УДК: 37:001.895 (575.1)

FACTORS OF STUDENTS' DIGITAL COMPETENCE DEVELOPMENT

KHAMRAYEVA GULNOZ RUSTAMOVNA

Tashkent University of Information Technologies named after Muhammad al-Khorezmi, Republic of Uzbekistan

Abstract: The article describes the methods of development of digital competence of students studying in the field of vocational education in the conditions of modern innovative teaching methods. In addition, the author has developed a structural model of using the "SMART Strategy" method in the organization of practical work of students.

Keywords: digital competence, innovative methods, education, QR codes, strategy, puzzles, technology.

ФАКТОРЫ РАЗВИТИЯ ЦИФРОВОЙ КОМПЕТЕНЦИИ СТУДЕНТОВ

ХАМРАЕВА ГУЛЬНОЗ РУСТАМОВНА

Ташкентский университет информационных технологий имени Мухаммеда аль-Хорезмий, Республика Узбекистан

Аннотация: В статье описаны методы развития цифровой компетентности студентов, обучающихся в сфере профессионального образования в условиях современных инновационных методов обучения. Кроме того,

автором разработана структурная модель использования метода «SMART Strategy» в организации практической работы студентов.
Ключевые слова: цифровая компетенция, инновационные методы, образование, QR-коды, стратегии, головоломки, технологии.

One of the global challenges of development of modern information technology tools on a global scale is the formation of digital competence in persons. Reforms and changing values in the global education system require the active use of digital technologies in education. According to the Global Education Futures report, "Digitalization of education for a complex society is recognized as a 'megatrend shaping the future of our young generation [1]. The trends of digital change in modern education require students to have a high level of ICT competence to successfully carry out educational activities, as these are the requirements that must be developed to become good professionals in the modern digital society. The relevance and importance of ICT competencies in modern education, including digital literacy, has been recognized by UNESCO [2], and ICT has been highlighted as one of the key skills that human beings will need in the future. Therefore, today ICT competence is one of the leading competencies of pedagogical activity at all stages of continuing education.

The current stage of development of the higher education system in our country places qualitatively new requirements on the content and methodology, to increase its effectiveness. Based on these requirements, a large-scale work is being done to create an education system that meets the priorities of socio-economic development of the country and the requirements of international standards.

Decree of the President of the Republic of Uzbekistan dated October 8, 2019 No PF-5847 “On approval of the Concept of development of the higher education system of the Republic of Uzbekistan until 2030” provides for the introduction of digital technologies and modern methods in the educational process Organization of training of highly qualified engineers and technicians for the digital economy, individualization of educational processes on the basis of digital technologies, development of distance learning services, webinars, online, “blended learning” [3], special attention was paid to the issues of wide implementation of flipped classroom technologies.

Due to implementation of these tasks, including the improvement of conditions for the preparation of students for higher education, the orientation of the industry in accordance with the changes in the digitalization of society, the training of young professionals directly related to training for the digital society. Focused on aspects of the development of a digital society, it is expedient to train the basis of professional potential of specialists in the field of production on the basis of knowledge in the field of technological production and the field affected by the laws of society. In today’s educational environment, the problem of developing mechanisms, tools and technologies to prepare digitally competent professionals for the field remains relevant. In turn, it is necessary to scientifically understand the importance of training highly qualified specialists in this field.

The modern era of the development of science and technology is leading to a sharp increase in the need for a digital economy and a digital society.

Today, all the changes and realities in the life of society are changing and updating rapidly due to digital technologies that cover all areas of human activity. The modern education system must be constantly updated and improved with scientific knowledge, because the future of our country depends on the activities of experienced professionals trained in the digital world.

Experts and social scientists call modern society the information age. The new generation is significantly different from the previous ones with their deep thinking. Society receives and processes a large amount of new information and information flow every day. The new information it receives adapts to changing circumstances as one has to adapt to the news of this world. The new era requires a change in the way people think. Many discoveries and scientific researches made in the field have already laid a solid foundation in the field of education. Today, changes in the modern educational process require the use of digital technologies[4].

When we analyze the stages of development of an economic society from five years to ten years ago, we see the surrounding economic reality (rapid pace of technological change, scale and global information flows), we have a different idea, in which digital competencies are created to succeed. We can see that these changes will lead to economic growth, create new jobs and eliminate a lot of manual labor, automation [5].

Thus, economic changes in society, the development of information technology have led to the addition of the term "digitization" to our work.

Digitizer - a device designed to convert finished images into digital form. The word digitizer is derived from a combination of the English words digitizing (digitizing) and tablet (tablet). A graphics tablet (digitizer) is used to insert drawings and pictures into a computer. Graphics tablets are a device designed to enter manually created information directly into a computer. It consists of flat tablets that are sensitive to pressure or the proximity of a pen, to which a special mouse can also be added [6].

Digitization-is the introduction of modern digital technologies in various areas of life and production.

The requirements of the “digital generation” of participants with learning disabilities in the modern education system were found in the early 1990s and early 2000 s[7]. Scientists are concerned that this generation has grown up in a digital environment equipped with the development of telephone technology[8].

A.A. Verbitsky's concept of "digital generation" Howe and W. Strauss argues that it originated within the framework of the theory of generations developed. According to this theory, the education of digital generations, values are formed in the period from 12 to 14 years, a number of factors that determine the formation of personality affect the lives, activities and behavior of people[9].

Scientists have identified a number of features of the digital generation: communication via mobile phones and computers; the superiority of virtual communication over personal communication; use of visual language in virtual communication; increased speed of information perception, difficulty in focusing on a single object; the way of thinking is scattered, and the judgments are superficial; These features developed in the "digital space" of children and adolescents 'lives, leading to the emergence of the concept of" clip thinking "(from English to" clip"). [10]

Today, higher education institutions create favorable conditions for the development of digital competence of students in the field of vocational education, the tolerant acceptance of various innovative ideas and ideas expressed by students, as well as their active participation in the educational process. Ensuring that each student is confident in his or her ability to develop new project work, constantly evaluating and encouraging their innovation in project work is the main goal of our research work. Given the digitalization of modern education, it is important to develop the digital competence of vocational students. Along with the development of digital competence of students of higher education in the field of higher education, the use of their orientation to perform tasks on the basis of innovative methods will further improve the quality of education.

Today, the development of students' digital competencies is widely used in all areas of education. The application of the above-mentioned digital competencies in the curricula of students studying in the field of vocational education, as well as the development of intellectual potential of students, as well as in-depth knowledge of the subject.

The use of the SMART strategy method serves to further improve the quality of education and increase students' digital competence.

SMART strategies include query-based learning, QR codes, project-based learning (PBL), smart-controlled classroom technology, and puzzles (Jigsaws) [11]. This teaching technology develops students' digital competence and encourages them to develop project tasks to relate their ideas to the course content. Students are actively involved in the learning process and can demonstrate their knowledge in collaborative groups with their peers.

Development using the SMART Strategy method

1.1. - table

Smart strategy	Conditions for the development of digital competencies in the requirements	The task of students
Intelligent managed training technology	- Students use Google Dos, YouTube videos, Quizlet, Kahoot, innovative programs and websites with the help of digital devices.	It can help you engage in innovative programs and websites, reminding you of upcoming assignments and homework, provide visual training through videos, provide group collaboration, and explore

		learning through games, online quizzes.
Inquiry-based learning	- Students develop questions that are difficult to answer through independent study; - Students study the topic using class time; - Students present what they have learned; - Students reflect on what happened and what did not happen in the process of work;	Students study the topic in the Class Room and then present their findings. Inquiry-based learning allows students to learn more deeply and extensively than ever before. Inquiry-based learning allows students to explore independently and increases their level of activity.
QR codes	-Check their answers; - "Vote" on the answers during group discussions; - Expansion of information available in textbooks; -Receipt of query data for mathematical units on data; -Participation in the search for information on new digital technologies; - Access to video textbooks on interesting materials on digital technologies; -Students link directly to Google Maps.	QR (Quick Response) codes allow students to retrieve information by scanning the code on a digital device. QR codes allow students to receive information without leaving their seats. They can produce QR codes to demonstrate their knowledge.
Project-Based Learning (PBL),	-PBL attracts more students to the course. - PBL improves learning. -PBL provides students with access to digital technology; -PBL makes teaching more fun and rewarding; -PBL students connect their university peers with other users.	Project-based learning uses realistic scenarios, problems, and challenges to engage students in critical thinking, problem solving, teamwork, and self-management activities. Once students have solved the problem, they present their solutions.
Jigsaws	- helps students to create new ideas about digital technology; - Students are divided into groups and provide information about new ideas in digital technology. - In their groups, students learn at a high level to teach new ideas about digital technology to students in another group.	In the group there is a creative thinking, the creation of new ideas, collaboration.

The SMART Strategy method described above develops students' digital competencies, enabling them to learn by solving problems, finding solutions, and developing critical thinking. Student engagement is facilitated by strategies that move away from the traditional lecture-based approach, but encourage questions in the classroom, provide space for research and presentations, are supported by information technology, and include self-study.

All of this encourages interest, motivation, attention, and collaboration among students, and enhances the great achievements of digital technologies in education and success in later life. The application of this method in the field of vocational education, along with the deep knowledge of students in the field of science, serves to develop their intellectual potential and digital competencies.

A.N. Lunev and N.B. From Pugacheva's point of view, pedagogical strategy is a process that takes place in time, that is, a set of actions aimed at achieving a specific result in accordance with the goal.

The goal of the strategy in the education system is to choose a strategic path for the development of pedagogical education based on innovative technologies.Н.Б. N.B.Pugacheva emphasizes in the research work that innovation is the end result of the introduction of innovation in order to change the object of management and increase its efficiency[12].

Researchers Yu. V. Shepeleva, N. A. Pakholkov notes that the following will help students to develop innovative activities:

– Improving the quality of education through the improvement of the educational process, the introduction of innovative results, strengthening the material and technical base, the use of modern digital learning technologies, the creation of new textbooks and manuals;

– study of the education system, reform of the training system, digitization and improvement of information support mechanisms;

– Development of the education system based on the formation of educational, scientific and innovative complexes;

In turn, the improvement of the education system in the region, the orientation of students to innovative activities and increase their competitiveness largely depends on the innovation strategy.

Based on the above scientific analysis, the development and organization of digital competencies of students studying in higher education in higher education institutions, stimulates students' interest and desire for digital technologies in an innovative society, encourages the analysis of ideas, strengthens emotions and knowledge.

REFERENCES

1. Указ Президента Республики Узбекистан № ПФ-5847 от 8 октября 2019 года «Об утверждении Концепции развития системы высшего образования Республики Узбекистан до 2030 года»// www.lex.uz.

2. Навыки будущего. Что нужно знать и уметь в новом сложном мире: доклад экспертов Global Education Futures и WorldSkills Russia / Е. Лошкарева, П. Лукша, И. Ниненко [и др.]. – 2017. – URL: https://futuref.org/futureskills_ru (дата обращения: 15.04.2018). – Текст: электронный.

3. UNESCO ICT Competency Framework for Teachers. VERSION 3. – Text: electronic.–Digital library UNESCO:official site.–2019. URL:

http://ru.unesco.kz/unesco-ict-competency-framework-for-teachers-version-3 (дата обращения: 16.01.2019).

4. И.А. Волкова, В.С. Петрова. Формирование цифровых компетенций в профессиональном образовании.

5. № 1 Россия Вестник НВГ. 1УДК 378 Нижневартовск, 2019. – 18 с.

6. Волкова И.А., Галынчик Т.А. 2018. Концепция развития кадрового и научно-образовательного потенциала региона в условиях цифровой экономики // Вестник Белгородского ун-та кооперации, экономики и права 6(73), 71–81.

7. Vikipediya, ochiq ensiklopediya.

8. Вербицкий, А. А. «Цифровое поколение»: проблемы образования / А. А. Вербицкий. – Текст: непосредственный // Профессиональное образование. – 2016. – № 7. – С. 10–13.

9. Проект дидактической концепции цифрового профессионального образования и обучения / В. И. Блинов, М. В. Дулинов, Е. Ю. Есенина, И. С. Сергеев. – Москва: Перо, 2019. – 72 с. – ISBN 978-5-00150-041-4. – Текст:непосредственный.

10. Чернявский, А.И. Цифровизация высшего образования / А. И. Чернявский. – Текст: непосредственный // Сейфуллинские чтения-14: Молодежь, наука, инновации: цифровизация – новый этап развития: материалы Республиканской научно-теоретической конференции, г. Астана, 20 марта 2018 / Казахский агротехнический университет им. - С. Сейфуллина. Астана: КазАТУ, 2018. – Т.I, Ч.2. – С.46–49.

11. Вербицкий, А. А. «Цифровое поколение» : проблемы образования / А. А. Вербицкий. – Текст : непосредственный // Профессиональное образование. – 2016. – № 7. – С. 10–13.

12. Horton, F.W. Understanding Information Literacy. A Primer / F. W. Horton. – Text :electronic. – Digital library UNESCO: official site. – 2018.–URL: http://unesdoc.unesco.org/images/0015/001570/157020e.pdf (дата обращения: 17.02.2018).