Turkish Online Journal of Qualitative Inquiry (TOJQI)
Volume 12, Issue 4, Month 2021: 26-32

Organization Of Experimental Work On The Development Of Professional And Creative Abilities Of Students

Boburjon Soliev[1], Iroda Sirojiddinova[2], Tojiboy Altaev[3], Zilola Nazirova[4]

[1]Student of 3rd year at Andijan Machine-building Institute, Andijan, Uzbekistan
[2]Ph.d., docent, Head of Department of Humanities, Andijan Machine-building Institute, Andijan, Uzbekistan.
[3]Professor, Department of Mechanical Engineering, Andijan Machine-building Institute, Andijan, Uzbekistan.
[4]Assistant, Department of 1 Obstetrician Gynecology, Andijan State Medical Institute, Andijan, Uzbekistan.

ABSTRACT:
Creative mechanisms for the development of professional and creative abilities of students in higher education institutions are introduced into the educational process. In this regard, the development of professional and creative abilities of students in higher education, modeling of the educational process, the creation of electronic information educational resources, the use of modern pedagogical and information and communication technologies, the development of creative competence, the introduction of "tutor-student" organizational and methodological support Systematic work is carried out to develop educational activities.
KEYWORDS: Experimental work**,** professional and creative abilities, higher education

INTRODUCTION

Research is being conducted in higher education institutions around the world to develop the professional and creative abilities of students, the organization of the educational process on the basis of media technologies, the development of pedagogical capabilities. In this regard, professional problems, research of scientific hypotheses, identification of professional problems, the definition of independent thinking educational strategies, creation of mechanisms of continuous renewal and development of professional and creative abilities, organization of differential approach, cooperative, educational-debate and mediation (neutral service environment) priority education, the organization of corporate training on the basis of e-learning and m-learning technologies and the improvement of the corporate database.[9]

The legal and regulatory framework for further improving the system of increasing the creative potential of students of higher education institutions of the Republic, the development of professional and creative abilities, the formation of independent thinking skills, curricula, programs and literature has been created.[4]"Increasing the level of coverage with higher education, training highly qualified, creative and systematic thinking, independent decision-makers on the basis of international standards, creating the necessary conditions for the demonstration of their intellectual abilities and the formation of a spiritually mature person." functions such as [8]. At the same time, the use of cognitive-informational, personal, cultural, competency paradigms in the development of professional and creative abilities of students, diagnostics of teaching quality, design of critical thinking and developmental educational technologies, synergetic integration in higher education and production will expand. [3]

MATERIALS AND METHODS

To determine the category of professional and pedagogical skills, we will consider ways to solve the problem. For example, designing an educational process requires the following skills: identifying future and current goals, developing perspective curricula, analyzing curricula, anticipating difficulties that may arise in the process of selecting and systematizing teaching materials, types of courses, selection of its structure, form, teaching aids and methods, assessment of the educational process. Thus, we defined a set of skills for students to carry out pedagogical activities as follows:

1. Students' personality formation skills are skills of social significance in conducting political and educational work among students in the promotion of pedagogical knowledge.

2. Skills of formation of educational and professional activity of students - general pedagogical skills on the formation of a professional direction of the student, the organization of self-management and education

and a choice of means of interaction, development of an educational process.

3. Skills of formation of the professional direction of the person consist of general pedagogical skills on a definition of clear purposes of education, choice of forms, methods, and means of training, creation of pedagogical problems, explanation of educational production materials, demonstration of these methods by a technical object.

4. Skills to choose forms and methods of education Educational pedagogical skills: formation of reading comprehension, organization of educational and professional activity of students, the establishment of self-justifying pedagogical relations, formation of team organization, organization of self-government.

4. Pedagogical-directing skills are general pedagogical skills, including the skills of public speaking and pedagogical directing.

5 Skills of analysis of various non-standard pedagogical situations general pedagogical skills in creating alternative models of the pedagogical activity, designing community and individual development, predicting the process of education, and control of their results.

6 Skills of generalization of advanced pedagogical experience. Knowledge skills in the generalization and systematization of advanced pedagogical experience, the separation of the main ones, the formation of skills in the field of pedagogy, production and engineering.

7 Engineering and technical skills - includes 5 groups of skills: general engineering, design - technical, organizational - technological, special skills and operational skills in production.

8 General engineering skills - polytechnic skills in reading and composing drawings, dimensions, technical diagnostics, graphic work, determining the economic performance of the production.

9 Constructive and technical skills - design, technical education of student’s design and construction of technological processes of devices.

10 Special skills - engineering and technical skills of a specialty in a field of production

The method of forming a defined image of the ideal teacher-educator is fully revealed in the human mind through abstraction. The essence of the formation of the image of the ideal teacher-educator as an abstract model, the ideal image reflects only the most important aspects of the infinitely multifaceted personality of the teacher and opens the way to identify his specific abilities. Therefore, the purpose of its use for students of higher education is to gain a deeper and more complete understanding of themselves, their readiness to perform socio-pedagogical tasks. The purposeful work on the formation of the defined ideal image of the teacher-educator in science lessons was effective.

RESULTS AND DISCUSSIONS

Only when the pedagogical process is purposefully organized, conditions are created for the development of the professional and creative abilities of students in the educational process. A purposefully organized pedagogical system creates favorable conditions for research subjects to receive, learn and test knowledge and skills in a special process. At the same time, a special situation with a high level of demand is created for the mutual integration of emotional, moral, normative, and intellectual capabilities of research subjects, there is an opportunity to further improve the current situation in the development of professional and creative abilities. The study summarized national and historical, scientific and theoretical views on occupational skills, identified their historical-national roots and factors of origin, and identified current principles for today.

Based on the purpose of the study, experimental work was organized to implement the proposals and recommendations developed for the development of professional and creative abilities of students of higher education institutions.

In the organized experimental work, attention was paid to the optimized use of the methods proposed by N.V. Kuzmina for the study of the technological component. The level of formation of the ability to build team relationships on the scales developed by N.V. Kuzmina, the group of "executive" activity skills (gnostic, design, design skills) helped to determine the role of the organizational component in the activities of the future teacher [12].

Work was carried out to identify the stages of development of professional and creative abilities of students and to improve the acmeological model of development of professional and creative abilities. At the same time, attention was paid to improving the professional and creative abilities of students on the basis of creative technologies. Criteria and assessment levels have been developed to determine the level of the creative potential of students to carry out this work. The practical application of these criteria and levels of assessment is reflected in the content of the textbook "Professional Pedagogy".

Experimental work in 2018-2020 Andijan Institute of Mechanical Engineering, Tashkent State Technical University, Jizzakh Polytechnic Institute 5111000 - Vocational Education (Ground Transport Systems and Their Operation) was carried out. Two groups were selected from each stage of the selected educational institutions, one divided into an experimental group and the other into a control group, and the number of participants at each stage was determined (see Table 1):

Table 1 Experiment - Student respondents who participated in the test

№	Universities	Groups	Number of Participants			
			Phase 2	Phase 3	Phase 4	Total
1.	AndMI	Experimental Group	24	24	25	**73**
		Control Group	22	25	26	**73**
2.	TSTU	Experimental Group	25	25	25	**75**
		Control Group	26	26	25	**77**
3.	JizPI	Experimental Group	26	25	26	**77**
		Control Group	24	25	24	**73**
4.	**Total**	**Experimental Group**	**75**	**74**	**76**	**225**
		Control Group	**72**	**76**	**75**	**223**

The experimental work was carried out in two stages, such as identification and shaping. In order to develop the professional activity of students, first of all, it is necessary to plan, analyze and determine the level of professional and creative abilities of students in the conduct of lessons. 5111000. Vocational education (5310600 - Territorial transport systems and their operation (tractors and agricultural machinery) pedagogical disciplines are taught in the block of general professional, specialty and additional sciences 12 subjects in the volume of 1466 hours. In the block of general sciences "Pedagogy. Ps. “Professional Psychology”, “Professional Pedagogy”, “Methods of Educational Work”, “Educational Technologies”, “Methods of Vocational Education”, “Pedagogical Conflictology” are taught as elective subjects for 1020 hours. Didactics and Methods of Teaching Specialties”, “Professional skills”, “World education system”, “Methods of legal education of students” are taught for 446 hours. In the block of elective subjects, the subject“Pedagogical ethics ”is taught for 212 hours. The set of pedagogical disciplines is as follows (see Table 2):

Table 2 5111000 Vocational training (5310600 - Ground transport systems and their operation (tractor) and agricultural machinery) pedagogical disciplines taught in the field of education

№	Names of study blocks, disciplines and activities	Student workload (in hours)				Independent study
		Total workload	Practical classes (in hours)			
			Total	Lecture	Seminar	
3.00	**General sciences**					
3.05	Pedagogy. Psychology	78	54	36	18	24
3.20	Professional psychology	210	144	72	72	66
3.21	Professional pedagogy	210	144	72	72	66
3.22	Methods of educational work	105	72	36	36	33
3.23	Educational technologies	105	72	36	36	33
3.24	Methods of vocational education	170	112	56	56	58
3.25.3	Pedagogical conflictology	142	84	44	40	58
4.00	**Specialties**					
4.03	Didactics and methods of teaching special subjects	148	100	50	32/18	48
4.05.1	Professional skills	126	84	42	42	42
4.05.3	World Education System	86	56	28	28	30
4.05.4	Methods of legal education of students	86	56	28	28	30
5.00	**Additional disciplines**					
5.00.3	Pedagogical ethics	212	144	72	72	68

In the clarifying phase, the impact of the ideas put forward during the research on students ’practical activities are studied. Cases of misunderstanding of the ideas put forward on the development of professional

Criteria for assessing professional creativity skills	Experimental groups	Number of student-respondents	Levels of development of professional creative skills

and creative skills will be identified, it is planned to create tools and developments to overcome it. At the formative stage, targeted activities will be organized to improve the educational process of professional disciplines, conduct and analyze spiritual and educational activities, develop methods and tools for the development of professional and creative abilities of students based on extracurricular activities. At both stages, attention was paid to the levels of assessment in determining the professional and creative abilities of a student of a higher education institution. This was done by dividing the knowledge, skills, and competencies to be acquired through the blocks in the structure of important competencies and professional-creative components at the assessment levels. It also takes into account the manifestation of personality traits and characteristics that allow students to master current theoretical developments and innovative practical solutions in a purposeful and consistent manner, encouraging them to seek their unconventional direction in the chosen field of pedagogical activity. knowledge levels were determined according to the evaluation criteria for the development of creative abilities. In determining such levels of knowledge, “high”, “medium” and “low” indicators were used (see Table 3):

Table 3 Assimilation rate indicators

Levels	Assessment Criteria
Higher	Students who have the knowledge to be assessed on the basis of the Criteria, who have the skills and competencies to apply this knowledge in practice
Intermediate	To students who have errors in their skills and competencies to apply in practice
Lower	Students whose knowledge is assessed on the basis of the Lower Criteria are scattered, who have difficulties in applying this knowledge in practice, and who make mistakes

The average value of the results obtained from these criteria and the indicators that determine the level of knowledge of the assessment was taken as the main indicators of the level of development of the professional and creative abilities of students. The experimental work was organized in three stages of development of the recommended professional and creative skills on the above criteria and levels of knowledge:

1. Preparation.
2. Basic.
3. Closing.

1. Preparatory phase. 2nd year - the period of adaptation, during which the initial tests on the proposed criteria and levels of knowledge (mastery) of students were conducted and the level of formation of their professional and creative abilities was determined. After that, seminars and roundtables on the development of the professional and creative abilities of students were organized during this period. Organized seminars and roundtables were held using innovative technologies. Tests were conducted to find out to what extent the lessons were changed by the students. This resulted in a significant increase in knowledge levels in the experimental groups compared to the knowledge levels in the control groups. The results of the adaptation period at the beginning and end of the experiment are given below (see Table 4):

Table 4 Results of the adaptation period at the beginning and end of the experiment

			high		average		low	
			Beg	End	Beg	End	Beg	End
Reproductive - Work with professional information	Experience	75	1	4	15	21	59	50
	Control	72	1	1	14	16	57	55
Ability to communicate productively and profession	Experience	75	0	3	12	17	63	55
	Control	72	0	1	11	12	61	59
Ability to solve problematic situations related to creative-professional activity	Experience	75	0	2	9	14	66	59
	Control	72	0	1	8	9	64	62
Criteria for the development of professional and creative abilities (General average)	Experience	75	0	3	12	17	63	55
	Control	72	0	1	11	12	61	59

2. The main stage. 3 courses - the stage of mastering psychological and pedagogical disciplines. At the same time, the development of professional and creative abilities of students on the proposed criteria and levels of knowledge (mastery) was examined in the field of psychological and pedagogical disciplines. Preliminary and final results were obtained at this stage as well. This resulted in a significant increase in the levels of knowledge in the experimental groups compared to the levels of knowledge in the control groups, making the research work in the experimental groups more effective (see Table 5):

Table 5 Results at the beginning and end of the experiment at the stage of mastering professional-pedagogical disciplines

Criteria for assessing professional creativity skills	Experimental groups	Number of student-respondents	Levels of development of professional creative skills					
			high		average		low	
			Beg	End	Beg	End	Beg	End
Reproductive - Work with professional information	Experience	74	4	9	23	33	47	32
	Control	76	4	4	24	25	48	47
Ability to communicate productively and profession	Experience	74	3	8	19	30	52	36
	Control	76	3	4	20	21	53	51
Ability to solve problematic situations related to creative-professional activity	Experience	74	2	7	17	24	55	43
	Control	76	3	3	16	17	57	56
Criteria for the development of professional and creative abilities (General average)	Experience	74	3	8	20	29	51	37
	Control	76	3	4	20	21	53	51

This suggests that the knowledge levels in the experimental groups increased significantly relative to

the knowledge levels in the control groups, making the research in the experimental groups more effective (see Table 6):

Table 6 Levels of development of students' professional and creative abilities

Criteria for assessing professional creativity skills	Experimental groups	Number of student-respondents	Levels of development of professional creative skills					
			high		average		low	
			Beg	End	Beg	End	Beg	End
Reproductive - Work with professional information	Experience	76	6	13	27	42	43	21
	Control	75	6	7	26	28	43	40
Ability to communicate productively and profession	Experience	76	6	12	23	35	47	29
	Control	75	5	6	24	25	46	44
Ability to solve problematic situations related to creative-professional activity	Experience	76	4	9	18	29	54	38
	Control	75	4	5	18	19	53	51
Criteria for the development of professional and creative abilities (General average)	Experience	76	5	11	23	35	48	29
	Control	75	5	6	23	24	47	45

3. The final stage. Stages 4 - Many new products of professional disciplines in the structure of professional-positive abilities of students are integrated and tested in practice in the process of practical testing of professional-creative abilities, ie students' encounters with real pedagogical events. The results were obtained on the basis of the level of mastering professional disciplines, pedagogical practice, observation, and analysis of future scientific and creative activities.

CONCLUSION

As a result of the research on the dissertation for the degree of Doctor of Philosophy (Ph.D.) in pedagogical sciences on "Development of professional and creative abilities of students of higher education institutions" the following conclusions were presented:

1. Pedagogical and psychological opportunities for the development of professional and creative abilities in students of higher education institutions require the study of the current state of the problem. Also, the technology of developing students' professional and creative abilities has been improved on the basis of the systematization of professional factors and professional and creative abilities.
2. The acmeological model of development of professional and creative abilities of students of higher educational institutions has been improved on the basis of optimization of strategies of formation of professional competence on the creative road map.
3. Criteria for the development of professional and creative abilities of students were determined on the basis of variable and invariant didactic functions of teaching professional knowledge. These functions have been improved on the basis of the expression of creative ability on the technology of "Assistance".

REFERENCES

1. Abduxairov R.A. Continuous development of professional and pedagogical culture in teachers of labor education doc. - Nukus, 2019. - 24 p.
2. Inoyatov U.I. Theoretical and organizational-methodological bases of management of quality control of education in professional college: Dis. ... doc. ped. science. - Tashkent, 2003. - 327 p.
3. Qurbonov B., Muxliboev M., Qurbonova G. Methodology of teaching labor education, a textbook for students of labor education in the field of career guidance. - Gulistan, 2013. - 295 p.
4. Merlin V.S. Psychology of personality: Selected psychological works. - Moscow: MPSI; Voronezh: MODEK, 2005. - 544 p.

5. Mitina L.M. A teacher as a person and a professional. - M .: Delo, 1994 .-- 216 p.
6. Mounier E. Personalistic and community revolution // Manifesto of personalism. - M .: 1999. - S. 70-72.7. The main indicators of the activities of higher education institutions. Statistical collection (2015-2016 academic year). - T .: Sano-standart, 2016. - 210 p.
7. V. A. Slastenina. Pedagogy of vocational education: Textbook. manual for stud. higher. study. institutions. // Ed. - M .: Academy, 2004 .-- 368 p..
8. Tolipov O'.Q. Pedagogical technologies for the development of general labor and professional skills in the system of higher pedagogical education: Dis. ... ped. fan. doc. - Tashkent, 2004. - 314 p.
9. Sharipov Sh.S., Davlatov K., Nasriddinova G.S. Scientific and pedagogical bases of vocational guidance. Study guide. - Tashkent, 2007. - 146 p.
10. Madaminov, U., Ashirova, A., Kutliyev, S., Nurbek, K., Fakhriddin, A. Didactical potential of using the electronic textbook in the process of learning computer graphics. Annals of the Romanian Society for Cell Biology, 25(4), pp. 5207-5217, 2021.
11. Khamraeva N.T., Rabbimova F.T., Kubakova K.K., Matmuratova G.B., Khujatov N.J., Abdikarimov F.B. Biologization of the cultivation of medicinal plant Capparis spinosa l. In arid zones and biotechnology of obtaining food and pharmaceutical products. Annals of the Romanian Society for Cell Biology,
25(4), pp. 5165-5187, 2021.
12. Saidakhror G., Abbos S., Nuriddin R., Muqaddas J., Bobur S., Nurbek K., Fakhriddin A. World experience of development trends of digital economy. Annals of the Romanian Society for Cell Biology, 25(4), pp. 5200-5206, 2021.
13. Fakhriddin Abdikarimov, Kuralbay Navruzov. Determining hydraulic resistance of stationary flow of blood in vessels with permeable walls. Annals of the Romanian Society for Cell Biology, 2021, 25(3), pp. 7316–7322.
14. Fakhriddin Abdikarimov, Kuralbay Navruzov. Modern Biomechanical Research in the Field of Cardiology. Annals of the Romanian Society for Cell Biology, 2021, 25(1), pp. 6674–6681.