Artículo de investigación

Multimedia technologies in vocational education

Технологии мультимедиа в профессиональном образовании

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Abstract

Modern higher professional education is aimed at the formation of a highly qualified competent specialist. In the conditions of the competence approach, there is an active introduction in the educational process of multimedia technologies. This is one of the most rapidly developing areas of information technology. Therefore, the training of students should be carried out with the use of various information and communication tools, ensuring the improvement of the quality of education. The purpose of the article is to present the experience of training students of pedagogical University using multimedia technologies. The analysis of the impact of these technologies on the motivation and training of students when studying discipline "technology of training teachers of the past" (media technologies have been embedded in the discipline content). For the study, we measured the motivation of students. We compared the indicators of motivation diagnostics in 2017 (before the introduction of multimedia technologies) and 2018 (after the introduction of technologies). We compared the motives of creative realization (MTR) and professional motives (PM). According to the control event on the discipline "Technologies of teaching teachers of the past", we found that the percentage of "excellent" in 2018 has increased

Аннотация

Современное высшее профессиональное образование направлено на формирование высококвалифицированного компетентного специалиста. В условиях компетентностного подхода происходит активное внедрение в учебный процесс мультимедийных технологий. Это одна из самых быстроразвивающихся областей информационных технологий. Поэтому обучение студентов должно осуществляться с использованием различных информационных и коммуникационных инструментов, обеспечивающих повышение качества образования. Цель статьи - представить опыт обучения студентов педагогического университета с использованием мультимедийных технологий. Проведен анализ влияния этих технологий на мотивацию и обучение студентов при изучении дисциплины «Технология подготовки педагогов прошлого» (медиа-технологии были внедрены в содержание дисциплины). Для исследования мы измерили мотивацию студентов. Мы сравнили показатели диагностики мотивации в 2017 году (до внедрения мультимедийных технологий) и 2018 году (после внедрения технологий). Мы

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significantly, the percentage of unsatisfactory ratings have decreased.
The obtained data allowed detecting positive changes after the introduction of multimedia technologies into the educational process. The motivation of students to study the discipline has increased, their preparedness has increased, and the quality of education has increased. The high efficiency of multimedia technologies was determined, so their implementation in the training of students of pedagogical University will continue.

Key Words: Competence, motivation, multimedia technology, professional education, student.

сравнили мотивы творческой реализации (MTR) и профессиональные мотивы (PM). Согласно контрольному мероприятию по дисциплине «Технологии обучения учителей прошлого», мы обнаружили, что процент «отлично» в 2018 году значительно увеличился, процент неудовлетворительных оценок снизился.
Полученные данные позволили выявить положительные изменения после внедрения мультимедийных технологий в учебный процесс. Мотивация студентов к изучению дисциплины повысилась, их подготовленность возросла, а качество обучения повысилось. Определена высокая эффективность мультимедийных технологий, поэтому их внедрение в обучение студентов педагогического университета будет продолжено.

Ключевые слова: компетентность, мотивация, мультимедийные технологии, профессиональное образование, студент.

Introduction

Currently, vocational education is developing in terms of the competence approach, which sets new goals for higher education institutions. To date, the main goal of the University is the formation of student competence (Prokhorova et al., 2018). The University focuses on the needs of the state and society for a competent graduate (Smirnova et al., 2018). The competence approach prioritizes the practical orientation of training, which is based on the use of various technologies. Among such technologies we distinguish multimedia, they are an integral component of society and education. From the standpoint of the competence approach, the studied disciplines are considered through the prism of activity. The experience of using multimedia technologies in higher schools shows that their use in the preparation of vocational education teachers is not widespread in practical classes. However, the existing experience in the field of multimedia implementation speaks of their wide capabilities that contribute to the organization of an effective learning process. And today, their active implementation continues. We also note that in the works of various scientists, the influence of multimedia technologies on student motivation is rarely studied. In our work, we will identify this effect. Multimedia technologies help to strengthen the motivation of students to study disciplines, develop independence in finding answers to tasks, and allow them to organize activities in such a way as to achieve the best results in a short time.

Motivation is a process in which the student's activity begins to acquire a personal meaning, creates stability of interest and turns the externally set goals of the teacher into internal needs. The initial level shows the external attitude to educational and cognitive activity. The achievement of the basic level occurs when the student determines for himself the necessary knowledge, skills and abilities for further development. Here the inner motive is formed. The highest level is represented by the student's need to realize his creative potential. Creativity activates the motivation to achieve. Multimedia technologies allow forming motivation gradually. They provide students with the opportunity to build an individual educational trajectory, the formation of competencies and competencies. As a result of the use of multimedia, students develop information competence, technological and as a consequence professional. The functionality of computer tools is aimed at ensuring that the student at any time was able to repeat the material passed, to perform training tasks with instant results and comments of the teacher.

Theoretical framework

In order to identify the impact of multimedia technologies on the motivation of students, it is necessary to trace their development in the educational process. The introduction of multimedia technologies into the educational process was inevitable (Abramova et al., 2018). This process gave rise to significant changes in pedagogical theory and practice. N. S. Anisimova, N. V. Klemesheva, D. p. Muravlev, O. V. Shlykova was engaged in studying and using multimedia in the process of professional training. I. V. Belitsyn, S. S. Kravtsov, A.V. Osin were engaged in the development of the issue of the formation of competence of the teacher of professional training with the use of multimedia. This topic is devoted to the work of not only domestic but also foreign scientists such as B. hill, B. Dahmer, K. green. The authors involved in the development of the phenomenon of educational multimedia are I. V. Balandina, V. A. Kastornova, N. O. Vetlugina. Despite a large number of researchers, the phenomenon of multimedia in the education system is still not fully understood ((including little study of the effect on student motivation).

Teachers of vocational training should use multimedia in their professional activities (Ihnatenko et al., 2018).

Multimedia tools should also be used in the formation of their professional competence (Rakhimbayeva et al., 2019). They should be able to design the learning process using modern learning multimedia tools (Ilyashenko et al., 2019a). Multimedia implements the principle of visibility through multimedia visualization of content (educational information) (Kamenez et al., 2019).

Multimedia technologies contribute to the implementation of game technologies, problem technologies, project learning (Koshechko et al., 2018). Allow activating cognitive processes. The possibilities of multimedia technologies are characterized by fine-tuning of methods for variable knowledge acquisition (Klinkov et al., 2018), development of individual personal and professional qualities, active participation of students in the learning process, the use of intuitive methods, creative approach and direct interaction with the studied object (Makhometa et al., 2018).

Many scholars define multimedia as the presentation of content using text and graphics, or as the integration of various types of digital content (text, image, sound, and video) into an interactive application (Bartkiv et al., 2018). The majority of scientists consider multimedia technologies as means of increase of efficiency and quality of training which characteristic feature is a representation of information not only in a text format, but also in the form of images. Considering multimedia technologies, we will define them as a set of computer technologies that implement several information environments: graphics, video, texts, photos, animation, sound with the help of special hardware and software (Bulaeva et al., 2018). The advantages of multimedia technologies are the ability to combine logical and imaginative ways of mastering information (Chirva et al., 2018); activation of the learning process by enhancing visibility; interactive interaction; flexibility and integration of different types of multimedia information (Denysenko et al., 2018). The use of multimedia in the preparation of University students contributes to the most effective organization of training and management of the educational process (Garnevska et al., 2019a).

Methodology

In 2017 and 2018, the Nizhny Novgorod State Pedagogical University named after Kozma Minin conducted a study on the impact of multimedia technologies on the quality of training of future teachers of vocational training by checking the formation of motivation. The content of the discipline "Technology of teaching teachers of the past" was introduced the use of multimedia technologies. The study involved 6 groups of students (three groups of students who studied "Technologies of teaching teachers of the past" in 2017 and three groups of students who studied this discipline in 2018). The motivation of students to study the discipline was measured. A comparison of indicators of motivation diagnostics in 2017 (before the introduction of multimedia technologies) and 2018 (after the introduction of technologies). We compared the motives of creative realization (MTR) and professional motives (PM). The comparison was carried out using the method "Study of the motives of the educational activities of students." For each student, a qualitative analysis of the leading motives of educational activity was carried out. For each sample (group of students), the frequency of choosing one or another motive was determined. The more often a particular motive was chosen, the higher its rank, the more it dominates the system of motives. Multimedia technologies make the educational process more

visual, and therefore more attractive for study, which motivates students to master new material.

Results and discussion

When studying the discipline "Technologies of training of teachers of the past" for future teachers of vocational training in Nizhny Novgorod state pedagogical University named after Kozma Minin multimedia technologies were introduced. During the training, students performed case studies and projects (Markova et al., 2019). Multimedia technologies contribute to the organization of interactive interaction. When performing tasks, students use network technologies, electronic textbooks, located on the electronic platform Moodle. The use of multimedia promotes mobility, develops the activity and independence of students. Such conditions of relative freedom encourage students to be more creative, to approach the task responsibly (Nikonova et al., 2019a).

Students perform case studies as follows. The teacher uses an interactive whiteboard for clarity, where he shows slides and highlights important points that should be paid attention to when working on a question. Students are involved in the work, using Internet resources, searching for relevant information for them (Nikonova et al., 2019b). The task is problematic. This situation may arise in real professional activities, students have to involve in the task of additional sets of textbooks, which are located on the electronic platform Moodle (Vaganova et al., 2019b). The advantages of working with such an electronic resource are obvious (Vaskovskaya et al., 2018). The teacher selected the necessary information earlier, which can be used by students in certain difficulties in solving the problem, because the information available on the Internet is too extensive, its analysis requires a lot of time (Vaganova et al., 2019c). Electronic manuals prepared by the teacher allow you to direct students to the necessary information, allow you to highlight the main idea and move on in search of an answer to the questions posed (Vaganova et al., 2019d).

The project was implemented using the capabilities of PowerPoint and video editors. They were used to prepare the presentation at the final lesson when defending the project (Ivanova et al., 2018). They allow you to learn how to structure information, and develop skills of direct program management, logic, the ability to control processes using available tools (Pometun et al., 2018).

Multimedia is used both in the classroom and in independent work (Sedykh et al., 2019). The preparation of the project is carried out by students with the direct participation of the teacher, who directs the activities in the right direction (Smirnova et al., 2019)

Project preparation is a long process that takes place over several sessions (Vaganova et al., 2019a). During this time, students use a variety of information and communication technologies, electronic means. Have the opportunity to organize their correspondence on the electronic educational platform and send each other the results, exchange ideas. The teacher evaluates the contribution of each student to the overall result (Rakhimbaeva et al., 2019). The electronic platform Moodle facilitates this process. For example, a Wiki tool is a web page that can be modified and supplemented by each participant in the project, and the teacher can track who made a particular change (Vaganova et al., 2019e). Wiki allows you to make a common project at a remote distance, and the presence of each student in the classroom is not required (Vaganova et al., 2019f). Students are in comfortable conditions and work at a pace that is convenient for them. In classroom settings, consultations are held that require the personal presence of all students. All students gather in the classroom also to present their work in the classroom. It uses an interactive whiteboard, multimedia projector, which allows you to show presentations prepared by students.

Figure 1 shows the work of students to prepare a project on the discipline "Technology of teaching teachers of the past." This discipline in the training of teachers of vocational training occupies a significant place.

Fig. 1. Implementation by students of pedagogical University the discipline project "Technologies of training of teachers of the past" with usage of multimedia technologies

For the study, we measured the motivation of students. We compared the indicators of motivation diagnostics in 2017 (before the introduction of multimedia technologies) and 2018 (after the introduction of technologies). The chart shows the results. We compared the motives of creative realization (MTR) and professional motives (PM).

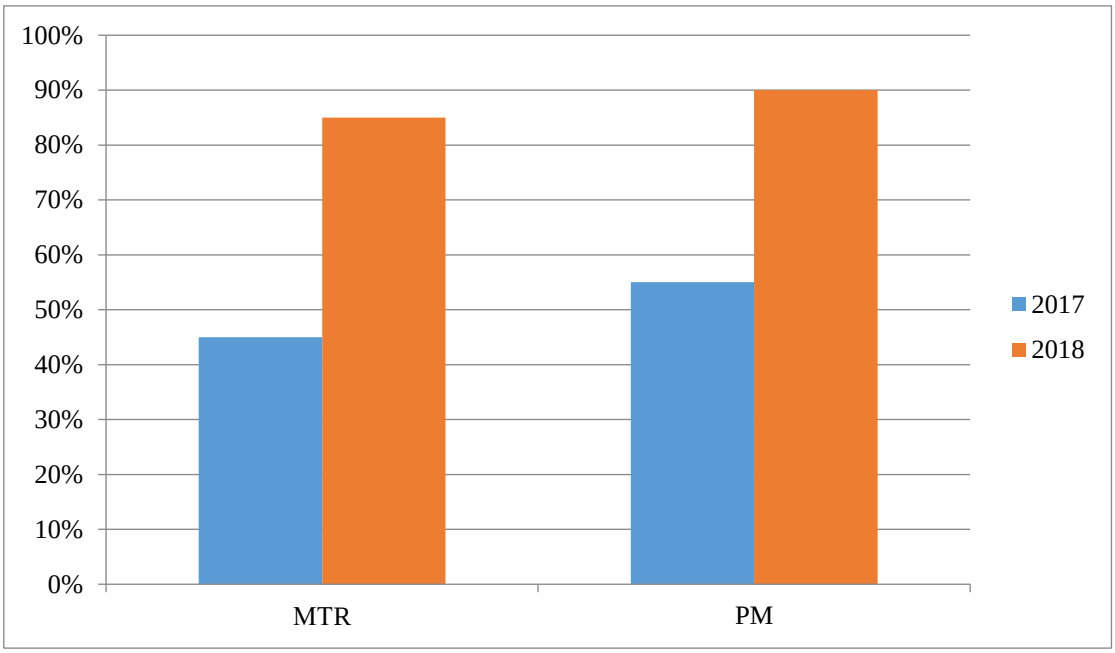

Fig. 2. Comparative characteristics of diagnostic indicators of educational students' motivation of in 2017 and 2018

We can observe that in 2017 the indicators of MTR and PM were significantly lower than in 2018, that is, the introduction of technologies had a significant impact on the motivation of students to study the discipline.

Figure 3 presents the results of the final control on the discipline "Technology of teaching teachers of the past."

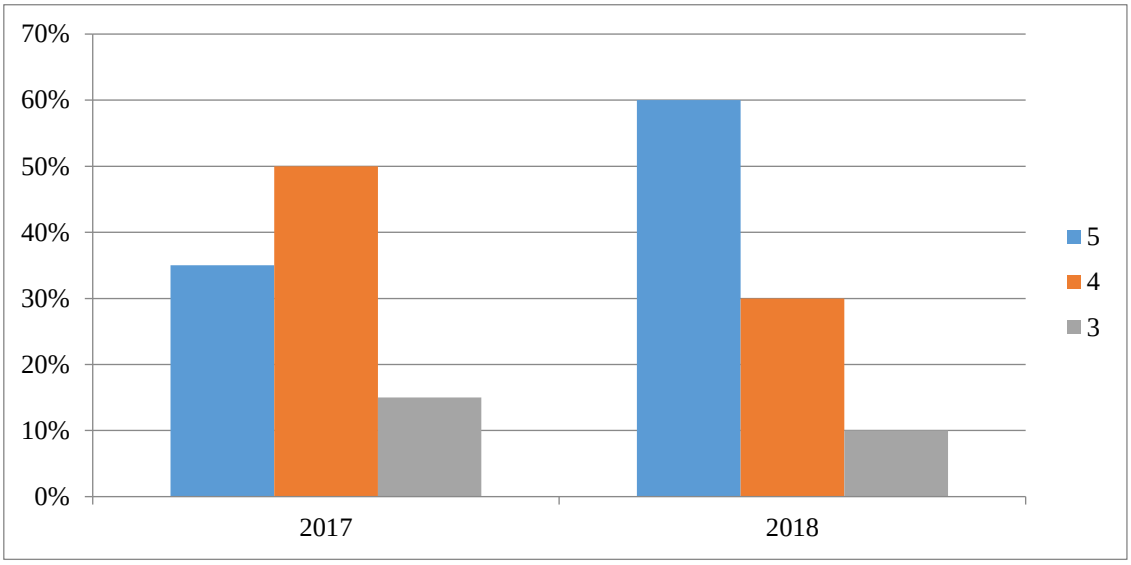

Fig. 3. The results of the discipline control "Technology of training teachers of the past

The figure shows that the percentage of "excellent" grades in 2018 increased significantly, the percentage of unsatisfactory grades decreased.

We also found that after the introduction of multimedia technologies in the process of studying the discipline, students ' preparedness increased, interest increased, which allows us the opportunity to talk about improving the quality of training of teachers of vocational training.

Conclusions

The paper presents the experience of training students of pedagogical University using multimedia technologies. The usage of multimedia technologies in the preparation of students of higher education institutions provides ample opportunities for the formation of their motivation, independence, and creative component. The study allowed us to establish that the quality of training with the introduction of these technologies in the learning process increases. The motivation of students' increases, the formation of competence of future specialists reaches a new level. Comparison of indicators of motivation diagnostics in 2017 (before the introduction of multimedia technologies) and 2018 (after the introduction of technologies)

allowed establishing that the motives of creative realization (MTR) increased from 45% to 85%,

and professional motives (PM) rose from 55% to 90%. Comparative analysis of the results of the study of the discipline "Technology of teaching teachers of the past" showed positive changes after the introduction of multimedia technologies in the content of the discipline. The percentage of "excellent" ratings in 2018 increased significantly (from 35% to 60%) compared to 2017 (before the introduction of multimedia technologies), the percentage of unsatisfactory ratings decreased. If in 2017, the percentage of students who completed the control tasks for assessment 3 was 15%, in 2018-10%.

We found that after the introduction of multimedia technologies in the process of studying the discipline, students ' preparedness increased, interest increased.

Therefore, we can talk about the need for further implementation of these technologies in the process of training students.

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