Parameters of development of professional competence of students based on digital technologies

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Annotation: Over the last years, Information and Communication Technologies have played a substantial role in improving both the quality of life for people. It will be discussed about parameters of development of professional competence of students based on digital technologies.

Keywords: parameters, professional competence, technologies, digital competence, methodology, knowledge, design

Today, the formation of specialists with digital competence is one of the main tasks of the education system of modern society. Digital technologies - Internet of Things (IoT). One of the main technologies based on digital information is the Internet of Things. It is common that many household appliances are connected to the electrical network, but gradually more and more objects of the physical world are connected to the Internet, which allows collecting information and even controlling these objects remotely. In fact, a virtual copy of a physical object appears on the Internet, containing various parameters of the object and the outside world, and allowing the control of the object over the Internet. As an example of the Internet of Things, a device such as a projector in a movie theater sends a signal to the technical support service about a detected fault and a list of parts that need to be replaced as part of unscheduled maintenance. .

Eur. Chem. Bull. 2023, 12(Special Issue 8),1017-1026

1017

Digital technologies - augmented reality (AR). The most promising is augmented reality technology, which allows adding objects from the virtual world to the real world. Imagine walking down the street and seeing more information about things and people around you. Examples of augmented reality already exist and are actively used, in some amusement parks you can already see signs that show the connections between objects in the physical world and the virtual world. Games with elements of augmented reality are actively spreading, clothing stores have virtual windows and fitting rooms, augmented reality is already being tested in cars. At the same time, there are also issues that need to be resolved in order to actively use augmented reality technologies. For example, the accuracy of geolocation tools is still insufficient, or the computer vision technologies for connecting physical world objects with their virtual copies are imperfect. However, it is safe to say that in the near future this technology may be associated with breakthroughs. Digital technologies - virtual reality (Virtual reality, VR). The emergence of technical devices that allow a person to be in virtual reality has made this technology in demand in the entertainment industry. Helmets and suits of virtual reality, specialized rooms allow you to enter an unknown world, all your actions are programmed to respond from the virtual world, which allows you to immerse yourself 100%.The task can be achieved only by successfully carrying out the methodology of developing ICT competence on the basis of multimedia projects, which allows the learner to understand new knowledge, to create innovations from them during the design process, and to effectively apply the created new projects to practice. should be given. It is for this reason that in the digital age of modern education, the development of digital competence of students of the higher education system with the help of interactive technology and multimedia tools is considered one of the main tasks of modern education. One of the main units of updating the

Eur. Chem. Bull. 2023, 12(Special Issue 8),1017-1026

1018

educational content is the concept of competence. It expresses the integrative nature of a person, in other words, the personal qualities of a future specialist - knowledge, skills, practical experience, abilities, personnel orientations. Competence ensures and strengthens the readiness of a person for professional activity. Relevance of the topic. The interaction of integration and differentiation has been proven in the science of pedagogy, which provides the opportunity to create the necessary conditions for organizing vocational education and building a hierarchical model. In modern society, the level of development of those countries is determined not only by its technical condition, but also by the professional competence of specialists being trained in higher education institutions. Modernization of the educational system, changes in the vocational education system make it necessary to develop the professional competence of the employees of the educational institution. Currently, the state educational standards of higher vocational education have been introduced, and innovations in the content and technology of education aimed at improving the quality of training of future vocational education workers are being widely introduced. The state educational standard defines professional and general competencies, that is, the knowledge, skills and abilities that graduates should acquire. They can be achieved through an integrative approach to the development of basic vocational education programs. The variant part of the program allows to reflect the uniqueness of the educational institution, the region, the demand of the employers in the region for specialists who have specific professional competencies. In our opinion, it is integrative education (educational integration) that is important for the process of formation of professional competence of future specialists and for their future professional activity. The modern labor market presents increasing demands for the quality of education today, and the professional competence and professional training of future vocational education students, in turn, leads to increased competition among graduates of higher educational institutions, including technical higher educational institutions. If the initial qualification of a specialist only implies the suitability for

jobs and the acquisition of narrow information, then "competence" requires the acquisition of knowledge not only of a general type, but also of a wide field1. The preparation and ability of the specialist in the successful implementation of his skills implies improvement of the efficiency and quality of his work. Various tasks related to professional activity can be defined as a set of developed personality qualities of the student. According to scientists E.E.shcherbik, A.A.Kondakova, three levels can be identified when assessing the formation of digital competences:

 - top; characterized by the ability to fully use digital and information and communication technologies (including the creation of a digital product);

 - middle; it can be characterized as knowing that all numerical competencies exist, but only partially using them;

 - low; It differs from the availability of knowledge in numerical components, the load of the knowledge component with professional tasks.

 Therefore, for the development of digital competences, it is necessary not only to use inter-discipline connections, but also to include design work using individual interactive methods in the studied subjects. According to experts, digital competence implies reliable and effective use of information society technologies in all spheres of life. Digital competence is based on basic skills in the field of information and communication technologies. "We present several definitions of the concept of multimedia that are covered in the literature: "Multimedia is a set of tools that process information in various forms"7. "Multimedia is a user who intends to use information of different types, text, graphics, sound and others at the same time. the concept of interface", "Multimedia is the embodiment of traditional and original types of information, delivery of learning materials to students based on software and technical tools of informatics", "Multimedia is a rapidly developing modern information technology". Based on our definitions, the emergence of multimedia is a

great achievement of humanity, thanks to which great achievements have been made in the fields of education, science, business, and art surrounded the world and showed his miracles in a wide audience. Having studied the above scientifically based definitions and possibilities of multimedia, using multimedia tools in the modern digital educational environment will create the possibility of a multimedia project for students to work with educational materials suitable for their individual psychological characteristics, to perform tasks. This creates a basis for the development of digital competence of students in a digital educational environment. "Project name (Latin projects - thrown forward), 1) technical document, drawing, calculation, layout, building, structure, etc. 2) preliminary text of any document; 3) plan, purpose". Having scientifically based the meaning of the project water, we have analyzed and studied the opinions and definitions of scientists in different fields of activity and have come to a creative conclusion. Based on the results of our conclusion, it is effective to improve the competence of vocational education students in the digital educational environment based on the orientation of their digital competence to multimedia design activities. The use of multimedia design in the process of digital learning environment develops the digital competence of students and enriches their experience. In the digital educational environment, learning with a new learning method to bring out a number of features such as making learning activities interesting, directing students to creative pursuits, motivating them, developing informational and communicative competences, developing project tasks, becoming a leader in a group, and winning a prize and improvement of adaptation to activities will give effective results. Keeping up with the times and adapting to the digital age is very important in education is a very important step towards motivating adaptation. All of the above factors will help in organizing multimedia project work of students, using home technology as an effective way to acquire new knowledge and skills, taking into account scientific research. Methods used in research. Gamification (from the English word "gamification") refers to the use of home-based approaches for

Eur. Chem. Bull. 2023, 12(Special Issue 8),1017-1026

1021

software and websites to attract users and consumers, increase their participation in solving program problems, and use products and services. We recommend using the gamification method to develop students' digital competence, to organize their work on a project basis in the performance of the tasks given in the lesson. The gamification method is a new scientific method that is currently being used in all fields: economy, sports, art, education and other fields. Today, in developed foreign countries, gamification principles are introduced into the educational process, from preschool to graduate school. For example, project-based homework is not just a boring "compulsory" chore, but a fun process to earn a reward or do new research. In conclusion, we offer the following recommendations for the development of digital competence of students studying in the field of vocational education based on the multimedia project, taking into account the above considerations:

- in-depth study of all the new requirements of the digital economy and the specialists developed by it, which are part of the three components of the digital society in the modern educational environment;

- to analyze and compare the classification of modern changes and innovative development in the field of education;

- to improve the possibility of multimedia project work, to motivate the development of digital competence of students in the environment of information education;

- implementing the use of gamification in the development of students' digital competence, organizing multimedia projects;

- analyzing the successful results achieved by students using the gamification method in the organization of multimedia projects.

In addition, it should be noted that the acquisition of students' knowledge in the course of diagnosis, interdisciplinary communication, should be carried out regularly

Eur. Chem. Bull. 2023, 12(Special Issue 8),1017-1026

1022

at intermediate stages - checkpoints and places where knowledge testing is planned - leading to the final point.

Thus, it is reasonable to implement professional activity by interdisciplinary integration, if the students of technical higher education institutions perform the tasks of integration with regular use and perform them in practical exercises, but only practical exercises allow to acquire and reduce the knowledge gained in studying theoretical materials. While performing this or that laboratory work, solving a complex academic task, the student acquires practical skills necessary for successful professional activity. The graduate, having perfectly combined professional skills, has the possibility of successful competition in the market of goods, allows creative use of professional skills, allows to achieve the highest quantity and quality indicators. The interdisciplinary integration of students of higher education institutions plays an important role in improving the quality of scientific-theoretical and practical training of students, because the problems of implementing the interdisciplinary approach at every level are not only the educational (study) program, but also the education and development of modern students. issues are resolved. A comprehensive (universal), creative, developing personality of a future specialist (professional) can only be formed in the conditions of an integral pedagogical process, the professional competence of the professional - based on the general principles of each stage, the methods and goals of the final goal built 1. It is for this reason that interdisciplinary integration is considered an important condition for the education and upbringing of teachers of vocational education in technical higher education institutions. The processes of integration and differentiation in the preparation of vocational education specialists for professional activity appear as the development of a single vocational education trend. Based on this, we have determined the integrative-differential approach as a pedagogical method for preparing future vocational education students.

Eur. Chem. Bull. 2023, 12(Special Issue 8),1017-1026

1023

In doing so, we will improve knowledge and vocational education by organizing a dynamic balance between the processes of integration and differences, implementing a vocational process that can work in various vocational and vocational education systems. Integration of pedagogic-psychological theoretical and practical knowledge in preparation for professional activity, interdisciplinary integration, integration of pedagogical and technical knowledge in diagnosing preparation for professional activity requires a systematic approach to improving the professional competence of students. Therefore, a systematic approach was taken to ensure the integration of pedagogical and technical knowledge in the diagnosis of preparation for professional activity. Based on the classification of the stages of formation of personal and professional qualities in future specialists, the mechanism of development of competencies such as mobility, reflexivity, integrativeness in theoretical, practical, scientific-research training directions was improved. At the stage of professional self-knowledge (II year), special development of students' personality continues, their cultural needs and demands are formed. They include all forms of self-confidence and independence, not only education and training, but also take an active part in public organizations and activities. During this period, attention to general professional subjects is strengthened. At the stage of professional self-identification (III course), students' attention to specialized training subjects is increased, motivations for improving their readiness for professional activity are strengthened and reduced. At this stage, specialization (specialization) begins, interest in scientific research increases, and they learn about the features of their chosen profession.In general, the use of multimedia design in the process of digital learning environment develops the digital competence of students and enriches their experience. In the digital educational environment, learning with a new learning method to bring out a number of features such as making learning activities interesting, directing students to creative pursuits, motivating them, developing informational and communicative competences, developing project tasks, becoming a leader in a group, and winning a

Eur. Chem. Bull. 2023, 12(Special Issue 8),1017-1026

1024

prize. improvement of adaptation to activities will give effective results. Today, the reforms implemented in our country, the implemented innovations, the conditions created for the participants of the educational process, the improvement of the living and working conditions of our people, in general, the achieved freedom of material and spiritual potential are a gift of the country's independence. free work and living, free thinking, freedom of belief and speech, religious tolerance, creative activity, respect and appreciation of universal values and national traditions, strong social protection and the creation of legal bases for these assigns specific tasks in the direction of teaching young people to objectively evaluate intelligence, its essence, importance and necessity. These, in turn, pay special attention to the formation and development of students' creative thinking skills in the educational processes organized in higher education institutions, teach them to think more freely and innovatively, and their subjectivity to increase, to create conditions for students to receive education, to analyze their scientificity, novelty and reliability based on the study of information received by students, to provide them with the latest and most reliable information, to exchange information in coordinating the activities of students determines the need for special attention and effective use of digital technologies. The reforms in the continuous education system implemented in our country, the preparation of highly qualified specialists, the creation of necessary and sufficient conditions for the participants of the educational process in the directions of improving the quality and efficiency of education, the heads of higher educational institutions and professors teachers also have their own responsibility. It is difficult for educational and educational processes to create creative activity without developing the student by themselves. For the development of knowledge, skills and abilities of students focused on creative activity, it is necessary to organize their activities correctly and have a creative approach. determines the necessity. Students' creative development does not occur as much during the process of understanding the educational material. For example: a person can effectively approach a creative

Eur. Chem. Bull. 2023, 12(Special Issue 8),1017-1026

1025

activity only if he acquires enough knowledge, skills and competence to create a content, if he does not remember the necessary information, he will not be able to use them sufficiently in the creative activity, it is natural that he will not develop any creative approach skills remains. In this place, as a result of their efforts, aspirations, and regular work of the student, they can get the opportunity to form and develop creative activities in the future. Effective use of ICT and digital technologies in providing students with a creative approach to professional-pedagogical activities based on modern requirements is considered appropriate.   Because digital technologies are considered important as they consist of a set of methods, production processes and technical tools combined for the purposes of collecting, editing, storing, distributing and using information for the benefit of the user.

References:

1. Kapterev A. I. Multimedia is a sociocultural phenomenon. — M.: Profizdat, 2002. — 224 p.

2. Fulomov S. S. Shermukh, Ammedova A. L. Begalov B. A. Economic informatics, -Uzbekistan, 1999. -527. b.

3. Begmatova N.N. Multimedia: term, definition, content and technology // Physics and mathematics and informatics. - T .: - No. 2. 2010. -B. 39-45

4. Aripov M.   Fundamentals of informatics and information technologies - T.: University. 2001. - 361 p.

5. Fulomov S. S. Shermukh, Ammedova A. L. Begalov B. A. Economic informatics, - Uzbekistan, 1999. - 527. p.