

## About preparation of students of higher education institution for professional activity in the course of studying of elective disciplines

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**Abstract:** Problems of formation of readiness of students of higher education institution in the course of studying of elective disciplines were studied. The model of formation of readiness of students for future professional activity modern conditions of training of specialists of higher education institution is described. For an effective functioning of the model of formation of readiness of students for future professional activity the following pedagogical conditions were defined: implementation of a multilevel monitoring of formation of readiness of students of pedagogical higher education institution for professional activity in the course of studying of elective disciplines by means of information and communication technologies; inclusion of the elements of professional activity in the process of formation of designing tasks in the course of studying of elective disciplines; ensuring participation of the teacher of elective disciplines and teachers of profile disciplines in designing and analytical activity of students. The indicators of readiness of students for future professional activity were justified. Conclusions were formulated.

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### 1. Introduction

In the course of studying the problem of readiness of students for professional careers during the study of elective disciplines we relied on the results of the study presented in «Preparation of students of higher education institution for professional activity in the course of studying of pedagogical disciplines» [1]., Also in the work «Preparation of students for professional careers during the study of special courses» [2]. This modified article comprises the novelty of our study which is consideration of the problem of preparation of students for professional careers during the study of elective disciplines. In the conditions of improvement of technologies of training and globalization of education new demands to preparation of teachers are made. Along with professional knowledge and skills employers today appreciate new abilities: leader qualities, ability to work in a team, a creative approach to the solution of educational tasks, ability to study and adapt to changes, responsibility for the executed work [3]. Mechanisms of integration of education with fundamental science and production, in which science and technology are put on the first place, become more perspective in respect of increase of efficiency of pedagogical education, and preparation of students is based on their inclusion in researches, designing and educational-technological developments what will help to develop their needs for professional literacy and career skills. These conditions stimulate their aim at professional activity [4].

Teaching elective disciplines in higher education institution is carried out on the first – fourth year elective disciplines give fundamental knowledge discovering the whole set of regularities of the nature and also the mechanism of the relation of thinking to life, a subject to an object. At present time there is a need of expansion of the role of elective disciplines in respect of formation of readiness of students to professional activity. The success of integration of fundamental and professional training defines understanding of the essence of readiness for professional activity.

The analysis of the works of modern researchers of professional education showed that there is no uniform approach to understanding of the term «readiness for professional activity». According to V.I. Zemtsova, V.V. Laptev and other researchers[5; 6; 7; 8] the concept "readiness" is identified with the term "competence". Competence being characterized as existence in a personality of profound knowledge, formed abilities, experience of activity, ability to make reasonable decisions in various life experiences at the same time is an indicator of readiness for carrying out a wide set of actions and operations and as a whole for professional activity. Thus we understand existence of fundamental knowledge of elective disciplines and other fundamental disciplines as readiness of students of pedagogical higher education institution for professional activity, an ability to use this knowledge in designing activity for the solution of problems of

the applied character considering specifics of the specialty and existence of motivation for the solution of professional tasks and ability to work in a team.

Research objective. For solution of the problem of formation of readiness of students of pedagogical higher education institution for professional activity when studying elective disciplines it is necessary to develop a model and to formulate pedagogical conditions providing its functioning. Within our research in organizational-procedural aspect we attach great value to this problem.

## 2. Methods

For the solution of the set objectives and verification of initial assumptions the following research methods were used: theoretical - analysis of the studied problem in scientific literature, empirical - observation, conversations, questioning, discussions, interviewing, analysis of the best pedagogical practices, analysis of creative works of students, studying of high school documentation (state standards of education, curricula, standard programs, educational-methodical complexes of elective disciplines) experiments, modeling.

## 3. Main part

In the traditional system of education subject informative training dominates over methodological training of elective disciplines, elemental over qualitative interrelation with profile disciplines [9]. Practically students are not taught (and further they can't) consciously use the potential of elective disciplines for the complete solution of professional tasks. The lack of traditional approach to studying of elective disciplines is connected with an inefficiency of management of informative activity of students. On the basis of the carried-out analysis an unconventional author's variant of formation of readiness of students of pedagogical higher education institution for professional activity when studying the elective disciplines is presented which model is offered in Fig. 1.

An academic value and specific of the educational program of students find a reflection in the catalogue of elective disciplines, that gives to student possibility of choice of own educational trajectory, receipt of the professional skills and competenses, oriented to the sphere of activity of education taking into account the necessities of society, economy, labour-market and expectations of employers.

In this case a student will be prepared for future professional activity if he masters designing technologies on application of elective knowledge in solution of pedagogical tasks on a profile of future professional activity. The main shortcomings of traditional training connected with an inefficiency of

management of informative activity of students [10] should be for this purpose eliminated. It is transition from orientation on the average trainee to the specific student by creation of training space which supports and encourages students to professional training [11] by receiving of information on the extent of mastering of a material by the teacher directly in the course of class-room lessons and independent work, and creation of a technology of pedagogical support of trainees in the course of their active informative involvement. Elimination of shortcomings will be more effective when using interactive methods of training in which the complex of means of pedagogical influence is used.

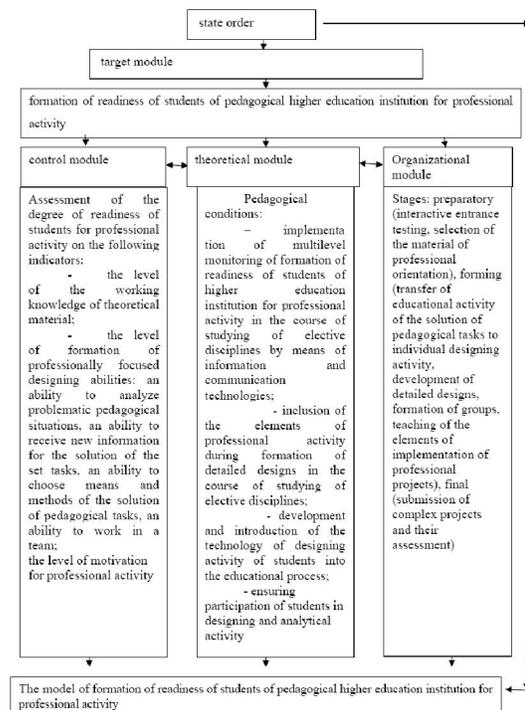


Fig. 1. The model of formation of readiness of students of pedagogical higher education institution for professional activity (by Sakenov D.Zh., Kushnir Y.V.)

For an effective functioning of the model of formation of readiness of students for future professional activity the following pedagogical conditions were defined: implementation of a multilevel monitoring of formation of readiness of students of pedagogical higher education institution for professional activity in the course of studying of elective disciplines by means of information and communication technologies; inclusion of the elements of professional activity in the process of formation of designing tasks in the course of studying of elective disciplines; ensuring participation of the teacher of

elective disciplines and teachers of profile disciplines in designing and analytical activity of students.

Multilevel monitoring is carried out on lectures and practical lessons which are realized in IT technology on the basis of experimental specialized class-room with the feedback where the management of informative activity of students is organized in the environment of ACS IAS (automated control system for informative activity of students). The specialized class-room is equipped with personal computers for work of students - terminals. A teacher carries out interviews in the form of testing and efficiently receives information on the level of mastering of the material, the degree of readiness of students for the further decision and mastering of a new material in real time.

For the accounting of personal features of students, for identification of dominating tendencies in behavior of students, for exploration of effective educational strategies [12] and the initial level of students' motivation for professional activity the first lesson is carried out by a psychologist. The psychologist receives all necessary psychological characteristics of students. The psycho-pedagogical feedback in ACS of IAS is based on the parameters of the model where the complex of psychological techniques defining dominating tendencies of behavior of a student in educational activity and his motivational mechanism: value orientation, the leading way of activity and the strategy of behavior in achievement of a purpose, personal meanings; expressiveness of the types of thinking and also their development; emotional reaction of a student in situations of a check of his level of knowledge, his competence in the training material is professionally selected and adapted. Formation of designing groups is carried out on the basis of the results received by the psychologist.

Inclusion of elements of professional activity on the basis of application of designing technologies for the solution of tasks with professional orientation in the course of elective disciplines occurs with the use of the project focused approach to the training of students of pedagogical higher education institution. We understand the project focused approach to the training of students as such an approach to training the basis of which is an independent designing activity of a student focused on the solution of problematic situations discovered on the basis of interrelation of elective and profile disciplines. For realization of this approach pedagogical tasks with professional orientation are presented to students. In the course of the analysis the ideas of the solution of pedagogical tasks through implementation of personal projects which are further reduced to one unified project are formed.

In the process of introduction of the project focused approach it is necessary to carry out: stage-by-stage teaching of designing activity for students in the course of studying of elective disciplines, detection of personal features of students, formation of the ability to work independently and also abilities to solve problems in a team. On the first propaedeutic stage a disclosure of the specifics of designing activity and its value for professional activity of teachers is carried out. On the second stage the training of individual designing activity is carried out. It is necessary for a teacher to give each student a chance to realize oneself in the course of studying elective disciplines, to understand its fundamental mission for further mastering of the future specialty and to learn how to apply pedagogical knowledge during further professional activity. On the third stage the training of group designing activity of students is carried out. It is necessary for a teacher to teach students how to work in a team and approach the solution of professional tasks creatively.

Transition to an independent project focused activity of students should be carried out in a system «student - teacher, teachers of the elective discipline» as this coordination of organization of activity of students by teachers of elective disciplines and profile disciplines promotes identification of all most topical issues which will be further a component of professional activity of the expert.

Let's allocate the following indicators of readiness of students for future professional activity:

- a) the level of knowledge of theoretical material;
- b) the level of formation of professionally focused designing abilities;
- c) the level of motivation for professional activity.

On special chairs it is necessary to form certain abilities of students in the field of corresponding elective knowledge for further application in professional activity. Integration of professional and elective knowledge is carried out on the basis of selection of the contents of elective material for presentation of the tasks focused on professional activity. Selection of the material is carried out according to the following requirements: compliance to the state educational standard; compliance to the level of the training standard of students; concrete connection with the issues of future professional activity.

An important stage in the process of studying of elective disciplines is presentation of pedagogical tasks to students considering the specifics of future professional activity of students. The tasks are split into elementary components which mastering is checked in a class-room with feedback and then problematic situations which are caused by

insufficient connection of elective disciplines with problematic tasks of future professional activity of students come to light. Formation of an idea of the solution of pedagogical tasks through the complex project is carried out. Originally students carry out private projects and then reduce them to one unified project. Development, representation, assessment of projects occur with direct participation of both the teacher of elective disciplines and teachers of profile disciplines.

Work on projects raises the level of knowledge of theoretical material. A report of students in the form of presentation, the program for calculation, calculations, animation demonstrations define the level of development of professionally focused designing abilities and create a motivation basis of future professional activity.

Motivation of students for professional activity is estimated by the purposes which are put by students of pedagogical higher education institution, the ways they choose for their achievement and their aspirations.

Level I (low) is characterized by small positive motives for future professional activity. Generally these are personal motives or the motives of avoiding of inconveniences and discomfort. Informative interests are amorphous and situational.

Level II (average) - interest in future professional activity becomes apparent. All positive motives are connected only with the productive part and are focused on success and achievement of the result. The doctrine represents itself as a means of achievement of the purpose.

Level III (high) is characterized by formation of all components, accurate motivation and steady orientation of informative motives.

Data on the level of formation of motivation for professional activity and the coefficient of the level of formation (CLF) are presented in the table 1.

The results of examinations on all studied sections of elective disciplines were used for an assessment of the level of knowledge of theoretical material. The results of examinations in control and experimental groups are presented in the table 2.

Between the results of mastering of theoretical material there are statistically significant differences in the studied groups.

The level of formation of professionally focused designing abilities was estimated with consideration of the ability to analyze problematic pedagogical situations (1), to receive new information for the solution of the set tasks (2), to choose means and methods of the solution of pedagogical tasks (3), to work in a team (4). Summary data on the levels of formation of

professionally focused designing abilities and the coefficient of the level of formation are presented in the table 4.

**Table 1. Level of motivation for professional activity**

Academic year	Number of students	Levels of motivation			CLF, %
		low	average	high	
2012-2013	CG 53 EG 54	16 3	29 27	8 24	70 75

**Table 2. Results of examinations in control and experimental groups**

Academic year	Number of students	elective disciplines			
		1	2	3	4
2012-2013	CG 53 EG 54	8 4	31 16	11 21	3 13

The level of mastering of theoretical material is estimated by means of the criterion  $\chi^2$ . According to the table of critical values for the level of reliability  $P = 0,05$  (with an error of 5%) and the degree of freedom  $m = C - 1 = 3$  the critical value of criterion  $\chi^2$  is 7,81. The results of calculation of the criterion  $\chi^2$  are presented in the table 3.

**Table 3. Results of calculation of the criterion  $\chi^2$**

Academic year	elective disciplines
2012-2013	13,02

**Table 4. Summary data on the levels of professionally focused designing abilities**

Academic year	Level of formation	of Groups	Professionally focused designing abilities								
			1		2		3		4		
			before	after	before	after	before	after	before	after	
1	2	3	4	5	6	7	8	9	10	11	
2012-2013	Low	cg	14	9	18	14	15	8	25	17	
		eg	14	5	15	3	14	4	25	7	
	Average	cg	28	30	25	28	30	35	24	28	
		eg	26	31	28	35	28	34	21	26	
	High	cg	10	12	9	10	7	9	3	7	
		eg	9	15	5	12	6	12	2	16	
	CLF, %	cg	64	70	63	69	64	70	56	69	
		eg	62	75	60	76	61	75	53	74	

#### 4. Conclusion

The analysis of the results of the research shows:

- a tendency to the growth of the level of knowledge of theoretical material,
- increase of the level of formation of professionally focused designing abilities and
- increase of motivation for professional activity when using this scheme of training.

## 5. Summary

Thus the need and possibility of the solution of the problem of formation of readiness of students of pedagogical higher education institution for professional activity from the position of continuity of transition from subject to professional training under the condition of implementation of a transfer of educational activity of the solution of pedagogical tasks to the designing activity prove to be true. Thus, effective preparation of students of institution of higher learning to professional activity is provided by the process of study of elective disciplines.

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