Artículo de investigación

Portfolio as an educational technology in the educational process of a university

Портфолио как образовательная технология в образовательном процессе вуза

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Abstract

The current stage in the development of society and science as well as technological progress pose new challenges for higher education institutions. Modern requirements concerning highly efficient specialists training have indicated the need to use innovative technologies in the competent graduate formation. The purpose of the article is to review the experience of implementing portfolio as an educational technology in the higher school educational environment. The article reveals the capabilities of the portfolio, its types and functions. The main ideas of portfolio technology in vocational education are identified. The research was based on the study of the motivational, epistemological, activity components formation before the portfolio technology introduction and after its implementation. The results obtained allow us to talk about the importance and effectiveness of the portfolio in the formation of a highly educated and competitive specialist. The data of the study can be used in the preparation of higher educational institutions students.

Keywords: Portfolio, students, competence, competencies, educational technology.

Аннотация

Современный этап развития общества и научно-технического прогресса, ставит новые задачи перед высшими учебными заведениями. Современные требования к подготовке высококвалифицированных специалистов обозначили необходимость использования инновационных технологий в формировании компетентного выпускника. Цель статьи: рассмотрение опыта реализации портфолио как образовательной технологии в образовательной среде высшей школы. В статье раскрываются возможности портфолио, его виды и функции. Определены основные идеи технологии портфолио в профессиональном образовании. Исследование основывалось на изучении сформированности мотивационного, гносеологического, деятельностного компонентов до внедрения технологии портфолио и после ее внедрения. Полученные результаты позволяют говорить о значимости и результативности портфолио в формировании высокообразованного, конкурентоспособного специалиста. Данные проведенного исследования могут быть использованы при подготовке студентов высших учебных заведений.

Ключевые слова: технологии портфолио, студенты, компетентность, компетенции, образовательные технологии.

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Introduction

Portfolio is one of the widely used technologies in education, which are focused on the result. The need for an objective assessment of one's own knowledge as well as real achievement and the ability to further study are important things to consider (Smirnova, et al 2018). These aspects of assessment have become a global and important phenomenon that can be represented as the result of intellectual and creative work obtained during creative activity (Garnevska, et al 2018). Thanks to the technological approach, the portfolio is considered as a pedagogical technology, it is it that meets the need for an objective assessment of one's own knowledge. N.N. Smetannikova and E.S. Polat is especially valuable in portfolio technology by improving the ability to self-evaluate student activities. N.P. Dutko talks about improving professional qualities and the formation of professional competence in this matter. In her opinion, portfolio technology allows you to solve the problem of an objective assessment of knowledge. The concept of portfolio came into the sphere of education from politics and business, and today it has adapted to educational process (Markova, et al 2019). The appeal to the portfolio as an educational technology in the professional training of students is due to a number of specific opportunities that contribute to a better formation of professional competency (Nikonova, et al 2019b). Portfolio is a technology for working with the results of educational activities of students which includes a demonstration, analysis, evaluation of educational results, the development of reflection (Makhometa, et al 2018). Students, working with a portfolio, improve the skills of structuring information (Vaskovskaya, et al 2018), learn to select and analyze it from the point of view of a particular topic, work with various sources of information, develop the skills of self-esteem and self-presentation (Smirnova, et al 2019). Using portfolio technology allows both the student himself to see his educational successes and institution of higher education to collect information about the level of students' training. (Ilyashenko, et al 2019b). The main goals of portfolio technology are tracking the dynamics of student learning; student's attitude to a particular field of study (physical training, professional, cultural, creative, social) (Kamenez, et al 2019); the process of mastering the curriculum; student achievement (Vaganova, et al 2019a). Portfolio encourages students to study disciplines since portfolio technology allows students to be immersed in the framework of training in conditions of some competition (Vaganova, et al 2019b). For each task (achievement), certain points are set and students tend to perform buildings better than fellow students to get a higher score (Nikonova, et al 2019a). Modern education is based on personality-focused technologies that take into account the interests and abilities of each individual student (Rakhimbaeva, et al 2019). A feature of portfolio technology is its personality-oriented nature as it reflects its needs and interests (Ivanova, et al 2019). Through a portfolio, a teacher can identify gaps in the education of each individual student (Myalkina, et al 2018).

Theoretical basis

Portfolio technology has appeared in Russia relatively recently. In the works of A.I. Kukueva it is indicated that in many countries a portfolio is a document with which any employee can prove their competitiveness in the labor market. O.G. Smolyanikova and V.V. Trofimov consider the portfolio as a way of developing professional competencies as well as sociocultural ones. Now more and more scientific works are devoted to portfolio technology (Koshechko, et al 2018). Many authors argue that the competence developed in the process of modern professional education consists of several components: motivational, epistemological and activity. A necessary condition for the development of competencies is the implementation of relevant activities (Vaganova, et al 2019c). Portfolio technology combines necessary activities for the development of cultural and professional competencies (Chirva, et al 2018). Portfolio technology performs the following functions in the process of preparing students of higher professional institutions: diagnostic (fixing changes in the student's indicators in the learning process for a certain period of time); goal-setting (consistent with educational goals) (Vaganova, et al 2019d); motivational (encourages students and teachers to interact effectively, to achieve better results compared to their fellow students) (Vaganova, et al 2019i); teaching (creates the conditions for the formation of students' competence) (Vaganova, et al 2019f). Scientists distinguish several types of portfolio: portfolio of achievements; portfolio self-esteem; portfolio report (Sedykh, et al 2019). One of the most important characteristics of portfolio technology is its reflexivity (Bartkiv, et al 2018). Reflection allows self-certification and self-reporting. (Bulaeva, et al 2018). With the help of reflection, the process of cognition is based on self-observation (Ihnatenko, et al 2018). In the

process of compiling the portfolio, students plan their activities, carry out assessment, self-esteem and mutual assessment, learn to set goals for building their individual educational paths, track and correct their mistakes and learning gaps (Ilyashenko, et al 2019a). The pedagogical ideas of the portfolio are to fill the student's educational gaps (Klinkov, et al 2018), focusing on his specific achievements rather than shortcomings (first of all, creating a portfolio, the student has the opportunity to evaluate the results of his activities) (Vaganova, et al 2018).

Methodology

We checked the formation of students' competency components using portfolio technology in 2018 (motivational, epistemological, activity). The activity component reflects a person's ability to evaluate his own activities and the activities of others, it allows him to build his educational trajectory. The motivational component reflects students' motivation to study educational materials. The epistemological component includes the student's existing knowledge system. The study involved three groups of 1st, 2nd and 3rd year students (220 people) studying in the field of "vocational training (in industrial sphere)." There are 73 people in the first group, 72 in the second, 75 in the third. We took the number of students in each group as 100%. The results showed that the formation of competence components of the 1st – 3d year students is naturally different. One of the reasons is that in the 1st year students are just starting to get acquainted with portfolio technology. They have not yet formed an idea of how to use it and what its essence is (Kalinina, et al 2019). By the third course, the situation is changing significantly. With the help of portfolio technology, students regulate their educational path, finding out in which particular area there are problems. The results allow us to talk about the need to use portfolio technology, since it allows students to monitor the level of their work independently.

Analysis

The most common type of portfolio at the Kozma Minin Nizhny Novgorod State Pedagogical University is the portfolio of achievements. Students begin to get acquainted with it from the 1st course. The formation of their competence becomes inextricably linked with its preparation. However, during the first year of studies students are just beginning to understand its essence, while by the 3rd year a full awareness of its significance is being formed. Verification of this assumption was carried out using research (Pometun, et al 2018).

Students, starting from the 1st year, fill out a special set of documents that contain several sections: cultural and creative activities, social activities, scientific activities, sports activities (Denysenko, et al 2018). Each section is a form in which data concerning achievements is entered. For example, it is the name of the competition or any other significant event (the package of documents contains information about the achievements that will be counted and what point will be awarded for this). During the training, students participate in scientific conferences, competitions, social projects, sports competitions and other various events. Aiming to get more points, they manifest themselves as active subjects of the educational process, develop independence and creative component. Table 1 provides a description of the competence components of the future vocational education teachers which is formed in the educational process of a higher educational institution. The students competence is developed only in activities. The activity component reflects a person's ability to evaluate his own activities and the activities of others, and allows him to build his educational path taking into account his own achievements and taking into account the desire to get better results. The motivational component reflects the students' motivation to study new materials. The epistemological component includes the student's existing knowledge system. We check the formation of components using portfolio technology. The study involved three groups of 1st, 2nd and 3rd year students (220 people) studying in the field of "vocational training (in industrial sphere)." There are 73 people in the first group, 72 in the second, 75 in the third. We took the number of students in each group as 100%. The results showed that the use of the portfolio has a positive effect on the formation of students' competence. By the 3rd course, the formation of each component is growing. If the high level of the motivational component formation during the 1st year of studies is 20%, then it reaches 35% by the 3rd year, the epistemological component (24% for the 1st year students have a high level, 34% for the third year), the activity component (1st year students - 25 %, 3d year students - 40%).

Table 1. Competency framework

Component	Component description
Motivational	It is expressed in the students willingness to apply acquired skills in the field of professional activity in practice
Epistemological	It is characterized by the students solid knowledge system of organizational, socio-psychological, legal and economic foundations for the implementation of professional pedagogical activities
Active	It is characterized by the ability to evaluate and analyze the results of activities, as well as the ability to identify both positive and negative aspects associated with a future profession, as well as to determine more effective ways of action within the educational process on the basis of the conclusions made

Table 2 presents the results of components formation check in 1st, 2nd and 3d training courses in 2018. The percentage of the total number of students is indicated.

Table 2. Change in the level of formation of the motivational, epistemological and activity competence components of 1st, 2nd and 3d year students using portfolio technology

Components and levels of their formation		2018 год			
		Course 1		Course 2	Course 3
motivational	high	number of persons	73	72	75
		(%)	20%	30%	35%
	middle	(%)	36%	40%	45%
	low	(%)	44%	30%	20%
epistemological	high	(%)	24%	28%	34%
	middle	(%)	30%	33%	44%
	low	(%)	46%	39%	22%
activity	high	(%)	25%	26%	40%
	middle	(%)	37%	35%	50%
	low	(%)	38%	39%	10%

We can notice that by the 3rd course the formation of each component is growing. If the high level of formation of the motivational component in 1st year students is 20%, then in the 3rd year it reaches 35%. The epistemological component (24% of 1st year students have a high level, 34% for the third year), the activity component (1 year - 25%, 3 year - 40%). The percentage of students with a low level of competence component formation becomes much lower. If in the 1st year the low level of the motivational component formation was in 44%, then in the 3rd year it was only 20%. Epistemological component: 1 course (46%), 3 course (22%). Active component: 1 course (38%), 3 course (10%). The formation of students' competence is impossible without the implementation of various activities. Therefore, the activity component is important for us. We reflect it in the figure.

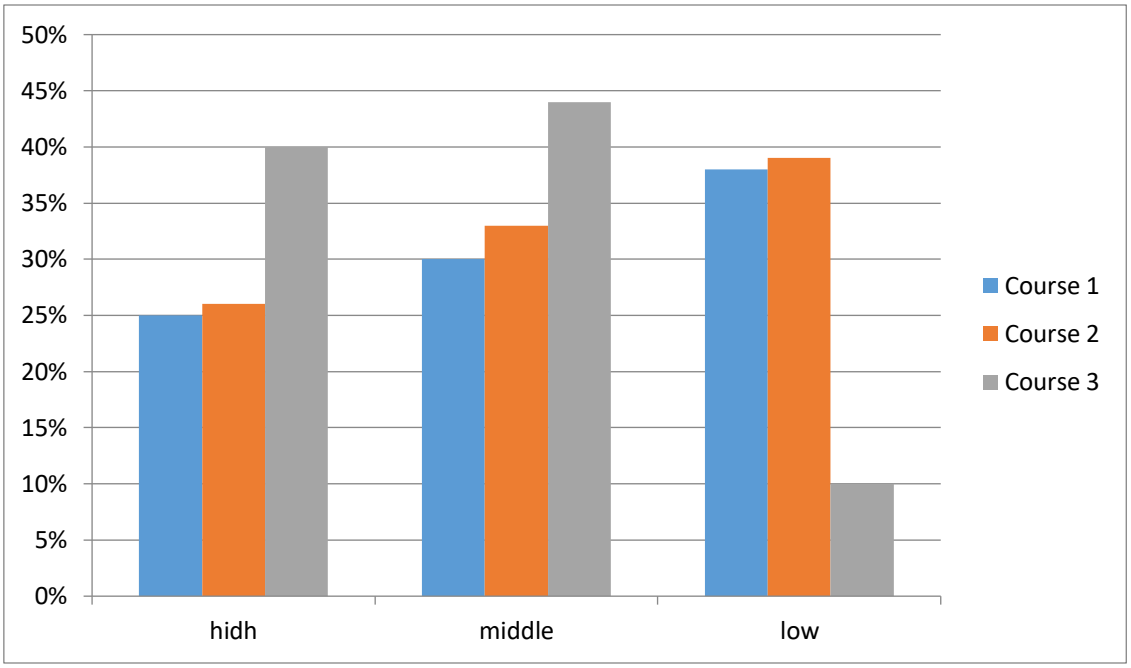

Figure 1. Formation of the activity component

By the 3rd course, 40% of students reach a high level of activity component. At the same time, the number of students with a low level of activity component formation is significantly reduced.

Conclusion

We conducted a study to identify the formation of the future vocational training teachers' competence. The results of the 1st, 2nd and 3d year students were studied. During the first year, students are just starting to get acquainted with the technology of the portfolio, this is the stage of getting used to. By the 3rd year, their awareness increases, they clearly understand the essence of the portfolio. This is one of the obvious facts of increasing the formation of students' competency components by the third year. Filling the portfolio, students pay attention to each of the areas of preparation and try to fill the gaps. In this way they regulate their success in mastering various disciplines.

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