Promote Self-Development in the Formation of Competencies for Future Teachers

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Abstract: Experimental and analytical learning pedagogy is a scientifically based technology that relies on multiple divergent transitions "theory-practice" and "practice - theory" in teaching pedagogy. Systematic use of different kinds of cognitive and practical teaching activities promotes holistic formation competences. Mentioned in this article experimental and analytical student learning pedagogy provides an efficient formation of the competences of future teachers and stimulates their ability to self-development. Conclusion was confirmed by the results of the study: a high level of training (based on competence -based test) in the experimental groups correlated with a high level of self-development students, whereas traditional teaching pedagogy significant associations were found.

Key words: Pedagogy · Training of future teachers · Experimental and analytical learning pedagogy · Competence · Self-development in professional work.

INTRODUCTION

Large-scale changes of the Russian system of higher pedagogical education [1], due to entering into the world educational space [2] and the transformation of the socio-cultural situation in Russia, carried out in the spirit of competence-based approach [3].

Obvious was the need for a fresh look at the training of future educators, because it must provide each student the opportunity to the fullest self-discovery and development capabilities, as well as the formation of a competent professional in your field [4-7].

Competence are seen as the ability and willingness of the person to solve a particular problem, to act in a particular situation, the ability to solve professional problems and typical professional tasks that arise in real situations professional pedagogical activity, using knowledge, professional and life experiences, values and inclinations [8, 9].

How to teach students of pedagogical high school to form a common cultural, general professional competence and professional at the same time stimulate the willingness to self-development? In other words - how to prepare the student for self-development means professional activities?

MATERIALS AND METHODS

To check the effectiveness of the technology based on experimental and analytical approach to learning pedagogy was conducted on the basis of pedagogical experiment Perm State Humanitarian Pedagogical University (PSHPU). Package was used for diagnostic procedures [7, p.419 -428], including, in particular, the traditional test materials (test department of pedagogy PSHPU) " competence -oriented test" [10], test " Willingness to self " (T.I. Shamova) [11].

For the processing of the raw data used such methods of mathematical statistics as Student's t-test for independent samples, Pearson's correlation analysis. Calculations were performed on a personal computer using the Statistica 5.0. for Windows.

The Main Part: Experimental and analytical learning pedagogy [7] is a scientifically based technology that relies on multiple divergent transitions "theory-practice" and "practice - theory" in teaching pedagogy.

It is based on four ideas: 1) on the interaction between student and teacher, 2) on the self-determination of the student in a specially designed educational environment (creating of variable educational

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environment of the university as we substantiate necessary condition for the implementation of this technology), 3) on the mutual transitions and phased development of cognitive and practical pedagogical activities, 4) their gradual integration into the professional and research activities of a modern teacher working effectively [12].

Experimental and analytical training this is a figurative name of the basic mechanism, which is based on education technology pedagogy. It is assumed that the main transition is firstly on experience, which is subjected to a study to analyze the purpose of arriving at theoretical generalization. In future (secondly) that theory to which the student comes, exposed " experimental " figuratively speaking on checking in practice.

Multiple divergent transitions "theory-practice" and "practice-theory" implemented through the use of several types of cognitive (educational and cognitive / reproducing heuristic quasi -research, reflexive, self-education, research) and practical teaching activities (teaching professional, professional, professional - innovative, quasi- professional, leisure / extracurricular / non-profit, natural daily interaction with people, self-improvement and previous professional experience student). All these kinds of cognitive and practical educational activities form the basis of student learning pedagogy at the university. Most importantly is to provide multiple divergent mutual transitions of cognitive and practical teaching activities and their gradual integration into the professional research, which develops future teacher.

As the long-term studies, students enrolled in this technology in actual practice in extreme situations are much more effective (successful improvisation show 3 times more than in the control groups) and as evidenced by the evaluation criterion of experts on teaching practice, students in these above dynamics willingness and ability to interact with children and colleagues, to build the educational process. Maturity of transition "practice theory" (through the skill of algorithmization of best experience - evaluation during a delayed control) in the experimental groups demonstrated a good level, more than half of students in two times more than in the control groups. And finally, thanks microstudies they fear problems in teaching activities and seek to find them effective solutions using a new pedagogical knowledge.

Let's consider whether the author's provide system technology based on experimental and analytical approach to learning pedagogy [7] the formation of skills that are relevant to solving pedagogical problems [1] and

at the same time - the ability of future teachers to self-development?

The study was conducted at the Perm State Humanitarian Pedagogical University. Experimental groups were consisted of fourth year students of the philological and mathematical faculties, control groups were fourth year students of historical faculty, economics and informatics.

Held twice cut the student's ability to self-development (TI Shamova's technique [11]) showed a positive trend with respect to indicators of freshmen in the experimental and control groups. Thus, actively pursue their opportunities for self-development, on average 71% of freshmen and 75 % of university graduates. Moreover, in experimental and control groups in the number of students assigned to this high level about the same.

In the experimental groups we did not meet the students with a 'low' level of self-development.

Comparison was made in the "level of self-development" and the level of implementation of "competence -oriented test "pedagogy" based on the criterion analysis of student short texts containing a description of the pedagogical process fragments (mini - cases).

These comparative results show that the experimental groups were significantly less students with high self-test is performed on humanitarian low: 20 % compared with 47 % of the control groups of students.

For the processing of the raw data with the purpose of empirical correlation features of the level of implementation of humanitarian and level of self- test students to apply techniques such as mathematical statistics Student's t-test for independent samples, Pearson's correlation analysis. Calculations were performed on a personal computer using the Statistica 5.0. for Windows.

We isolated groups "Mathematics" - experimental, "Mathematics" - control, "humanists" - experimental, "humanists" - control. A total of 79 people participated in the analysis used the results of 79 subjects.

Levels were determined from the mean values, median and mode, the normal distribution variables descriptive statistics.

Analysis of intergroup differences severity indicators of success of the test in pedagogy and self-development level students (t- test) (Table 1) and analysis of the relationships of indicators of severity that the tests in pedagogy and self-development level (SC) (Table 2) showed that in the experimental groups revealed a

Table 1.1: Significant differences of success rates of the test on pedagogy and the level of self-development of students specializing in mathematics

1 group	Experimental									4th year students of the Faculty of Mathematics	
2 group	Control									4th year students of the Faculty of Informatics	
	Mean G_1:1	Mean G_2:2	t-value	df	p	Valid N G_1:1	Valid N G_2:2	Std.Dev G_1:1	Std.Dev G_2:2	F-ratio variancs	p variancs
test	38,542	35,65	0,51	42	0,613	24	20	16,77	20,85	1,545	0,318
Self-develepment	2,6667	2,75	-0,59	42	0,557	24	20	0,482	0,444	1,175	0,728
Level of significance	p <,05					2,02					*
	p <,01					2,7					**
	p <,001					3,55					***

Table 1.2: Significant differences of success rates of the test on pedagogy and the level of self- development of students in the experimental and control groups

1 group	Experimental									4th year students of the Faculty of philology	
2 group	Control									4th year students of the Faculty of history	
	Mean G_1:3	Mean G_2:4	t-value	df	p	Valid N G_1:3	Valid N G_2:4	Std.Dev. G_1:3	Std.Dev. G_2:4	F-ratio variancs	p variancs
test	48,66667	31,1	3,2462	33	0,003**	15	20	15,361	16,189	1,1108	0,8558
Self-develop-ment	2,733333	2,7	0,1855	33	0,854	15	20	0,4577	0,5712	1,5574	0,4022
Level of significance	p <,05					2,04					*
	p <,01					2,75					**
	p <,001					3,65					***

Table 1.3: Significant differences of success rates of the test on pedagogy and the level of self-development of students in the experimental and control groups and humanitarian and mathematical specialties

1 group	Experimental									4th year students of the Faculty of Philology and Mathematics	
2 group	Control									4th year students of the Faculty of History and Informatics	
	Mean G_1:1	Mean G_2:2	t-value	df	p	Valid N G_1:1	Valid N G_2:2	Std.Dev G_1:1	Std.Dev G_2:2	F-ratio variancs	p variancs
test	42,4359	33,38	2,273	77	0,03*	39	40	16,8	18,57	1,222	0,538
Self-develop-ment	2,69231	2,725	-0,3	77	0,766	39	40	0,468	0,506	1,17	0,63
Level of significance	p <,05					1,99					*
	p <,01			`		2,64					**
	p <,001					3,42					***

Table 2.1: Significant relationships of success rates of the test on pedagogy and the level of self-development of students specializing in mathematics in the experimental group 4th year students of the Faculty of Mathematics

Correlations (a copy of the mm-ob- 177 -12.01.sta)

Marked correlations are significant at p <, 05000

N = 24 (Casewise deletion of missing data)

	test	Self-development	
test	1		
Self-development	0,27	1	
Level of significance	p <,05	0,404	*
	p <,01	0,515	**
	p <,001	0,623	***

Table 2.2: Significant relationships of success rates of the test on pedagogy and the level of self-development of students specializing in mathematics in the control group 4th year students of the Faculty of Informatics

Correlations (a copy of the mm-ob- 177 -12.01.sta)

Marked correlations are significant at p <, 05000

N = 20 (Casewise deletion of missing data)

	test	Self-development	
test	1		
Self-development	0,35	1	
Level of significance	p <,05	0,444	*
	p <,01	0,561	**
	p <,001	0,66	***

Table 2.3: Significant relationships of success rates of the test on pedagogy and the level of self- development students in the experimental group 4th year students of the Faculty of Philology

Correlations (a copy of the mm-ob- 177 -12.01.sta)

Marked correlations are significant at p <, 05000

N = 15 (Casewise deletion of missing data)

	test	Self-development	
test	1		
Self-development	0,57*	1	
Level of significance	p <,05	0,51	*
	p <,01	0,641	**
	p <,001	0,792	***

Table 2.4: Significant relationships of success rates of the test on pedagogy and the level of self- development students in the control group 4th year students of the Faculty of History

Correlations (a copy of the mm-ob- 177 -12.01.sta)

Marked correlations are significant at p <, 05000

N = 20 (Casewise deletion of missing data)

	test	Self-development	
test	1		
Self-development	0,34	1	
Level of significance	p <,05	0,444	*
	p <,01	0,561	**
	p <,001	0,66	***

connection " level of self-development - the success of the test ", "in particular - in groups philologists enrolled in the program, involving several pedagogical practices, students of the experimental groups, while maintaining a sufficiently high level of self-development, in general, better able to cope with the test on pedagogy.

CONCLUSION

In general, we can say that the students who were trained on the technology based on experimental and analytical approach of learning to pedagogy, recognize the importance of pedagogy to address the specific problems they may encounter, the results of the delayed control more than half of them can successfully apply the knowledge for the analysis and design of a fragment of the pedagogical process (in the control groups - only one-third).

The best results were seen in groups where pedagogy course in accordance with the State Standard of Higher Professional Education) assumed an opportunity to organize several macro- cycles of mutual transitions " theory-practice " and " practice -theory" and includes a large number of practices.

High level of training (based on competence based test) in the experimental groups correlated with a high level of self-development of students, whereas traditional teaching pedagogy significant associations were found.

This one indicates self-development of students in the experimental and analytical learning pedagogy.

Resume. Systematic use of different kinds of cognitive and practical teaching activities promotes holistic formation competences. Experimental and analytical student learning pedagogy provides efficient formation of the competences of future teachers and stimulates their ability to self-development.

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