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Information Technologies Of The XXI Century Teacher Education: The Role Of Pedagogical Software In Developing Digital Literacy Skills

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ANNOTATION
Equipping students with digital literacy skills is essential to success in today's world. This article examines the role of pedagogical software in developing these skills in the context of computer science and information technology teacher education. It explores the landscape of digital literacy skills, analyzes the benefits and limitations of pedagogical software, and discusses how its integration can improve computer science and information technology teacher education programs.

Keywords: Pedagogical software, teacher training, informatics and information technologies, educational technology, technology integration.

Introduction

The rapid development of technology requires continuous improvement of educational approaches, in particular, information technology education. It is important to develop digital literacy skills in students, including information evaluation, communication technologies, responsible online behavior and the ability to learn and adapt in a digital environment. Information technology educators play an important role in fostering these skills, but their education must evolve with these advances. Due to today's development, the digital environment is rapidly entering the education system. In particular, many schools of our Republic have electronic diaries and magazines, interactive electronic boards, computers, tablets, and video cameras. The use of technology in the process of education and training is effective. Thanks to the conditions created for using high-speed Internet, the possibility of using interactive databases, various information resources, and teaching platforms is emerging in schools. These opportunities serve as a solid foundation for more effective organization of the educational process. The application of information technology allows students to grow in order to become modern professionals in the future. They achieve progress and leadership in every field they choose. Many scientists around the world are in favor of digitalization of the educational process. They believe that broad participation is crucial for the 21st century.

Media content on the Internet, interactive electronic textbooks are increasingly in demand for traditional educational resources. Improvement and successful implementation of the "Digital Uzbekistan - 2030" strategy of personnel training in the field of information technology, development of digital technologies and daily life of the population is one of the important conditions for ensuring its implementation and is an urgent task [3]. Digitization of the educational process is not only the use of information technologies, in which the flexibility of the pedagogue in online and offline education through the Internet, mobile application and various platforms, their individualization aimed at increasing the creative character of education, and the creation of a new educational model are among the important tasks. .

What exactly does "digital literacy" involve? There are many competing definitions, but it can be thought of as the ability to use digital technologies – both hardware and

software – safely and appropriately. According to the United Nations Educational, Scientific and Cultural Organization (UNESCO), this includes competencies such as the use of ICT, data processing and working with the media. However, digital skills do not exist in a vacuum and interact with other skills such as general literacy and numeracy, social and emotional skills, critical thinking, complex problem solving and collaboration skills.

NEGOTIATION AND RESULTS

Digital Literacy Skills for the 21st Century:

Information Literacy: evaluating the credibility of online sources, conducting effective research, and understanding copyright issues.

Communication and cooperation: Using digital tools for communication, collaboration and knowledge sharing.

Solving numerical problems: applying critical thinking skills to solve problems using technology.

Digital citizenship: Responsible online behavior Be aware of digital security

Digital creativity: using technology to create and share content in creative and innovative ways.

Pedagogical software is important in developing digital literacy skills in education.

Advantages of educational software:

Interactive education: the software enables active learning through simulations, game experiences and collaborative activities. (For example: Virtual laboratories, educational games, online discussions)

Scenario-based learning: The software allows students to apply digital literacy skills in simulated real-world situations. (For example: cyber security simulations, online research tasks, digital citizenship scenarios)

Differentiation and Personalization: The software can adapt to individual learning styles and paces and offers targeted activities to develop skills. (Example: Adaptive Learning Platforms, Differentiated Learning Tools)

Self-study: software allows students to independently practice and improve specific digital skills. (Example: Online tutorials, interactive exercises)

Rating and feedback: The software provides immediate feedback on performance, allowing students to identify areas for improvement. (Example: automated quizzes, diagnostic assessments)

Teacher training: IT teachers themselves need training to effectively integrate software and assess student learning through software.

Designing effective pedagogical software: The main features of teacher training in information technology

Focus on a particular aspect of competence: Digital competence and digital literacy are important concepts in higher education research. Digital competence refers to the knowledge, skills, attitudes, strategies and awareness required to use ICT and digital media effectively and ethically

Educating the 21st century IT teacher: it is necessary to bridge the gap between the theory and practice of pedagogical software in the development of digital literacy skills.

Pedagogical software It is necessary to develop effective strategies for teaching information technology.

Limitations of educational software:

Overreliance on technology: Software should complement, not replace, traditional teaching methods that encourage critical thinking and discussion.

Pedagogical software includes a wide range of educational tools and platforms designed to improve student teaching and learning. Here are some examples of these pedagogical software tools.

Learning Management Systems (LMS): LMS platforms like Google Classroom, Schoology, and Canvas allow teachers to organize and deliver course materials, facilitate online discussions, and track student progress.

Educational applications : There are many educational apps for different subjects. These apps provide interactive learning experiences, practice exercises, and educational games. Examples include Khan Academy, Duolingo, and Quizlet.

Simulations : Simulation software allows students to participate in virtual experiences that simulate real-world scenarios. For example, students can use flight simulators to gain experience flying an airplane or use chemical simulations to conduct virtual experiments.

Software for special needs : Special needs software is designed to meet the special requirements of students with disabilities or special educational needs. This software includes assistive technologies such as speech synthesizers, text-to-speech software, and multimedia tools that guide specific learning opportunities.

Software for solving mathematical problems : Math Problem Solving helps teachers build students' math problem-solving skills. These tools provide interactive exercises, step-by-step solutions, and practice problems to support math learning.

Support software : The utility helps teachers with various tasks such as preparing quizzes, tests and grading. It simplifies administrative processes and helps to effectively manage classroom activities.

Educational games : Educational gamification software combines gaming elements with educational content to make learning more fun and engaging. These games can cover different topics and skills for different age groups. Teachers can choose software based on their specific teaching goals, subject areas, and student needs.

CONCLUSION

In conclusion, pedagogical software plays an important role in the development of digital literacy skills in 21st century education. By providing interactive and engaging learning experiences, facilitating access to information, fostering collaboration and communication, fostering critical thinking and problem-solving skills, and supporting personalized learning, educational software can improve students' digital literacy. increases skills. Educators should consider integrating pedagogical software into their teaching practices to effectively prepare students for the digital age.

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