of respondents cannot imagine their life without media.

Table 2. Classification of the Contact Levels Index of the Students' Media Competence Development Related to Media Critics' Texts

Levels of contact index	Taganrog Management and Economics Institute students: control group (%)			Anton Chekhov Taganrog Institute students: experimental group (%)		
	Female	Male	Total	Female	Male	Total
High	10.4	8.7	9.8	12.8	10.0	11.9
Medium	44.8	43.5	44.2	61.6	45.0	55.9
Low	44.8	47.8	46.0	25.6	45.0	32.2

The [Table 2](#) data indicate that on the whole there is no significant difference between the contact levels with media criticism texts between two universities (control and experimental groups). Less than 12 % show high (daily) level of contact with media criticism texts. On the other hand, students revealing medium contact level comprise from 42.2 % to 55.9 %, so about half of the given respondents category in that or another way (several times a week/a month) do read/listen/watch media critics' texts.

Table 3. Classification of Contact Levels Index of the Media Competence Development Related to Media Education Texts

Levels of contact index	Taganrog Management and Economics Institute students: control group (%)			Anton Chekhov Taganrog Institute students: experimental group (%)		
	Female	Male	Total	Female	Male	Total
High	2.6	13.1	6.6	0.0	15.0	5.1
Medium	21.1	17.4	19.6	33.3	20.0	28.8
Low	76.3	69.5	73.8	66.7	65.0	66.1

The data of [Table 3](#) attests no significant difference between levels of contact related to media education texts expressed by the students in two universities (control and experimental groups). On the whole, less than 7 % of them reveal a high (daily) level of contact related to media education texts. On the other hand, there are 19.6 % to 28.8 % of students who manifest medium level, which testifies that nearly one quarter of respondents do address media education texts several times a week/month.

Table 4. Classification of the Motivation Index of Students' Media Competence Development

Levels of motivational index	Taganrog Management and Economics Institute students: control group (%)			Anton Chekhov Taganrog Institute students: experimental group (%)		
	Female	Male	Total	Female	Male	Total
High	15.8	17.4	16.4	17.9	15.0	17.0
Medium	28.9	30.4	29.5	25.7	30.0	27.1
Low	55.3	52.2	54.1	56.4	55.0	55.9

[Table 4](#) data show that a high level of media competence's motivational index development, i.e. a wide complex of genre, thematic, emotional, gnoseological, hedonistic, intellectual, psychological, creative, aesthetic motives (including: choice of various genre and thematic spectrum of media texts, in particular including non-entertaining genres; pursuit for philosophical/intellectual, aesthetic challenge/dialogue with a media text's creators, criticism;

identification, sympathy; quest for aesthetical impressions; quest for new information; for proving own competence in various spheres of life and media culture; search for material for study, research objectives, etc.) is only expressed by 16–17 % of the students (with no significant gender differentiation). And vice versa, a lot more respondents – ranging from 54.1 % (Taganrog Management and Economics Institute) up to 55.9 % (Anton Chekhov Taganrog Institute) show a low level of motivational parameter, meaning a narrow spectrum of genre, thematic, emotional, hedonistic, psychological motives, including: the choice of media texts that are of strictly entertaining genres and themes; pursuit of compensation; pursuit of psychological "therapy"; longing for thrill; recreation, entertainment and absence of aesthetical, intellectual, or creative reasons of contacts with media).

Herewith, a deeper study of the findings showed that the students of two Russian universities - Taganrog Management and Economics Institute (further: TMEI) and Anton Chekhov Taganrog Institute (further: ACTI) - are attracted by the following genres most:

- comedy – from 77.1 % (TMEI) to 76.3 % (ACTI);
- science fiction – from 55.8 % (TMEI) to 59.3 % (ACTI);
- thriller – from 49.1 % (TMEI) to 40.7 % (ACTI);
- detective – from 45.9 % (TMEI) to 47.5 % (ACTI).

As far as the gender is concerned, it turns out that the number of male students preferring such entertaining genres as science fiction, thriller and a detective story, is somewhat higher than the number of female ones:

- science fiction: 60.9 % of male students and 52.7 % female students (TMEI); 60 % of male students and 59 % of female students (ACTI);
- thriller: 60.9 % of males and 42.2 % of females (TMEI); 45.0 % of male students and 38.5 % of female students (ACTI);
- detective genre: 47.8 % of male students and 44.8 % of females (TMEI); 50.0 % of male and 46.2 % of female students (ACTI).

At the same time, female students prefer a sentimental melodrama genre: 17.4 % of male preferences vs. 42.2 % of female preferences (TMEI); 15.0 % of male preferences vs. 53.8 % of female preferences (ACTI).

The following genres became outsiders:

- musical comedy - from 1.6 % (preferences of students of TMEI) to 5.1 % (ACTI);
- operetta - from 1.7 % (preferences of students of TMEI) to 6.8 % (ACTI);
- opera - from 5.0 % (preferences of students of TMEI) to 11.9 % (ACTI);
- satire - from 5.0 % (preferences of students of TMEI) to 18.6 % (ACTI).

Subsequent talks with the respondents in focus groups showed that modern students perceive opera and operetta as archaic, boring genres; and they appreciate not satire in comedies but pure entertainment (gags, tricks, funny jokes, stand-up comedian acts, etc.).

The answer of the students of two Russian institutes - TMEI and ACTI - to the question about the appealing functions in print/audiovisual media texts, media critics' works, media education literature (in press, Internet, radio or TV), has considerably assisted us to correlate them to previously expressed genre preferences.

The analysis of students' answers demonstrates that the most popular function of media texts is a recreational one: 60.7 % of TMEI students (at that this function is 20 % more popular with female respondents than with male ones) and 52.5 % of ACTI students (without significant genre difference).

Then follow:

- information-communicative function (46.0 % of students' answers in TMEI; 28.8 % of students' answers in ACTI, no big gender difference);
- aesthetical, artistic function (41.0 % of TMEI students, with females prevailing by 23.9 %; and 44.1 % of ACTI students' preferences, with female answers prevailing 21.3 %).

Gender differences are visible in the answers about other functions of media texts:

- analytical function: 60.9 % of male TMEI students vs. 15.8 % of female students; 35.0 % of male ACTI students vs. 28.2 % of female students;

- ideological, political function: the function is popular with 39.1 % of male TMEI and 26.3 % female students, while in ACTI – 15.2 % of male vs. 28.2 % of female students;
- aesthetical function: in TMEI it is favoured by 30.4 % male and 18.5 % female students, while in ACTI this function is popular with 20.0 % of male respondents and 10.3 % of female ones;
- advertising / commercial function: 4.3 % of male and 15.8 % of female TMEI students; 30.0 % of male and 15.4 % of female respondents in ACTI marked this function.

Let us bear in mind that the analysis of genre motivation showed that on the whole, entertaining media texts ranked from 45.9 % to 77.0 %, that correlates to popularity of the recreational function with the surveyed audience. The smallest number of votes (1.6–1.7 %) of both universities' students was collected by the regulatory-corporation function of media texts. We have expected that because our survey group was not a media-related major, but comprised of future managers, economists, lawyers, and teachers who are not very keen on professional backstage of media industry.

Answering the question of what main psychological, intellectual, creative, aesthetic, etc. motives of the students' contacts with media critics' works, are, revealed the following leading motives:

- pursuit to access new information – 82.0 % (preferences of TMEI students, with female students' answers prevailing 13.0 %) and 67 % (ACTI students with female answers prevailing by 26.9 %);
- search for entertainment, recreation - 60.7 % (TMEI students, with 20.7 % more female answers than male ones) and 52.5 % of ACTI students, without significant gender differentiation;
- search for aesthetical, artistic impressions – 44.3 % (preferences of TMEI students, with female voices dominating by 22.3 %) and 41.1 % (preferences of ACTI students, with female students dominating by 21.3 %);
- longing for spending one's free time - from 29.5 % (TMEI students with female voices exceeding male ones by 12.6 %) to 32.2 % (ACTI students with no big gender difference).

On the whole, the students' aspiration for entertainment and recreation (60.7 %) and relaxed way of watching/listening media (29.5 %) correlates to students' preferences of entertaining media genres and functions.

The less number of students' voices was received by:

- aspiration for improving one's skills in media literacy – 2.6 % (TMEI students) and 1.9 % (ACTI students);
- pursuit of developing one's knowledge in media education - 4.4 % of TMEI students and 3.2 % of ACTI students.

To sum up, the low motivation of students to gain knowledge and skills in the field of media literacy was something we had expected because the survey was conducted with 1-2 year students who had never taken a media education course.

Table 5. Classification of the Informational Index Levels

Levels of information index	Taganrog Management and Economics Institute students: control group (%)			Anton Chekhov Taganrog Institute students: experimental group (%)		
	Female	Male	Total	Female	Male	Total
High	0.0	0.0	0.0	0.0	0.0	0.0
Medium	55.3	52.2	54.1	51.3	55.0	52.5
Low	44.7	47.8	45.9	48.7	45.0	47.5

The detection of the information index levels of TMEI and ACTI students' media competence development was conducted with the help of a test. The testing procedure with the developed questions (see Appendix) had some vulnerable spots. On the one hand, the test format contains the opportunity of guessing (intuitive or logic – by eliminating most ambiguous answers) the right answer with the probability of 25 %. On the other hand, during the testing there might have occurred cheating or prompting by some participants. However, the test results were verified by

the finding of focus groups and face-to-face interviews that to a large extent facilitated the clarification and validation of students' competence levels.

None of the students questioned demonstrated the high level of media competence development's information index (which was assigned as 75–100 % of correct answers to questions related to terminology, history and theory of media, media culture, media criticism and media education). About 52–54 % of surveyed students showed a medium level of the information parameter (without significant gender differences between the respondents). 45–47 % of the students revealed a low level of media competence's information index that is they were able to give less than 50 % of correct answers. Herewith, the minimal number of correct answers (less than 40 %) was received to the questions connected to the knowledge of media specialists' activities, media educators, media theories, and a media text production stages.

Completing a phrase "Media criticism is ..." from 65.6 % (TMEI students) to 69.5 % (ACTI students) could choose a correct answer out of four suggested. Preliminary conversations with students in focus groups showed that without multiple choice options they, as a rule, found it hard to give a definition to media criticism. Still, we should note that even having a correct answer as one of the options, one third of the students could not detect it.

Completing a sentence "Media culture is...", from 85.3 % of TMEI students to 89.8 % of ACTI students were able to choose a correct answer out of the four given options. However, as focus groups had previously revealed, without ready answers to choose from, students were at a loss.

Completing a definition for media education, from 77.1 % of TMEI students to 83.0 % of ACTI students could choose a correct answer. But again, the same question in focus groups was difficult for the participants.

Finishing a phrase "Media perception is...", 72.1 % of TMEI students and 69.5 % of ACTI students chose the correct option. As before, they had difficulty giving this definition without suggested answers in focus groups.

Completing a phrase "Media language is..." 91.8 % of TMEI students and 83.0 % of ACTI students surveyed could choose the correct answer out of the four provided. Nevertheless, preliminary conversations with students in focus groups showed that without multiple choice options they, as a rule, found it hard to give a definition.

Completing a definition for media competence, 62.3 % of TMEI students and 59.3 % of ACTI students chose the right answer. 64.0 % of TMEI students and 52.5 % of ACTI students were able to differentiate a correct answer while completing a sentence "Media text is...".

Matching a "story line" with its definition, 62.3 % of TMEI students and 47.4 % of ACTI students recognized the correct answer out of the four offered options. 72.1 % TMEI and 67.8 % ACTI students gave the correct answer continuing the phrase "Manipulative influence of media is...".

When answering a question about the workplace of a media critic, 72.1 % of TMEI students and 67.8 % of ACTI students gave the correct answer. We should remember that the latter and all of the above listed questions raised problems when they were asked in focus groups with no multiple choice options. Therefore, the students' choice during a test is more likely a result of logical comparison of the suggested options for choice (the so called "test-wiseness"), but not of the real knowledge. Moreover, a test's major weakness is that it promotes guessing (one can get 25 % by choosing all "a"s or "b"s , etc.). So it should be stressed, that the test results have been balanced with other forms of research.

Answering the question about the job of a media teacher, 37.7 % of TMEI students and 50.8 % of ACTI students got the right answer. Choosing a surname of a researcher who had introduced the media theory concept of the "global village", only one third – 37.7 % of TMEI students and 37.3 % of ACTI students chose the correct answer. While in focus groups none of the participants could remember the name of Marshall McLuhan as its author.

Looking for a term not related to media culture, media criticism or education, 70.5 % (TMEI students) and 72.9 % (ACTI students) were able to choose the correct answer.

However, identifying skills, not related to media culture, media criticism or education, only 14.8 % of Management and Economics Institute, and 27.1 % of ACTI were able to choose the correct answer out of the four options. Another rather low result was shown by the choice of the media-related "wrong sentence": only 34.4 % of TMEI students and 50.8 % of ACTI students could identify the correct answer.

While answering the question, which of the following theories of media is based on the idea of strong, direct impact of a media text on the audience, the impact that provokes immediate reaction, only 34.4 % of respondents from TMEI and 32.2 % of ACTI students chose the correct answer (inoculatory approach). Answering the question, which of the suggested media theories is based on studying sign systems, only 39.4 % of TMEI students and 52.5 % of ACTI students surveyed identified semiotic theory as the correct one.

Choosing the correct phrase (out of 4 options) connected to media criticism, 19.7 % of TMEI students and 18.6 % of ACTI students were able to find it. Answering the question about what media critic's writing about television, only 16.4 % and 23.7 % (students of TMEI and ACTI, correspondently) identified the right person. When doing the assignment to re-arrange the stages of an audiovisual or print media critic's text in the logical sequence, only 39.3 % of TMEI and 23.7 % of ACTI students coped with the task.

Table 6. Classification of the Interpretation/evaluation Index Levels

Levels of interpretation/evaluation index	Taganrog Management and Economics Institute students: control group (%)			Anton Chekhov Taganrog Institute students: experimental group (%)		
	Female	Male	Total	Female	Male	Total
High	0.0	0.0	0.0	0.0	0.0	0.0
Medium	76.3	73.9	75.4	76.9	75.0	76.3
Low	23.7	26.1	24.6	23.1	25.0	23.7

Exposure of the interpretation/evaluation index levels was conducted through the assignments related to the analysis of various media texts.

As a result (Table 6) it turned out that none of the respondents demonstrated a high level of interpretation/evaluation index. The high level presumes a media text's analysis based on the ability to relate to its author, analysis and synthesis of the space and time form, its understanding, interpretation and evaluation of the author's concept in the context of a media text's structure; the ability to correlate emotional perception with concept opinion, to transfer this opinion onto other genres and types of media culture, to relate a media text with own experience or experience of other people.

The medium level of media competence development's interpretation/evaluation index assumes the ability to characterize characters' behaviour and psychological state on the basis of rudimentary knowledge; the ability to explain the logic of the events sequence in a plot; the ability to dwell on some components of a media image; lack of an author's stance interpretation (or its simplistic interpretation). The medium level was demonstrated by 75-76 % of students without a significant gender difference in both universities.

The low level of interpretation/evaluation parameter presumes a naive, realistic perception of a media text's story line, unawareness of media language peculiarities, inconsistency, confusion of opinions, dependency on peer influence; simplistic interpretation of characters' positions and the author's stance. This level was shown approximately by a quarter of respondents in both universities.

Table 7. Classification of Activity Index Levels

Activity index levels	Taganrog Management and Economics Institute students: control group (%)			Anton Chekhov Taganrog Institute students: experimental group (%)		
	Female	Male	Total	Female	Male	Total
High	28.9	34.8	31.2	25.6	30.0	27.1
Medium	55.3	56.5	55.7	56.4	60.0	57.6
Low	15.8	8.7	13.1	18.0	10.0	15.3

The identification of activity index levels was realized in the course of analysis of their assignments targeted at creation and communication of media texts' various forms and genres.

On the whole (Table 7), the high level of the activity index (practical skills to create a media text) was demonstrated by 27-31 % of students. With that male students prevailed by 5 % approximately.

The medium level of activity parameter (hands-on skills to create a media text with the help of a teacher/specialist/other people) was revealed by about a half of the students, with male respondents outnumbering female ones by 1-4 %.

The low level of activity index (inability to create a media text or unwillingness to do it) was shown by 13-15 % of students, with female students prevailing by 7-8 %.

4. Discussion

Validness of our findings can be proved by the research results of Moscow sociological group "Zircon" under the title "Current state and perspectives of media literacy of the Russian citizens based on the national monitoring of media behavior (2009-2013)" which was initiated by the Ministry of Communications and Mass Media of the Russian Federation and used the volume of 1600 respondents (representative sample). The surveys were held annually in five stages from 2009 to 2013. As reported by "Zircon", on average, over 80 % of Russian population watch television (i.e. contact with television media texts) daily (Zircon, 2013).

If we address the survey results of teenagers' Internet contacts, held by the research group headed by G. Soldatova in 2013 (1203 teenagers aged 12-17 were questioned, living in 58 Russian cities with the population of 100 thousand people and more, from 45 regions and 8 federal areas), we'll see that Russian teens somewhat surpass both adults and university students as far as the frequency of contacts with media texts is concerned. 89 % of teenagers use Internet daily (Soldatova, 2013). Similar findings were gained by other Russian (Tsybalyenko et al., 2013), British (Ofcom, 2013) researches of teenagers' media behavior, and others media researches (Fenton, 2009; Garcia-Ruiz, Ramirez-Garcia, Rodriguez-Rosell, 2014; Hammer, 2011; Hermes et al., 2013; Holt, & Von Krogh, 2010).

The comparative analysis of the students' answers in two Russian universities – Taganrog Management and Economics Institute and Anton Chekhov Taganrog Institute - to the question about the frequency of their contacts with media texts showed that on average, over 80 % of students (82.0 % in TMEI and 83.0 % in ACTI) contact with media on a daily basis. On the whole, the findings verify the results of many sociological surveys (Fedorov, 2003; Myasnikova, 2010; Zircon, 2013; Ofcom, 2013), held in different years. The level of media contacts is very high, while entertaining genres dominate in their preferences. Male respondents to a larger degree than female prefer action/thriller genres, female respondents tend to favor melodramas.

At the same time, as far as we know, neither in Russia, nor in other countries, a research of audience's (including students') contacts with media criticism was conducted. Comparative analysis of students' answers testifies the degree of demand for print and audiovisual media critics' texts: without a significant gender difference, it turned out that from 9.8 % (TMEI students) to 11.9 % (ACTI students) have such contacts daily. Another 42-55 % students read/listen/watch media critical text several times a week/month. Still, as we had anticipated, there are young people in both universities who rarely or never contact media critics' messages: ranging from 32 to 47 %. Focus groups conversations showed that the respondents in the first place, contact with texts of popular but "amateur" media bloggers (who review latest films and computer games, videos, etc.), because these texts are easier and more understandable for them than texts of media professionals.

As far as the research of audience's contacts with media literacy texts, we also have not found the previously done similar surveys in Russia or elsewhere. Before conducting a survey, we took into account that the first or second year students had not studied any media literacy course yet, therefore a percentage of respondents who contacted media education texts on a regular basis would be very low. However the findings corrected our initial expectation: there is a demand for that kind of media texts. It turned out that 5.1 % (ACTI students) to 6.6 % (TMEI students) contact with media education texts daily. From 19.6 % to 28.8 % of students try and do that several times a week/month. However, as we had anticipated, the vast majority of young people - from 66.1 % (ACTI) to 73.8 % (TMEI) never have anything to do with media literacy texts. Focus group

discussions showed that the respondents, in the first place, read the texts related to technical, computer learning aids, and do not differentiate between media education and computer literacy.

Our research has affirmed the tendencies, that had been revealed in previous researches (Ashley et al., 2013; Downey et al., 2014; Fantin, 2010; Korochensky, 2003; Marchessault, 2014; Myasnikova, 2010; Sparks, 2013; Potter, 2014).

Noticeably, a high level of motivational index is demonstrated, as a rule, by less than a quarter of young audience. Whereas a considerably larger number of respondents - about a half - has a low level of motivational parameter.

Our research findings proved that the high frequency of contacts with media and high level of motivational index are not directly linked with the high level of comprehensive media texts analysis. Although the information and motivational index levels of media competence are reflected on levels of interpretation/evaluation parameter.

We have also acknowledged a tendency that a high level of media competence's information index does not necessarily correspond to an equally high level of evaluation index. Therefore, awareness of media terms, theory and history of media culture and media criticism does not automatically foster analytical skills related to media texts.

The high level of media competence's information index was not demonstrated by a single student of two universities surveyed that is characteristic of non-media studies departments. We have found that half of respondents have a medium level of information index, that is they do have some knowledge about media terminology, history and theory, gained through self education or/and family education.

As far as the activity levels of media competence development are concerned, our analysis has shown that they are rather similar to previous survey results (Fedorov, 2003; Myasnikova, 2010; Soldatova, 2013; Zircon, 2013; Wilson et al., 2011; Tsymbalenko et al. 2013; Sourbati, 2009), when a high level of this parameter was indicated by around a quarter of a similar age group respondents (with male respondents slightly exceeding female ones).

5. Conclusion

In summary, we can draw a conclusion that our research demonstrates that modern students' media competence in several parameters (motivational, information, interpretation/evaluation, activity) needs to be considerably elevated. The development of the media competence's above mentioned parameters, in our opinion, is possible in the course of media education. Therefore, university students (not less than school students) need to take media literacy courses. In that case we can only speak about significant advancement of the UNESCO concept (Wilson et al., 2011) about the synthesis of information and media literacy.

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References

- Ashley et al., 2013- Ashley S., Maksl A., Craft S. (2013). Developing a News Media Literacy Scale. *Journalism & Mass Communication Educator*, 68 (1), 7–21.
- Downey et al., 2014 - Downey J., Titley, G., Toynbee, J. (2014). Ideology Critique: The Challenge for Media Studies. *Media, Culture & Society*, 36 (6), 878-887.
- Fantin, 2010 - Fantin M. (2010). Literacy, Digital Literacy and Information Literacy. *International Journal of Digital Literacy and Digital Competence*, 1(4), 10-15.
- Fedorov, 2003 - Fedorov A. (2003). Media Education and Media Literacy: Experts' Opinions. MENTOR. A Media Education Curriculum for Teachers in the Mediterranean. Paris: UNESCO.
- Fenton, 2009 - Fenton N. (2009). My Media Studies: Getting Political in a Global, Digital Age. *Television New Media*, 10, 55-57.
- Garcia-Ruiz et al., 2014 - Garcia-Ruiz R., Ramirez-Garcia A., Rodriguez-Rosell M.M. (2014). Media Literacy Education for a New Prosumer Citizenship. *Comunicar*. 22 (43), 15-23.

- [Hammer, 2011](#) – *Hammer R.* (2011) Critical Media Literacy as Engaged Pedagogy. *E-Learning and Digital Media*, 8(4), 357-363.
- [Hermes et al., 2013](#) - *Hermes J., Van den Ber, A., Mol M.* (2013). Sleeping with the Enemy: Audience Studies and Critical Literacy. *International Journal of Cultural Studies*, 16 (5), 457–473.
- [Holt, Von Krogh, 2010](#) - *Holt K., Von Krogh T.* (2010). The Citizen as Media Critic in Periods of Media Change. *Observatorio Journal*, 4 (4), 287-306.
- [Korochensky, 2003](#) - *Korochensky A.P.* (2003). Media Criticism in the Theory and Practice of Journalism. Rostov: Rostov State University Press.
- [Marchessault, 2014](#) - *Marchessault J.* (2014). Media Studies as Interdisciplinary Exploration. *Journal of Visual Culture*, 13, 82-84.
- [Myasnikova, 2010](#) - *Myasnikova T.I.* (2010). Comparative analysis of the media preferences of Russian and German students: axiological perspective. *Bulletin of the Orenburg State University*, 10, 25-32.
- [OFCOM, 2013](#) - OFCOM (2013). Children and Parents: Media Use and Attitudes. Report. London: Ofcom.
- [Potter, 2014](#) - *Potter W.J.* (2014). Media literacy. LA: Sage.
- [Soldatova et al., 2013](#) - *Soldatova G.U. et al.* (2013). Digital competence of adolescents and parents. The results of nationwide research. Moscow: Foundation for Internet Development.
- [Sourbati, 2009](#) - *Sourbati M.* (2009). Media Literacy and Universal Access in Europe. *The Information Society*, 25, 248–254.
- [Sparks, 2013](#) - *Sparks C.* (2013). Global Media Studies: Its Development and Dilemmas. *Media, Culture & Society*, 35(1), 121–131.
- [Tsymbalenko et al., 2013](#) - *Tsymbalenko S.B., Sharikov A.V. et al* (2013). Monitoring and analysis of the Moscow informational and educational space: results of sociological research and programming. Moscow: Moscow state University of Humanity.
- [Usov, 1989](#) - *Usov Y.N.* (1989). Film education as a means of aesthetic education and artistic development of students. Unpublished doctoral dissertation, Russian Academy of Education, Moscow.
- [Wilson et al., 2011](#) - *Wilson C., Grizzle A., Tuazon R. Akyempong K., Cheung C.-K.* (2011). Media and Information Literacy. Curriculum for Teachers. Paris: UNESCO.
- [Zircon, 2013](#)- *Zircon* (2013). Current status and prospects of literacy of the population of the Russian Federation on the basis of national monitoring of media conduct (2009-2013). Moscow: Zircon.



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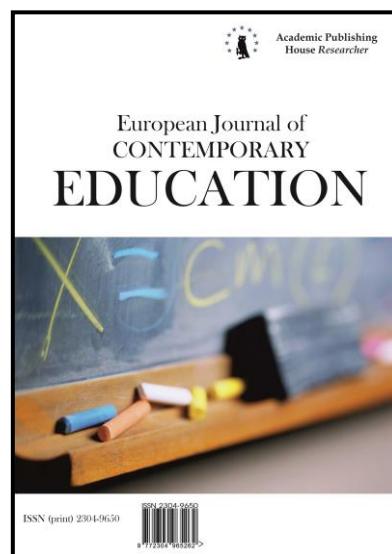
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Female Teachers Training in Educational Grades of Women's Gymnasia in Kazan in the Last Third of the XIX – Early XX Centuries

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Abstract

The purpose of the article is to study the way the female teacher education was formed in late imperial Russia. The subject of the study is the specific element of this process in Kazan province, being a multi-ethnic region. The article analyses a number of issues, the ones related to the activities of the two Kazan gymnasia - Maryinskaya and Ksenyinskaya, generalizes both functioning conditions of these institutions and problems and achievements in quality preparation of teaching staff for schools of the Volga region.

The study reveals the socio-cultural and pedagogical factors that determined the way the subsystem of female teachers training was formed. The dynamics of the education classes development demonstrated a certain degree of improvement of the educational process, extension of the academic term from one year to two years, increasing demand applied to students. The enhanced focus on practice-oriented training greatly affected development of professionally significant qualities of the future female teachers.

As this educational activity was insufficiently regulated, that allowed for its planning and organization on a local level while taking into account particular regional conditions and needs. Such local 'testing' of the way education classes function helped to build a well-coordinated subsystem of female teacher training in the country as well as obtain the required number of

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teachers within a short period.

The results of the study can be applied while modernizing the practices of modern teacher training.

Keywords: Russian empire; Kazan; women's education; teacher training; gymnasium.

1. Introduction

Studying historical formation patterns of female teacher training is of particular relevance to modern teacher training as it is closely associated with defining the role of women in modern society, especially in terms of the younger generation education. The history of female teachers training in Russia is inextricably linked to women's gymnasia activity of the last third of the XIX – early XX centuries, which were quite popular with girls as those institutions trained them to teach at elementary schools.

The adoption in 1870 of 'The regulations on women's gymnasia and progymnasia', that led to women's colleges of the first degree being renamed as gymnasia, gave a vigorous start to further development and spreading of girls' upbringing through education in public schools that had a full right to be called secondary schools.

The Ministry of Education (the ME) gave great importance to educational training for women, as 'a woman, in terms of the way she can influence her family, has a responsibility to its impact on the family, have an upbringing obligation. Should she fail to fulfil the obligation or do it in the wrong way, then it affects all society and state; and that is particularly dangerous as evil is pervasive and able to undermine the foundations of both public and state life without appearing to do so' (Kovalensky, 1908: 199). Therefore, along with the adoption of the new 'Regulations' in 1870 teacher training courses were established at ten provincial gymnasia. In 1874, in connection with the adoption of 'The regulations on the eighth special teacher training grade in women's gymnasia' the eighth grade was added in gymnasia, that used to have seven grades (Kantorovich, 1899: 157-158), the one that was training students to work as a home tutor or public school teacher.

2. Materials and methods

There are plenty of various sources on the matter, being different in nature and content. Priority was given to archival and periodical materials. Various groups of documents stored at the National Archives of the Republic of Tatarstan (the NART) constituted the main source base of the study. The following funds are especially important: 92, 93, 122, 125, 150, 421, which store circular documents and workflow records. Those include documents that describe the activities of legislative, executive and administrative bodies in the field of education, as well as the state of education in Kazan in different years of the period under study, such as minutes of gymnasium teachers' boards meetings, school districts and gymnasia annual reports, historical descriptions of educational institutions, statements and information on annual and semi-annual testing at schools.

A numerous group of sources consists of legislative and other regulatory laws of the Russian Empire within the period from 1881 to 1905; orders concerning the ME, Kazan educational district (KED); compilations of regulations issued by the government and ME; statistical data on the number of schools and pupils; materials on public education history and the reform of secondary school; reports and extracts from a schools status reports; reference books, commemorative books, calendars of Kazan province published over the period. The value of all these publications is that they are all, besides providing a lot of statistical data, are sources of summary information on the most important moments of school activities, students' performance, school facilities, etc. All these materials can be very useful if taken with a pinch of salt. It was 'The review of the activities of the ME' and circulars by KED that were of great assistance as they contain a lot of documents that are interesting from the content and methodical point of view.

Another big and no less valuable set of sources on the history of female teacher training Kazan is both all-Russian and local periodicals. The all-Russian magazines that published extensive reviews on the development of teacher training in Russia made it possible to trace the activities of the prominent figures of public education (M.L. Peskovsky, N.A. Korf, A. Anastasiyev, N. Bobrovnikov, I. Iznoskov and others). These stressed the importance of issues related to the teaching staff training and brought up these issues in magazines. The provincial media contains information on the organization and quality of elementary school teacher training, i.e. female graduates of gymnasia in Kazan.

The degree of reliability of the sources was determined by their critical benchmarking.

Having studied the above-mentioned materials, we formed a set of sources, allowing to consider various aspects of the issue. It makes it possible to trace the formation of government policy in the field of education in relation to primary schools teaching staff training within the period under review, obtain valuable information on the number of students in the eighth teacher training grades; determine the number of female teachers who got education in such teaching classes in Kazan as well as find out the need for teaching staff.

For the purposes of the study the sources are analysed from historical and genetic point of view using the comparative-historical method, whereas it is the integrity method and steady focus on value-based approach while taking into account the interdisciplinary nature of the issue under study that are of paramount importance when a historiographic analysis is carried out. The basis of the study was a microanalysis of the two female gymnasias' educational environment in Kazan. Upon defining the methodological basis of the study, the authors used specific scientific approaches being typical for modernisation lead paradigm, educational urban planning and adaptive-activity cultural studies. The results of the study are structured in the issue-chronological order.

3. Discussion

The works by A. Derevitskiy ([Derevitskiy, 1902](#)), M.N. Kovalensky ([Kovalensky, 1908](#)), E.O. Likhacheva ([Likhacheva, 1907](#)), P.G. Mizhuyev ([Mizhuyev, 1906](#)) relating to women's secondary education make one of the most interesting sections of the issue's historiography. The works by M.N. Kovalensky, found in a multi-volume work 'History of Russia in the XIX century', are of great interest. The author acknowledged the progress made by women in both education field and actual teaching. The author believes that the reasons for a temporary delay of further development of women's education have something to do with the internal politics of the government, including the one in the field of education, describing it as a reactionary one. E.O. Likhacheva, having performed a comparative characteristic analysis of women's education in Russia and Western Europe, believes that secondary women's education in Russia was organized at a better scale than in any European country, primary education being an exception.

Taking into account the value of each of these studies, it should be noted that all these works had, in general, a journalistic nature. This is explained by the fact that the authors of these works still had a small number of sources at their disposal, and they were guided primarily by their political objectives. Many of the assessments and conclusions they made are now thought to be obsolete. At the same time, they generalized and systematized the accumulated material.

It is known that education issues in Russia of the period under consideration were quite fully studied in the works by Soviet historians. F.G. Panachin ([Panachin, 1979](#)), for example, was the first to thoroughly investigate a wide range of issues: the secondary female teacher training institutions, social composition of the students, curricula and programs, policies of the government in relation to teacher training, etc. A relatively rapid growth of educational institutions network, a change in its social structure, establishment of new areas of school education is explained by the author as the result of the development of capitalism (not as a result of the government activities), which caused changes in all domains of social life in Russia. Another important aspect that F.G. Panachin drew his attention to was the teacher training institutions of KED. However, the author only loosely touched upon some of their organization issues.

Modern historiography is represented by works which cover certain aspects of primary schools female teachers training while studying the development of education in a number of multinational parts of the country, i.e. Kazan region ([Kornilova, 2011](#); [Kornilova, 2012](#)) and the whole Volga region ([Magsumov, 2015a](#); [Magsumov, 2015b](#)), as well as in the Caucasus ([Zakaraya, Cherkasov, 2010](#); [Shevchenko et al., 2016](#)).

Having studied historiography of the issue, we can pinpoint the main disadvantage of most of the works, that is a biased assessment of certain events or processes. The regional level aspect of the issue also failed to get a thorough research.

4. Results

The government policy in the field of female teacher training is considered as an integral part its domestic policies activities in the last third of the XIX – early XX centuries. It was aimed at

preserving and maintaining the political system at the time. The growing activity of the opposition forced the government of Alexander III to give up liberalism in education, the latter had manifested itself in a number of reforms of the 80-90s of the XIX century. And yet the government permitted certain turns in its political course related primarily to the increasing need for socio-economic development of society.

In the period under study tertiary teacher training education in Russia gained considerable success as the educational institution network aimed at training teacher spread every year. Since the 1870s the government started to pay attention to the organization of teacher training in various regions of the country. A few state teacher training institutions opened in Kazan as well that were to train only male teachers for primary schools. Women could get such type of education in teaching grades of women's gymnasia, which were also widespread in the 70s of the XIX century. In the last third of the XIX – early XX centuries there was a significant increase in the number of women's secondary schools in the province, funded not only by the government, but also the local authorities, companies as well as by means of private donations. This is due, first of all, to the population's increased need for secondary education for women and, secondly, to the need for training female staff for public schools.

In the last third of the XIX – early XX centuries there were women's gymnasia only in the provincial city of Kazan. Those were 1st Maryinskaya gymnasium converted from Maryinskoye first grade women's college on 30 August 1871 ([NART, fund 92, inv. 1, file 24887: 1](#)) and 2nd Ksenyinskaya gymnasium converted from a progymnasium in August 1880. In other towns of the province women's gymnasia were opened only at the beginning of the XX century. In 1905 Chistopolskaya women's gymnasium, converted from a progymnasium, was ([NART, fund 92, inv. 1, file 4028: 19](#)).

Women's gymnasia curriculum included the following subjects: Scripture knowledge, the Russian language, arithmetic with an enhanced accounting element, geometry basics, general and Russian geography, general and Russian history, natural history and physics with the addition of data relating to household keeping and hygiene, calligraphy, crafts and gymnastics ([Code of laws, 1893: 327](#)). Thus, the new charter made teaching more practical with regard to the woman's future way of life. He also affected women's gymnasia by introducing classicism, the one that dominated in men's educational institutions.

In 1874, in women's gymnasia it was allowed to teach classical languages (Greek and Latin) as optional subjects or just Latin, French and German, drawing, music, dancing, singing ([Kantorovich, 1899: 158-159](#)). Thus, in 1896 in Kazan Ksenyinskaya gymnasium they taught Latin as an optional subject, in 1901 at the Maryinskaya gymnasium practical lessons of French were introduced ([On the introduction in Kazan, 1896: 519](#)). Classical languages were not taught at Kazan Maryinskaya gymnasium due to the fact that there was no demand for those subjects ([NART, fund 125, inv. 1, file 235: 3](#)). The number of both curriculum subjects and academic hours given to a particular subject was significantly lower compared to men's gymnasia and non-classical secondary schools. For example, maths, history, geography and literature courses were significantly contracted compared to those in men's gymnasia ([Kirpichnikov, 1890: 164](#)). Logic and other subjects were not taught. Instead, curricula were overloaded with lessons of crafts and other types of household keeping.

Students were charged fees to be taught in women's gymnasia. The tuition fee amount was determined by the local council ([Polyansky, 1901: 121](#)). The tuition fee was quite high. At the beginning of the 1880s, in the two Kazan women's gymnasia the students paid 30 roubles a year for compulsory subjects, 18 roubles for optional subjects and 15 roubles per year at a preparatory grade ([NART, fund 92, inv. 1, file 13591: 238](#)). Collection of tuition fees was the main funding source for gymnasia.

It is necessary to note the activities of a gymnasium's board of trustees, whose function was to involve the public into establishing women's gymnasia and their promotion. In addition to raising funds the Board was entitled to relieve certain poor students from paying tuition fees at the request of the administration or students' relatives. In 1st Maryinskaya gymnasium in Kazan 106 students were relieved from tuition fees for studying compulsory subjects in 1880 ([NART, fund 125, inv. 1, file 235: 17](#)). The fees for poor students were paid by some philanthropists of the city of Kazan. For example, during the first half of the 1880/81 school year, I.N. Zhuravlev paid the tuition fees for eight students, A.S. Alexandrovich paid for 12 students, M.I. Popov paid five

students and A.P. Pribytkov paid for one student. All the above-mentioned donors were the hereditary honorary citizen of the city. Moreover, I.N. Zhuravlev paid for many poor students on a yearly (NART, fund 125, inv. 1, file 235: 18). While permitting a certain degree of society involvement into establishing women's gymnasia and their maintenance, the ME limited the way society was allowed to affect daily activities and curriculum of these educational institutions.

Provincial women's gymnasia were placed under the supervision of the governors and chairmen of the teachers' councils. The head of the entire educational work was appointed the head of the men's gymnasium or the school superintendent was appointed the head of the teachers' council being responsible for all the educational activities in the region. None of the events related to teaching might take place without the permission of the high-rank officials. As a result, the role of the headmistress and teachers of the gymnasium was thereby limited.

In women's gymnasia, just as in universities, there were class mistresses who worked as intermediaries between teachers and students. They attended all lessons and their function was to help the teacher maintain discipline and order in class, thus allowing the teacher to be fully engaged in teaching (Kirpichnikov, 1890: 164-166). Using rare archival materials and press publications, we can obtain evidence that class mistresses did not only maintain discipline, but also watch the way the teacher works, assess the teacher's morality as well as to ensure that the teacher does not exceed the education content scope for women's educational institutions determined by the ME. As a rule, male teachers working in male educational institutions, normally gymnasia, were invited to teach at women's middle and senior grades, whereas female teachers worked in lower grades. As a result of class mistresses' permanent supervision, smaller education content scope, lack of classical languages as a compulsory subject in such institutions, women, who had received secondary education, were not allowed to teach in all gymnasium grades, thus being limited to the lower grades only.

Having finished the seven grades, students, who had successfully completed a full course of study, were given the right to the title of the primary school teachers and teachers of public schools (Deryuzhinsky, 1900: 9). Later, they were given the right to teach in the lower colleges grades. Since March 1881, students in women's gymnasia were permitted to be awarded with the gold and silver medals in the same order, which had been set for men's gymnasia. Students in Kazan province were proved to be very good at studies from the very beginning. They were quite zealous while studying and often, according to official reports, showed better results than students from men's gymnasia. The annual report of Maryinskaya gymnasium for 1898 contains information out of 743 students in main grades 57 students completed seven grades, six of them were awarded with gold medals and 10 were awarded with silver ones (Traubenberg, 1900: 42). In 1899, in Ksenyinskaya gymnasium, out of 46 students of the seventh grade three were awarded with gold medals and 12 were awarded with silver ones (NART, fund 92, inv. 1, file 24888: sheet isn't numbered).

For the majority of women's gymnasia graduates, who belonged to the low-income social groups, education was the only capital that could save them from poverty; and that capital was, in most cases, applied in teaching. In order to provide poor girls with the opportunity to learn teaching terms and methods the eighth teaching grade was established in gymnasia, its completion gave the right to the title of the home tutors and teachers (Code of Laws, 1893: 328).

In Kazan province the eighth grade was established in both women's gymnasia. In Maryinskaya gymnasium it was opened in 1870, and in Ksenyinskaya gymnasium it was opened in 1881 r. (NART, fund 125, inv. 1, file 544: sheet isn't numbered; NART, fund 122, inv. 1, file 52: 1). In 1881/82 academic year the eighth grade in Maryinskaya gymnasium was divided into two subdivisions for the first time as the number of those willing to obtain such qualification had grown. The biggest number of students in Maryinskaya gymnasium was seen in 1889/90 academic year (82 students) (NART, fund 125, inv. 1, file 647a: sheet isn't numbered).

There was tuition fee for studying in the eighth grade. Thus, in Ksenyinskaya and Maryinskaya gymnasia students were charged 50 roubles per year (NART, fund 92, inv. 1, file 24888: sheet isn't numbered; NART, fund 125, inv. 1, file 544: sheet isn't numbered). It is easy to notice that the fee for the teaching grade was much higher than for the lower grades. So, we can conclude that in the eighth grade there were normally students from well-to-do families rather than poor girls, though it was them that the grade was intended for. The archival data prove this. Thus, in 1883, in the eighth grade of Maryinskaya gymnasia there were 14 daughters from noble

and officials families, 8 students were born into clergy families, 12 persons were from merchants and burghers families, 19 were from other social groups, but none were from a peasant family (NART, fund 125, inv. 1, file 278: 30).

It should be noted that teaching grade tuition fee in Kazan province was relatively small compared to other regions. Thus, in Saratovskaya women’s gymnasium it was 70 roubles per year, 60 roubles in Yekaterininskaya women’s gymnasium (the city of Rostov-on-Don) and the amount of the tuition fee in Khersonskaya 1st Maryinskaya gymnasium was 100 roubles per year (NART, fund 125, inv. 1, file 579: sheet isn't numbered).

The students in this special grade were given information on main educational principles, teaching techniques and methods in women’s gymnasia. They also practiced teaching under the guidance of their teachers.

The ME developed universal curricula and teaching programs for gymnasia based on ‘Regulations, dated 1870’. Differences were only allowed in relation to the eighth additional teacher training grade of Kazan and Moscow education districts (MED). This can be clearly seen from the Table 1 of weekly lessons in the eighth teacher training grade Kazan and Moscow school districts (NART, fund 492, inv. 1, file 24167: 8):

Table 1. Number of weekly lessons in a teacher training grade in MED and KED women’s gymnasia

Subjects	Kazan ED	Moscow ED
Compulsory		
Scripture knowledge	2	2
The Russian language	4	3
Arithmetic	4	3
Education science	3	3
Singing	2	-
Total	15	11
Optional		
The Russian language	2	3
Mathematics	2	3
History	2	3
Geography	2	3
The French language	3	3
The German language	3	3
Total	14	18

Based on the above-mentioned, we can conclude that in KED more attention was paid to teaching basic disciplines that form the basis of primary school curriculum, whereas in MED there was a focus on subjects taught in secondary school. In both districts, the number of lessons was minimal. Therefore, both the tables are not exclusive. In 1883, having taken the regulation as a basis, the KED trustee proposed a new curriculum draft as well as teaching programs for the eighth grade in women’s gymnasia of his district, that had been drawn up at the meeting of boards of trustees of both Kazan women’s gymnasia (Maryinskaya and Ksenyinskaya).

The new project was introduced as the methodological and work regulation base for women’s gymnasia at the time was considered unsatisfactory and insufficient, for example, the number of test lessons was not determined while the theoretical course content was unclear. It was due to the fact that there was no yearly planning, that resulted in the lack of weekly planning of the number of theoretical and practical lessons. Similar proposals were also received from the board of trustees of other districts.

Having come to the conclusion that it was impossible to fulfil all the functions of the eighth grade of women’s gymnasia within a year, on December 27, 1884 the ME commission under the chairmanship of Prince M.S. Volkonsky adopted and approved a two-year academic course of the eighth grade (NART, fund 92, inv. 1, file 24167: 6). A one-year course of study in the eighth grade

was allowed only in case it is impossible to organize a two-year course.

The commission also developed a new table of weekly lessons. In junior and senior teacher training grades three lessons were allocated for Scripture knowledge and the Russian language, two lessons were allocated for arithmetic lesson. Practical training and exercises were to take 12 lessons per week (five lessons in the junior grade and seven classes in the senior one) (NART, fund 92, inv. 1, file 24167: 7). For practical training of teaching activities junior grade students attended classes of senior grade students who themselves were teaching under the guidance of adult teachers in the preparatory and four lower gymnasium grades.

Following the decision, made by the board of trustees, hygiene and cloth making-up lessons were introduced in the eighth grades as optional subjects. In 1889, cloth making-up lessons were introduced in Maryinskaya gymnasium as an optional subject in the eighth grade (NART, fund 125, inv. 1, file 549: 1). Later on, in 1900/01 academic year hygiene classes were introduced in both the gymnasias as optional subjects (NART, fund 122, inv. 1, file 412: 5; NART, fund 125, inv. 1, file 496: 2).

It should be noted, however, that it is the Russian language and literature that should have been in the focus of the study in women's gymnasias. In this respect, as far as the official studying program makes it possible to figure out, Maryinskaya gymnasium did its best to achieve good results, both in the junior and especially in senior grades.

It was Maryinskaya gymnasium that arranged 'literary discussions' for the eighth grade (Traubenberg, 1900: 37). These discussions were started by the initiative of V.P. Bryukhanov, the gymnasium's teacher, for the purposes of studying the best Russian literary works (by the authors who worked after A.S. Pushkin). In addition to its direct purpose these discussions were to fill the gap in education concerning thorough studying of Russian literature, which characterized the Russian school as a whole. For the discussion, works required for the study as well as those that were permitted for reading in senior grade were selected. The talks did not take place three to four times a year, normally on public holidays or in evenings and were held for two or three hours. The participation was voluntary. Two or three weeks before the discussion took place the teacher would name the book and provide questions to give spoken replies to. For example, during 1897-1900 there were discussions concerning *The Overcoat* by N.V. Gogol, *A Profitable Position* by A.N. Ostrovsky, *Home of the Gentry* by I.S. Turgenev, *Oblomov* by I.A. Goncharov, *Childhood and Boyhood* by L.N. Tolstoy.

Until 1899/1900 academic year, teaching in the eighth grade of women's gymnasias in Kazan was performed on the basis of the curricula dated back to 1874. Since 1899/1900 academic year, upon the permission of the Minister of Education new test curricula and programs were introduced for the eighth grade of women's gymnasias. These programs were developed earlier in 1897 by a commission of two teachers working in Kazan women's gymnasias, chaired by the former KED trustee assistant S.F. Speshkov.

Under the new curricula and programs all eighth grade students were to study the following subjects: Scripture knowledge, teaching science and didactics, the basics of teaching of the Russian language, arithmetic and singing. In addition, each student was to select one of the subjects (except for singing) she was going to get the specialization as a home tutor or teacher. Some of these subjects included the Russian language along with the Church Slavonic language and literature; the German and French languages; mathematics; history and geography.

In fact, the number of students in the eighth grade was not limited. In each of Kazan women's gymnasias everyone who had completed seven grades could go to the eighth grade. Therefore, the number of students were different throughout the history of the eighth grade. However, in the city of Kazan there was a tendency of increasing the total number of students in the teacher training grade.

In this regard, in 1901, the board of trustees received a report by the head of Maryinskaya gymnasium M.N. Andreevskaya on the admission restriction in the eighth grade. The limit norm of 45-50 people, i.e. the number of students in one subdivision, was justified by the fact that studying there was believed to be very easy, and almost all the students who had completed the seventh grade entered the eighth grade as well. As a result, in the gymnasium they had students in the eighth grade had no love for children or teacher training, being in the grade only for formal reasons.

Based on this report, on May 29, 1901 the board of trustees decided to admit no more than 50 students in the eighth teacher training grade being guided by the following selection criteria:

academic success, their attitude to profession, punctuality referring to attendance, state of health and the way they treated teaching. Should there be more applicants than it was allowed to admit, the student with less favourable financial standing was admitted (NART, fund 125, inv. 1, file 647a: sheet isn't numbered). This decision created favourable conditions especially for members of the underprivileged social groups, who, working as teachers, could support themselves financially. Not only gymnasium graduates, but also the ones from eparchial colleges were permitted to enter the teacher training grade provided they had passed all exams on the gymnasium's curriculum (Concerning the fact that the persons, 1901: 609-610).

Those who had completed the course and were awarded with medals received the title of home tutors, while those with no medals received the title of home teachers (Deryuzhinsky, 1900: 9). By 1899, in Ksenyinskaya gymnasia, since the opening year (1880), 117 students completed the course with the title of home tutor and 347 received the title of home teacher (Report extract, 1900: 3). The number of students in Maryinskaya gymnasium were 302 and 1062 consequently (Traubenberg, 1900: 2). As a matter of fact, the gymnasium graduates were not allowed to enter higher educational institutions, thus being restricted from obtaining certain professions.

The new form of women's secondary educational institutions, especially after they were given the title of gymnasia and spread wide around Russia, met opposition from ardent opponents of women's education. They distributed printed lampoons on the students, accusing them of immorality, nihilism, undermining the family ties and state foundations. However, despite this, the number of women's gymnasia affected by the inevitable requirements of life grew, and by 1882 their number in Russia exceeded the number of men's gymnasia, that had been in operation five times as long comp. According to some reports, in 1882 in Russia there were not more than 130 men's gymnasia and progymnasia, that makes about 200 schools, whereas there were 259 women's gymnasia, that exceeded the number of gymnasia for men by 59 institutions (Peskovsky, 1886: 70).

This was typical for Russia as a whole, but the situation in Kazan region was slightly different. The number of women's gymnasia failed to exceed the number of men's ones. This can be explained by the specific features of the province's population as a significant portion of the female population of the province were not Russian. According to official data women's education among the Tatars, even at the end of the XIX century, was only beginning to appear, although there was not a single village without girls who studied. But even during the period of their extensive spreading women's gymnasia involve only a small portion of the female youth. Commissions that considered the ME annual reports again started to bring up the idea of establishing women's educational institutions that 'could provide the majority of girls from middle-class families with education being quite appropriate to their needs and requirements, whereas not alienating them from the general environment' (Women's gymnasia, 1905: 20-21).

The campaign against women's school continued under guidance by A.A. Saburov. In 1880 he established a special commission to discuss a new type of women's education, a cross between a gymnasium and primary school. But this was done neither by A.A. Saburov nor his successor, A.P. Nicolai. It was I.D. Delyanov who took the initiative using a note by Baroness E.F. Raden, submitted to the empress in 1884, the Empress. The note proved the need for fundamental change in women's education. Baroness E.F. Raden felt strongly to:

1) deprive women's secondary educational institutions from the right to grant teaching degrees;

2) grant this right to special teaching courses, classes, seminaries;

3) establish teaching courses dormitories.

On December 27, 1884, I.D. Delyanov set up a commission under the chairmanship of Prince M.S. Volkonsky, consisting of the ME representatives, members of the clergy, department of religious affairs, as well as department of institutions of Empress Maria, for the purposes of reorganization of the entire system of women's education. In his report to the emperor, I.D. Delianov, repeating Baroness E.F. Raden's ideas, formulated the need for radical change in this area, 'The recent establishment, since the 1860s, of a large number of women's gymnasia and progymnasia under the ME, along with no colleges with a complete basic course or profession-oriented institutions negatively affected девиц of certain young women, who, having graduated from secondary educational institutions, are eager to enter a variety of higher women's courses, both in Russia and abroad, the majority of them being interested not so much in scientific sphere,

but in getting out of their family and general environment, leaving mundane duties and trying to achieve rights, which are hardly appropriate for a woman' ([Collection of resolutions, 1881-1904: 1304](#); [Rozhdestvensky, 1902: 660](#)).

These words clearly showed the anti-democratic, conservative nature of the proposed reform. In connection with this report the new commission was established under the chairmanship of Prince M.S. Volkonsky. But the projects that the commission had developed failed to receive approval in most educational districts, one of them being KED. Only in some regions (the Baltics, the Don region, the Caucasus, Turkestan) there appeared women's four-year colleges that were equal to municipal colleges of 1872.

Moreover, the reform failed to be implemented as women's gymnasia with relatively expensive training gradually turned into privileged educational institutions, while it was women's progymnasia that played the role of the preparatory schools for the less privileged.

Formalism, humdrum and constant supervision flourished in women's educational institutions. Monitoring of the students' behaviour was not limited to the gymnasium itself. Class mistresses regularly paid visits to the students' apartments, especially non-resident ones. Even the students' accommodation selection had to be approved by the head of the gymnasium.

The tuition fee in women's gymnasia, being quite high from the beginning, kept on going up. Thus, since 1859 to 1899, the tuition fee in Maryinskaya gymnasium rose from 15 to 20 roubles per year in the preparatory grade; the tuition fee (grade 1 to grade 7) rose from 30 to 42 roubles for compulsory subjects and from 15 to 18 roubles for optional subjects; whereas it remained unchanged in the eighth teacher training grade, being 50 roubles per year ([NART, fund 125, inv. 1, file 544: sheet isn't numbered](#)).

Nevertheless, the popularity of women's education was growing in Russia. In the 90s of the XIX century there were a large number of private women's schools, which turned into government ones at the end of the century. A similar process took place in Kazan province as well. On July 1, 1901 3rd Kazan gymnasium of A.I. Kotova was granted the title of a government women's educational institution. Until that time, it was a private women's educational institution managed by S.F. Wagner (1877 to 1892) and then by A.I. Kotova (1892 to 1901) ([NART, fund 421, inv. 1, file 6: 1](#)).

The tuition fees in the gymnasium of A.I. Kotova was considerably higher than in Maryinskaya and Ksenyinskaya gymnasia. In 1903, the tuition fee in the preparatory grade was 40 roubles per year, 60 roubles per year in the main grades and 75 roubles per year in the teacher training grade ([Status report, 1905: 7](#)).

The need to increase tuition fee was dictated by the insufficient funds, which was still a drawback in the development of women's education. In 1900, when the total sum of public benefits to gymnasia and progymnasia had reached up to 350 thousand roubles a year, the Minister of Education, N.P. Bogolepov presented strong evidence in favour of the urgency of increasing the amount of funds allocated to these institutions: only 36 % gymnasia had a satisfactory budget, the remaining institutions did not have sufficient funds, and 16 % were declared in desperate need.

In 1900, in order to somewhat weaken the harmful effects of this poverty on the progress of women's education N.P. Bogolepov, with the approval of the State Council, allocated an additional 150 thousand roubles per year in the form of grants for women's secondary educational institutions. And in 1902 this amount was increased up to 125 thousand roubles a year ([Rozhdestvensky, 1902: 566-569, 720, 727](#)).

5. Conclusion

After the establishment of women's gymnasia women's secondary education started developing. Students, who had completed a course in a gymnasium, were granted the right to teach in their junior grades. But, unfortunately, they failed to receive the right to continue their own education, that is, the right to get higher education. Meanwhile, the young teachers soon felt their education being insufficient and came to realize that a gymnasium is just the beginning, not the end of studying. Naturally, the students started thinking about getting a university degree.

In general, in the last quarter of the XIX - early XX century, there was a great step forward in women's education. We believe that an additional teacher training grade in gymnasia was able to provide sufficient training for a person to start a career in primary education. Women's secondary education was characterized by a trend towards increasing the share of female employment in the

field of education. This is proved by the following data: special educational institutions of Kazan province had trained 1550 teachers by 1905 (NART, fund 92, inv. 1, file 16563: 1; NART, fund 92, inv. 1, file 16896: 9; NART, fund 92, inv. 1, file 19584: 2; NART, fund 92, inv. 1, file 19585: 2; NART, fund 92, inv. 1, file 19586: 3; NART, fund 92, inv. 1, file 17500: sheet isn't numbered; NART, fund 92, inv. 2, file 18: sheet isn't numbered; NART, fund 92, inv. 1, file 759: 1a, 37; NART, fund 92, inv. 1, file 4031: 42, 47; NART, fund 92, inv. 1, file 448: 2; NART, fund 93, inv. 1, file 683: 2; NART, fund 93, inv. 1, file 513: 1; NART, fund 93, inv. 1, file 842: 2; NART, fund 150, inv. 1, file 561: 8; NART, fund 150, inv. 1, file 553: 15-28, 29-66; NART, fund 150, inv. 1, file 592: 71-74), whereas women's secondary educational institutions had trained 1828 teachers by 1899 (Report extract, 1900: 3; Traubenberg, 1900: 2). This proves women's intention to be allowed to teach both in junior and senior grades, thus being able to continue their further education.

However, speaking of the positive change in the field of secondary education for women in the province, it should be noted that the results of these achievements were used mainly by the ones coming from well-to-do families, as seen while analysing the students' social composition. The principle of boys and girls' co-education, being supported by the liberal public, was not put into practice. Women at the beginning of the XX century did not receive equal education right with men.

While analysing the process of women's education development, it is not only the progressive trend that is significant, being associated with further emancipation of women, but also the way women's professional education (teaching training, above all) was formed.

References

[Code of laws, 1893](#) – Svod zakonov Rossiiskoi imperii [Code of laws of the Russian Empire]. (1893). Vol. 11. Part 1: Svod ustava uchenykh uchrezhdenii i uchebnykh zavedenii Ministerstva narodnogo prosveshcheniya [Code of the charter of scientific organizations and educational institutions of the Ministry of national education]. Sankt-Peterburg, 802 p. [in Russian].

[Collection of resolutions, 1881-1904](#) – Sbornik postanovlenii po Ministerstvu narodnogo prosveshcheniya. T. 8-17 [The collection of resolutions on the Ministry of national education. Volume 8-17] (1881-1904). Sankt-Peterburg [in Russian].

[Concerning the fact that the persons, 1901](#) – O tom, chto litsa, okonchivshie kurs eparkhial'nykh zhenskikh uchilishch, dolzhny, pri postuplenii v 8-i pedagogicheskii klass zhenskikh gimnazii, podvergat'sya ispytaniyu po vsem predmetam gimnazicheskogo kursa [Concerning the fact that the persons which have ended a course of diocesan women's schools have to, at receipt in the 8th pedagogical class of female gymnasiums be subjected to test in all objects of a gymnasia course]. (1901). Tsirkulyar po Kazanskomu uchebnomu okrugu. 7: 609-610. [in Russian].

[Derevitskiy, 1902](#) – *Derevitskiy A.* (1902). Zhenskoe obrazovanie v Rossii i za granitse [Female education in Russia and abroad]. Odessa, 45 p. [in Russian].

[Deryuzhinsky, 1900](#) – *Deryuzhinsky V.F.* (1900). Narodnoe obrazovanie v Rossii [National education in Russia]. Sankt-Peterburg, 22 p. [in Russian].

[Kantorovich, 1899](#) – *Kantorovich Ya.A.* (1899). Zakony o zhenshchinakh: Sbornik vseh postanovlenii deistvuyushchego zakonodatel'stva, otnosyashchikhsya do lits zhenskogo pola [Laws on women: The collection of all resolutions of the current legislation relating to female persons]. Sankt-Peterburg, 272 p. [in Russian].

[Kirpichnikov, 1890](#) – *Kirpichnikov A.M.* (1890). Pedagogicheskie ocherki (1867-1888) [Pedagogical sketches (1867-1888)]. Moskva, 184 p. [in Russian].

[Kornilova, 2011](#) – *Kornilova I.V.* (2011). T.A. Magsumov. Srednyaya professional'naya shkola Kazani v kontse XIX – nachale XX veka [T.A. Magsumov. High vocational school of Kazan at the end of XIX – the beginning of the 20th century]. *Voprosy istorii.* 12: 163-164. [in Russian].

[Kornilova, 2012](#) – *Kornilova I.V.* (2012). Podgotovka pedagogov v Kazanskoj gubernii v dorevolyutsionnyi period [Training of teachers in the Kazan province during the pre-revolutionary period]. Saarbrücken, 253 p. [in Russian].

[Kovalensky, 1908](#) – *Kovalensky M.N.* (1908). Srednyaya shkola. In: M.N. Pokrovsky, ed., *Istoriya Rossii v XIX v.* [History of Russia in the 19th century]. Sankt-Peterburg, 7, 9: 170-202, 145-163. [in Russian].

[Likhacheva, 1907](#) – *Likhacheva E.O.* (1907). Materialy dlya istorii zhenskogo obrazovaniya v Rossii. 1856-1880 [Materials for history of female education in Russia. 1856-1880]. Sankt-

Peterburg, 648 p. [in Russian].

[Magsumov, 2015a](#) – *Magsumov T.* (2015). Charity societies for helping needy students in the Volga region, late 19th - early 20th centuries. *Rossiiskaia Istoria*. 4: 63-69.

[Magsumov, 2015b](#) – *Magsumov T.* (2015). The additional professional training in the late Russian empire. *Bylye Gody*. (2), 36: 327-337.

[Mizhuyev, 1906](#) – *Mizhuyev P.G.* (1906). Zhenskii vopros i zhenskoe dvizhenie [Women's issue and women's movement]. Sankt-Peterburg, 72 p. [in Russian].

[NART](#) – Natsional'nyi arkhiv Respubliki Tatarstan [National archive of the Republic of Tatarstan]. Kazan', Russia.

[On the introduction in Kazan, 1896](#) – O vvedenii v Kazanskoii Kseninskoii, Vyatskoii Mariinskoii gimnaziakh prepodavaniya latinskogo yazyka [On the introduction in Kazan Kseninskaya, Vyatka Mariinsky gymnasiums of teaching Latin]. (1896). Tsirkulyar po Kazanskomu uchebnomu okrugu. 11: 519. [in Russian].

[Panachin, 1979](#) – *Panachin F.G.* (1979). Pedagogicheskoe obrazovanie v Rossii: Istoriko-pedagogicheskie ocherki [Pedagogical education in Russia: Historical and pedagogical sketches]. Moskva, 216 p. [in Russian].

[Peskovsky, 1886](#) – *Peskovsky M.L.* (1886). Obrazovanie zhenshchin u nas i za granitsei [Women's education from us and abroad]. *Russkaya mysl'*. 7: 54-93. [in Russian].

[Polyansky, 1901](#) – *Polyansky A.* (1901). Russkaya zhenshchina na gosudarstvennoi i obshchestvennoi sluzhbe: Sbornik postanovlenii i rasporyazhenii pravitel'stva [The Russian woman in the public and public service: Collection of resolutions and orders of the government]. Moskva, 499 p. [in Russian].

[Report extract, 1900](#) – Izvlechenie iz otcheta o sostoyanii Kazanskoii zhenskoii gimnazii imeni Ksenii Aleksandrovny za 1899 god [Report extract on the status of the Kazan female gymnasium of Ksenia Aleksandrovna for 1899]. (1900). Kazan', 11 p. [in Russian].

[Rozhdestvensky, 1902](#) – *Rozhdestvensky S.V.* (1902). Istoricheskii obzor deyatelnosti Ministerstva narodnogo prosveshcheniya. 1802-1902. [Historical review of activity of the Ministry of national education. 1802-1902]. Sankt-Peterburg, 785 p. [in Russian].

[Shevchenko et al., 2016](#) – *Shevchenko N.A., Vidishcheva E.V., Emelyanova O.V.* (2016). The Establishment of the System of Public Education in the Caucasus (1802–1917 years): the Characteristic Features. *Bylye Gody*. (2), 40: 363-372.

[Status report 1905](#) – Otchet o sostoyanii Kazanskoii zhenskoii 3-i gimnazii, uchrezhdennoi A.I. Kotovoi za 1903/1904 uchebnyi god [Status report of the Kazan female 3rd gymnasium founded by A.I. Kotova in 1903/1904 academic year]. (1905). Kazan', 12 p. [in Russian].

[Traubenberg, 1900](#) – *Traubenberg P.V.* (1900). Kazanskaya Mariinskaya zhenskaya gimnaziya: Kratkii istoricheskii ocherk, ee sovremennoe sostoyanie i deyatelnost' [Kazan Mariinsky female gymnasium: Short historical sketch, her current state and activity]. Kazan', 44 p. [in Russian].

[Women's gymnasia, 1905](#) – Zhenskie gimnazii i progimnazii Ministerstva narodnogo prosveshcheniya [Women's gymnasia and pro-gymnasia of the Ministry of national education (1858-1905)]. (1905). Sankt-Peterburg, 139 p. [in Russian].

[Zakaraya, Cherkasov, 2010](#) – *Zakaraya E.I., Cherkasov A.A.* (2010). Popular education in the Caucasus during graph I.I. Vorontsov-Dashkov vicegerency (1905-1915). *History and Historians in the Context of the Time*. 7: 36-43.

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Подготовка учительниц в педагогических классах женских гимназий Казани в последней трети XIX – начале XX вв.

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Аннотация. Целью статьи стало исследование процессов становления женского педагогического образования в позднеимперской России. Предмет рассмотрения региональное преломление этих процессов в полиэтническом Казанском крае. Анализируется ряд важных вопросов жизнедеятельности двух Казанских гимназий – Мариинской и Ксениинской, обобщаются условия функционирования этих учебных заведений, проблемы и успехи в качественной подготовке педагогических кадров для школ Поволжья.

Раскрываются социокультурные и педагогические факторы, определившие создание в позднеимперской России подсистемы женского педагогического образования. Динамика развития педагогических классов демонстрировала улучшение организации учебного процесса, увеличение сроков обучения с года до двух лет, усиление требований к обучающимся. Развитие акцента на практикоориентированное обучение обуславливало формирование профессионально значимых качеств будущих учительниц.

Нормативная неразработанность деятельности этого вида образования допускала его планирование и организацию на местном уровне, с учетом региональных условий и потребностей. Такая первичная «апробация» функционирования педагогических классов на местах позволила выстроить достаточно слаженную подсистему женского педагогического образования в стране и подготовить необходимое число учительниц в достаточно короткие сроки.

Результаты исследования могут быть применены в практике модернизации педагогического образования.

Ключевые слова: Российская империя, Казань, женское образование, педагогическое образование, гимназия.



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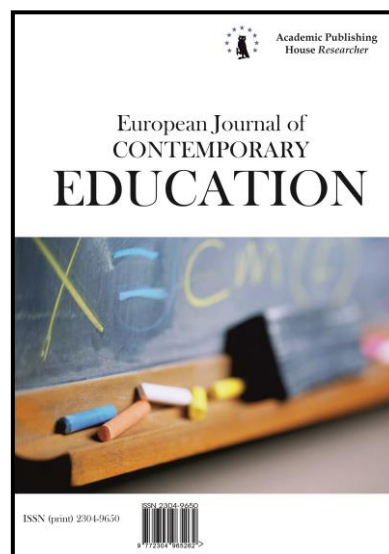
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Prospects for the Development and Internationalization of Higher Education in Asia

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Abstract

This study investigates the current process of internationalization of higher education in the countries of the Asia Pacific region (APR) through the example of China, the Republic of Korea, Japan, and Russia. The article aims to familiarize the reader with the experience of internationalizing higher education in APR states against a backdrop of global trends. The authors examine the major strategies for the internationalization of education, such as taking a coordinated approach, attracting qualified manpower, focusing on deriving profit, and expanding the potential. The paper analyzes the traditions, strengths and weaknesses, and general traits and characteristics of the above states' national systems of education, as well as the major forms of international partnership and key dimensions of education internationalization in APR states. The authors show that over the last few years APR states have been increasingly active in entering into agreements in the area of education internationalization, which has facilitated the division of spheres of influence and zones of responsibility within the educational area, as well as the steering of educational approaches along a common course. The paper employs traditional methods of research, such as classification, comparative analysis, generalization, juxtaposition, and forecasting. The study suggests three possible scenarios for the future development of the process of higher education internationalization: sustainably diverse internationalization, convergence in the direction of the liberal model, and the triumph of developing economies. The paper also describes current trends in this area in APR states. The authors come to the conclusion that we are

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in for considerable changes in the international market of educational services, such as the reconsideration of spheres of influence and redistribution of key players in the market, dynamicity and heterochrony in development being among the key traits inherent to today's market of educational services.

Keywords: higher education, internationalization, competitiveness, student mobility, standardization, unification.

1. Introduction

The development of systems of higher education in various countries around the world is increasingly characterized by a trend towards unification and standardization. The Bologna Declaration on the European Space for Higher Education, signed on June 19, 1999 by 29 countries (47 countries taking part in the process at present), marks the transition of higher education to a new international level.

The Bologna process seeks to facilitate student mobility via the removal of obstacles to free movement, enable comparing qualifications acquired at various institutions of higher learning, guarantee that these qualifications meet the present-day needs in the labor market, and ensure college graduate competitiveness.

Thanks to the internationalization of higher education, students are provided with the opportunity to go to virtually any college in any foreign country, study foreign culture and mentality, travel, and learn what it is like around the world. The internationalization of education incorporates the following forms of international partnership: individual mobility, i.e. the mobility of students and instructors for educational purposes; the mobility of curricula; putting together new international standards for academic curricula; institutional partnership; forming strategic educational alliances.

The benefits of internationalization include (Abdulkerimov et al., 2012): attaining a unity of resources; preventing the duplication and copying of research topics; identifying educational projects, boosting the accessibility of higher education, universalizing knowledge, facilitating the emergence of international quality standards, boosting the innovativeness of higher education, and expanding and bolstering international partnership.

However, despite the internationalization of higher education, there is a lot that is unique, special, interesting, and unusual that national education systems have to offer. This includes the systems of higher education of Asia's following leading states: China, Japan, the Republic of Korea, and Russia.

2. Materials and methods

This study aims to analyze the general and particular in the systems of higher education of China, Japan, Korea, and Russia in the context of the internationalization of higher education taking place across the globe at the moment, expansion of international partnership, and increase in the share of the export and import of students at colleges within these countries.

Among the major strategies for the internationalization of higher education are (Vincent-Lancrin, 2010a):

- taking a coordinated approach, which implies giving sanction to the international mobility of students and instructors through grants and student exchange programs and being oriented towards smaller groups;
- attracting qualified manpower, which implies taking a more active and targeted approach to recruiting foreign students and shifting from mass enrollment of students to seeking out and inviting the most talented ones;
- being focused on deriving profit, which implies being oriented towards commercial objectives and deriving maximum profit;
- expanding the potential, which implies focusing on the support and development of academic curricula overseas and setting up foreign colleges in the territory of the receiving country; this, mainly, has to do with developing countries.

Since the beginning of the 21st century, the academic mobility indicators for the US, Japan, and Korea have risen more than 2 times. We have witnessed a similar trend in respect of Europe as a whole, too (Vincent-Lancrin, 2010a, 2010b).

Note that the US is gradually losing ground to Australia, New Zealand, Great Britain, Germany, and France when it comes to receiving foreign students. Among the chief suppliers of students are China, India, the Republic of Korea, Japan, and the US. In recent years, the global market of educational services has witnessed considerable changes. Thus, for instance, Singapore was planning on having brought in 150,000 foreign students by 2015, Japan – 300,000 by 2025, and China – 500,000 by 2020.

The attractiveness of the Asian market of education is high also because we are expecting the number of people to be educated to have grown from 17 to 87 million in Asia by 2025 (Rasha, 2013). The intensity of measures for the internationalization of higher education in the Asia Pacific region depends on the educational policy of particular states.

There are three major dimensions to international education (Huang, 2007):

- state-regulated (China, Malaysia, South Korea, Russia);
- market-oriented (Hong Kong);
- transitive, i.e. subject to a shift from state-regulated to market-oriented (Japan, Taiwan).

3. Results and discussion

Russia. Education internationalization in Russia is mainly oriented towards the experience of US colleges and adopting the American model for higher education, which may appear as a paradox, given a pronounced anti-American sentiment we have witnessed in Russian society of late.

A subscriber to the Bologna Declaration since 2003, Russia started implementing a two-level, bachelor's/master's degree, system of higher education back in 1992. Compared with some other participants in the Bologna process, Russia is currently a lot closer to the full-scale fulfillment of the Bologna Declaration.

At present, the key objectives for Russian education in the context of the Bologna Declaration are: instituting a credit system, working out and implementing a new system of education appraisal and quality control, as well as implementing the Diploma Supplement, established for participants in the Bologna process (A comparative characterization, n. d.).

Leading Russian colleges, especially those specializing in technical disciplines, have always been recognized globally due to their traditionally high preparation level. And Russians, rightfully, have always been proud of the level of Russian education. In Russia, this area has received a significant safety margin, which allows Russian education to stay at a respectable level (Krechetnikov, 2014). The major strengths of the Russian system of education have always been the fundamental and systemic nature of instruction and the high quality of educational services. Russian education is founded on firm cultural and pedagogical national traditions and has deep historical roots (Yemelyanov, 2012).

So why are Russian colleges not ranked by foreign ratings agencies the way they should, based on their actual position in the global system of education?

There are several reasons behind this:

1) the majority of the world's top ratings for educational institutions are oriented towards the American or European education models; there are too few parameters, many of which do not work for the Russian education system as they do not reflect the specificity of Russian education, like the number of Nobel Prize and Field Medal laureates among graduates and staff or the citation rate, mainly in English-language journals (Sadovnichiy, 2013);

2) the nature of requirements set by global educational ratings being too uncustomary and novel for Russian realities; making the Russian system of education a full entrant in global ratings takes time, as there is a need to overhaul the nation's education system and worldviews and adapt them to meet relevant global requirements, align with the structure of educational curricula, etc.;

3) the language barrier; additional costs in time and money for instructors associated with writing papers in pure English, as well as the total lack of representatives of Russia on the editorial boards of the world's top journals;

4) historically, Russian universities have never really been regarded to be at the forefront of Russian science, while in the world's practice science has been mainly centered in universities; in Russia, apart from universities, there are the institutes of the Russian Academy of Sciences (RAS), with which universities engage in close partnership, but there is no particular rating indicator in

the world classification to assess activity associated with the partnership between universities and the RAS;

5) the fact that Russian universities do not have an extensive foreign student support program; the importance of preparing foreign students is only now beginning to be realized, there being an increase in quotas and funding for these purposes, but you cannot raise the number of foreign students overnight, for it takes time to create maximally favorable conditions for them and make them want to study in Russia; since the Russian language is hard to learn, there is a need to switch to providing instruction of academic disciplines in English; in addition, Russia could bring in a large number of students from the post-Soviet space and Eastern Europe, for whom learning Russian should not be a problem;

6) one of the key factors in determining the existing educational global ratings is the opinion of experts on a specific college, but there are almost no experts from Russia on expert committees, which, obviously, tells on the outcome;

7) education is an open system whose state, developmental dynamics and characteristics are largely determined by the social-economic context, especially the level of the nation's economic development and its demographic characteristics (Agranovich et al., 2009); it would be incorrect to compare the world's education systems without taking account of these factors;

8) a list of major indicators for a university's global ranking should include the level of education and the content and quality of curricula, while these parameters are not regarded as principal by leading international rankings.

In 2013, Russia's Ministry of Science and Education placed an order with the Center for Education Monitoring and Statistics for a comparative study into the Russian and global systems of education. The study included data on colleges and schools in 50 countries (Education in Russia, n.d.). It was revealed that in the world's most advanced countries to receive a basic secondary education students have to attend school for a period of 12 to 14 years, while in Russia it is mandatory to complete only 9 grades at a general education school. That said, Russia has a high share of certified specialists (ranked 10th in the world on the number of college and technical college graduates), whom it shares generously with the West. While the number of Master's and Doctorate degree holders is even greater, Russia ranking 6th in the world.

Every year the US, a key player in the world's educational market, brings in 760,000 foreign students, which translates into \$24 billion worth of revenue to the state budget. Russian students going overseas to study tend to go with (with the number of students in descending order) Germany, the US, France, Great Britain, Canada, Finland, and the Czech Republic. A trend that may alarm one is that, while Russians preferred going to the world's leading universities most of the time before, right now they tend to enroll in colleges that are *not* ranked that high globally (Agranovich et al., 2009). This could be due to the following reasons: getting a higher education in foreign colleges is oftentimes a better deal than going to a Russian college, based on the price to quality ratio; the theoretical and linguistic preparation level of Russian school graduates does not allow many to be worthy candidates for attending the world's top universities; getting an education overseas is viewed by many Russians as not just a way to receive a quality education but also a rung on the ladder to a career outside Russia.

Currently, Russia enrolls just about 5 % of all foreign students enrolled around the globe. This is comparable to figures reported for such nations as New Zealand and South Africa. Having said that, Russian higher education has huge export potential (Lobov, 2014).

China. Russia and the US are currently evincing a similar trend towards the expansion of college partnership with China.

China's system of education goes back into remote antiquity. Confucius laid down its deep spiritual principles as early as the 6th century BC. Some 3,000 disciples of Confucius passed his legacy along from generation to generation. Being educated has always been held in high regard in China. There is a multi-tier system of college admission allowing only the best members of Chinese society enroll in the nation's top educational institutions.

In February, 1993, China launched the implementation of an educational program grounded in the principles of decentralization and taking account of the needs of the labor market. The following four key principles of reforming the college system were declared: joint development, restructuring, merging, and cooperation.

Over the last decade, the volume of state support for research in China has been increasing by 20 % per annum, with the number of Chinese colleges more than doubling over the same period (Garusova, Piginshcheva, 2013). The government has been investing funds in support for the nation's 39 largest universities with a view to turning them into world-class colleges. Chinese colleges have received additional government support (about \$6 billion) and are looking for dependable college partners prepared to engage in implementing joint programs in the area of education and science.

China's entry into the WTO has given a new impetus to the development of transnational educational programs in China – primarily, joint programs run by Chinese and foreign colleges. In addition, new emphasis has been laid on the export of Chinese education as not just an instrument for expanding Chinese influence through the use of “soft power” but also a source of greater profits for Chinese colleges.

China is mainly attractive to foreigners because of the opportunity to learn foreign languages – Chinese and English. Most foreigners go to China to learn the language and, maybe, “take some commercial course in passing”. Most universities offer Chinese courses for foreigners: short-term (ranging from a week to half a year) and long-term (a year and up). After a year-long preparation period, all subjects are taught in Chinese.

Very few have the courage to go for a full-scale higher education, mostly due to the language barrier. But the barrier is quite overcomeable: a third of all foreigners who study in China do so in order to get a diploma of higher education and a postgraduate degree. Most of them are representatives of the Chinese diaspora from Asian countries. In an effort to attract Europeans and Americans, special courses are put together where a portion of subjects are taught in English.

About half of China's foreign students major in the Humanities: Chinese Language and Culture, International Economics and Trade, and Chinese Philosophy. Most of the foreign students come from the Republic of Korea (33 %), followed by Japan (9.5 %), the US (7.5 %), Vietnam (5 %), and Thailand (3.7 %). Russians account for about 3.5 %, which is around 7,000 students, including those who have completed language courses.

Based on data from China's Ministry of Education, over the last 20 years China has sent nearly 350,000 of its own citizens to over 100 countries across the globe and has received over 380,000 foreigners. Currently, there are over 1,500 universities in China, 544 of which provide instruction to foreign students in various disciplines and the Chinese language.

At the moment, there are several forms the internationalization of Chinese education has taken on: sending Chinese students and instructors overseas; bringing in foreign instructors, professors, and researchers; bringing in foreign students to China, both at their own expense and via a vast system of grants; developing joint educational programs in partnership with foreign colleges; employing the double diploma system; using modular education overseas; implementing foreign textbooks and bilingual curricula in the educational process; opening up foreign linguistic centers.

The Chinese government does its best to stimulate the inflow of foreign students to China, its foreign student government scholarship quotas expected to have doubled by the year 2020. These measures will allow Chinese colleges to acquire an international status and stimulate the development of the nation's education system.

According to China's Ministry of Education, the reason behind growing interest in studying in China is the nation's phenomenal economic growth, as well as understanding that speaking Chinese may expand considerably one's career opportunities. Increases in the number of incoming foreign students also reflect growing interest in China as Asia's historical and cultural center.

Several times a year China holds an exam testing one's knowledge of Chinese, called the Hànyǔ Shuǐpíng Kǎoshì (HSK) test (an analogue of the American TOEFL test). The exam can be taken by anyone. It checks one's communication skills, as well as one's oral and written knowledge of Chinese. By taking the exam, one can have one's linguistic level assessed, an HSK certificate being a nice asset when applying for a job.

Studying in China is cheaper than going to most foreign universities and even those in Moscow. The average price is \$2,000–3,000 per year (several times higher at elite colleges). Attending linguistic courses costs about \$300–500 per month.

Despite its lower rankings, Moscow is currently losing the price rivalry to China. One year of study at Moscow State University of Economics, Statistics, and Informatics (MESI) costs \$3,750, while the price for enrolling in the Department of Economics at Moscow State University is \$6000. To compare, it costs yearly 1.5 times less to attend Peking University, which ranks several dozen positions higher than the former (Zlobin, 2007).

There are two types of scholarships (grants) for foreign students: full and partial. Students with full scholarship are exempt from paying tuition, insurance, and registration fees and are entitled to free dorm lodging and some money to cover their pocket expenses. For undergraduates this amount is 1,400 yuan, for graduates it is 1,700 yuan, and for postgraduates it is 2,000 yuan. Newly arrived students also get 1,000 yuan (those attending one term) or 1,500 yuan (2 terms and more) as a way to help them settle down.

The “cheap implies poor quality” stereotype is becoming obsolete with respect to not just China-made consumer goods but Chinese higher education as well: diligent students are helped in China to secure a comfortable berth in life (Getting your MBA, 2006).

The introduction of the English language and textbooks in English into the Chinese educational process reflects global trends. The need to align with global standards requires getting an insight into the world’s best practices, something that is not always available in the Chinese language. Chinese colleges are actively adopting top foreign methodological solutions.

Research interest in the experience of the development and internationalization of continuing education in China is, on the one hand, associated with the fact that China’s colleges tend to copy and be oriented towards European and Western models, while, on the other, China manages to retain its national traditions in the area of education. It is this balance that has determined, in large part, China’s achievements in the area.

The Republic of Korea. Korea’s system of education comprises three stages: general secondary education, secondary special education, and higher education. General secondary education commences at the age of 6 and lasts through the first 6 grades. There is a single curriculum for all students.

This is followed by the second stage – secondary special education, which incorporates not only mandatory disciplines but lets you select specific subjects of interest to you, which gives you the opportunity to decide in advance on your future occupation. This stage has a timeframe of 2 years.

Institutions of higher learning include higher schools, colleges, and universities. The length of study at colleges is from 2 to 4 years (undergraduates). In addition, one can also pursue a Master’s degree (1.5–2 years) and a Doctorate degree (2–3 years). Your Master’s major must be the same as your Bachelor’s one. The academic year in Korea begins in March. The spring term lasts for 16 weeks and ends in June. After a break from school in July, you resume your studies during the fall term, which starts in August and lasts until January.

To enroll in a university in Korea, you have to pass a special general test, an analogue of Russia’s Unified State Exam. Private colleges have their own procedure for admitting students.

Korea’s colleges have a clear-cut hierarchy in terms of ratings, for which reason the way diplomas awarded are rated can also vary significantly. All of Korea’s citizens, just like foreigners, can receive a higher education both in Korean and in English. To receive instruction in English, all entrants must pass a unified language exam. Each college offers multi-level English courses completing which can boost significantly your chances of passing the unified language exam.

Currently, private colleges are the most popular type of institution of higher learning in Korea. To enroll in them, you will need to have a secondary education certificate and an English language certificate.

Until recently, foreigners were allowed to get only their Bachelor’s or Master’s degree in Korea. However, currently foreigners can also pursue a Doctorate degree in certain disciplines. The roster of majors available to foreigners is somewhat narrow. Among the areas that are particularly popular among foreigners in Korea, due to the high quality of education in them, are IT, programming, and Web design.

The major advantages of study in Korea is its relatively low cost (\$7,000 to \$10,000 per year, exclusive, of course, of prestigious universities and majors), the opportunity to acquire knowledge used within rewarding and promising trades, the use of cutting-edge pedagogical and information technology, and quite a high quality of education.

Classrooms in Korea are equipped with information technology, computer equipment, and free 24-hour Internet access. Lectures are conducted in the form of presentations, with instructors sending all study materials to students by email. There are a sufficient number of labs for practical classes. Foreign students can take their internships at the nation's top factories alongside local students ([Why does study in Korea facilitate successful career growth?](#))

Among the major characteristics of study at some of Korea's universities is the opportunity to do your on-the-job training at major, globally recognized Korean companies, like Hyundai, LG, and Samsung, which is quite attractive to many foreign students. In addition, Korea retains its deep cultural traditions, with which foreign students have the chance to familiarize themselves while in college. What may impress one particularly much is the synthesis of ancient culture and cutting-edge technology.

Japan. Higher education in Japan incorporates getting a Bachelor's degree (4 years), a Master's degree (2 years), and a Doctorate degree (3 years). Medical/pharmaceutical departments do not offer Bachelor's degrees. Getting a basic higher education in them takes 6 years and getting a Doctorate degree takes 4–5 years.

Japan has 3 types of university: national, public, and private. Free higher education is hardly offered anywhere. Based on data for 2011, out of 2,880,000 students at Japanese colleges just around 100 received a scholarship from the Japanese government. Scholarships are granted only to the most talented students and the least financially advantaged ones. Note that these funds are subject to repayment and do not cover all of your tuition costs (Education in Japan, n. d).

According to the QS World University Rankings, the world's top 100 universities in the 2014–2015 academic year included: Tokyo University (ranked 31st), Kyoto University (36th), Osaka University (55th), Tokyo University of Technology (68th), and Tohoku University (71st) ([Topuniversities, 2014](#)).

The academic year commences in Japan in April. Classes are held Monday through Friday, rarely on Saturdays, which varies from college to college. The academic year consists of three trimesters which are separated from each other by brief college breaks, in spring and in winter, while there is a month-long break in summer, normally in July or in August. There are also academic years divided into 2 terms with breaks in spring and in fall. The leadership of Tokyo University was going to divide, as of 2015, the academic year into 4 terms two months long each ([University of Tokyo, 2013](#)). A number of universities in Japan have plans to switch within a 4-year period to a new system of classes whereby the academic year will begin in fall (on the 1st of September). This implies an attempt to get the Japanese academic year to share a common denominator with the academic years of foreign colleges and a willingness to prepare a generation of globally oriented graduates.

Moving the beginning of the academic year to fall will facilitate a better inflow of foreign students, who are a lucrative source of revenue for Japan's colleges. Around 70 % of the world's colleges commence their academic year in September–October. Currently, the number of foreign students studying in Japan is just about 2 %, which is also due to the somewhat peculiar characteristics of the Japanese system of education. There are plans to adapt, in the near future, Japan's education system to match the requirements of the global one, which should help increase, as planned, the number of foreign students to 10 % of all students at Japanese colleges.

Education for students in Japan is their personal responsibility. At the majority of Japanese universities there are no strict rules and no attendance is taken, students allowed to come to class at any time, even when there is just 10 minutes left in the lesson. What matters the most is that the student has hands-on exposure to the material and passes through all the established types of control.

Japan's system of higher education is divided into 4 major types of educational institution ([Moryakov, 2002](#)):

1. Full-cycle universities. The basic length of study is 4 years, while at the Department of Medicine and that of Veterinary Medicine it is 6 years. On completing the basic 4-year course of study at the university, graduates can then pursue their Master's or Doctorate degree.

2. Fast-track universities. The length of study is between 2 (for nurses) and 3 years. About 60% of all students at these universities are females. One can major in foreign languages, literature, pedagogy, social welfare/protection, and economics.

3. Occupational colleges. These institutions are oriented towards those keen to receive a narrowly technical education. The length of study is no more than 3 years.

4. Technical institutes. The length of study is 5 years. These institutions provide technical and technological training and turn out engineers and researchers for areas associated with the development of innovation technology, microelectronics, etc. They also train merchant navy specialists.

Japanese colleges have a unique institution, well-known around the world, called “kenkyūsei” (“research students”): students pursuing a postgraduate degree have the opportunity to engage in research work in a specific area they have chosen for a period of 6 months to 1 academic year.

There are 3 major types of research student in Japan:

- students who are keen to achieve a scientific result within their university in addition to the basic 4-year education;
- students who continue their study at a different university via an agreement with the university where they pursued the primary course of study;
- foreign students who can be admitted to the university both to be trained for taking entrance exams and to engage in specific research – for a period of 1 term to 2 years.

At present, Japan’s 20–30 private universities and a portion of its state colleges provide foreign students with the opportunity to receive a higher education in a fast-track fashion. State and private foundations provide scholarships and other types of financial aid on terms prescribed for students pursuing a full-cycle course of study. Students who demonstrate a good command of the Japanese language are allowed to attend lectures given to Japanese students at the college. However, most of the time, to save time instruction is provided to foreign students in English. Short-term variants of study in Japan are mostly oriented towards learning Japanese, studying Japanese culture, management, and economics.

Foreign students’ tuition costs include entrance exam fees, tuition fees, and the cost of textbooks and computer equipment and range from \$5,000 to \$12,000 (depending on the college’s prestige).

Among the priority dimensions for boosting the quality of Japan’s higher education is the ‘Global 30’ plan, launched by the Japanese government in 2008. It aims to have brought in 300,000 foreign students by 2020. There are 30 of Japan’s top universities selected for this purpose (Pododimenko, 2013). The CAMPUS Asia (Collective Action for Mobility Program of University Students) program was initiated by Japan’s government, industry, and universities with a view to boosting the nation’s partnership with its closest neighbors, China and South Korea.

Japan is among the world’s most highly developed countries. It ranks 2nd–3rd globally on the volume of investment in the system of education (Education in Japan, 2014). Young Japanese people, normally, wish to go to no other than a Japanese college, and, only if they fail to get admitted to one, they start considering the possibility of pursuing a course of study at a foreign university. This is not only and not so much about patriotism as it is about the prestigiousness of Japanese universities and one’s prospects of getting a job and starting a career in the future.

Nevertheless, Japanese education is quite accessible to foreigners, thanks to Japan’s well-conducted foreign policy, which welcomes foreign students. The internationalization of education helps Japan promote its culture, foster a favorable image for its nation, and prepare young specialists who afterwards will work with Japan in the various areas of activity.

4. Conclusion

Recent years have seen many international agreements in the area of education intended to facilitate international partnership. Thus, for instance, in an effort to encourage multilateral partnership there was set up an institution known as UMAP (University Mobility in Asia and the Pacific), expected to facilitate effective international academic student mobility in the Asia Pacific region through the use of its credit transfer scheme (UCTS, UMAP Credit Transfer Scheme). In November, 2010, there was held the first conference on Pioneering ASEAN (Association of Southeast Asian Nations) Higher Education Research Clusters. It was decided that the first 3 clusters would concentrate on health care and medicine and be coordinated by Singapore and Thailand; agriculture and food, with Vietnam, Thailand, and Malaysia at the core; and energy, environment, and biodiversity, with the Philippines and Indonesia acting as the research

coordinators. Thus, we will have the best research teams from different countries working to maximize the effect of scientific/pedagogical work of the entire community (Vincent-Lancrin, 2010b).

There are three future scenarios for the internationalization of higher education:

1) sustainably diverse internationalization, which implies the use of the afore-mentioned 4 strategies for internationalization while retaining the diversity of higher education systems from the standpoint of institutional autonomy, terms of admission, and funding;

2) convergence in the direction of the liberal model, which is based on the principles of trade and implies competing to bring in foreign students prepared to pay for their tuition at market prices;

3) the triumph of developing economies, which implies that taking a strategic approach to the development of human capital and knowledge will help former “developing economies” achieve proper economic growth and high competitiveness for their education systems – both in terms of quality and tuition costs.

An analysis of the area of education internationalization reveals that nations which have led the way historically in the international market of educational services tend to limit foreigners’ access to the labor market within the higher education sector and give preference to foreign specialists with a unique set of competencies. By contrast, countries aspiring to bolster their standing in the international market of educational services, including all of the nations examined in this article, do not tend to establish strict requirements for foreign candidates – they try to ease the complexities and restrictions associated with the foreigner’s employment and stay in the country.

The development of the system of higher education in Russia, China, the Republic of Korea, and Japan, as well as measures for attracting foreign students (migration policy, tuition cost and quality, security issues), could have a major impact on today’s market of international educational services.

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References:

[A comparative characterization of the education systems of leading foreign countries and Russia](#) - A comparative characterization of the education systems of leading foreign countries and Russia. (n.d.). Prospects of Russia’s entry into the single European educational space. Retrieved from <http://madrace.ru/bolonskiy-protsess>

[Abdulkerimov et al., 2012](#) - Abdulkerimov I.Z., Pavlyuchenko, Ye.I, Esetova A.M. (2012). Present-day trends in the internationalization of higher education. *Problemy Sovremennoy Ekonomiki*, 3(43), 48.

[Agranovich et al., 2009](#) – Agranovich M.L., Kovalyova G.S., Polivanova K.N., Fateyeva A.V. (2009). Russian education in the context of international indicators: An analytical report (p. 108). Moscow, Russia: IF Sentyabr.

[Education in Japan](#) - Education in Japan. (n.d.). In Wikipedia. Retrieved from https://en.wikipedia.org/wiki/Education_in_Japan

[Education in Japan, 2014](#) - Education in Japan. (2014). Business Times. Retrieved from <http://btimes.ru/education/obrazovanie-v-yaponii>.

[Education in Russia: A comparison](#) - Education in Russia: A comparison. (n.d.). Retrieved from <http://blog.uznai.su/679/>

[Galichin, 2013](#) - Galichin V.A. (2013). The international market of educational services: Its major characteristics and development trends. *Vek Globalizatsii*, 2, 101–112.

[Garusova, Piginesheva, 2013](#) - *Garusova L.N., Piginesheva A.P.* (2013). The way a modern regional university engages in international partnership in the context of education internationalization. *Naukovedeniye*, 6, 19.

[Getting your MBA in China: Shall we go East, 2006](#) - Getting your MBA in China: Shall we go East? (2006). Elitnyi Personal. Retrieved from <http://ubo.ru/articles/?cat=97&pub=1263>

[Huang, 2007](#) - Huang F. (2007). Internationalization of higher education in the developing and emerging countries: A focus on transnational higher education in Asia. *Journal of Studies in International Education*, 11(3-4), 421-432.

[Krechetnikov, 2014](#) - *Krechetnikov K.G.* (2014). Active methods of instruction at Far Eastern Federal University. *Sistema Tsennostey Sovremennogo Obshchestva*, 36, 134-139.

[Lobov, 2014](#) - *Lobov V.* (2014). Foreign students may consider going to Russian colleges. *Rossiyskaya Gazeta*, 971, 14.

[Moryakov, 2002](#) - *Moryakov S.* (2002). The system of education in Japan. Retrieved from http://cnews.ru/reviews/free/edu/it_world/japan.shtml

[Pododimenko, 2013](#) - *Pododimenko I.I.* (2013). The prospects for current trends and priority dimensions in the development of higher education in Japan. *Vestnik Chelyabinskogo Gosudarstvennogo Universiteta*, 4, 168-176.

[Rasha, 2013](#) - Rasha Ye.Ye. (2013). An analysis of the characteristics of transnational and international education at institutions of higher learning. *Izvestiya Rossiyskogo Gosudarstvennogo Pedagogicheskogo Universiteta im. A.I. Gertsena*, 161, 220-224.

[Sadovnichiy, 2013](#) - *Sadovnichiy V.A.* (2013). Russian universities and university ratings. Retrieved from <http://federalbook.ru/files/FSO/soderganie/Tom%209/V/Sadovnichiy.pdf>

[Topuniversities: Worldwide university ratings, guides, & events, 2014](#) - Topuniversities: Worldwide university ratings, guides, & events. (2014). Retrieved from [http://topuniversities.com/university-rankings/world-university-rankings/2014#sorting=rank+region=71+country="+faculty="+stars=false+search=](http://topuniversities.com/university-rankings/world-university-rankings/2014#sorting=rank+region=71+country=)

[University of Tokyo gives up on plan to start academic year in autumn, 2013](#) - University of Tokyo gives up on plan to start academic year in autumn (2013). Retrieved from <http://www.japantoday.com/category/national/view/university-of-tokyo-gives-up-on-plan-to-start-academic-year-in-autumn>

[Vincent-Lancrin, 2010](#) - *Vincent-Lancrin S.* (2010). Cross-border higher education: trends and perspectives. *Vestnik Mezhdunarodnykh Organizatsiy*, 3(29), 86-109.

[Why does study in Korea facilitate successful career growth?](#) - Why does study in Korea facilitate successful career growth? (n.d.). Retrieved from <http://inostudent.ru/strany/koreya/obuchenie-v-koree.html>

[Yemelyanov, 2012](#) - *Yemelyanov A.I.* (2012). Russian higher education in the context of Russia's entry into the WTO. Retrieved from <http://lawinrussia.ru/node/159015>

[Zlobin, 2007](#) - *Zlobin A.* (2007). A Chinese puzzle: Is it possible to get a good education at Chinese universities? Retrieved from <http://ubo.ru/articles/?cat=101&pub=1826>



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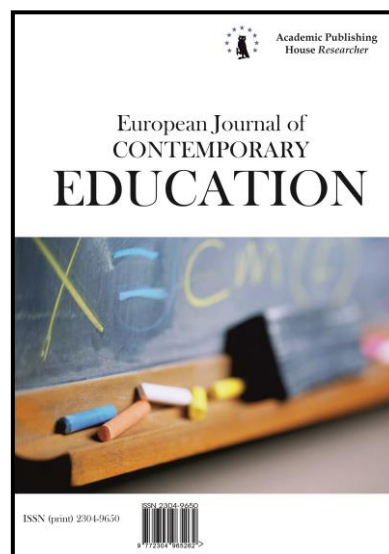
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Computer Model of the Empirical Knowledge of Physics Formation: Coordination with Testing Results

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Abstract

The use of method of imitational modeling to study forming the empirical knowledge in pupil's consciousness is discussed. The offered model is based on division of the physical facts into three categories: 1) the facts established in everyday life; 2) the facts, which the pupil can experimentally establish at a physics lesson; 3) the facts which are studied only on the theoretical level (speculative or ideally). The determination of the forgetting coefficients of the facts of the first, second and third categories and coordination of imitating model with distribution of empirical information in the school physics course and testing results is carried out. The graphs of dependence of empirical knowledge for various physics sections and facts categories on time are given.

Keywords: didactics, imitation models, mathematical methods, pedagogics, pedagogical examination, computer simulations, theory of training.

1. Introduction

At the junction of didactics and mathematics the mathematical theory of training appeared, which provides research of the system "teacher – pupil" by methods of mathematical modeling (Dobrynina, 2009; Roberts, 1986; Hunt, 2007). Development of information technologies has led to the emergence of imitating models of didactic systems (Dorrer, Ivanilova, 2007; Kudrjavcev et al., 1996). The essence of the modeling method is that the real pedagogical system is replaced with an abstract model, – some idealized object which behaves like the studied system. Such model can be a system of logical rules, mathematical equations or a computer program allowing to make a

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series of computational experiments at various parameters, entry conditions and external influences. Changing an initial condition of the pupil, distribution of educational information and other parameters of the modelled didactic process, it is possible to study their influence on the result of training (Atkinson et al., 1969).

Now the discrete and continuous computer models of training which are based on automatic approach and on the solution of the differential equations (Leont'ev, Gohman, 1984; Mayer, 2013; Novikov, 1998) are known. Sometimes the multi-agent models, by which each pupil is replaced with a program agent functioning irrespective of other agents, are used (Ivashkin, Nazojkin, 2011). Also there are imitating models using Petri's networks, genetic algorithms, matrix modeling and others (Solovov, Men'shikov, 2001; Firstov, 2011). In all these cases there is a problem of the computer model coordination with the distribution of educational information and results of testing. It is necessary to set certain numerical values to the pupil's parameters, the speed of information transfer, the level of teacher's requirements during training; only in this case the model will describe a real situation.

The purpose of the physics course is to construct a physical picture of the world in the pupil's consciousness. Because of bifurcation of the world into the external (open) and internal (hidden) parties, in the theory of knowledge there is a phenomenon (external aspect) and essence (internal aspect). The outer side of the object (a phenomenon) is perceived by the person's sense organs directly or by means of devices. This leads to emergence of the empirical or factual knowledge as the result of observation and experiments. The generalized facts and empirical laws are elements of empirical knowledge. Comprehension of the inside of researched object (that is its essence) leads to receiving theoretical knowledge.

The empirical knowledge is an important component of the physics course, therefore the formation of the empirical knowledge system in the pupil's consciousness is an actual problem. To study it, methods of mathematical and computer modeling can be used. The purpose of the present work is as follows: 1) creation of the imitational model of the empirical knowledge assimilation at physics lessons at Russian schools; 2) coordination of the model with distribution of educational information in a school course of physics and the testing results of the school graduates.

2. Division of facts into three categories

The studying method of this or that fact depends on the possibility of its experimental establishment in everyday life and at school. It is obvious that almost all facts established in everyday life can be studied experimentally at the physics lesson. Therefore we have formulated three following categories of the facts differing in the way of their studying by pupils (Mayer, 2014):

1. The facts of the first category which can be established by an average pupil in the everyday life after experimental studying them at school. Such facts belong to this category as: the existence of Archimedes force, heat exchange, electrization by friction, light reflection and refraction, heating of the conductor at course of current, a luminescence of heated bodies, thermal expansion of bodies and others. Certainly, these facts can be also experimentally established while training.

2. The facts of the second category can't be experimentally established by pupils in everyday life, however they can be experimentally proved at the physics lessons: Kirchhoff's laws, electromagnetic induction, electric resonance, photo-effect, polarization of light, refraction of electromagnetic waves.

3. The facts of the third category can't be experimentally established in the conditions of training, and their studying is carried out on the speculative level by means of educational video movies and computer models. For example, the facts of existence of light pressure, thermonuclear reaction, relativistic delay of time, results of Michelson's experiment.

It is obvious that assimilation durability and the forgetting speed for the facts of first, second and third categories are various. It is possible to assume that the facts of the first category are easier and strongly acquired and forgotten slower as they are included in activity of the pupil who continuously faces them, "rediscovering". The facts of the second category are forgotten quicker, than the first, but not so quickly, as the third category facts because the pupils have observed or performed the corresponding experiments at physics lessons. The forgetting speed of the third category facts is the highest, because the pupils studied them speculative (or ideally) and seldom use this knowledge in their everyday activity. Because of a big variety of the facts and their features

the offered division into three categories is not absolute and has no clear boundary: there are facts which can be taken simultaneously to the first and the second or to the second and the third categories. However, in most cases it is possible to tell definitely, what category this or that fact belongs to.

3. Mathematical model of assimilation of empirical knowledge

Let us break training process into small intervals and consider that in each interval the speed of information transfer to the pupil is constant: $v = dI/dt = const$. Let us consider, that all educational information is acquired by the pupil. The speed of increase in the pupil's knowledge Z is equal to the sum of the speed of training and speed of forgetting $-\gamma \cdot Z$: $dZ/dt = v - \gamma \cdot Z$. Here γ is the forgetting coefficient. Considering that at the beginning of training t_0 the amount of the pupil's knowledge is $Z(t_0) = Z_0$, we get:

$$\int_{Z_0}^Z \frac{dZ}{Z - v/\gamma} = -\gamma \int_{t_0}^t dt.$$

It follows that amount of the pupil's knowledge in a timepoint t is equal to:

$$Z(t) = \frac{v}{\gamma}(1 - e^{-\gamma(t-t_0)}) + Z_0 e^{-\gamma(t-t_0)}.$$

Let at an initial timepoint $t_0 = 0$ the amount of knowledge of the pupil to be equal to Z_i . The amount of knowledge of the pupil at the end of the $(i+1)$ – the academic year:

$$Z_{i+1} = Z_i e^{-\gamma\tau} + \frac{v_{i+1}}{\gamma}(1 - e^{-\gamma\tau}),$$

where Z_i – the level of knowledge at the end of i –th of year, v_{i+1} – the speed of the knowledge transfer in the $(i+1)$ –th year and $\tau = 1$ year. This equation allows to calculate sequentially the amount of the pupil's empirical knowledge at the end of the 1st, 2nd, ..., 11th years of training at school.

As amount of the pupil's facts knowledge of the j –th academic year is equal to the sum of the knowledge acquired in the 1st, 2nd, ..., i –th, ..., j –th classes and partially forgotten during $(j-1)$, $(j-2)$, ..., 1, 0 years respectively, we have:

$$Z_j = \sum_{i=1}^j \Delta Z_i e^{-\gamma(j-i)\tau} = \sum_{i=1}^j \frac{v_i}{\gamma} (1 - e^{-\gamma\tau}) e^{-\gamma(j-i)\tau},$$

where $\Delta Z_i = (v_i / \gamma)(1 - e^{-\gamma\tau})$ – the quantity of knowledge acquired in the i –th class, the multiplier $e^{-\gamma(j-i)\tau}$ considers the forgetting within $(j-i)$ years, $\tau = 1$ year – training time in one class.

Using this model for research of knowledge assimilation demands to account the dependence of the forgetting time on the category of the facts. Considering that forgetting coefficients of the facts for the first, second and third categories and their transfer speeds are respectively equal to γ_1 , γ_2 , γ_3 and v_{i1} , v_{i2} , v_{i3} , where $i = 1, 2, \dots, 11$ – number of a class, after transformations, we receive:

$$Z_j = \sum_{k=1}^3 Z_{jk} = \sum_{k=1}^3 \sum_{i=1}^j \frac{v_{ik}}{\gamma_k} (1 - \exp(-\gamma_k \tau)) \exp(-\gamma_k (j-i)\tau),$$

where Z_{ik} – the amount of the pupil’s knowledge corresponding to the facts of k –th category at the end of the j –th class. We offer an assimilation coefficient of empirical knowledge K_j as the relation of the factual knowledge Z_j in the j –th class to the total empirical information: $K'_j = Z_j / I_j$. Thus, the quantity of the given information is equal: $I_j = \sum_{k=1}^3 \sum_{i=1}^j \nu_{ik} \tau$.

Table 1. Quantity of the facts of first, second and third categories in various sections of the school physics course

Class i	Category of facts	Mechanics	Theory of heat	Electrodynamics	Optics	Quantum physics
7	1	32	13	0	0	0
	2	13	0	0	0	0
	3	1	0	0	0	0
8	1	1	13	12	9	0
	2	0	13	32	4	0
	3	0	0	3	0	0
9	1	27	0	0	0	0
	2	23	0	0	0	0
	3	1	0	0	0	0
10	1	2	9	16	0	0
	2	2	13	42	0	0
	3	0	3	8	0	0
11	1	2	0	2	3	2
	2	2	0	28	13	13
	3	1	0	8	6	37

4. Coordination of model with results of testing

As a result of the content analysis of the Russian physics textbooks the transfer speed of empirical knowledge in different classes in fact/year have been determined. This allows take into account the division of the facts in dependence on the sections of physics and on the categories (Table 1). To determine the forgetting coefficients, the testing of about 100 first–year students of the Physics Department of the Glazov State Pedagogical Institute has been held. It allows to determine approximately the these student’s knowledge level of 50 educational facts (10 from each section of physics) and estimate the assimilation coefficients K of the facts of the first, second and third categories as the relation of number N of the asked questions to the number n of the correct answers: $K = n / N$. The received results are presented in the second column of Table 2.

The problem of coordination of mathematical model with the testing results is reduced to determination of such values $\gamma_1, \gamma_2, \gamma_3$ at which the assimilation coefficients of empirical knowledge K'_k for the facts of various categories predicted by the model, are closest to the

corresponding values K_k received at testing. For this purpose we use the method of the smallest squares consisting in minimization of the sum:

$$S = \sum_{k=1}^3 (K_k - K'_k)^2 = \min .$$

For the optimization of the parameters $\gamma_1, \gamma_2, \gamma_3$ and modeling of empirical knowledge learning, the computer programs and files have been created:

1. A data file which consists of the information about distribution of the facts in the school physics course and about test result of the school graduates in a half year after school ($t = 11,5$ years). From the test results we get that the pupil's knowledge levels for the facts of the first, second and third categories are respectively equal to $K_1 \approx 0,72$, $K_2 \approx 0,35$, $K_3 \approx 0,19$.

2. The subprogramme which allows, using the information about facts distribution in the physics course and coefficients $\gamma_1, \gamma_2, \gamma_3$, to calculate the theoretical (predicted by the model) values of the empirical knowledge levels for facts of various categories K'_k in timepoint $t = 11,5$ years.

3. The program for determination of values γ_k ($k = 1, 2, 3$) at which the sum of squares of differences K_k and K'_k is minimum. It adjusts of the model to the results of testing and distribution of the empirical information.

4. The program which carries out imitating modeling of learning of empirical knowledge for the facts of the first, second and third categories and various sections of physics.

Table 2. Coordination of model with results of testing

		Result of testing	MODEL			
			1	2	3	4
Level of the facts knowledge	K_1	0,72	0,30	0,50	0,73	0,73
	K_2	0,35	0,43	0,62	0,17	0,35
	K_3	0,19	0,60	0,19	0,32	0,19
The forgetting coefficients	γ_1	—	0,38	0,20	0,090	0,090
	γ_2	—	0,38	0,20	0,95	0,49
	γ_3	—	0,38	1,48	0,95	1,5
Criterion	S	—	0,36	0,12	0,049	0,00016

5. Determination of forgetting coefficients

To prove the necessity of division of the facts into three categories, we have carried out calculations for four cases: 1) the facts of all three categories have identical coefficients of forgetting: $\gamma_1 = \gamma_2 = \gamma_3$; 2) the facts of the first and the second categories have the identical forgetting coefficients $\gamma_1 = \gamma_2$ which are not equal to γ_3 ; 3) the facts of the second and third categories have the identical forgetting coefficients $\gamma_2 = \gamma_3$ which are not equal to γ_1 ; 4) the forgetting coefficients of the facts $\gamma_1, \gamma_2, \gamma_3$ of the first, second and third categories are different. The criterion of proximity of the results given by the model to the testing results is the sum S

which at their coincidence is equal to zero. Values S for these four models are presented in the third, fourth, fifth and sixth columns of tab. 2 respectively.

From the received results it is visible that the fourth model considering the distinction of the forgetting coefficients of the facts of the first, second and third categories most precisely corresponds to the results of testing. So, the required forgetting coefficients are approximately equal to $\gamma_1 \approx 0,090$, $\gamma_2 \approx 0,49$, $\gamma_3 \approx 1,5$ (1/year).

Limits of applicability of the offered model are defined by an error of the data entered into the model, and by influence of some unaccounted and uncontrollable factors. For example, when modelling it was supposed that studying of physics was carried out without breaks and the speed of receipt of educational information within a year was constant; the training of pupils for final and entrance examinations wasn't considered. The accounting of these factors demands essential complication of the model, introduction of new variables, assessment of which would require more complex testing. In the present work the first approach which allows to estimate the parameters γ_1 , γ_2 , γ_3 and to determine the main features of process of empirical knowledge formation is made.

6. The result of modelling of the empirical knowledge assimilation

The curves of dependence of the pupil's empirical knowledge from time are presented on fig. 1. It is visible that the facts of the third category studied at purely speculative level are most quickly forgotten. Their forgetting coefficient is $\gamma_3 \approx 1,5$ 1/year, the period of the half information forgetting is $T_3 = \ln 2 / \gamma_3 \approx 0,46$ years. The facts studied with the help of physical experiments are forgotten slightly slower: $\gamma_2 \approx 0,49$ 1/year, $T_2 = \ln 2 / \gamma_2 \approx 1,4$ year. The first category facts, which the pupil can establish experimentally in everyday life are forgotten even slower: $\gamma_1 \approx 0,090$ 1/year, $T_1 = \ln 2 / \gamma_1 \approx 7,7$ 1/year. The received values γ_1 , γ_2 , γ_3 allow to calculate and construct graphs of dependences of the empirical knowledge quantities on time for various categories.

In fig. 1 general changes of the pupil's empirical knowledge with the time, and also the knowledge of the facts of the first, second and third categories are shown. In fig. 2.1 and 2.2 it is shown how the amount of empirical knowledge of the physics sections changes: for mechanics (curve 1), for molecular physics and thermodynamics (curve 2), for electrodynamics (curve 3), for optics (curve 4), for quantum physics (curve 5). Failures in graphs are connected with forgetting in intervals between the first and second studying of the given section of physics, taking place at the first (7–9 classes) and second step (10–11 classes) of training. It is visible that empirical knowledge of various sections of physics is forgotten with a different speed. For example, the level of formation of the empirical knowledge of mechanics consisting mainly of the first facts category decreases slowly (fig. 2.1, a curve 1) while the facts of quantum physics which are generally relating to the third category are forgotten quicker (fig. 2.2, a curve 5).

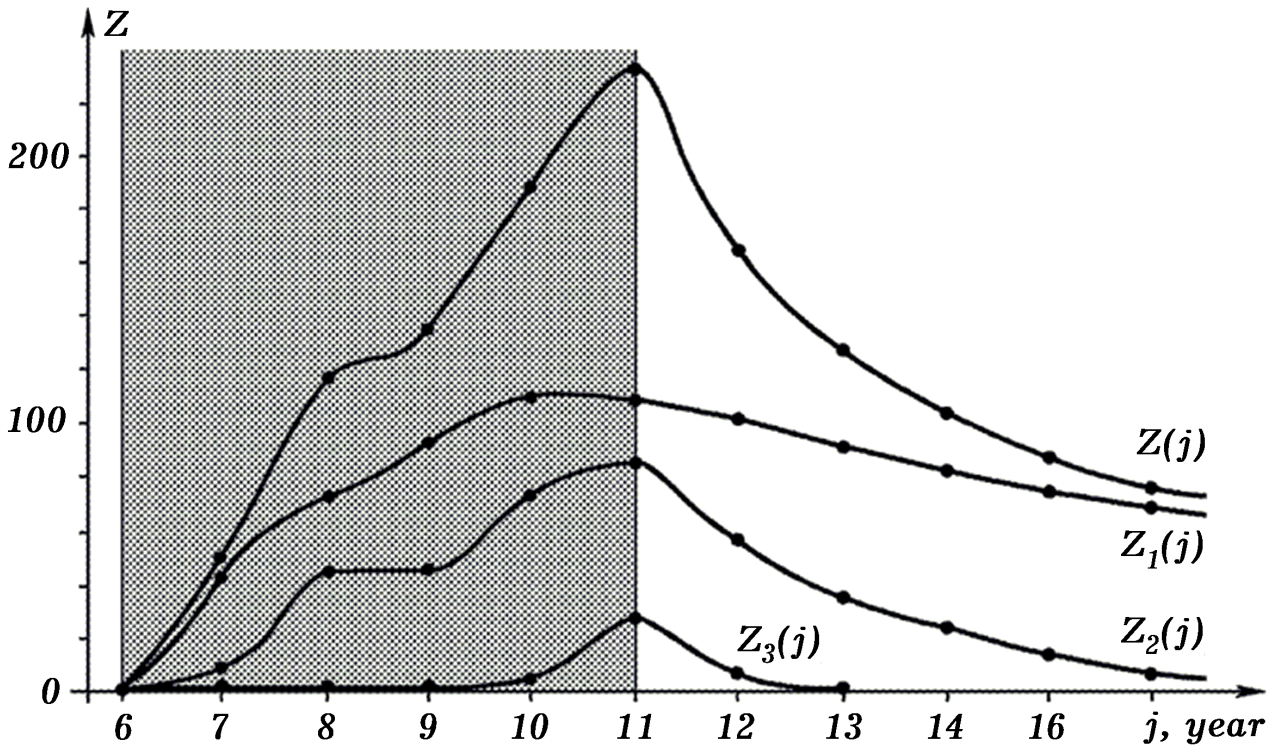


Figure 1. Dependence of factual knowledge of various categories on time

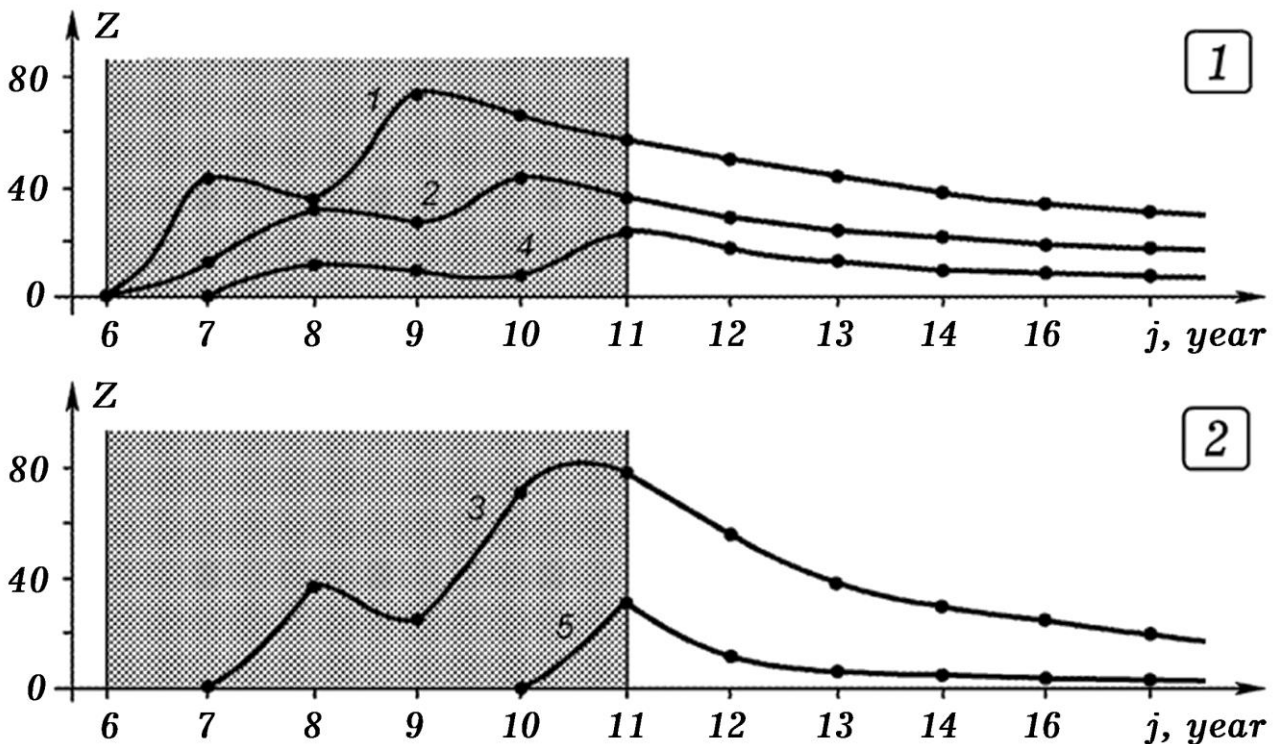


Figure 2. Dependence of factual knowledge of various physics sections on time

It follows from Figure 1 and Figure 2 that the level of knowledge of the first category facts smoothly increases to some value, and then remains almost invariable. The knowledge levels of the second and third category facts smoothly increase, at the end of training they reach a maximum, and then exponential decrease. Correspondence of modeling results to pedagogical experience confirms the validity of initial assumptions. First of all, it is about a hypothesis of expediency to

divide the facts into three categories that allows to consider their dissimilarity from the didactic point of view caused by occurrence of some facts in everyday life and possibility of their experimental establishment at a lesson.

The analysis of the received graphs and testing results allows to formulate the following regularities of the empirical knowledge formation in the pupil's consciousness:

1. In studying process the knowledge level of the first category facts entering the pupil's daily experience increases, and after training remains almost unchanged.

2. After studying the levels of knowledge of the second and third category facts which do not enter pupil's daily activity decreases due to forgetting.

3. The more the studying of the second and third category facts is based on the pupil's activities, connected with observations and performance of educational experiments or their theoretical (speculative) studying, the less is the forgetting speed of those facts.

7. Conclusion

The article presents application of mathematical and computer models for studying of the empirical knowledge assimilation by pupils. The three-component model which bases on division of the physical facts into three categories is offered. For approximate assessment of the forgetting coefficients of the first, second and third categories facts the coordination of imitating model with distribution of empirical information in a school physics course and results of testing is carried out. The graphs of dependence of empirical knowledge for various physics sections and categories of facts on time are received. The above described regularities explain why school graduates usually remember the facts of the first category well enough, but satisfactory – the facts of the second category, and rather poor – the facts of the third category. Further specification of the computer model of the empirical knowledge assimilation by pupils through the use of more accurate data about distribution of empirical information and testing results is possible. The above mentioned approach can be used to simulate the process of learning in other academic disciplines.

References

Atkinson et al., 1969 - Atkinson R., Baujer G., Kroters Je. (1969). Vvedenie v matematicheskiju teoriju obuchenija [Introduction to the mathematical theory of training]. M: Mir, 1969. 486 p.

Dobrynina, 2009 - Dobrynina N.F. (2009). Matematicheskie modeli rasprostraneniya znanij i upravlenija processom obuchenija studentov [Mathematical models of the spread of knowledge and learning management students]: *Basic research*, № 7.

Dorrer, Ivanilova, 2007 - Dorrer A.G., Ivanilova T.N. (2007). Modelirovanie interaktivnogo adaptivnogo obuchajushhego kursa [Modeling of interactive adaptive course of learning: Modern problems of science and education], № 5.

Firstov, 2011 - Firstov V.E. (2011). Matematicheskie modeli upravlenija didakticheskimi processami pri obuchenii matematike v srednej shkole na osnove kiberneticheskogo podhoda [Mathematical models of control didactic process of teaching mathematics in secondary schools on the basis of the cybernetic approach]: dissertation ... doc. of pedagogical sciences. St. Petersburg, 460 p.

Hunt, 2007 - Hunt E. (2007). The Mathematics of Behavior. New York: Cambridge University Press, 2007. 346 p.

Ivashkin, Nazojkin, 2011 - Ivashkin Ju.A., Nazojkin E.A. (2011). Mul'tiagentnoe imitacionnoe modelirovanie processa nakoplenija znanij [Multi-agent simulation of the process of accumulation of knowledge]: *Software products and systems*, № 1, pp. 47-52.

Kudrjavcev et al., 1996 - Kudrjavcev V.B., Vashik K., Strogalov A.S., Alisejchik P.A., Peretruhin V.V. (1996). Ob avtomatnom modelirovanii processa obuchenija [On the automaton model of the learning process]: *Discrete Mathematics*, 1996. T. 8. Vol. 4. pp. 3-10.

Leont'ev, Gohman, 1984 - Leont'ev L.P., Gohman O.G. (1984). Problemy upravlenija uchebnym processom: Matematicheskie modeli [Problems Training Management: Mathematical model]. Riga. 239 p.

Mayer, 2013 - Mayer R.V. (2013). Mnogokomponentnaja model' obuchenija i ee ispol'zovanie dlja issledovanija didakticheskikh sistem [Multicomponent model of training and its use for

research of didactic systems]. *Fundamental'nye issledovanija: Pedagogicheskie nauki*. № 10. pp. 2524-2528.

[Mayer, 2014](#) - Mayer R.V. (2014). Kiberneticheskaja pedagogika: Imitacionnoe modelirovanie processa obuchenija: monografija [Cybernetic pedagogics: Imitating modeling of process of training: monograph]. Glazov, Glazov. gos. ped. in-t, 141 p. URL: <http://maier-rv.glazov.net>

[Novikov, 1998](#) - Novikov D.A. (1998). Zakonomernosti iterativnogo nauchenija [Regularities of iterative learning]. Moscow, Institut problem upravljenija RAN, 1998, 77 p.

[Roberts, 1986](#) - Roberts F.S. (1986). Diskretnye matematicheskie modeli s prilozhenijami k social'nym, biologicheskim i jekologicheskim zadacham [Discrete mathematical models with annexes to social, biological and ecological tasks]. M.: Nauka, Gl. red. fiz.–mat. lit., 496 p.

[Solovov, Men'shikov, 2001](#) - Solovov A.V., Men'shikov A.A. (2001). Diskretnye matematicheskie modeli v issledovanijah processov avtomatizirovannogo obuchenija [Discrete mathematical models in the study of processes automated training]. *Educational Technology & Society*, № 4, pp. 205-210.



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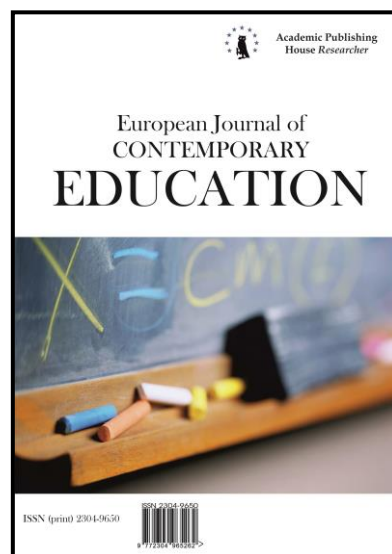
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Interrelation of Evaluation and Self-Evaluation in the Diagnostic Procedures to Assess Teachers' Readiness for Innovation

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Abstract

The paper solves the problem of the relationship of external diagnosis and self-diagnosis of readiness of teachers to innovative activity. It highlights major disadvantages of measurement tools that are used to this process. The author demonstrates an alternative approach to harmonizing the diagnosis, based on a modular diagnostic model, general diagnostic tools, to synchronize the management tasks of the process of readiness for innovation and self-innovation. The proposed approach, in the author's opinion, creates the necessary conditions for improving the quality of innovative activity of both teachers and ongoing modernization of education.

Keywords: teacher readiness for innovation, the relationship of external diagnostics and self-diagnostics, a modular diagnostic model, diagnostic tools, control specifications.

1. Introduction

Existing conditions of the innovative development in education feature an important element - the diagnosis of readiness of teachers to innovative activity. Such a diagnosis is implemented in different forms and involves harmonization of tools and expertise procedures with those of self-diagnostics.

If one conducts an analysis of approaches to the development of diagnostic material and studies the results of measurements (Voropaeva, 2014; Lazarev et al., 2015; Ponomareva, 2011; Prischepa, 2010), it is usually possible to detect significant gaps in the ontological structure of the innovation readiness, gaps between the essential characteristics of readiness, its indicators and indices, excessive detail of some characteristics and poor representation of others, the lack of

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important determinations, etc. These circumstances indicate definite disadvantages of the diagnostic tools and the need for its further improvement.

2. Method and materials

The relationship of evaluation and self-evaluation of innovation readiness of the teacher should be reflected in the requirements for diagnostic criteria. These requirements define a general framework for shaping up the criteria. The conducted research has the following basic requirements that we observe: reliability, practicality, capacity to discern, validity (Deviatko; Magura, Kurbatov, 2007).

The initial material for the development of methodological bases to diagnose readiness for innovation tapped into the results of study of the nature and structure of psychological readiness (Dyachenko, Kandybovich, 1976; Nersisyan, Pushkin, 1969), as well as the study of problems of innovative activity of teachers conducted by V.S. Lazarev, B.P. Martirosyan (Lazarev, Martirosyan, 2006) E.P. Morozov (Morozov, Pidkasisty, 1991), P.I. Pidkasisty (Morozov, Pidkasisty, 1991) V.A. Slastenin, L.S. Podymova (Slastenin, Podymova, 1997) and others.

3. Discussion

At the harmonization of tools and procedures of the external diagnostic and self-diagnostic of readiness of teachers to innovative activity, the following circumstances must be considered.

Firstly, the scope of diagnosis should include relative phenomena of diagnosis. The relative phenomena of diagnosis of the innovation activity, on the one hand, governed by the tasks of management of innovative pedagogical process. In this case, the results of the survey contribute to the optimization of decisions that are being taken. On the other hand, the relative phenomena of diagnosis are focused on the area of self-regulation tasks for teachers readiness to innovate, and the results of the diagnosis are designed to serve the processes of professional and personal self-development of a teacher.

Secondly, the external and internal diagnostics have their differences in the positions and attitudes of the participants. External diagnostics performed, as a rule, by heads of educational institutions, heads of methodological associations, specialists in the field of innovation – is conducted as an expert review. The experts more strictly adhere to the specified criterion-semantic units than do the teachers during procedures of self-analysis and self-assessment. Self-diagnosis is carried out autonomously by each teacher. However, his personal qualities are included directly in the system of self-analysis and self-assessment, in his view of the current level of readiness for innovation. Often the reasoning and self-esteem of the teacher can be interpreted only in the context of the innovative actions and in connection with the goals he sets for himself. This is especially true for self-analysis and self-assessment of motivational sphere of innovation, its value-semantic structure.

Thirdly, harmonization of diagnostics and self-diagnostics - is, above all, the question of harmonization of logic and semantics of performed procedures, and to this end, it is important to use a single diagnostic set of tools.

Development of diagnostic tools is preceded by the drawing up of the diagnostic model of innovation readiness. Creation of the model occurs through structuring of the semantic space of diagnostics in the form of a specific set of diagnostic modules. Separation of the diagnostic model to standalone modules gives flexibility to the diagnosis. Depending on the goals and objectives pursued by the diagnosis, there may be used not all diagnostic models but only certain individual modules.

The modular structure of the diagnostic model is based on the principle of availability of functional-level regulation to innovation, and also on the concept of value-and-meaning control of such readiness. At the same time, willingness to innovate is manifested as separate local structures. As part of the diagnostic module such local structures are represented by diagnostic units. They are, in their turn, divided according to their status into the main and auxiliary. The main diagnostic units form a dialectical couple of interrelated variables that reveal the essential core of a local structure. For example, the dyad of "values of innovation – meanings of innovation" allows assessing the ideological positions and attitudes of a teacher, motivational side of innovation activities.

Auxiliary diagnostic unit is also variable. It is regarded as a mechanism for the practical implementation of innovation. In this case, the auxiliary diagnostic unit appears as a marker of a causal link of both key variables, as well as a significant factor influencing the nature and content of their implementation. In this example, the value-semantic mechanisms of innovation activity play a role of such a variable.

Thus, each diagnostic module provides a unified description of a well-defined structure of readiness for innovation in the form of diagnostic tasks, diagnostic units (main and auxiliary) criterion and its indicators. As a result, we obtain a diagnostic model of innovation readiness of a teacher, which includes four Diagnostic Modules (DM1 - DM4).

DM 1 "Activity-and-competence structure of readiness to innovate." The module is designed for the analysis and evaluation of readiness for innovation by the *criterion - the potential of innovative activity*. The criterion gives an idea of how well teachers have mastered basic types of innovation activities and relative skills, specific to these activities. Indices of the criterion are (1) *activities range of innovation* and (2) *competence range of innovation activity*.

The innovative activity of a teacher is not uniform in its content. It is necessary to distinguish relatively independent activities, which take shape as a result of natural classification. Practice-oriented structure of innovative activity in the most general form is predetermined by:

- research activity;
- planning activity;
- communicative activity;
- experimental activity;
- management activity;
- competence self-regulation.

In the framework of each individual type of innovation there can be identified certain competences by which it is implemented. Here are examples of innovation activities and their respective competences on the basis of which, the assessment of the current readiness level is conducted.

*(PC – Professional Competence)

Research Activities (*PC 1: mastery of ways and methods of analysis in the field of education in light of the influence of innovations; PC2: mastery of ways and methods of laying out acute educational problems, training and development of students; PC3: mastery of pedagogical innovation research methodology*).

Planning activities (*PC1: mastery of methodology to develop the concept and plan out development of the educational organization; PC2: mastery of methodology for modeling of the innovation process; PC3: the ability to structure one's teaching activities in accordance with the targets and requirements of the innovation process*).

Communicative activity (*PC 1: mastery of methods of presentation of pedagogical innovations; PC2: the ability to discuss issues of innovation activity in accordance with the rules of professional communication; PC3: the ability to work in a team to solve innovation tasks*).

Experimental activities (*PC 1: mastery of methodology of experimental work planning on the validation of the innovation process; PC2: mastery of methodology of research and experimental validation of the innovation process; PC3: mastery of experimental data processing*).

Management activities (*PC 1: the ability to make rational decisions in the field of modernization of education; PC2: the ability to plan the innovation process with consideration of interdisciplinary relationships; PC3: mastery of methods of organizing a collective innovation activity; PC4: mastery of the innovation process monitoring methods*).

Competence self-regulation (*PC 1: mastery of methods to self-assess the ability to innovate; PC2: the ability for self-planning of the readiness to innovate; PC3: the ability for self-development of the competencies to innovate*).

Making the analysis and evaluation of action-competence structure of innovation readiness, an important place is given to the practical mechanisms of implementation of the desired competencies. Such mechanisms reveal substantive competences and functional characteristics at different phases of their implementation. These primarily include:

- subject-analytical mechanism;
- practice-transforming mechanism;

- activity-regulatory mechanism.

Subject-analytical mechanism of competencies is related to the procedures of search and processing of missing information in the domain of innovation. This mechanism allows us to estimate the difficulties that arise for teachers within a particular competence in carrying out analytical activities.

Practice-converting mechanism of innovation competencies is associated with the modernization of the existing practice of education. It is based on related procedures (conceptualization, planning, experimentation, self-development, etc.) with a clear focus on the mastery of specific pedagogical innovation.

On the basis of the activity-regulatory mechanism there is implemented self-examination, self-assessment and self-correction of one's innovation. Obviously, the diagnosis should show how well a teacher is able to identify the emerging deviations and difficulties, to what extent has he/she developed ways and means of overcoming them.

DM2 "Functional-role structure of willingness to innovate." Innovative activity is characterized by the variety of role positions and functions, by the dependency of teachers on each other. In this regard, it is necessary to include in the ongoing diagnostic *the criteria of functional-role activity*, based on the following indicators: (1) *role definiteness* and (2) *role functionality*.

Roles need to be analyzed and evaluated from the standpoint of major groups. The concept of role groups is ultimately a reflection of the fact that the role of innovation activities may be different, as well as the fact that within a given situation there can be performed roles of different groups. In the diagnosis of the innovation readiness of teachers, one should distinguish three main groups of roles (A, B and C) (Tynnikov, 2015).

Roles of Group A are directly related to the implementation of the innovation process. Roles in this group reveal the interaction of the teacher with an innovative process. The group includes such roles: *analyst, expert, innovator, methodologist, planner, designer, coordinator, consultant, controller, methodologist with hands-on experience*.

Roles of Group B are directly related to the organization of interaction between participants of the innovation process. These roles are introduced in the innovation process in the form of functions, positions and appropriate forms of cooperation, specific to the discussion of the problems of development of education, specific conditions of the innovation process, forms of coordination and monitoring of innovation. At the same time business communication takes place in the form of business simulation, group discussions, debates, consultations, presentations, etc. The group includes the following roles: *initiator, organizer, moderator, critic, mediator, motivator, conflict resolution specialist, facilitator*.

Roles of the Group C are centered on the objectives of self-preparedness for innovation. This group should include such roles as *self-diagnosis specialist, planner, self organization manager, autodidactic, self-controller*.

Role steps are important in the event if they are adequate to the situation of innovation. Depending on the nature and content of such situations there considerably varies the role of characteristics of innovation. In the diagnosis of functional-role activities of teachers there must be evaluated role behavior with respect to situations such as:

- *the situation of the innovation team creation;*
- *situation of problematization of the innovation process;*
- *situation of planning of the innovation process;*
- *situation of business communication;*
- *situation of management of innovation process;*
- *situation of professional self-development.*

Function-role activity is implemented through specific mechanisms. The ongoing diagnosis should distinguish, first of all, the mechanisms that cover the main phases of the Functional-role activity:

- *role self-identification;*
- *positioning of the role;*
- *role interaction.*

The mechanism of functional-role identity is built on a premise that a teacher views himself as a subject of innovation and plays a specific role. The transition to the new role means a new role specification, and is accompanied by changes of previous roles and functions and obligations.

Functionally-role identity is limited in time and unthinkable without the knowledge of the rules and regulations of behavior within the role, without tapping into the special knowledge and skills, professional and personal experience of the teacher.

Functional-role positioning is an important condition for the inclusion of the teacher in the situation of innovation. Positioning is achieved by determining a teacher's place and role in the innovation process, development or adoption of the most important ideas for the innovative transformation, translation of innovative ideas in the process of collective decision-making.

The mechanism of functional-role interaction is characterized by a general business orientation, which implies quite clear ideas about the principles of role interaction, possession of professional communications skills in different contexts of innovation activities (team building, research for teaching innovations, creation of an innovative project, project discussion and others.).

Dm3 "Task-operational structure of willingness to innovate." The diagnostic module emphasizes the main feature of the subject field of innovative activity: A variety of practical problems of improving of the educational process. Analysis and evaluation of readiness for innovative activity is carried out by *the criterion of operational completion*. Indicators of the criterion (1) *holistic task structure* and (2) *operational completion*.

Innovative readiness involves stimulating teachers to use the system of innovative practical tasks, understanding of the baseline and posing questions about the unknown, their logic and common interconnection. In general, this corresponds to the interpretation of the problem as a text, expressing fixed information about the "situation" and the content of the question, the answer to which is contained in the data ("baseline conditions") ([Sociological Dictionary of Project Socium, 2003](#)). However, we must distinguish the concept of a problem situation and objective ([Psychology. Dictionary, 1990](#); [Tyunnikov, 2014](#)).

Here is the typological structure of innovation tasks segmented by the activity-functional base:

- *research and analysis tasks;*
- *planning and converting tasks;*
- *experimental and forming tasks;*
- *communicative and discursive tasks;*
- *managerial and organizational tasks;*
- *competence-regulatory tasks.*

The need to strengthen the focus of the professional work of the teacher to solve such problems is pointed out by many researchers ([Gavrilenko, 2008](#); [Kazakov, 2006](#); [Kharisova, Shukaeva, 2015](#)).

Operational structures is related to the methods and techniques of solving practical problems, and suggests that teachers have specialized groups of skills. Let's define the skill groups that are subject to analysis and assessment in the diagnosis of the innovation readiness of teachers.

Research and analytical tasks (*the ability of socio-cultural orientation in the field of education; the ability to identify the source of contradiction in the educational system; ability to identify main trends of development of education, etc.*).

Planning-and-converting tasks (*ability to identify problems of an educational organization, the ability to evaluate innovative ideas and proposals; ability to identify and assess the possibility of further development of an educational organization; the ability to develop a concept of an educational organization; the ability to develop a program for the development of an educational organization etc.*).

Experimental-and-forming tasks (*setting goals for an experiment; ability to plan an experiment; the ability to control the progress of an experiment, etc.*).

Communicative and discursive tasks (*presentation skills to show pedagogical innovations; the ability to express their attitude to an innovative activity; the ability to analyze statements; the ability to work in a team to solve problems of innovation, etc.*).

Managerial-and-organizational tasks (*ability to identify priority areas for the development of an innovative educational organization; the ability to plan the innovation process; ability to organize innovative activities; the ability to control an innovation activity etc.*).

Competence-regulatory tasks (*the ability to analyze and evaluate professional competences on the basis of reflection of an innovation activity; self-development goal-setting skills in the area*

of willingness to innovate; the ability to develop a program of self-development to master one's willingness to innovate, etc.).

When diagnosing task-operational readiness of the structure it is also important to take into account the mechanisms of practical implementation of innovation skills. Mechanisms determine the characteristics of different levels of application of skills, indicate knowledge and ability specific to each level. These include:

- *reproductive use of abilities,*
- *reproductive-and-creative use of skills,*
- *creative use of skills.*

Reproductive mechanism of innovative skill application means a reliance on the various kinds of regulations, procedures, algorithms. Improving the educational process in this case is carried out according to a certain pattern or predetermined by instructions in recognizable situations.

Reproductive-and-creative mechanism of skill application is basically built on the regulations and samples, with extensive use of individual elements of creativity.

Creative mechanism of implementation involves the use of skills as a means of building an innovative pedagogical process of new knowledge acquisition, non-standard ways to act.

DM4 "Value-semantic structure of readiness for innovation." The innovation activity is strongly influenced by psychological phenomena of consciousness, determining the value-semantic structure of readiness for innovation: the identity of the system, values, worldviews, personal meanings, motivational hierarchy. The primary tasks of the diagnosis in this case are the analysis and evaluation of readiness for innovation by *the criterion of value-semantic certainty*. Important indicators of the criterion are (1) *value-sense certainty of innovation*, (2) *value-sense certainty of self-development of one's readiness for innovation*.

For the innovative values to serve as the main targets and motivation of innovation activity, they should be meaningful. Furthermore, one should understand the value in modernization of education, recognize the social demand for innovation activity. Equally important is an understanding of the need to maintain an adequate level of innovative activity by means of professional self-development and self-education. In this regard, diagnostic of value orientations of teachers should primarily focus on the analysis and assessment of such structural elements of innovation readiness as:

- *social values of innovation* (quality of education, sustainability of education, the path of education in the long term);
- *professional and personal values of innovation* (creative self-fulfillment, leadership, openness to new experiences, professional responsibility, cooperation and team work, professional and personal self-development).

In its turn, the diagnosis of semantic elements of the innovation readiness of teachers should also include analysis and evaluation of the meanings of two kinds:

- *socio-cultural meanings of innovation;*
- *professional and personal meanings of innovation.*

The content of the concepts of value and meaning is associated with the concept of self-identification, which is regarded as self-determination, one's own pro-activeness, a conscious desire to take a stand; personal new-formation associated with the formation of the inner attitude, awareness of their social and professional functions, the need to solve the problems of one's own future, of the professional community (Rozov, 1998; Shokhin, Abushenko).

Value-semantic self-determination in the field of innovation is realized through certain mechanisms. Mechanisms of value-semantic self-determination are another important variable in the diagnosis that is being carried out. With their help, it is possible to identify weaknesses and gaps in philosophical attitudes and motivation of innovation, in willingness for creative self-fulfillment, reflection of innovative stance, involvement in the solutions of practical problems of innovative activity, in making of important decisions in the field of modernization of education, in understanding the need for professional and personal self-development, etc.

Above all, for the purposes of an ongoing diagnosis, there should be identified those mechanisms that cover the main phases of the value-semantic self-determination:

- *value-semantic strategy development;*
- *value-semantic conceptualization;*

- *value-sense reflection.*

Value-semantic strategic planning is focused on determining the prospects of innovative development of a particular educational process, and –appreciation of the value, meaning and prospects for professional and personal development of teachers.

Value-semantic conceptualization focuses on the formation of value-semantic foundations of innovation and professional and personal development of a teacher. First of all, it involves a detailed review of the relationship of values and meanings of their own innovation with the problems of its planning, organization and implementation, as well as with the problems of self-development of innovation readiness.

Value-semantic reflection defines how deep the values of a teacher and his understanding of the meaning of innovation correspond to the real conditions and possibilities of education. Diagnosis based on the mechanisms of value-semantic reflection reveals whether teachers are able to analyze their value orientations in the field of educational upgrades, demonstrate their innovative abilities, whether they are ready to decide on changing their values and meanings.

Therefore, in relation to the tasks of each module (DM1, DM4) there have been identified criteria, indicators and diagnostic variables. Thus, we have defined the methodological basis for selecting various system diagnostic tools.

In our opinion, the most succinct yet informative are the diagnostic tasks, structured as a matrix. We will show a matrix form of the diagnosis with the example of DM1 "Activity-competence structure of readiness for innovative activity" (see [Table 1](#)).

Basic and auxiliary variables set the meaningful framework and define the logic of the matrix. Completing the diagnostics it is possible to identify the parameters of the main types of innovation (the first basic variable) and those professional competences (second main variable), which ensure the implementation of these activities.

Table 1. Diagnostics Matrix of activity-competence structure of readiness for Innovative Activity

Types of Innovation Activity. Competences of Innovation Activity	Mechanisms of implementation of IA competences		
	subject-analytical	Practice-converting	activity-regulatory
<p>Research activity <i>PC1: mastery of ways and methods of analysis in the field of education in light of the influence of innovations</i> <i>PC2:</i> <i>PC3:</i></p>			
<p>Planning activities <i>PC1: mastery of methodology to develop the concept and plan out development of the educational organization</i> <i>PC2:</i> <i>PC3:</i></p>			
<p>Communicative activity <i>PC 1: mastery of methods of presentation of pedagogical innovations</i> <i>PC2:</i> <i>PC3:</i></p>			
<p>Experimental activities <i>PC 1: mastery of methodology of experimental work planning on the validation of the innovation process</i> <i>PC2:</i> <i>PC3:</i></p>			

<p>Management activities <i>PC 1: the ability to make rational decisions in the field of modernization of education</i> <i>PC2:</i> <i>PC3:</i> <i>PC4:</i></p>			
<p>Competence self-regulation <i>PC 1: mastery of methods to self-assess the ability to innovate</i> <i>PC2:</i> <i>PC3:</i></p>			

In its turn, the nature and content of innovation and related competencies are strongly influenced by the mechanisms of their implementation (auxiliary variable). The levels of the practical implementation of each mechanism are measured against a barrier parameter in four gradations, and the result is entered in the diagnostic matrix. The obtained data allow to draw the conclusions about the current level of readiness of a teacher to innovative, based on the criterion of innovation potential with a differentiated assessment in terms of activity-related competence and competence completeness.

We have studied the problem of reconciling of the external diagnostic and self-diagnostic of teachers` readiness to innovative from the perspective of unified diagnostic tools. We must now consider the problem from the perspective of management tasks of innovative process and management tasks for professional self-development of a teacher.

Through the innovation process management one carried out the basic idea of the pedagogical innovation, which is to ensure proper quality of the educational system at the expense of its current renovation. At the same time management is defined by the targeted, organizing and regulating influence (through the system of administrative, scientific and methodical management of the educational institution) of the processes of implementation of pedagogical innovations, relationships and activities of all participants in the innovation process.

Innovative pedagogical process Management System, as well as any complex process, can be represented as a specific circuit, which includes analysis, goal setting, planning, organization, control and correction.

The decisive role in ensuring the proper quality of innovation is placed on self-regulation of innovation readiness. O.A. Konopkin considers the essence of self-regulation as a mental process, which provides the initiation, construction, maintenance and management by a teacher of all kinds and forms of external and internal activities (Konopkin, 2002).

Self-regulation of readiness for innovative activity is also possible in a specialized circuit. The circuit covers the procedures of professional and personal self-development of a teacher, and includes self-examination, self-development planning, self-organization, self-education, self-monitoring, self-correction. Dedicated components interact in the structure of self-regulation as key links in a single logical strand. Self-monitoring is becoming a significant element of self-regulation in innovation, if the indicators correlate with expert evaluation and are considered in the management of innovative pedagogical processes.

As you can see, the expert diagnosis of readiness for innovation and relevant self-testing should complement each other dialectically. The result is that each type of diagnosis has a dual function and plays a key role in the control circuit, and self-control circuit. In other words, internal and external diagnosis must simultaneously perform two basic functions: *object-planning*, which is reflected in the management decision process in the holistic educational process, and *subject-planning*, which is an auxiliary to diagnostic information with regards to the individual participants of the innovation process and, consequently, to their specific self-development programs.

4. Conclusion

Matching external diagnostic and self-test readiness of teachers to innovative is aimed at solving problems of improving the innovation process and objectives of professional and personal self-development of teachers. Methodological key to the solution of the problem of diagnosis harmonization is the development of a common set of diagnostic tools and its application in two adjacent circuits – management of an innovative process and self-regulation of readiness to innovate. This approach fundamentally changes the nature of harmonization, and its implementation minimizes the innovative risks associated with the professional readiness of teachers.

References

- [Deviatko](http://www.elective.ru/arts/meno4-ko307-p17426.phtml) - *Deviatko I.F.* Methods of sociological research // <http://www.elective.ru/arts/meno4-ko307-p17426.phtml>.
- [Dyachenko, Kandybovich, 1976](#) - *Dyachenko M.I., Kandybovich L.A.* (1976). Psychological problems of preparedness to activities. Minsk: Publishing house of BSU.
- [Gavrilenko, 2008](#) - *Gavrilenko L.S.* (2008). A model of preparation of the future teacher to innovative activity. *Bulletin of RGPU named after A.I. Herzen*. № 58.
- [Kazakov, 2006](#) - *Kazakov I.S.* (2006). Information culture of the future teacher. *Higher education today*. № 10.
- [Kharisova, Shukaeva, 2015](#) - *Kharisova L.A., Shukaeva T.M.* (2015). Innovative activity in institutions of general education: problems and solutions. *Teacher Education and Science*. №5.
- [Konopkin, 2002](#) - *Konopkin O.A.* (2002). Total capacity for self-regulation as a factor of subject development. *Questions of psychology*. № 2.
- [Lazarev et al., 2015](#) - *Lazarev V.S., Afanasiev T.P., Eliseev I.A.* (2015). Innovative activities in continuous development schools: Research and resource book for school faculty. M.: Non-Profit Partnership "Avtorskiy Klub", 2015.
- [Lazarev, Martirosyan, 2006](#) - *Lazarev V.S., Martirosyan B.P.* (2006). Educational Innovation. M., 2006.
- [Magura, Kurbatov, 2007](#) - *Magura M., Kurbatov M.* (2007). Assessment interview. *Upravleniye Personalom*, № 24.
- [Morozov, Pidkasisty, 1991](#) - *Morozov E.P., Pidkasisty P.I.* (1991). Preparation of teachers to innovative activity. *Soviet pedagogy*. Is. 10.
- [Nersisyan, Pushkin, 1969](#) - *Nersisyan L.S., Pushkin V.N.* (1969). Psychological structure of operator's readiness to extreme actions. *Voprosy psikhologii*. Is. 5.
- [Ponomareva, 2011](#) - *Ponomareva N.S.* (2011). Formation of readiness of future engineers to innovate in the educational process of the university: Dissertation abstract for candidate of pedagogical science. Bryansk, 19 p.
- [Prischepa, 2010](#) - *Prischepa T.A.* (2010). Development of teacher preparedness for innovation based on enriched educational environment in system of additional vocational training: Dissertation abstract for candidate of pedagogical science. Tomsk, 21 p.
- [Psychology. Dictionary, 1990](#) - *Psychology. Dictionary* / edited by A.V. Petrovsky, M.G. Yaroshevsky. M.: Politizdat. 1990.
- [Rozov, 1998](#) - *Rozov N.S.* (1998). The values in the problem world. Novosibirsk.
- [Shokhin, Abushenko](#) - *Shokhin V.K., Abushenko V.L.* Value. Humanitarian encyclopedia [Electronic resource]. The Centre for Humanitarian Technologies. URL: <http://gtmarket.ru/concepts/6895>.
- [Slastenin, Podymova, 1997](#) - *Slastenin V.A., Podymova L.S.* (1997). Pedagogy: innovation. M.: publishing house. Magistr.
- [Sociological Dictionary of Project Socium, 2003](#) - *Sociological Dictionary of Project Socium*, 2003. [Electronic resource] <http://voluntary.ru/dictionary/572>
- [Tynnikov, 2015](#) - *Tynnikov Ju.S.* (2015). Conceptualizing the System of Preparing Future Pedagogues for Innovation Activity. *European Journal of Contemporary Education*. 2015. Vol. 11, Is. 1. Pp. 98-112.
- [Tyunnikov, 2014](#) - *Tyunnikov Y.S.* (2014). Ontologization of constructs of additional professional education. *Izvestiya Sochinskogo gosudarstvennogo universiteta*. № 1.
- [Voropaeva, 2014](#) - *Voropaeva E.E.* (2014). The structure and criteria of readiness of a teacher to innovative. *Modern problems of science and education*, Is. 4.