Educational technologies as a means of developing students' independence

Образовательные технологии как средство развития самостоятельности студентов

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Abstract

The current stage of development of society is characterized by the development of scientific and technological progress, the emergence of various innovative processes that affect the course of development of all spheres of life, including higher education. With the emergence of a competency-based approach and a corresponding change in educational goals, higher education institutions, fulfilling the requirements of the Federal state educational standards, should use innovative educational technologies in the preparation of students to form their professional competence. The purpose of the article is to consider the experience of implementing educational technologies as a tool for developing students' independence. The independence of the student is an integral part of the development of his competence. The article presents an examination of the concepts of "independence" and "educational technology" from various points of view. The dependence of independence on the use of innovative educational technologies in the educational process is traced. The stages of the process of organizing students' independent work using innovative educational technologies are highlighted. The presented study on identifying students' level of independence when studying the discipline "Teaching Technologies

Аннотация

Современный этап развития общества характеризуется развитием научно-технического прогресса, появлением различных инновационных процессов, которые воздействуют на ход развития всех сфер жизни, в том числе и сферы высшего образования. С появлением компетентностного подхода и соответствующим изменением образовательных целей, высшие учебные заведения, выполняя требования Федеральных государственных образовательных стандартов, должны использовать инновационные образовательные технологии в подготовке студентов для формирования их профессиональной компетентности. Цель статьи заключается в рассмотрении опыта реализации образовательных технологий в качестве инструмента развития самостоятельности обучающихся. Самостоятельность студента является неотъемлемой частью развития его компетентности. В статье представлено рассмотрение понятия «самостоятельность» и «образовательная технология» с различных точек зрения. Прослежена зависимость самостоятельности от использования в образовательном процессе инновационных образовательных технологий. Выделены этапы процесса организации самостоятельной работы

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of the Teachers of the Past" allows us to conclude that students are more successful with the active implementation of educational technologies, since they make the process more active and creative, make the interaction process more efficient. The study was conducted over two years (in 2018 and 2019). We checked the level of independence of students before the introduction of innovative technologies in the study of the discipline "Technology of teaching teachers of the past" and after. The more often educational technologies are used in the educational process, the more students get used to independent work, the better it becomes. The use of educational technologies allows the formation of a highly educated competent specialist who independently and creatively solves professional problems.

Key Words: competencies, competence, educational technologies, problematic training, independence.

студентов с использованием инновационных образовательных технологий. Представленное исследование по выявлению уровня самостоятельности у студентов при изучении дисциплины «Технологии обучения педагогов прошлого» позволяет сделать вывод о повышении успешности обучающихся при активном внедрении образовательных технологий, поскольку они позволяют сделать процесс более активным и творческим, сделать процедуру взаимодействия более оперативной. Исследование проводилось в течение двух лет (в 2018 и 2019 годах). Мы проверили уровень самостоятельности студентов до внедрения инновационных технологий при изучении дисциплины «Технология обучения учителей прошлого» и после. Чем чаще применяются образовательные технологии в образовательном процессе, тем больше студенты привыкают к самостоятельной работе, тем качественнее она становится. Использование образовательных технологий позволяет сформировать высокообразованного компетентного специалиста, самостоятельно и творчески решающего профессиональные задачи.

Ключевые слова: компетенции, компетентность, образовательные технологии, проблемное обучение, самостоятельность.

Introduction

The global goals of reforming the sphere of higher education are the formation of an independent competent graduate capable of implementing professional activities at a high level. High schools, creating conditions for the preparation of students, introduce various educational technologies that are the basis for the development of their independence (Vaskovskaya et al., 2018). Innovative educational technologies are aimed at solving the problem of developing both general cultural and professional competencies (Vaganova et al., 2019a). The main advantage of educational technology is the guarantee of achieving the set goals (Ivanova et al., 2019). Educational technology allows you to build the learning process as a set of external and internal actions based on certain principles, where the personality of the student as a future teacher manifests itself (Rakhimbaeva et al., 2019). Among the characteristics of educational technologies can be identified: the subordination of pedagogical actions to a certain algorithm; focus on the formation of competencies; the presence of a system of interrelated principles; counseling role

of the teacher in the implementation of a particular technology in the educational process. Studying the discipline "Teaching Technologies of the Teachers of the Past" involves classroom work (lectures, practical, and contact independent work) and independent work (Nikonova et al., 2019b). To organize successful independent work, electronic educational systems are actively used. In the organization of independent work of students, the Moodle electronic educational platform plays an important role as a means by which students can interact at a given distance.

Theoretical framework

The formation of students' independence is one of the main issues of modern professional education. Various aspects of this topic are covered in the works of A. V. Brushlinsky, A. M. Matyushkin, P. I. Pidkasistogo, T. A. Popov, M. N. Skatkin. These authors present the General characteristic of independent work of students, the development of various classifications of independent works, conditions of the

organization of independent activity. By analyzing the scientific literature, we can identify a wide range of definitions of this concept. Many authors widely consider independence and define it as a multifaceted quality of personality that manifests itself in various life situations. Also, independence can be considered a way of performing activities, which is used by students to solve problems of various nature, set in the framework of the learning process (Ihnatenko et al., 2018). Some researchers express the opinion that independence is the ability to carry out activities of varying degrees of complexity without the help of a teacher, the ability to adjust it on time by established educational requirements and their views and beliefs (Klinkov et al., 2019). In the absence of a consensus on the concept of student autonomy, summarizing the above, we can highlight the common features inherent in each of the analyzed definitions (Kamenez et al., 2019). Independence is the ability, which implies the solution of the student's problems on their own, it is organizational skills (the ability to organize their activities to achieve their goals), the ability to argue for their own opinion and listen to opponents, without resorting to unjustified criticism.

The study of educational technologies from the point of view of professional education is carried out for a fairly long period. During this time, many definitions of this concept have accumulated (Prokhorova et al., 2018). However, there is no single recognized definition (Vaganova et al., 2019f).

M. V. Klarin educational technology is defined as an activity related to the construction of the educational process and aimed at achieving educational results by students. Researchers B. V. Palchevsky and L. S. Friedman speak about educational technologies as a complex of situations of educational character, which are necessary to effectively implement the implementation of pedagogical activity.

I. P. Volkov considers educational technology as a process of consistent achievement of planned educational results of students in cooperation with the teacher. Based on the studied scientific literature, we can say that among the innovative technologies that contribute to the development of students ' independence, researchers distinguish problem-based learning technologies, discussion technologies, group learning, project technologies, gaming, information technologies (Smirnova et al., 2019). All of them interact with each other and are included in each other,

allowing students to achieve high educational results (Denysenko et al., 2018). And each of these technologies somehow affects the formation of student independence (Markova et al., 2019). The essence of problem learning technologies is to "immerse" the student in a problem situation, which he must solve based on existing experience and the use of the experience of various researchers. To do this, he needs to select from a large amount of information only relevant, important, and necessary to resolve a specific issue. The teacher poses a problem problem. In the classroom, two scenarios can be applied. Either students are grouped or, the task is performed individually (Vaganova et al., 2019d). The main thing in this process is the independent work of students. They can share the results obtained, jointly solve the issues arising in the course of work, and thus achieve the goals (Vaganova, et al., 2019b). This forms a creative process where students can develop their personal and professional qualities (Pometun et al., 2018). Discussion of the technology can be deployed in the course of problem-based learning (Nikonova et al., 2019a). Students, for a deeper and more comprehensive study of the issue, join groups and discuss certain problems (Vaganova et al., 2019c). The discussion requires additional preparation (Vaganova et al., 2019e). Students study the positions of different authors to form their attitude to build a reasoned position (Oros et al., 2018). As part of the discussion technologies used the method of "brainstorming", "round table" and some other methods. "Brainstorming" involves students expressing a variety of opinions and at the initial stages cannot be rejected or criticized any of the ideas. Thus students acquire a certain freedom. This method allows you to prevent the fear of the performance to obtain operational results. At the same time, students themselves determine the viability of an idea, arguing their position (Sedykh et al., 2019). Technologies of group training assume mutual enrichment of students, the organization of joint activity for achievement of results. Students distribute functions and roles among themselves (which is typical for game technologies), exchange methods of action to obtain the total product of activity (Pichugina et al., 2019). Technologies of group training allow students to master methods of interaction, which in the future; in the implementation of their professional activities will help them to build effective communication with colleagues and students. The peculiarity of these projects is to achieve students ' goals through detailed study of the problem, as a result of which a specific product of educational activity should appear. The students themselves are engaged in the

development of these issues in the counselling role of the teacher. As a result of joint work, which leads to concrete results, students experience a situation of success, which is a motivator for further, deeper study of the discipline. Game technologies imitate future professional activity of students. The game has a clear goal and the corresponding pedagogical result. Game technologies in formation of independence of students can be different types: imitation, operational, role-playing business. The game uses dialogues, discussion of problems (Chirva et al., 2018). Information technologies accompany students throughout the entire period of study. They contribute to the organization of remote interaction of students. Allow to make the process of studying the discipline more intense and interesting, accompanied by the use of various multimedia tools. When defending a project, during a business game or the implementation of discussion technologies, students develop presentations, preparing to present their results. We can conclude that in the formation of independence, innovative technologies penetrate each other and together allow achieving better results.

Methodology

The study was conducted over two years (in 2018 and 2019). We checked the level of independence of students before the introduction of innovative technologies in the study of the discipline "Technology of teaching teachers of the past" and after. In the first year students took part in the number of 67 people, in the second-70. The level of independence of students was determined by the following criteria: the student correctly formulates the problem; puts forward hypotheses; establishes patterns of development of any phenomenon; compares and contrasts the facts; adjusts its activities by the goal.

32% of students have a high level of independence. They can perform the tasks set by the teacher completely independently, creatively and have a high level of self-organization. 45% of students have an average level of independence. In the process of performing tasks, they resort to the advice of the teacher, show responsibility and adjust their activities by the goals. 23% of students have a low level of

independence. For them it is difficult to perform the task without the help of a teacher, to achieve their goals, they need control from the teacher. In 2019, the situation has changed for the better. 42% of students have a high level of independence, the average level reaches 50%, and only 8% of students remain at a low level. The percentage of students with a high level of independence became higher by 10%, the average level increased by 5%, students with a low level of independence became much smaller (this percentage decreased from 23% to 8%).

Results and discussion

The organization of independent work with the use of innovative educational technologies in pedagogical University is as follows. The task of the teacher is to create a comfortable environment in which students can quickly and efficiently perform tasks (Osadchenko. et al., 2019). Students perform contact self-study and self-study using information technology, actively attracting LMS Moodle funds to their activities (Ilyashenko et al., 2019b). The means of this electronic platform allow them to organize interaction at a remote distance, to receive advice from the teacher, to study additional information compiled by the teacher on the electronic course (Bulaeva et al., 2018). Students solve problem situations, solve real practical problems, use various information bases (Abramova et al., 2018). Analyzing the pedagogical positions of various authors to prepare for the implementation of the project, participate in a business game or discussion, they form their professional position, select the necessary arguments, and study terminology. The process of organizing independent work of students using innovative educational technologies takes place in several stages: preparatory (goals are defined, the program is established, methodological support and appropriate equipment are selected); the second stage-the main, involves the direct implementation of the program, the use of methods of search and selection of relevant information, its assimilation and processing, the use of knowledge, fixing the results; the final stage includes the assessment of the significance of the results, reflection. At each stage, the teacher exercises control, checking the assimilation of students ' knowledge. At the final stage of studying the discipline "Technologies of teaching teachers of the past", the level of formation of students ' independence is checked according to the criteria presented in Table 1.

Table 1. Levels of formation of students' Independence

Level	Criterion
High	The student correctly formulates the problem without the help of a teacher; puts forward hypotheses; easily establishes patterns of development of various phenomena; competently compares and contrasts the facts; successfully implementing corrective their activity and in accordance the target
Middle	Students seek the help of a teacher in rare cases, mainly on issues related to key points on highlighted problems ; the students hypothesize, often true ; establishes patterns of development of various phenomena; can collate and contrasts the facts with a partial control of the teacher ; adjusts its own activities by the goal
Low	Student cannot determine the problem without the help of a teacher; often makes incorrect hypotheses; cannot trace the development of patterns; carries out the adjustment of their own activities with the help of a teacher and only in this case achieve their goals

In 2018, students studied discipline without the use of innovative technologies. In the process of training, students used LMS Moodle tools only to repeat the material they passed; they did not participate in webinars and did not use the Wiki tool, which allows several people to execute a project remotely at the same time. In the organization of independent work, discussion technologies were not used. Among the students, a "brainstorming" was conducted within the framework of individual topics. As a result of checking the level of formation of students' independence (67 people), we received the following data, reflected in Figure 1.
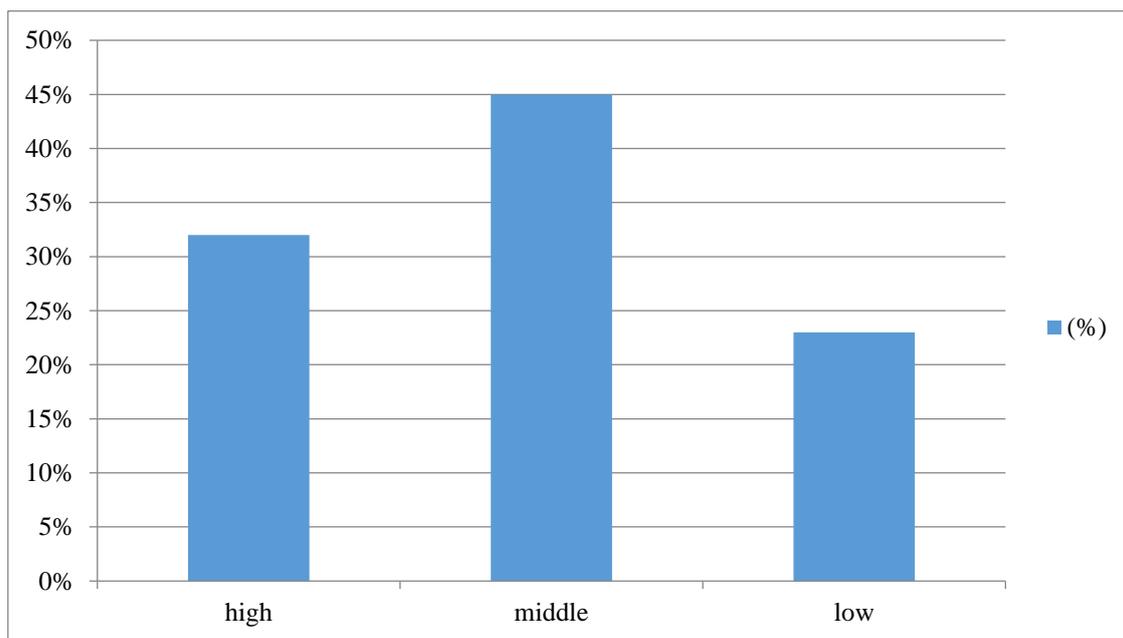
Fig. 1. Results of checking students' independence level in 2018

The results showed that before the introduction of innovative educational technologies in the study of the discipline "Teaching Technologies of the Teachers of the Past", the level of students' independence was as follows. A high level of independence has 32% of students. They can carry out the tasks set by the teacher completely independently, creatively and have a high level of self-organization. 45% of students have an average level of independence. In the process of completing assignments, they resort to the advisory assistance of a teacher, show responsibility and carry out the adjustment of their activities by the goals. 23% of students have a low level of independence. It is difficult for

them to complete the task without the help of a teacher, to achieve their goals they need control. In 2019, in the study of the discipline, innovative educational technologies were introduced (the number of respondents is 70 people). The results of our study are shown in Figure 2.
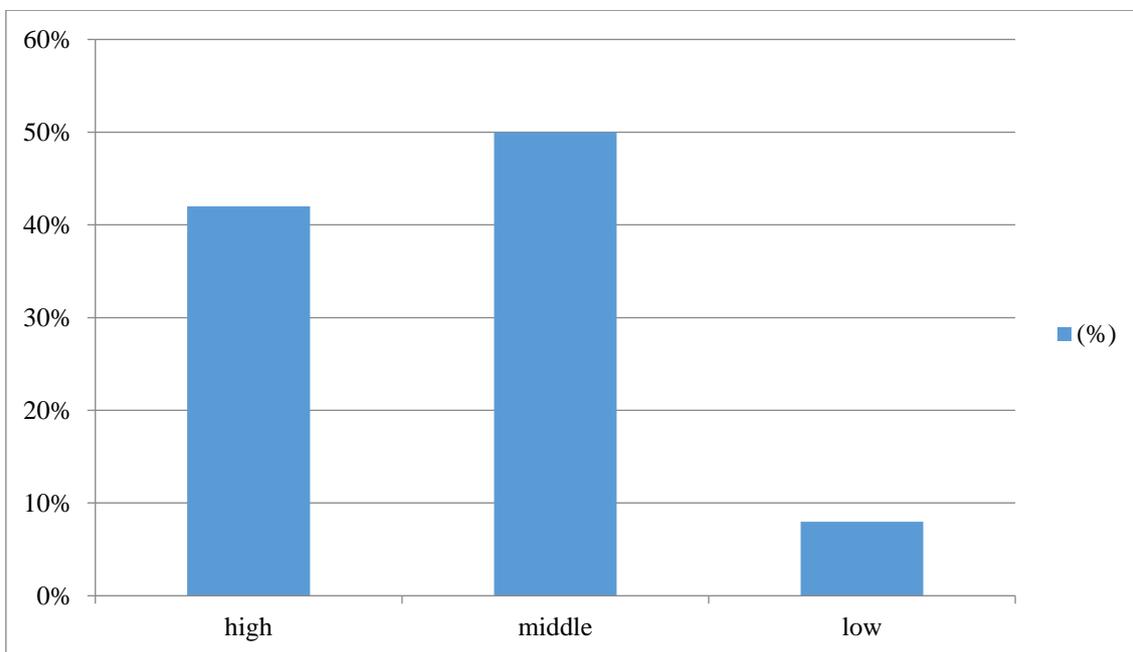
Fig. 2. Student Independence Test Results (2019)

The results of our study show that 42% of students have a high level of independence formation, the average level reaches 50%, only 8% of students remain at a low level. Figure 3 shows the results of identifying the level of independence for 2018 and 2019.
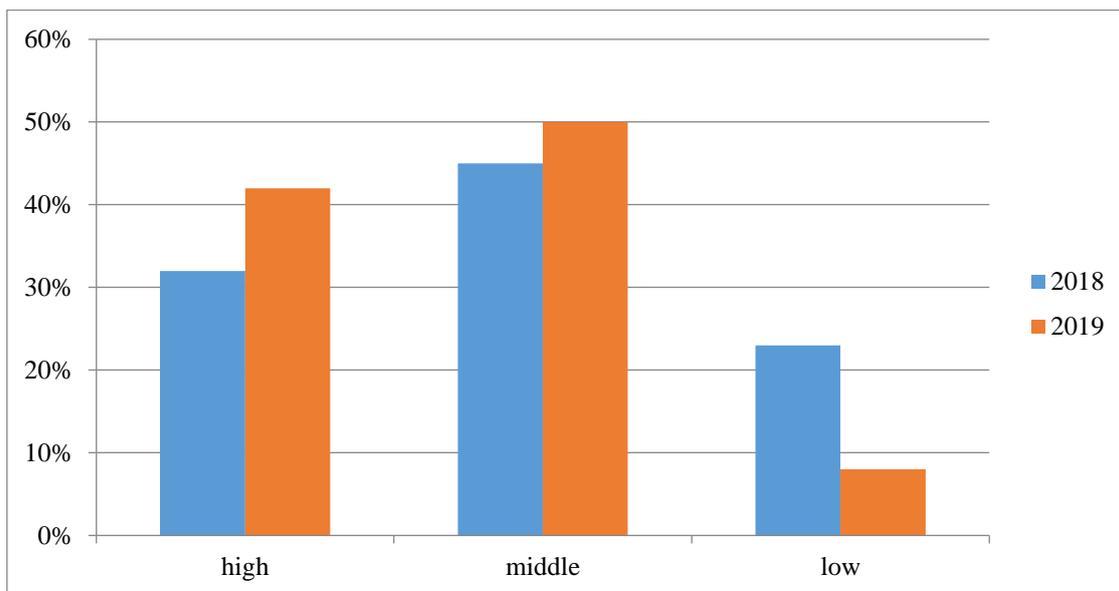
Fig. 3. Student Independence Test Results (2018 and 2019)

The figure shows that the percentage of students with a high level of independence has increased by 10%, the average level has increased by 5%, students with a low level of independence have become much less (this percentage has decreased from 23% to 8%). Consequently, the active introduction of innovative educational technologies in the process of studying the discipline "Teaching Technologies of the Teachers of the Past" improves the preparation of students for professional activities. Students can independently and creatively solve tasks, resort to non-standard methods of identifying problems and quickly deal with them.

Conclusions

We presented the experience of the implementation of educational technologies as a tool for the development of students' independence. The process of organizing students' independent work using innovative educational technologies takes place in several stages: preparatory (goals are determined, a program is established, methodological support and appropriate equipment are selected); the next is the main stage, it involves the use of search and selection of relevant information, its assimilation and processing, application of knowledge, fixing the results; the final stage includes an assessment of the significance of the results, reflection. One of the most effective educational technologies is considered problematic, projects, games, discussion, information, group training. they all penetrate each other, contributing to the achievement of the best results. At each stage, the teacher exercises control, checking the assimilation of students' knowledge. The study showed that the introduction of innovative educational technologies allows students not only to form a high level of independence, but also to acquire creative qualities, learn how to interact in a group, build their position, providing opponents with appropriate arguments. Through the use of educational technology, a student learns to correctly formulate a problem without the help of a teacher; put forward hypotheses; establish patterns of development of various phenomena; compare and contrast the facts; to adjust their own activities in accordance with the goal. The results can be taken as a basis in the preparation of students in various studying fields.

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