

Implementation of the model of the self-education pedagogical support for university students in the Republic of Saha (Yakutia)

Implementación del modelo de autoaprendizaje, de apoyo pedagógico, para estudiantes universitarios en la República del Saha (Yakutia)

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ABSTRACT:

This article focuses on the problem of the pedagogical support for students' self-education as part of the higher education at the Teacher Training Institute of the Ammosov North-Eastern Federal University in the Republic of Sakha (Yakutia). The purpose of the article is to describe the step-by-step implementation of the pedagogical support model for students' self-education. The authors developed and practically verified the pedagogical support model for the university students' self-education, and identified preparedness for pedagogical conditions of self-education support. The implementation of this model at the university has increased the students' need for self-education, the future teachers' ability and willingness to carry out pedagogical activities in the educational process; the formedness of professional and research competencies contributed to the professional and personal development of future teachers.

Keywords: Self-education, pedagogical support, professional competence, students, vocational training.

RESUMEN:

Este artículo se centra en el problema del apoyo pedagógico para la autoeducación de los estudiantes como parte de la educación superior en el Instituto de Formación de Profesores de la Universidad Federal del Noreste de Ammosov en la República de Sakha (Yakutia). El propósito del artículo es describir la implementación paso a paso del modelo de apoyo pedagógico para la autoeducación (aprender por sí mismo) de los estudiantes. Los autores desarrollaron y verificaron un modelo de apoyo pedagógico para la autoeducación de los estudiantes universitarios, e identificaron la preparación para las condiciones pedagógicas del apoyo a la autoeducación. La implementación de este modelo en la universidad ha aumentado la necesidad de autoeducación de los estudiantes, la capacidad de los futuros docentes y la voluntad de llevar a cabo actividades pedagógicas en el proceso educativo; La formación de competencias profesionales y de investigación contribuyó al desarrollo profesional y personal de los futuros docentes.

Palabras clave: Autoeducación, apoyo pedagógico,

1. Introduction

In a rapidly developing society, personal aspirations and needs change in accordance with other societal innovations. A thriving society needs competitive specialists who are ready to unlock their potential and implement their expertise. A specialist-to-be is a person prepared to act and capable of thinking about the future for the benefit of the public as a whole.

Due to the education system's transition to a competence-focused approach, new social and marketplace expectations require teachers to continually improve their skills, personal growth, and professional qualifications. The personality of the teacher is a key component of the educational process. The education, upbringing, and development of the younger generation depend on the teacher's personal qualities and perceived attitude towards their profession. This is why educational institutions frequently update their standards for and approaches to future teachers' professional development. To help students develop self-education skills, teachers should teach them to systematically work on themselves, develop their personal and professional qualities, effectively plan their educational and extracurricular activities, and take an active part in their research work. The best teachers use new educational tools and methods to help students prepare for new social and professional paradigms. Students, on the other hand, help inform teachers' pedagogical methods by embracing their own style and idiosyncrasies and reflecting their lived social experiences back to the teacher.

One of the most important factors that teachers should take into account when developing a classroom ecosystem is the ethnosocial reality of their culture. For instance, in the Republic of Sakha (Yakutia), economic and socio-cultural factors heavily influence a student's potential level of development. People from some regions cannot work productively in others, especially when their educational development has not prepared them for a foreign region's demographic, cultural, and socio-economic realities. Based on this, we believe that a teacher's vocational training should prepare them to create the necessary pedagogical environment to in turn prepare students for specific regional conditions.

Students need a solid pedagogical support model in order to establish the self-education skills that are vital to their future professional activities. This support model should be a single pedagogical process that combines targeted, informative, and resultative components of each educational subject.

The issues of pedagogical support of the university students' self-education have been touched upon with regard to the requirements of the Federal State Standard for Higher Education, and the results of the model implementation pilot testing have been presented in the context of the vocational training of future teachers.

1.1. Literature review

The implementation of the pedagogical support model for the self-education of university students in the Republic of Sakha (Yakutia) is associated with the concept of the Arctic as an international region, as one of the most enduring and adapted to the extreme conditions civilizations, as well as the hypothesis of the possibility of acquiring Arctic knowledge as a model of vitality, adaptability, survival in the face of increasing global, environmental and technological problems (Robbek, 2007; Lovecraft and Eicken, , 2011; Rønning and Wiborg, 2008). In the 20th century the American scholars formulated the concept of self-education as a form of education where students bear the primary responsibility for planning, executing and evaluating their learning experience (Merriam, and Caffarella, 1991). The medium-term strategy for 2008-2013 called "Learning Throughout Life" developed by the UNESCO Institute for Information Technology in Education has not lost its relevance today. The teachers have to prepare their pupils for lifelong learning, mainly by making them learn how to learn, to become lifelong learners; assist in mastering universal skills, which will allow to acknowledge the need for self-education and lifelong learning (LFF, 2012; Demkina

and Sharova, 2014).

The analysis of the publications on the current state of the pedagogical education problems and the teacher training practice in Western European countries was carried out by P.M. Broadfoot (1981), F. Buchberger (1994), R. Fessler, L. Kremer-Hayon JT., and J.H.C. Vonk (1993). The most important task in these conditions is to provide knowledge and competencies enabling to solve the social and scientific progress problems, and helping every person find his/her place in life, in the environment of the constantly growing and updated qualification requirements (Nikolaeva et al., 2015).

The Federal Law "On Education in the Russian Federation" stipulates the main task of the professional education as the acquisition of knowledge and skills by students in the process of mastering basic professional educational programs, as well as the competence development to a certain degree and volume, allowing them to carry out professional activities in a particular area and to perform work in specific professions and specialties (FZ-273, 2016). For solving this problem it is necessary to focus on the capabilities of an individual, i.e. to develop the ability to educate oneself. The study of the scientific literature on the research subject indicates the scholars' increased attention to the problem of self-education skills development in university students. The self-education as a socio-pedagogical problem is addressed in the scientific-theoretical and psychological-pedagogical literature (Vishnevskaya, 2009; Zeer, 2006; Ilyina and Solyankina, 2016; Vershlovsky, 2003); the need to develop students' self-education skills is substantiated (Yakusheva, 2014; Shamova, 1982); the essence of the self-education process, the conditions, and methods for growth of a self-developing personality, ways and means of managing and self-managing the self-educational activities are studied (Yakusheva, 2014; Slobodchikov, 2000; Gargay, 2004).

2. Methodology

A set of methods was used to conduct the research: 1) theoretical ones involving the study and analysis of literary sources; 2) empirical methods, including the study of pedagogical experience, analysis of educational and methodological documentation, testing, and conversation; 3) statistical techniques, comprising data recording and ranking.

The students' self-education support involves the ability to plan and organize their future pedagogical activity, independence development, and self-consciousness establishment. The empirical methods were used to determine and describe the pedagogical conditions created to solve this problem at the Northeastern Federal University. At the same time, the educational and methodological documentation was studied and analyzed, including the major bachelor educational programs implemented at this University aimed at developing the self-education skills.

The map of the pedagogical assessment and self-assessment of the preparedness for self-education (Kodzhaspirova and Kodzhaspirov, 2000) was used in the study, with the participation of 89 students majoring in the Teacher Training Education and the Psychological and Pedagogical Education. The students were divided into two groups: 37 people in the control group, mainly comprised of the school graduates and 52 students in the experimental group, more than half of the group consisted of the college graduates.

Kodzhaspirova's test is aimed at identifying the self-education preparedness level of future teachers, it includes four components: motivational, cognitive, communicative skills and the self-management ability in the pedagogical activity. To identify each component students have to answer 5-9 questions. The purpose of this test is to evaluate future teachers' preparedness for the pedagogical work. When performing this test, students are asked to rate themselves on a 9-point scale for each indicator and determine the development level of their self-education skills and capabilities.

All respondents' answers were recorded and generalized using the factor analysis by the qualitative criteria, translated into numerical indicators, ranked by frequency and interpreted respectively according to the components significance.

3. Results

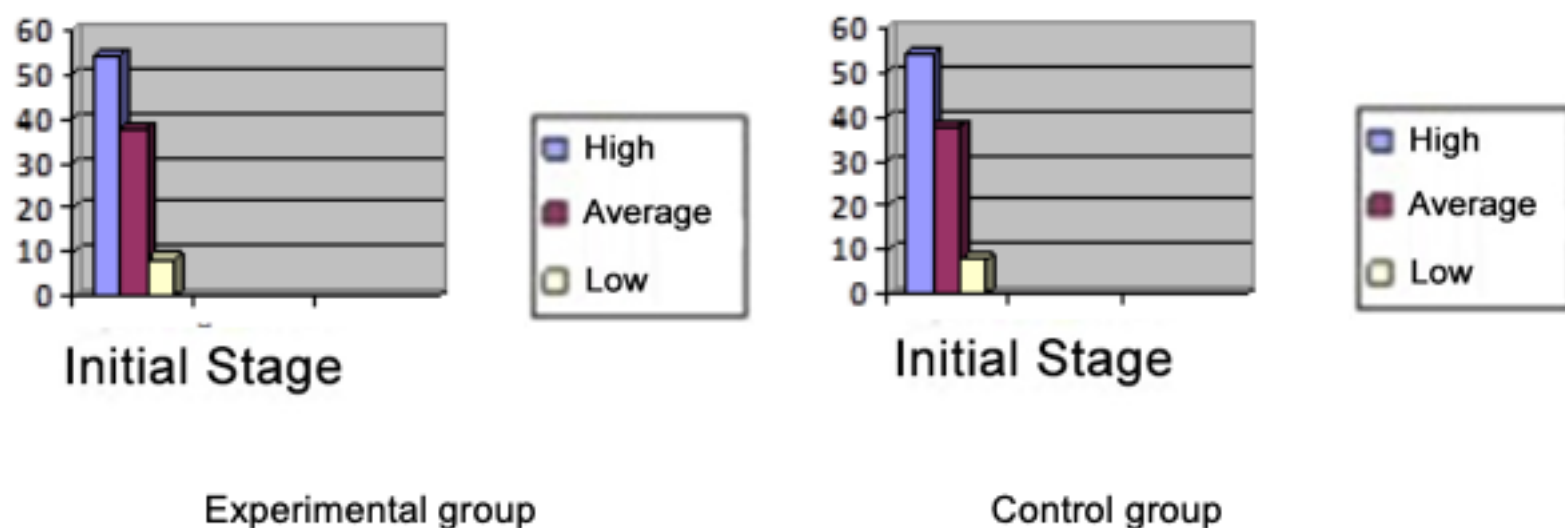
The diagnosing consisted of two stages: the initial stage – the diagnosis of the freshman year, first semester students; the control stage – the fourth year, eighth semester students.

At the initial stage in the experimental group the motivational component was characterized as follows: 20 students had a high readiness level, amounting to 54.1%, which allowed us to conclude that they were striving for pedagogical activity, for learning and finding new solutions and wanted to master their theoretical knowledge. The average level was observed in 14 students (37.8%), which indicated a lack of preparedness for pedagogical activities and difficulties in the adaptation period. Three students demonstrated the lowest level, accounting for 8.1%. These students had no desire for self-development, self-realization and no motivation to learn.

The control group participants, in general, see the educational process positively, they show confidence. Thus, 28 students, which accounts for 50.8%, started their university education on purpose, they had a need for learning; they were motivated. The average level was demonstrated by 19 students (36.6%), who believe that they are not confident in their capabilities, but they have a positive attitude towards the profession of a teacher. The low level of the motivational component (shown by 9.6% or 5 students) is associated with a neutral attitude towards learning, lack of communication with teachers and classmates.

The motivational component data at the initial stage are shown in Figure 1.

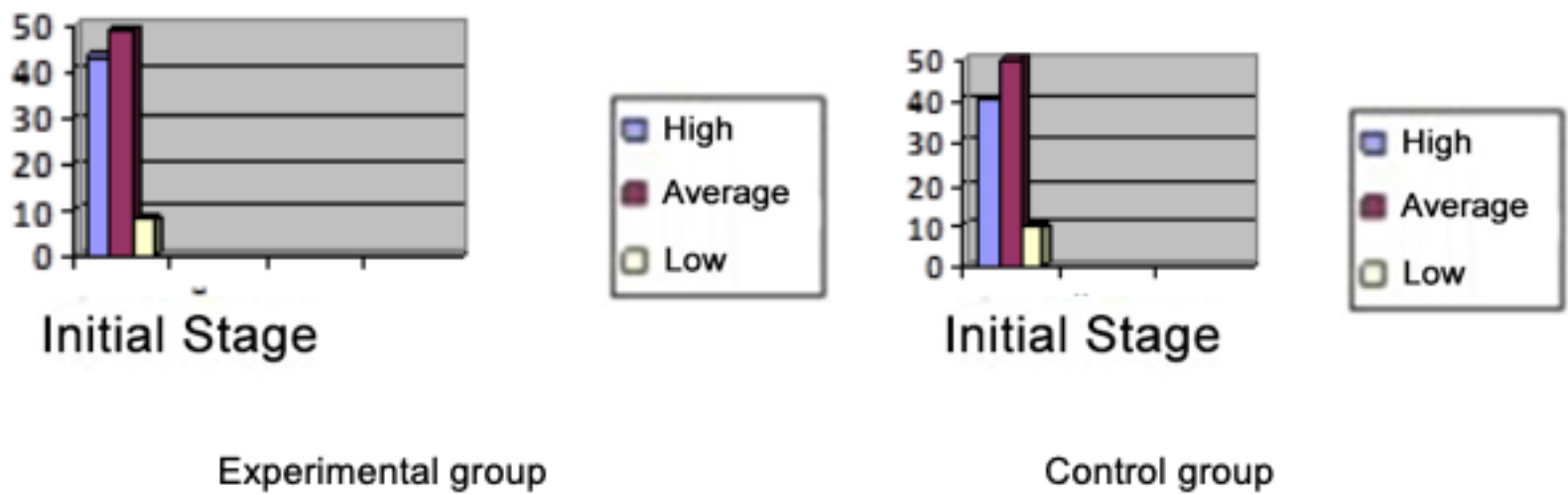
Figure 1
The motivational component revealed at the initial stage in the experimental and control groups



The cognitive component provides for the evaluation of the knowledge gained at school and the attitude towards the learning activities. Thus, in the experimental group 16 students (43.2%) had a high level of the cognitive component, they had profound knowledge, took an active part in the class, did tasks in time and showed interest in their future profession. An average level was demonstrated by 18 students (48.6%), they were not confident in their skills and capabilities, as they had experienced certain difficulties during the first days of study. Three students (8.1%) showed a low level of the cognitive component; they do not actively participate in class and do not know how to organize themselves.

In the control group 21 students (40.4%) demonstrated a high level of the cognitive component; they knew how to work in the classroom and analyze their educational activities. An average level was shown by 26 students (50%) who manifested a positive attitude towards learning, but these students failed to complete the teachers' tasks on time. Five students (9.6%) had a low level of the cognitive component; they showed no interest in studying, did not know how to work with textbooks and had difficulties in learning. Figure 2 presents the results referring to the cognitive component identified in both groups at the initial stage.

Figure 2
The cognitive component at the initial stage



The experimental group showed a high level of the self-management skills in the pedagogical activity amounting to 56.3% (18 students), they had a positive attitude towards teaching, a desire to acquire a pedagogical degree, which was confirmed by their high interest in educational activities; 14 students (37.9%) demonstrated an average level, while 5 students (13.6%) showed a low level of this component.

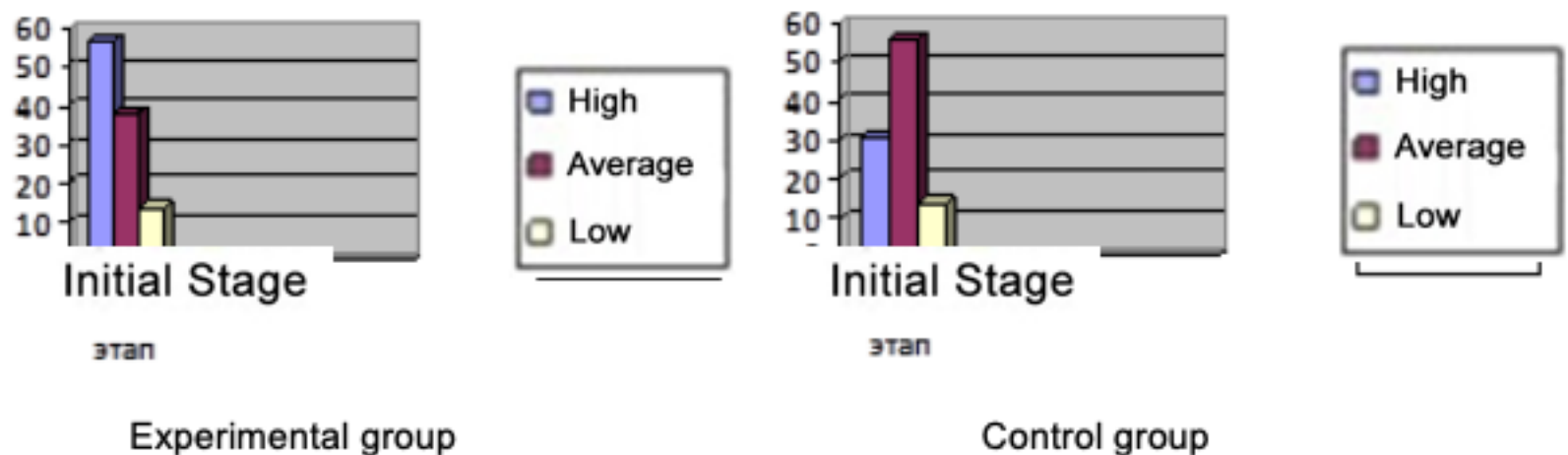
In the control group 16 students demonstrated a high level of the self-management skill in the pedagogical activity, which amounted to 30.8%, this indicator enabled to make a conclusion about the students' primary skills in professional activity, as well as their ability to set pedagogical goals and solve problems. In 29 students (55.7%) this component was at an average level, they had a sufficient level of skills, but they experienced ethical and psychological difficulties. Seven students (13.5%) showed a low level associated with self-doubt and the lack of the desire to get a teaching profession.

In general, the obtained results have a mean value. The school graduates' high level is associated with their desire to learn, their demonstration of independence and energy. At the initial stage, college graduates had a high motivation to learn, an interest in the educational process.

The results relating to self-management skills in the pedagogical activity demonstrated by experimental and control group students at the initial stage are given in Figure 3.

Figure 3

The self-management ability in the pedagogical activity at the initial stage in the experimental and control groups



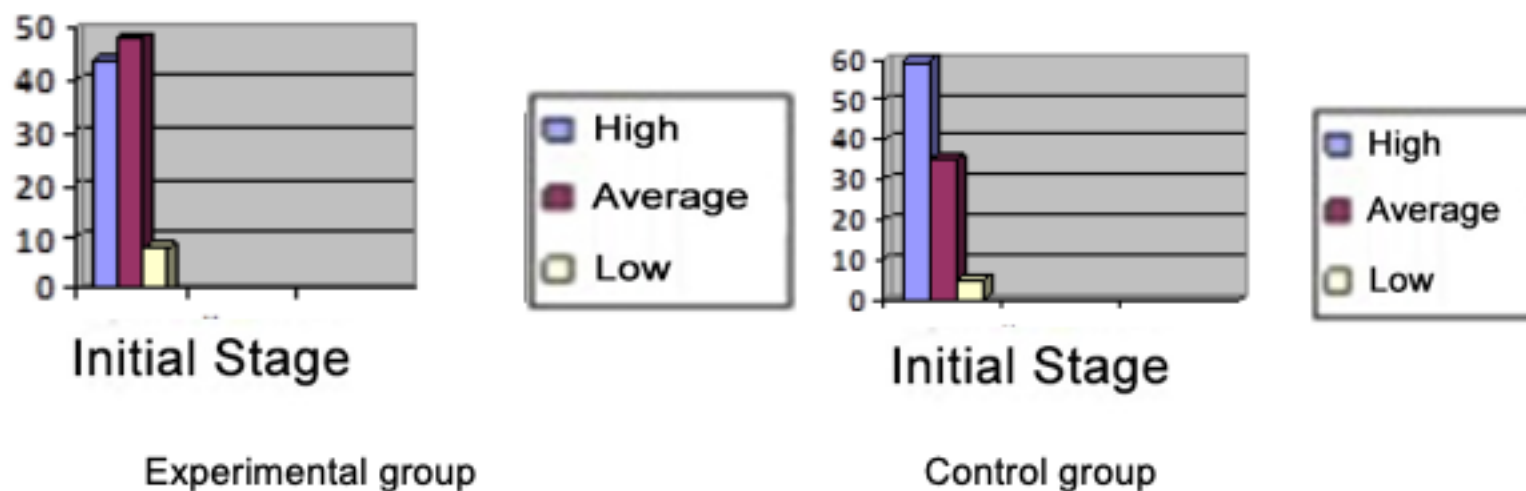
In the experimental group communication skills are well developed at the initial stage. Thus, a high level demonstrated by 22 students (59.5%) indicates their active communication, initiative, openness, organizational and leadership qualities. An average level identified in 13 students (35.1%) is associated with the fear of public speaking, self-criticism, and shyness. A low level of this component was determined in 2 students (5.4%). These students have underdeveloped communication skills, as well as a communication barrier, low self-esteem, and uncertainty.

In the control group 23 students (44.2%) showed a high level of communication skills. This group of students was able to interact with other people, as well as accurately communicate

their thoughts, feelings, and emotions. An average level was demonstrated by 25 students (48.1%); they did not want to take part in discussions, had a poorly developed speech, and some psychological issues. A low level was represented by 4 students (7.7%). These students experienced adaptation problems and had psychological difficulties.

The results of the experimental and control groups concerning communication skills are shown in Figure 4.

Figure 4
Communication skills at the initial stage of the experimental and control groups



Thus, the results concerning the communicative component show that, in general, communication skills are above the average level in many students. During the adaptation period, students experienced psychological, ethical, and motivational issues. Therefore, at the initial stage, the pedagogical self-education support was aimed at developing the future teachers' theoretical knowledge, certain skills and abilities in practical activities, on mastering the professionally important qualities of the teacher's personality. To achieve this, the systematic, consistent and interrelated characteristics of the learning process are taken into account when developing a pedagogic environment.

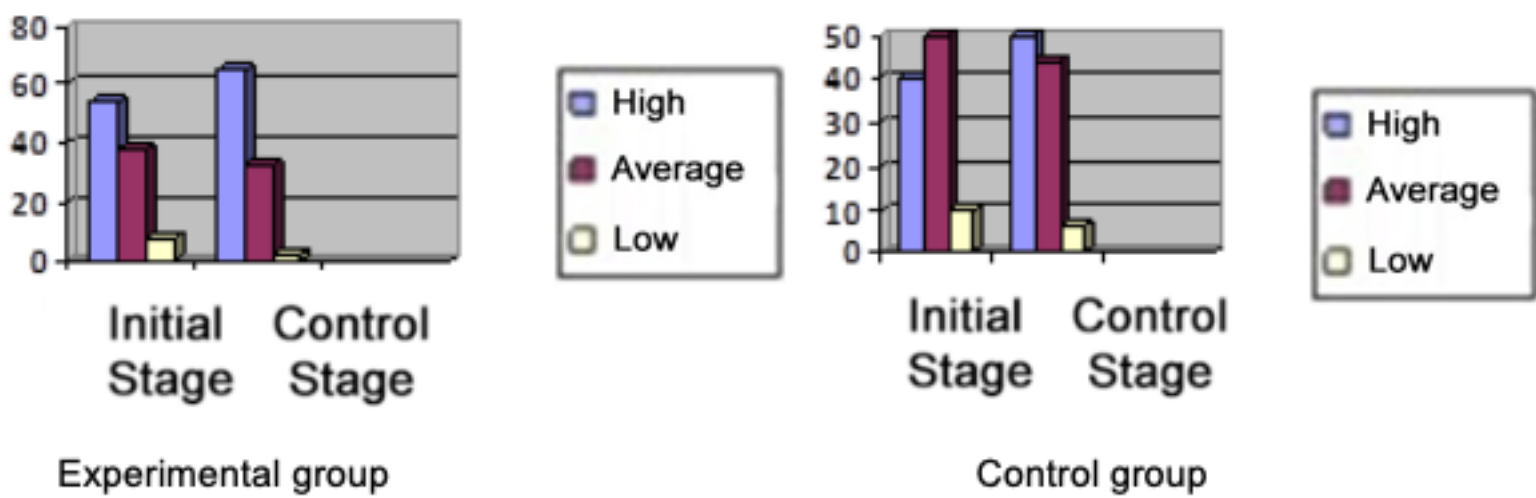
The summarizing stage included the research control phase based on the pedagogic environment results, which revealed the future teachers' preparedness for self-development and self-education, contributing to their professional and personal development.

In order to identify the future teachers' readiness for self-education at the control stage, the re-diagnosis based on the "Map of the Pedagogical Assessment and Self-assessment of the Preparedness for Self-education" test (Kodzhaspirova, 2000) was carried out.

In general, the motivational component results showed a positive dynamics for self-development and professional growth level. In 24 students (64.9%) of the experimental group the motivational component was at a high level, in 12 students (32.4%) it was at an average level of, and one student (2.7%) showed a low level. This means that students were confident in their abilities, they were well aware of their future professional development and evolving, and planned to continue their studies in the master's program.

In the control group 33 students (63.5%) had a high level, 16 students (30.7%) showed an average level and a low level was identified in 3 students (5.8%). According to our observations, the control group students had a motivation to further professional growth, many of them were currently employed, they knew how to apply their knowledge in practice. Figure 5 shows the results obtained for the motivational component at the control stage.

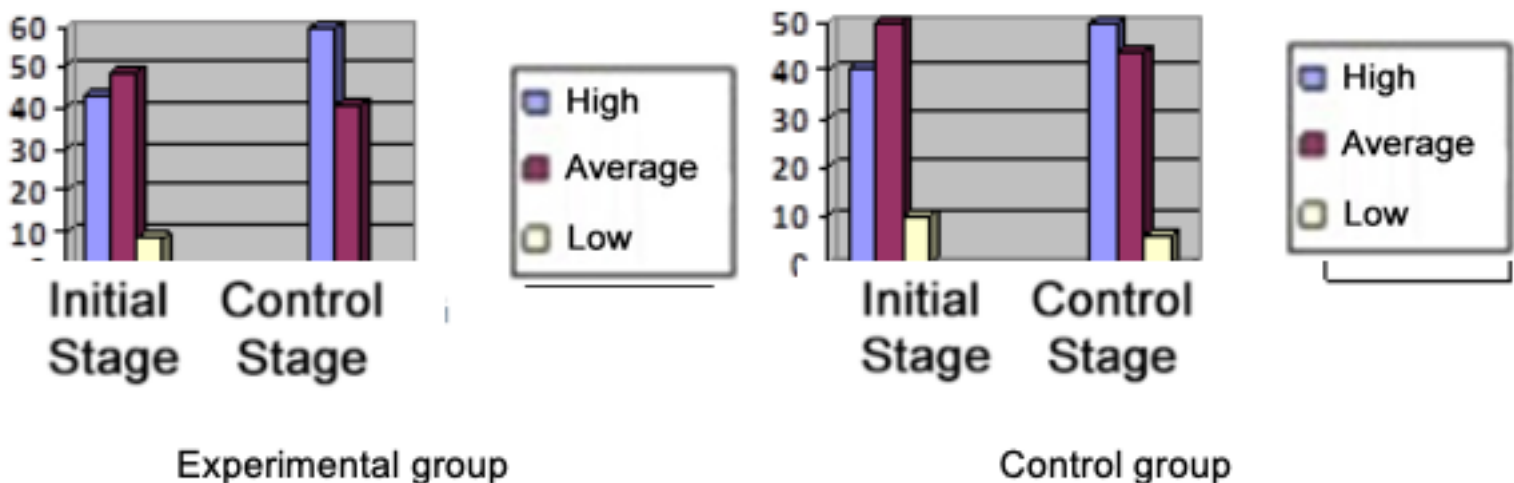
Figure 5
The results concerning the motivational component at the control stage



Regarding the cognitive component, the control stage was aimed at identifying the levels of knowledge and skills the students received during the period of preparation for their professional activities. The experimental group students estimated their level as "good", which accounted for 22 students (59.4%); 15 students (40.6%) showed an average level. This group had good theoretical knowledge, confidence in their skills and experience, some of them had passed the federal online exam, which was one of the good indicators of the cognitive component. In the control group, in 26 students (50%) the cognitive component was at a high level, which was a good indicator. This group of students demonstrated a positive attitude towards learning activities, a high cognitive activity, independence and initiative. An average level was demonstrated by 23 students (44.2%), they showed good knowledge, the ability to express their point of view, independently acquire knowledge and use it. The low level was demonstrated by 3 students (5.8%), who had certain difficulties in acquiring knowledge and did not know how to plan their time.

In general, the obtained answers can be assessed as being above average level, since many students have a fairly strong knowledge and skills and are able to independently set their goals and put this knowledge into practice. Figure 6 presents the results referring to the cognitive component identified in both groups at the control stage.

Figure 6
The cognitive component in the experimental and control groups at the control stage

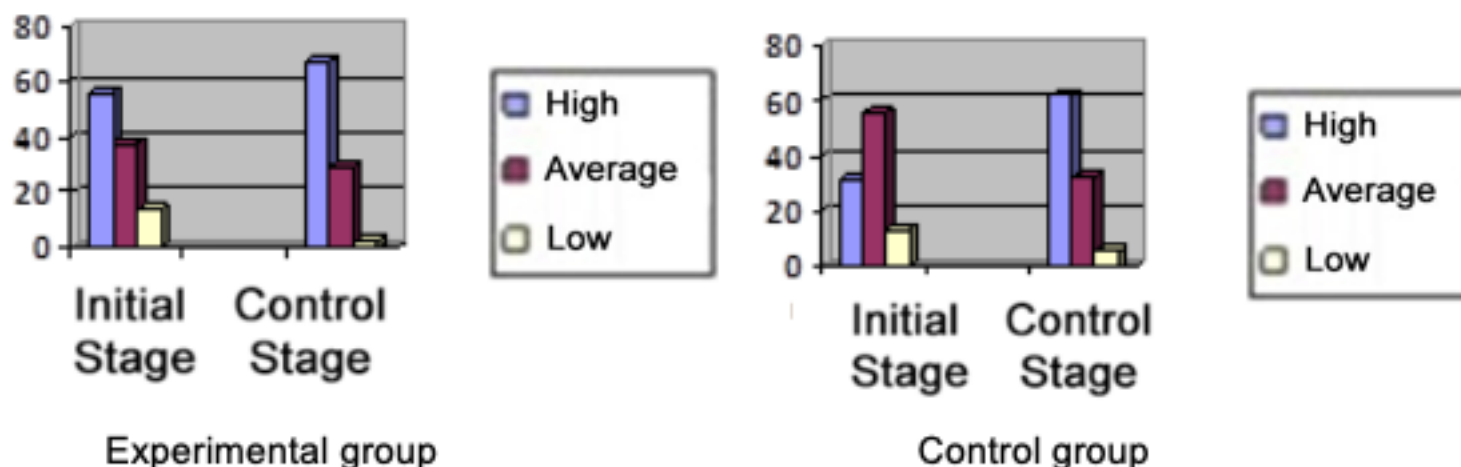


The next component is the self-management ability in pedagogical activity, aimed at identifying independence and self-control skills. The obtained results proved that the experimental group had a fairly high level of the self-management ability in teaching activities demonstrated by 25 students (61.6%). These students had self-consciousness and self-organization skills and the ability to perform certain activities. An average level was demonstrated by 11 students (29.6%), this group of students had the skills in practical actions and the desire to improve their self-education level. A low level was shown by one student (2.7%), which was explained by the fact that this student did not plan to pursue this profession, was afraid of responsibility and experienced psychological difficulties. In the control group 32 students (67.6%) demonstrated this component at a high level; these students had well developed professional skills, a positive attitude towards their future

profession, and knew how to work with children. An average level was shown by 17 students (29.7%) who liked working with children and were good at planning and organizing their time. The lowest self-management ability was identified in 3 students (8%). These students had professional difficulties, their practical skills were under-developed. It is worth mentioning that the university pedagogical practices are informative with the students showing and applying their knowledge, skills and abilities, learning to analyze themselves and their work. The results relating to self-management skills in the pedagogical activity demonstrated by students of the experimental and control groups at the control stage are shown in Figure 7.

Figure 7

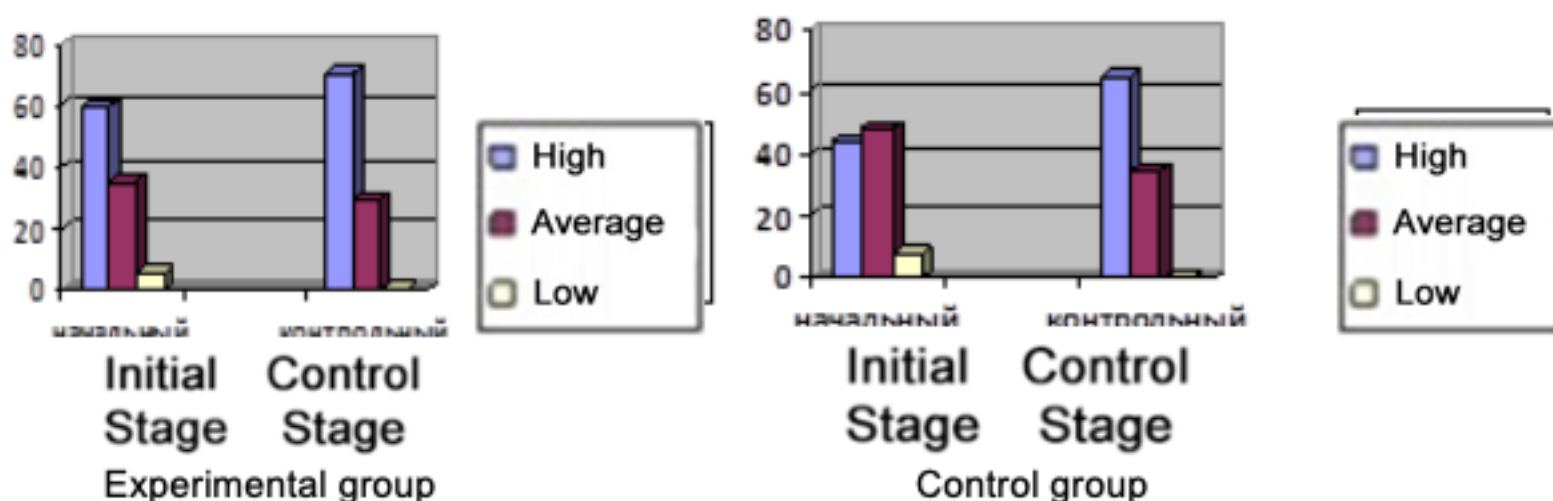
The results of the self-management ability in educational activities at the control stage



The communicative competence in the pedagogical activity has a top priority, as the teaching success depends on it. Therefore, we consider the communicative component to be important for the development of professionally valuable qualities of the teacher's personality. The experimental and control groups had a high level of communication skills. This suggests that the use of modern educational technologies in the classroom produces their results, since many students are able to give speeches at conferences of different levels, participate in methodological competitions and show public speaking skills. Figure 8 demonstrates the results of the communicative component shown by experimental and control group students at the control stage.

Figure 8

The results of the communicative component in students of the experimental and control groups at the control stage. develop



3.1. Discussion

The results obtained for four components confirm that the created pedagogical environment is focused on acquisition of quite high professional and research competencies by future teachers, the ability to self-organize and plan their further self-development. Table 1 provides the characteristics of criteria to determine the level of preparedness for professional activity for each component in the experimental and control groups.

Table 1
Characteristics of the criteria

Components	Characteristics of the criteria	Levels	EG	CG
Motivational	Motivation, an active position in self-education, showing an independent educational activity.	High	64.9%	63.5%
	Interest in learning, enriching oneself with versatile knowledge, but lacking understanding of the self-education importance.	Average	32.4%	30.7%
	Lack of understanding of the self-education importance for teaching, inability to use theoretical knowledge in practical activities.	Low	2.7%	5.8%
Cognitive	The ability to analyze own activities and their results, assess one's performance, a stable interest in acquiring pedagogical skills.	High	59.4%	50%
	Not clearly expressed desire for self-education, difficulties in reflection, the mechanical reproduction level of pedagogical skills.	Average	40.6	44.2%
	No awareness of how to organize educational activities.	Low	0%	5.8%
Self-management ability in the pedagogical activity	Positive attitude towards the pedagogical activity, ability to set goals, the self-development ability.	High	67.6%	61.6%
	Setting a goal and solving pedagogical tasks with the help of a teacher, unstable interest in the pedagogical activity.	Average	29.7%	32.6%
	Under-developed desire for professional self-development, lacking creative attitude towards the activity.	Low	2.7%	5.8%
Communicative	Participation in organizing discussions, ability to reflect, supporting a dialogue.	High	70.3%	65.4%
	Communication difficulties, entering the dialogue with the help of a teacher.	Average	29.7%	34.6%
	Rare initiative, passive communication.	Low	0%	0%

The achievements of the student scientific club are indicative of the research competence maturity.

Recently the number of the participants in research-to-practice conferences has grown, which indicates that students understand the informed development of the research competence, the importance of mastering the research skills that will be used in teaching. Table 2 shows the students' participation in various conferences on an annual basis.

Table 2
The performance of the student
scientific club over the last 5 years

Year	Republican conferences	All-Russian conferences	International conferences	Olympiads, contests
2014	1	1		
2015	1	6	3	2
2016	2	8		3
2017	2	10		4
2018	2	23		3

In our opinion, the scientific club operation is very important, both for the research supervisor and for students. Students' scientific clubs improve the quality of education, the level of students' scientific training and research competence, and also the public speaking and self-education skills required for the graduation theses defense.

From our point of view, another indicator of the professional competencies maturity is the graduates' employment rate. The high percentage of graduate employment in teaching specialties in recent years confirms that future teachers have a mature need for self-development and self-education, as well as the ability and readiness for teaching activities.

Thus, in 2018, according to the preliminary employment contract, the graduates' employment rate amounted to 86%, and the master's program enrollment made 14%. Analysis of the results shows that in the fourth year many future teachers master their professional competences and are prepared to work in the education system in different regions of the Republic (Table 3).

Table 3
Analysis of the employment over the past 3 years

	2016	2017	2018
Number of graduates in total	152	212	173
<i>Employed in the specialty</i>	78 (51.32%)	142 (66.98%)	121(69.4%)
<i>Other types of employment</i>	74 (48.68%)	70 (33.02%)	52 (30%)
- enrolled in the master's program	38 (51%)	21 (30%)	20 (38.5%)

Based on the specifics of the future teachers' professional and personal development in the process of the self-education pedagogical support and according to the research results, it was possible to draw up recommendations for the development of research and professional competencies which can be conditionally divided into several stages:

1. The stage of the motivation and positive attitude towards the profession of a teacher (first-second years of studies);
2. The stage of the inclusion in the profession (third-fourth years);
3. The stage of the preparedness for pedagogical activity (fourth year).

At the stage of the motivation and positive attitude towards the profession of a teacher, the

students accept the requirements for educational activities and self-determination, which covers the first two years. The future teachers' motivation for educational activities is organized using such principles as "I must", "I want" and "I can". The first principle implies the implementation of the necessary training requirements. The second one denotes the inclusion in educational activities through the emergence of the student's internal needs. The third means the development of internal readiness for learning activities.

The stage of the inclusion in the profession (second-fourth years of studies) involves the recognition of individual difficulties in learning and practical activities. In a challenging situation the student develops volitional powers and learns to reflect. The reflection helps the student identify the cause of the difficulty, the lack of knowledge, abilities and skills in learning activities.

The stage of the preparedness for the pedagogical activity takes place in years 3-4 and includes an open communication of the educational process participants based on the cooperation and mutual understanding.

Thus, as a result of implementing the theoretical model of the self-education pedagogical support, positive results have been obtained. The special emphasis in the pedagogical support of future teachers is put on the development of professional and research competence, ensuring independence and responsibility in the self-organization and self-education process.

4. Conclusions

The pedagogic work has a public and social character, since the future of a country or region depends on a teacher's personality. In the course of the teaching process in educational institutions, vocational training of future teachers is aimed at increasing the level of pedagogical activity and the development of a creative, active personality. We believe that the present reality needs multi-skilled, creatively thinking, energetic and successful teachers.

Summarizing the results obtained in the study, the following conclusions can be articulated:

- each student's potential necessary for professional and teaching activity and the creation of the pedagogical environment were identified and developed;
- based on the theoretical analysis the meaning of the "pedagogical self-education support" concept was clarified. We consider the future teachers' self-education as a factor of professional and personal development, meeting their needs in the educational process;
- the specifics of the self-education pedagogical support for future teachers was determined, including the psychological (the motives of the readiness for pedagogical activity begin with a positive attitude toward learning, which is beneficial for the result); personal (it is provided in integration with the need, ability, readiness, taking into account individual characteristics and capabilities); and action-related aspects (the ability to perform certain activities aimed at the development of knowledge and strengthening of skills);
- substantiation was given to the pedagogical conditions for the future teachers' self-education support, presented as a single educational process in a combination of consistent and interrelated components such as targeted, informative and resultative ones; the principles of interaction of the educational process participants were included that provide value-based, special, communicative, reflexive functions; the stages of pedagogical support have been identified, including the diagnostic, activity-oriented and practical ones; the professional and research competencies contributing to the professional and personal development of future teachers were formed;
- based on the diagnostic tools, the criteria and indicators of formed need for self-education, abilities and preparedness for the future teachers' pedagogical activity were defined.

The practical significance of the study lies in the fact that the research results can be used to create the guidelines for the development of the professional and research competencies in the future teachers' professional and personal growth.

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