USE OF INNOVATIVE METHODS AND TOOLS OF MULTIMEDIA TECHNOLOGIES IN THE EDUCATIONAL PROCESS PROFESSIONAL EDUCATION INSTITUTIONS

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This article examines innovative methods and means of learning that teachers and students of education can use in the educational process. Such innovative methods include:reverse learning (Flipped Learning), which is an interesting innovative approach to the organization of learning, which gives students more control over their learning; virtual reality (VR) and augmented reality (AR) technologies that offer unique opportunities to enhance learning and enable students to explore different subjects and concepts in a more interactive and engaging way; gamification is a technology that has great potential to improve learning and engage learners; video creation and animation are two powerful multimedia technologies that are used in the educational process to create visually attractive and interactive educational materials; Edpuzzle, a free online platform that allows you to create interactive videos;Genially, a multifunctional, multilingual and multitasking service that allows teachers to create a variety of educational content, including interactive videos, games, presentations, tests, infographics and other materials;multimedia websites and blogs open up endless possibilities for consumers and content authors;interactive exercises and tests are online tools that allow you to create tasks that can be performed and checked in an interactive format, as well as many other innovative methods that allow you to simplify, improve and enrich the educational process, make it rich and interesting for both teachers and and for education seekers.

Keywords:*innovative methods, multimedia technologies, methods, means, educational process, education seekers, teachers.*

Innovative methods are new, creative, improved methods of learning and pedagogical work that differ from traditional methods, they are aimed at improving the quality of education, achieving better results. Innovative methods in education play a key role in improving the quality of education and engaging students. They make it possible to create more effective and interesting conditions for learning that meet the requirements of the modern world. [8].

Active research is being conducted aimed at introducing multimedia technologies and computer-oriented learning systems into the educational process. This trend is clearly reflected in the works of prominent scientists such as I. Krasilnikov, L. Masol, O. Naumenko, O. Pereverzov, T. Reisenkind and others.

Innovative methods and tools can really open up vast possibilities for improving learning and creating interesting and interactive learning experiences for students. Here are some tools and techniques to help achieve this:

Reverse learning(Flipped Learning) is an interesting innovative approach to the organization of learning that gives students more control over their learning:

1. Self-study at home: Students study new material on their own at home, which may include video lectures, readings, assignments, or other resources. This allows them to work at their own pace and have more control over the learning process.

2. Classroom classes: In classroom classes, the teacher can actively interact with students, answer their questions, discuss complex concepts and conduct practical exercises. This contributes to a deeper understanding of the material and problem solving.

3. Active learning and collaboration: feedback learning supports active student participation, collaboration and interaction. They can work in groups, solve problems and share their thoughts with their peers.

4. Reinforcement and assessment: Feedback also involves systematic reinforcement of material and assessment of skills. Students can solve tasks, take tests or present their knowledge.

5. Individualization of learning: this method allows taking into account the individual needs and pace of learning of each student [3, p. 19].

Feedback encourages students to be more actively involved in learning, develops their analytical and critical skills, and contributes to a deeper understanding of the learning material. This approach can be particularly useful for today's students, who already have access to many resources on the Internet and are looking for more interactive and personalized ways of learning.

Virtual Reality (VR) and Augmented Reality (AR) technologies offer unique opportunities to enhance learning and enable students to explore different subjects and concepts in a more interactive and engaging way.

Advantages of using VR and AR in education:

Virtual Reality (VR):[1]

Immersiveness: VR gives users a sense of immersion in a virtual environment, which helps create more realistic learning situations.

Practicality: VR can be used to create virtual laboratories, simulators for medical practice, simulations of harsh conditions and other practical training scenarios.

Increased motivation: The interactivity and excitement of VR can motivate students to learn more actively.

Augmented Reality (AR):[1]

Connecting with the real world: AR allows for a connection between virtual objects and real objects around students, facilitating learning and research.

Additional information: AR can supplement reality with additional information, for example, by telling about the history of architectural monuments or characteristics of natural objects.

Ease of access: Many modern smartphones and tablets support AR, allowing students to use the technology without expensive equipment.

When used wisely, these technologies can greatly enrich the learning experience and foster a better understanding of complex concepts.

Gamification- a technology that has great potential for improving learning and engaging students. It is based on the idea that game elements can be used to create a stimulating and interesting learning environment. The main principles of gamification, which can be very useful in the educational process:

1. Tasks and Challenges: Presenting learning material in the form of tasks and challenges, similar to tasks in video games, can create an interactive and interesting educational process. This helps learners become more engaged in the material.

2. Points and rewards: A system of points and rewards can motivate students to achieve certain goals and to study more actively.

3. Competition and cooperation: Gamification can create competitive elements in learning, which promotes communication skills and teamwork.

4. Providing Feedback: Immediate feedback is essential to improve learning outcomes. Gamification allows you to quickly assess the achievements of students and provide them with appropriate feedback.

5. Plot and Story Elements: Plot elements can make learning more engaging and increase student interest.

Gamification can be used effectively for a variety of educational purposes, from improving outcomes to developing creativity and critical thinking. It is important to carefully consider and plan gamified educational scenarios so that they meet the specific educational goal and needs of students [2].

Video creation and animation- two powerful multimedia technologies that are used in the educational process to create visually attractive and interactive educational materials. Video materials and interactive animations are very important tools for quality learning, especially in distance learning. These technologies make it possible to convey the key content of educational material in the form of bright video presentations, which are interesting, concise and informative at the same time [5].

Video creation and animation are powerful tools for enhancing education and learning. They allow you to create visually appealing and interactive content that helps explain complex concepts clearly and engage students.

Key aspects of using these methods in education:

Video creation:

Quality of lectures: Videos can improve the quality of lectures because the teacher can prepare and record the material in a relaxed environment, explaining it clearly and consistently.

Online learning: Video content is an integral part of many online courses, providing learners with access to educational material from anywhere and at any time.

Interactivity: Videos can include exercises, self-test questions and other interactive elements to make learning more interesting.

Animation:

Visualize concepts: Animation helps visualize abstract or complex concepts, making them easier to understand.

Interactivity: Animations can be interactive, allowing students to interact with the content and learn at their own pace.

Creating cartoons: Creating animated cartoons for learning can be a creative way to convey information and engage learners.

Both of these methods require some technical training and software, but they can be powerful tools for educators. It is also important to be mindful of content accessibility and follow the principles of universal design to ensure that the material is accessible to all participants.

Edpuzzle is a free online platform that allows you to create interactive videos. On this platform, you can create tests with open questions, choose one or more correct answers, and add voice comments and explanations to video material [6]. One of the advantages of

Edpuzzle is the possibility of integration with the Google Classroom platform, which allows teachers to monitor the activity of learners, check who watched the videos and how successfully they completed the tasks. In addition, Edpuzzle is a very convenient and affordable tool that can be used on computers and mobile devices by downloading the appropriate application from Google Play or the App Store[6].

Genially –is a multifunctional, multilingual and multitasking service that allows teachers to create a variety of educational content, including interactive videos, games, presentations, tests, infographics and other materials. This tool is especially useful during distance learning. Educators can create an unlimited number of their own interactive projects for free. Genially allows you to add comments, create pop-ups, create hyperlinks to other slides or external resources, making the learning process more interactive and engaging[7].

Multimedia websites and blogs open up endless possibilities for consumers and content authors.

Advantages and capabilities of these platforms:

Access to a variety of media formats: Multimedia platforms allow you to use a variety of media formats such as text, photos, video, audio, and others. This helps to make the content more diverse and meaningful.

Audience engagement: Using visual and interactive elements helps to capture the audience's attention. Users can engage more with content, leave comments, share content and participate in discussions.

Visual appeal: Graphics, photos and videos can make content more attractive and understandable. Visuals help illustrate concepts and make them more accessible.

Educational: Multimedia websites and blogs can serve educational purposes by providing educational materials, video tutorials, presentations, and other learning resources. This is especially important in today's world, when access to information is of great importance.

Interactivity: Some multimedia platforms allow users to interact with content, solve problems, take tests and vote. This creates more opportunities for interaction and audience engagement.

Social media distribution: Content on multimedia platforms can easily be shared through social media and other channels, allowing you to reach a larger audience and increase your impact.

Ease of access: Users can access content on different devices, making it more accessible and convenient to view and use.

Multimedia websites and blogs play an important role in today's Internet environment, providing the opportunity to combine various media resources for information, education and communication [8].

Multimedia websites and blogs are powerful tools for collaborative information sharing, learning, and creativity, and they are widely used in a variety of fields, including education, media, advertising, and entertainment [4, c.26].

Interactive exercises and tests –are online tools that allow you to create assignments that can be completed and checked in an interactive format. Interactive exercises and tests are widely used in education, online courses, learning platforms and knowledge assessment. They help improve learning efficiency and create a more interactive learning environment.

Open Educational Resources (OER)–are teaching and research materials that are available in a variety of formats and media. The material may be in the public domain or copyrighted, but is released under an open license that allows unrestricted access, reuse, reformatting, adaptation, and other distribution. Using open technology standards helps ensure the availability and reusability of these resources.

OER can include a variety of learning resources, such as full courses, course modules, open textbooks, lectures, learner materials, assignments, tests, laboratory and classroom exercises, tutorials, videos, simulations, and role-playing interactive resources [4, c.34].

Therefore, innovative methods and means of using multimedia technologies in professional education open up new opportunities for improving education and training of education seekers. They help make the educational process more interesting, effective and aimed at developing not only theoretical, but also practical skills, which are important for a successful career.

With the help of such innovative methods as reverse learning, virtual reality, augmented reality, gamification and others, learners can gain a deeper understanding of the material, more practical experience and become more motivated to learn. These methods also increase students' activity and contribute to the development of their creativity and critical thinking.

In addition, the use of multimedia technologies allows creating accessible and flexible educational content that can be accessed from anywhere and on different devices. This is especially relevant in today's world, where distance learning is becoming more and more common.

Innovations in education help students better prepare for the challenges of the modern labor market, develop their skills and competencies, which are important for a successful professional career. This approach contributes to increasing the competitiveness of graduates and contributes to the development of modern education.

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