

**FORMATION OF PRACTICAL COMPONENT OF PREPAREDNESS OF  
FUTURE INFORMATICS TEACHERS FOR MONITORING EDUCATIONAL  
ACHIEVEMENTS OF PUPILS IN PROFILE SCHOOL**

Keywords: professional training, preparedness, professional preparedness, components of preparedness, levels of preparedness.

The problem of teacher training and his preparedness for organization of students' educational activity bases on philosophical principles about the unity of theory and practice, principles of systemacy and complexity, which provide with interconnection of pedagogical and professional preparedness. The orientation for the given statement arranges conditions for integration of theoretical, psychoeducational, methodological and special training of future teachers.

In the literature it is placed high emphasis on concrete forms of preparedness: on the unit (D. Uznadze and others), the readiness of a personality for personal activity (N. Levitov, K. Platonov, L. Kandibovich and others) etc.

Except the concept of preparedness it is worth observing the connected concepts "training", "professional preparedness" and "pedagogical preparedness". In the great explanatory dictionary the concept of "training" is defined as "fund of knowledge, skills, experience and acquired during the process of studying, practical activity" [1, P. 952]. Very often modern theorists of professional education connect professional training with professional preparedness, activity and targeting.

The problem of forming professional preparedness for pedagogical activity is considered in many modern psychoeducational researches of K. Duray-Novakovskaya [4], M. Kobzeva, A. Mishchenko, V. Tamarina, V. Slastenina and others.

The held analysis of literature in problem of preparedness of future teachers for pedagogical activity allows emphasizing the main approaches for preparedness determination for professional activity:

- on the personal level the preparedness is considered as a multi-aspect structure of qualities, properties and states which together allow more or less successfully realize activity;
- on the functional level the preparedness is the result of training for a certain activity; some integrative personal formation which includes different components: totality of knowledge, abilities, skills, personal qualities which are equal to the standards and matter of activity.

So, preparedness is inner state (ability) of personality, which is certain completeness which is a feature of professional qualification and also the result of purposeful training. The preparedness as a complex psychological forming except necessary knowledge, abilities and skills includes not only equal standards to the professional activity, personal qualities and skills, but also educational (understanding of professional problems, valuation of their importance etc.), motivational (interest to the profession, aspiration to reach success etc.) and strong-willed (overcoming doubts, the ability to mobilize own strength etc.) components.

nents. It suggests the idea about some coincidence of concepts of competence and preparedness, however, the fact that a competent specialist is able to overstep the limits of the subject of his profession allows to determine *competence as the highest level of preparedness*.

Taking into account all aforesaid information, we formulate the concept of "preparedness of a future informatics teacher for monitoring students' educational achievements".

The shown preparedness is studied by us as an integrative personal formation, which is expressed in presence of complex of knowledge, abilities, skills and personal-professional qualities in a teacher, which are necessary for him for making a system of controlling and diagnostic measures, which are conditioned by tasks of educational process, which allow to watch educational process, determine its results (levels of understanding knowledge) and correct them as far as necessary in accordance with established standards under the authority of the held analysis.

Also we will proceed from the facts that the structure of preparedness of a future informatics teacher for monitoring students' educational achievements integrates itself in three interrelated components: cognitive, practical and motivational.

The cognitive component of preparedness of a future informatics teacher for monitoring students' educational achievements is presented as a complex of knowledge (general cultural, natural-scientific, psychoeducational and special) which are necessary to a future informatics teacher for effective organization of monitoring researches, analysis of their results and alteration in teaching and educational process of students. In other words, the given preparedness expects the increase of professional teacher competence for realization the monitoring, the presence of analytical, prognostic and reflexive skills.

The practical component of the preparedness includes a complex of knowledge which allow a future teacher to make goals to realize monitoring procedures, to choose techniques and a set of tools for their realization, to collect data and analyze given data, to correct a student's individual trajectory of development and improve own professional competence. In other words, the given preparedness expects activity through realization of organizational and communicative skills.

The motivational component of the preparedness which supports the complex character of a given formation, characterizes the professional and pedagogical direction of a teacher's personality according to the next indicators: value attitude to pedagogical activity; the level of forming the interest to realization of monitoring activity; the consciousness of social importance of a teacher profession; many-sided interests; the presence of social activity; the presence of creative skills.

Depending on the level of forming the presence of an informatics teacher for monitoring students' educational achievements we offer to distinguish three levels: low, middle and high.

1. The low level of preparedness of a future informatics teacher is characterized by the absence or a weak attitude to the pedagogical activity which is shown in weak interest, manifestation of displeasure of profession choice; low knowledge level of special and psychoeducational disciplines; absent or low knowledge level concerning the problem of profile studying of senior pupils; knowledge of a content, organization and realization of monitoring research are superficial, have unconscious character; practical realization of such researches is possible only in typical or similar situations and needs help of colleagues.

Table 1

The results of the degree of forming the practical component of preparedness of future informatics teachers on the statement stage

Indicators	Group	Levels					
		High		Middle		Low	
		Quan-tity	%	Quan-tity	%	Quan-tity	%
The degree of understanding the monitoring functions	EG	2	2,7	17	23,0	55	74,3
	CG	5	2,8	14	8,0	157	89,2
Knowledge and organization of monitoring research levels	EG	2	2,7	26	35,1	46	62,2
	CG	8	4,5	58	33,0	110	62,5
Choice of tooling for gathering and handling the monitoring data	EG	–	–	14	18,9	60	81,1
	CG	2	1,1	15	8,5	159	90,3

2. The middle level is characterized by passive and episodic attitude to the professional activity; fragmentary and not systematic knowledge of special and psycho-educational disciplines; necessity in self-perfection only under the appearance of difficulties in the professional activity; basic theoretical knowledge of an informatics plan for profile classes; presence of basic knowledge in the problem of organization and realization of monitoring educational achievements of profile school students.

3. The high level of the preparedness of an informatics teacher for monitoring educational achievements of profile school students is characterized by strict positive attitude to the professional activity; high knowledge level of special and psycho-educational disciplines; knowledge of methodic of studying informatics in different educational profiles (social and humanitarian, naturalistic and mathematical, sporting, technological etc.); the teacher mastering of organization technique and realization of monitoring students' educational achievements which leads to modeling of new pedagogical experience, designing own innovative techniques; skills to find a solution in not standard situations; skills and abilities of a teacher to value his own individual style of activity and to make a development plan of his pedagogical activity.

On purpose of experimental research of the future informatics teacher training process for monitoring educational achievements of profile school students, the experimental model was designed by us and the experimental check of its effectiveness was realized.

In all in the experiment 250 students of 3-6 courses took place (students of Borys Grinchenko Kyiv University, National Pedagogical Dragomanov University, Cherkasy Bohdan Khmelnytsky National University).

For the experimental group (EG) (74 people) two special disciplines were introduced: "The monitoring of the educational activity" and "The educational metrologies". In the controlling group (CG) (176 people) studies also were held according to the curriculum and the improvement of their professional training in monitoring also was realized due to the professional disciplines and disciplines of natural and scientific training.

To clarify the formation degree of the practical component of future informatics teachers' preparedness for monitoring educational achievements of profile school students we have elaborated a questionnaire (appendix) for identification of expediency of using the monitoring in teaching and educational process, determination of students' practical abili-

Table 2

The measures of arithmetical mean of the practical component of the preparedness of future informatics teachers for monitoring educational achievements of profile school students on the statement stage

Group	High		Middle		Low	
	%	abs.	%	abs.	%	abs.
EG (74 people)	1,8	1	25,7	19	72,5	54
CG (176 people)	2,8	5	16,5	29	80,7	142

ties to make choice of necessary tooling for monitoring research. Besides, we have used the observations of teachers concerning the practical using of students the gained knowledge, abilities and skills during studying at the university and pedagogical practice. Also a number of discussions were held and it was offered students to value their degree of practical preparedness independently.

The degree of the practical component formation of future informatics teachers' preparedness for monitoring students' educational achievements in profile school was determined under these indicators: the degree of understanding monitoring functions; knowledge and organization of monitoring research steps; choice if tooling for gathering and monitoring data handling.

The received results are shown in the table 1.

Generalized results concerning the practical component of future informatics teachers' preparedness are shown in the table 2.

As the data of the table 2 affirm, the results do not fundamentally differ at the primary stage in both groups. Mainly, future teachers showed low (72,5% in EG and 80,7% in CG) and middle (25,7% in EG and 16,5% in CG) degrees, and only 1,8% is recorded in EG and 2,8% in CG on the high degree. So, it is necessary to realize purposeful work with future teachers, which will cooperate for increasing the degree of practical abilities and skills of knowledge the matters of realization monitoring researches, their organization, and choice of research tooling.

After the realization of the statement stage of the experiment, the second content-operating stage of future informatics teachers training began.

For the experimental group two special disciplines were introduced: "The monitoring of the educational activity" and "The educational metrologies". In the controlling studies also were held according to the curriculum and the improvement of their professional training in monitoring also was realized due to the professional disciplines and disciplines of natural and scientific training.

On the end of the forming stage of the experiment control knowledge tests were held concerning the future teachers' attitude to the pedagogical activity, the preparedness to organize and to realize scientific researches, and monitoring, especially to exercise control and correction of students' educational achievements in the profile school.

The next test was aimed at the determination of formation degrees of communicative and organization skills of future informatics teachers (the practical component). The received results are shown in the table 3.

Generalized results concerning the practical component of future informatics teachers' preparedness are shown in the table 4.

**Table 3**

The results of formation evaluation of the practical component of the preparedness of future informatics teachers after the forming experiment

Indicators	Group	Levels					
		High		Middle		Low	
		Quan-tity	%	Quan-tity	%	Quan-tity	%
The degree of understanding the monitoring functions	EG	15	20,3	31	41,9	28	37,8
	CGKF	10	5,7	23	13,1	143	81,2
Knowledge and organization of monitoring research levels	EG	23	31,1	35	47,3	16	21,6
	CG	14	8,0	62	35,2	100	56,8
Choice of tooling for gathering and handling the monitoring data	EG	13	17,6	14	18,9	47	63,5
	CG	8	10,8	20	11,4	148	84,1

**Table 4**

The measures of arithmetical mean of the practical component of the preparedness of future informatics teachers for monitoring educational achievements of profile school students on the statement stage

Groups	High		Middle		Low	
	%	abs.	%	abs.	%	abs.
EG (74 people)	23,0	17	36,0	27	41,0	30
CG(176 people)	8,2	14	19,9	35	71,9	127

As it is seen from the table 4 after the forming experiment the indicators of the practical component of the preparedness of future informatics teachers for monitoring educational achievements of profile school students considerably changed. So, in the experimental group on the high level the indicators grew by 21,2% (in the controlling group only by 5,3%), on the middle level the indicators grew by 10,3% (in the controlling group by 3,4%), on the low level the indicators reduced by 31,5% (in the controlling group by 8,8%).

To our mind, such considerable changes in the experimental group occurred due to the facts that the students during the special courses had a possibility to develop their practical and organization skills. The development of the practical skills was cooperated with solutions of pedagogical problems, discussions, which required the students' abilities not only to choose tooling correctly, but at the same time to give reasons for their choices etc. On the practical studies the students had an opportunity to develop their organization skills. During the realization of such purposeful work the future informatics teachers learned theoretically before doing to the pedagogical practice and could use gained knowledge practically, that gave them an opportunity to correct mistakes in the proper time which they made, to pay attention to what skills they lack and to learn to make decisions correctly, to persist in their own position in situations which happened.

#### Literature

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