

An integrated approach to the effectiveness of training masters of technical higher educational institutions

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Abstract—The article presents the results of the ascertaining experiment on the problems in the field of professional training of masters of technical higher educational institutions. The author analyzes the effectiveness of the process of training masters, identifies factors contributing to the improvement of the qualifications of masters for future professional activities. The article provides diagnostics for identifying readiness by the meter (indicators). Monitoring of the quality of education was carried out, on the basis of which indicators were developed and tested for the following objects of assessment: educational activities; extracurricular activities; the quality of the conditions for ensuring the educational process. Their use in the process of control and experimental work is also considered. The results of determining the readiness of masters by combined assessment levels are generalized.

Keywords—information and management competencies, teacher, student, of Technical higher education, methodology, criteria, levels, experiment, indicators.

1.Introduction

In modern situations, the content of pedagogical activity is changing dramatically, as the methods and methods of teaching are rapidly developing. The effectiveness of teaching methods and technologies is determined, first of all, by ensuring a new quality of education, when the result of teaching is the teacher's competence in various spheres of life. This result is achievable if the graduate is ready for educational activities. The readiness of masters helps to successfully use knowledge and skills, maintain composure and rebuild when unforeseen obstacles appear in the future. Increasing the efficiency of the process of preparing masters serves as a means and goal of the methodological and meaningful development of pedagogical processes in higher educational institutions.

2. Material and methods.

Based on the relevance, there is a need for scientific substantiation and improvement of the measuring tool to determine the readiness and identify the conditions for increasing the efficiency of the process of training masters. To achieve the goal of the study, the author of this article solved the following tasks:

- to improve the indicators (indicators) of the readiness of masters for professional activity;
- to determine the level of preparedness of the masters of organization and management of pedagogical processes;
- to study the effectiveness of pedagogical processes organized by young specialists;
- to identify the factors affecting the effectiveness of pedagogical processes.

At the same time, it becomes important that the means of measuring the readiness of future specialists for professional activity meet several requirements:

- measurement methods should complement and mutually check each other;
- the information obtained during the measurement should directly indicate the process of readiness for professional activity of future specialists, be objective and sufficient.

Based on the above requirements, we have improved indicators as a means of measurement, with the help of which it was possible, on the one hand, to determine the current state of the training of masters, on the other hand, to determine the quality of training. preparation and training of masters of technical higher educational institutions to identify and solve existing problems, the solution of which will increase the efficiency of the process of preparing masters for professional activity.

An experiment that determines the current state of readiness for professional activity of masters was carried out at the Tashkent State Pedagogical University, Namangan Civil Engineering Institute (formerly Namangan Engineering Pedagogical Institute). Institute), Fergana and Namangan State University.

In the subjects, the final diagnostics was carried out and the level of readiness for professional activity was determined, systematization, generalization, assessment and analysis of the results were carried out.

Pedagogical processes are carried out in the field of two complementary systems, that is, in the process of educational and extracurricular activities. Thus, the indicators (indicators) have been improved for the following objects of assessment: educational activity; extracurricular activities; qualitative conditions of the educational process.

The set of indicators of educational activity includes: educational achievements in general and special subjects and scientific practice; educational programs that determine the content of vocational education in the direction 5A330201-

Qualification requirements for obtaining a master's degree in computer systems and their software (by industry and industry) (pedagogical abilities, speech culture, mastery of progressive pedagogical and information technologies).

The complex of indicators of extracurricular activities includes: types of extracurricular activities carried out by teachers: curatorial activities, the organization of various types of events and competitions, national conferences, etc., as well as the achievement of a future specialist in these types of activities.

The set of indicators of the conditions for ensuring the educational process includes indicators of testing the knowledge of a future specialist in the equipment of the educational process, educational and methodological support of the educational process, material and technical equipment of the educational process.

The above sets of indicators (indicators) characterize the main elements of the quality of education (quality of goals, quality of conditions, quality of the process, quality of results).

The indicators of the level of preparedness of masters of technical universities include:

First, preparation for professional activity in the subjects of the educational cycle and scientific practice (internships), personal achievements in educational activities;

Secondly, the quality of the organization of pedagogical processes;

Thirdly, knowledge in the field of conditions for ensuring the educational process.

The monitoring was carried out during 2019-2021.

Monitoring the quality of the results of the educational activities of masters: in general and special subjects, the rating system of higher educational institutions (current, intermediate, final work) was assessed, on the basis of which the progress of masters in subjects, mastering of knowledge, skills, abilities according to the state educational standard and qualification requirements by the method of questioning (according to the developed indicators).

3.Result

Monitoring of the quality of the results of extracurricular activities was assessed by a system for collecting data on the results of extracurricular activities, which includes two complementary systems for collecting and processing data:

- Questionnaires (questionnaires) that are filled in by masters;
- Questionnaires (questionnaires) filled in by teachers.

Monitoring the quality of the conditions for ensuring the educational process was assessed by a system for collecting data on the conditions for supporting the educational process, which includes additional systems for collecting and processing data:

- Questionnaires (questionnaires), which are filled in by masters of technical higher educational institutions;
- Questionnaires (questionnaires) filled in by teachers.
- Questionnaires (questionnaires) filled in by the administration.

Knowledge in the field of extracurricular pedagogical activities was assessed by indicators, offering the masters a set of questions to identify the knowledge necessary to perform extracurricular activities. The use of these questions made it possible to reveal the knowledge of masters about the role, types of extracurricular activities, as well as about the organization and management of educational processes.

To date, there is already a proven rating-point system for assessing the educational activities of masters, which determines the readiness for professional activity. However, the readiness of masters for extracurricular activities, as a rule, does not have an objective assessment and has a serious drawback. Therefore, we have improved indicators to determine the quality of preparation for extracurricular activities of a future specialist - this is extremely important in development.

The identification of the knowledge necessary for the implementation of extracurricular activities was carried out according to the results of a questionnaire survey of masters after passing scientific practice. With the help of this methodology, the knowledge of masters about the role, types of extracurricular activities in professional activities, as well as in the organization and management of extracurricular educational processes was revealed.

If the master's total points received according to the proposed survey (12 in total) ranged from 11-12 points, then he referred to the high level of readiness to organize extra-curricular processes. They clearly understood the role and importance of extracurricular, educational activities and fully possessed strong knowledge, skills and abilities in the field of technology for organizing professional activities.

Masters with grades from 9 to 10 belonged to the intermediate level, declared that they did not have sufficient complete and solid knowledge to solve pedagogical problems in the field of professional activity.

If the master scored from 7 to 8, then he referred to a low level of readiness to organize educational processes. The master had a poor understanding of the role and significance of educational, extracurricular activities. They have not mastered all the knowledge necessary to perform pedagogical actions.

If the master received a result of less than 7 points, then it was considered that he was not ready for the implementation of pedagogical processes. His knowledge turned out to be haphazard, fragile.

Determination of knowledge about the conditions of the educational process was also carried out by surveys of masters, the number of questions was 14. Answers were evaluated in points, after which points were awarded. The master, who scored from 8 to 9 points, belonged to the low level, from 10 to 11 points to the average, from 12 to 14 points to the high level of preparedness in the field of knowledge of the conditions for ensuring the educational process (Table 1). In the process of work, we realized that the level of readiness for educational activities, extracurricular activities and the conditions for ensuring the educational process may be different, and it is in this form that it is difficult to identify them.

Table 1. Indicators of readiness for professional activity of masters (5A330201-computer systems and their software (by industry and industry))

Level	Learning activities	Extracurricular activities	Terms of the educational process
	Number of points	Number of points	Number of points
	In percents	Total 12 points	Total 12 points
Tall	86 - 100	11 - 12	12 - 14
Average	71 - 85	10 - 9	11 - 10
Low	55 - 70	8 - 7	9 - 8
Unacceptable	Below 55	Below 7	Below 8

Therefore, it was decided to draw up a scale for the combined assessment of the level of readiness for professional activity, which takes into account the mixed output, combining two adjacent levels. This will take into account the variation in the level of preparedness (table 2).

Table 2. The combined assessment of readiness for professional activity

Level	Level Signs	Level ratio
9	All components of high-level educational readiness	Tall
8	Two components of high-level educational readiness, one on average	
7	All components of preparedness for teaching at the middle level	Average
6	Two components of readiness for pedagogical activity at an average level, one at a high level	
5	Two components of readiness for teaching at the middle level, one at a low level	
4	One component of readiness for pedagogical activity at a medium level, one at a low level, one at a high level.	
3	All components of readiness for pedagogical activity at a low level	Low
2	Two components of readiness for teaching activities at a low level, one on average	
1	Two components of readiness for pedagogical activity at a low level, one at a high	
0	At least one readiness component is not formed.	Unacceptable

The readiness for the levels of educational, extracurricular activities and the conditions for ensuring the educational process of masters, teachers was determined by comparing the questionnaires with a meter (indicators). To determine the total amount of points by levels and general readiness, each level of readiness was assessed according to a five-point system. And for each level, we took into account the average number of points. The maximum number of points ($M_{(S_b)}$) at three levels is 15.

The average number of points and the amount of knowledge of masters by groups and teachers was determined by the following formulas:

$$O_{r_{1,2}} = E_{A_1} + E_{A_2} + E_{A_3}; (1)$$

$$S_r = \frac{O_{r_{1,2}}}{G_{r_{1,2}}}; (2)$$

$$Q_r = \frac{S_r}{M_{S_b}} \times 100\%; (3)$$

$$Q_{K_1} = \frac{S_{K_1}}{M_{S_b}} \times 100\%; (4)$$

G1, G2, G3, G4, G5, G6, G7, G8 - groups; $O_{(g_{1-8})}$ - the sum of the points of the groups G1, G2; $E_{(A_{1,2,3})}$ - the sum of the points of the groups by the levels of educational activity, extracurricular activities, conditions of the educational process; $G_{(g_{1-8})}$ - the number of masters in groups; $S_{(g_{_})}$ - average number of points by group; $Q_{(g_{_})}$ - average number of points by group; $M_{(S_b)}$ - the amount of knowledge of masters in groups; the maximum number of points (15 points).

The result testifies to the lack of knowledge of masters and teachers in the field of educational, extracurricular activities, the conditions for ensuring the educational process.

So, the experiment showed that the effectiveness of pedagogical processes organized in higher educational institutions in the preparation of masters, as well as young specialists, is unsatisfactory.

The graduates have insufficiently formed skills in the organization and management of pedagogical processes; theoretical knowledge in the field of ensuring the effectiveness of pedagogical processes is not enough. Many of them express dissatisfaction with their preparation for teaching. The analysis of the results of the experiment was one of the factors that made it possible to conclude that it is advisable to create a special course "Information and management competencies of a specialist", the main goal of which is: to improve the training of masters. Theoretical substantiation and experimental assessment of the readiness of future teachers after completing the course are important.

After analyzing the state of the literature, we came to the conclusion that educational institutions lack methodological support in the field of organization and management of pedagogical processes. Therefore, to solve the above problems, it is necessary to develop an appropriate methodological support. Methodological support as one of the conditions for the effectiveness of the pedagogical process is one of the determining factors of the high quality of teaching.

Therefore, it is necessary to develop the following types of methodological support and equip university graduates and young teachers with them:

Fund of technologies for performing educational work, expressed in various approaches to the organization and management of pedagogical processes;

Methodological developments, manuals, recommendations for the organization and management of pedagogical processes in the context of secondary specialized educational institutions.

They will help ensure that the graduate can consciously and competently start and successfully carry out his teaching activities.

Acknowledgements:

Thus, special attention should be paid to undergraduates of technical universities, since they are responsible for the quality of future professional activities.

Literature:

1. MirziyoevSh.M. Together we will build a free, democratic and prosperous state of Uzbekistan. - Tashkent: "Uzbekistan", 2018. - 54 p.
2. MirziyoevSh.M. The Constitution is the basis of our free and prosperous life, further development and prosperity of the country. - Tashkent: "Uzbekistan", 2018. - 64 p.
3. Baidenko VI, J. Van Zanworth. New methods and approaches to the organization of the educational process (a goal-oriented approach). Report 2 / Ed. 2nd. - M., Research Center for Problems of the Quality of Specialist Training, 2001. - 79 p.
4. Varnavsky S.M. Education of creative activity of masters in a developing educational environment // Science of the 21st century: questions, hypotheses, answers. - 2013. - № 3. – 40 p.
5. Laptev V.V., Noskova T.N., Flegontov A.V., Gavronskaya Y.Y., Piotrovskaya K.R. "High-tech information educational environment" is a synthesis of high educational technologies and hi-tech technologies. In the collection: Regional informatics "RI-2014". Proceedings of the XIV St. Petersburg International Conference. 2014. 347 p.
6. Shodmonova S. Formation and development of independence thinking in masters of higher educational institutions of professional direction. Dis. doctors of pedagogical sciences. - Tashkent, 2010.
7. Magzumov PT, Baubekova Z.ZH. Pedagogical skill. Tutorial. - T.: 2015 – 63 p.
8. Matrosov V.L., Troinev V.A. Troinev I.V. Intensive pedagogical and information technologies. Organization of management training, v.1.- M.: Prometheus, 2010. 354 p.
9. 10.O.S.Abdullayeva, A.Isomiddinov. Diagnostics and identification of conditions of effectiveness of the process of preparation for pedagogical activity of masters on the direction of "professional education"// International journal of mechanical and production engineering research and development (ijmperd), issn (online): 2249-8001; issn (print): 2249-6890; impact factor(jcc) (2019): 8.8746.
10. O.S.Abdullayeva, S.S.Beknazarova. A. SH. Mukhamadiyev. M.R.Gaumitbayev. Egmentation of rgb images: methods and algorithms// International journal of mechanical and production engineering research and development (ijmperd), issn (online): 2249-8001; issn (print): 2249-6890; impact factor(jcc) (2019): 8.8746.
11. 12.O.S.Abdullayeva, M.K.Jaumitbayeva, S.S.Beknazarova. Technology of projecting- mobile application// International Congress on Applied Sciences, which will be held in on March 15-16, in Tashkent Chemical-Technological Institute.
12. Safibullaevna, A.O., Abdurasulovna, K.G. Methodology for organizing online learning as a component of IT technologies for masters of technical higher educational institutions // Annals of the Romanian Society for Cell Biology, 2021, 25(4), стр. 9032–9041.
13. 14.Safibullaevna, A.O., KaramtdinKizi, J.M., Engalichev, M.I., Safibullaevna, B.S.Online-learning organization methodology as component of it technologies at mastersof technical universities// International Conference on Information Science and Communications Technologies, ICISCT 2020, Tashkent 2020.