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THE IMPORTANCE OF MODERN INNOVATIVE PEDAGOGICAL TECHNOLOGIES IN TEACHING ENGINEERING GRAPHICS

ЗНАЧЕНИЕ СОВРЕМЕННЫХ ИННОВАЦИОННЫХ ПЕДАГОГИЧЕСКИХ ТЕХНОЛОГИЙ В ОБУЧЕНИИ ИНЖЕНЕРНОЙ ГРАФИКЕ

ZAMONAVIY INNOVATSION PEDAGOGIK TEXNOLOGIYALARNING MUHANDISLIK GRAFIKASI FANLARINI O'QITISHDAGI AHAMIYATI

Sulaymanova Sevarakhon Bakhodirjon kizi ⓘD
Teacher of the Department of Fine Arts of Ferghana State University

Annotatsiya

Ushbu maqolada muhandislik grafikasi fanlarini o'qitishda zamonaviy pedagogik texnologiyalarining o'rni va zamonaviy pedagogik texnologiyalarni qo'llashda erishiladigan yutuq va kamchiliklari, ular yordamida ta'lim sifatini oshirishga qaratilgan tavsiyalar haqida ma'lumotlar berilgan.

Аннотация

В данной статье представлена информация о роли современных педагогических технологий в обучении инженерной графике, достижениях и недостатках использования современных педагогических технологий, а также рекомендации, направленные на повышение качества образования с их помощью.

Abstract

This article provides information on the role of modern pedagogical technologies in the teaching of engineering graphics, the achievements and shortcomings of the use of modern pedagogical technologies, and recommendations aimed at improving the quality of education with their help.

Kalit so'zlar: muhandislik grafikasi, zamonaviy pedagogik texnologiyalar, Kengaytirilgan haqiqat texnologiyasi, moslashuvchan o'quv platformalari, hamkorlik vositalari, flipped sinf modeli, mobil o'rganish, onlayn simulyatsiyalar va laboratoriyalar, sun'iy intellekt o'qituvchilari, interfaol doskalar va aqlli proyektorlar.

Ключевые слова: инженерная графика, современные педагогические технологии, технология дополненной реальности, гибкие платформы обучения, инструменты для совместной работы, модель перевернутого класса, мобильное обучение, онлайн-симуляции и лаборатории, учителя с искусственным интеллектом, интерактивные доски и умные проекторы.

Key words: engineering graphics, modern pedagogical technologies, Augmented Reality technology, flexible learning platforms, collaboration tools, flipped classroom model, mobile learning, online simulations and laboratories, artificial intelligence teachers, interactive whiteboards and smart projectors.

INTRODUCTION

Modern innovative pedagogical technologies have revolutionized the way education is delivered to students across the globe. These technologies leverage the power of digital tools and platforms to create engaging and interactive learning experiences that cater to the diverse needs and learning styles of today's students.

From virtual reality simulations to online collaborative platforms, modern pedagogical technologies offer educators a wide range of tools and resources to enhance their teaching methods and engage students in active learning. These technologies also provide opportunities for personalized learning experiences, allowing students to learn at their own pace and in their preferred learning environment.

Incorporating modern pedagogical technologies in the classroom can help educators create dynamic and engaging lessons that foster critical thinking, collaboration, and creativity among students. By leveraging these tools, educators can create a learning environment that is not only innovative and engaging but also inclusive and accessible for all students.

Overall, modern innovative pedagogical technologies have the potential to transform the field of education and empower educators to inspire and motivate students to reach their full

potential. As technology continues to advance, the possibilities for integrating innovative pedagogical technologies into the classroom are endless, opening up new opportunities for educators to enhance the teaching and learning experience.

LITERATURE ANALYSIS AND METHODOLOGY

Modern innovative pedagogical technologies:

1. Virtual Reality (VR) technology: VR can create immersive learning experiences that can help students better understand complex concepts by allowing them to interact with virtual environments.

2. Augmented Reality (AR) technology: AR can overlay digital information onto the physical world, enhancing traditional learning materials and making them more interactive and engaging.

3. Gamification: By incorporating game elements such as points, levels, and rewards into educational tasks, gamification can motivate students to learn and improve their performance.

4. Adaptive learning platforms: These platforms use artificial intelligence to personalize learning experiences for individual students, identifying their strengths and weaknesses and adjusting the content accordingly.

5. Collaborative tools: Platforms like Google Docs and Slack enable real-time collaboration among students and teachers, allowing for group work and peer feedback.

6. Flipped classroom model: In a flipped classroom, students learn new material at home through online videos or readings, and then use class time to engage in hands-on activities, discussions, and projects.

7. Mobile learning: With the increasing use of smartphones and tablets, mobile learning allows students to access educational content anytime, anywhere.

8. Online simulations and labs: These digital tools enable students to conduct experiments, practice skills, and explore concepts in a safe and interactive virtual environment.

9. Artificial Intelligence (AI) tutors: AI-powered tutoring systems can provide personalized assistance to students, guiding them through their learning journey and offering feedback and support.

10. Interactive whiteboards and smart projectors: These interactive tools can enhance classroom presentations and discussions, allowing for dynamic and engaging lessons.

Modern innovative pedagogical technologies have revolutionized the way education is delivered and received. These technologies encompass a wide range of tools and platforms that enhance teaching and learning experiences for both educators and students.

One of the most prominent examples of modern pedagogical technology is online learning platforms. These platforms allow students to access educational materials and participate in virtual classrooms from anywhere in the world. This flexibility has made education more accessible to individuals who may not have been able to attend traditional brick-and-mortar institutions.

Another innovative technology is the use of virtual reality in education. Virtual reality simulations can provide students with immersive learning experiences that bring abstract concepts to life. For example, students studying biology can explore the inside of a cell or students studying history can virtually travel back in time to important historical events.

Mobile learning apps are also gaining popularity in education. These apps provide students with bite-sized lessons and interactive quizzes that they can access on their smartphones or tablets. This on-the-go learning approach allows students to continue their education outside of the classroom and at their own pace.

Additionally, gamification has become a popular pedagogical technology that uses game elements and principles to engage students in learning. By incorporating elements such as points, badges, and leaderboards, educators can motivate students to actively participate and progress in their learning.

Modern innovative pedagogical technologies have transformed the way education is delivered and consumed. These technologies have the potential to make learning more engaging, accessible, and personalized for students of all ages and backgrounds. As technology continues to advance, it will be exciting to see how these tools continue to shape the future of education.

Innovative pedagogical technologies have revolutionized the traditional methods of teaching and learning by incorporating interactive, engaging, and personalized approaches that cater to the

diverse needs of students. These technologies have enabled educators to create dynamic learning experiences, facilitate collaboration, and enhance critical thinking skills among students.

One of the key benefits of modern pedagogical technologies is the ability to adapt to different learning styles and preferences. With the use of multimedia resources, virtual simulations, and interactive tools, educators can provide a more immersive and stimulating learning environment that resonates with the digital-native generation.

RESULT AND DISCUSSION

There are several modern innovative pedagogical technologies that can greatly enhance the teaching of technical sciences. Some of these technologies include:

1. Virtual and augmented reality: These technologies allow students to visualize complex technical concepts and processes in a more tangible and interactive way. Students can explore and manipulate virtual models of machinery, circuits, and other technical systems, which can help them better understand how things work in a hands-on way.

2. Simulation software: Simulation software allows students to conduct virtual experiments and simulations of real-world technical scenarios. This can help students develop problem-solving skills and test out different solutions in a safe and controlled environment.

3. Online learning platforms: Online learning platforms offer a wide range of resources and tools for teaching technical sciences, including interactive tutorials, video lectures, and online assessments. These platforms can provide students with the flexibility to learn at their own pace and access a wealth of educational content from anywhere with an internet connection.

4. Gamification: Gamification involves incorporating game-like elements into the learning process, such as points, badges, and leaderboards, to make learning more engaging and interactive. This can help motivate students to actively participate in their learning and improve their retention of technical concepts.

5. Collaborative technologies: Collaborative technologies, such as virtual classrooms and group project management tools, can facilitate teamwork and communication among students in technical science courses. These tools can help students collaborate on projects, share resources, and provide feedback to one another in a more efficient and effective manner.

CONCLUSION

These modern innovative pedagogical technologies can enhance the teaching of technical sciences by making complex concepts more accessible and engaging for students, as well as providing opportunities for hands-on learning and collaboration. By incorporating these technologies into their teaching practices, educators can help prepare students for success in the ever-evolving field of technology.

Additionally, these technologies have also leveled the playing field for all students, regardless of their geographical location or socioeconomic status. Online learning platforms, virtual classrooms, and remote learning tools allow for greater access to quality education and eliminate barriers to learning faced by many students.

Furthermore, innovative pedagogical technologies have transformed the role of educators from traditional lecturers to facilitators of learning. By leveraging data analytics, artificial intelligence, and machine learning algorithms, educators can personalize learning experiences, track student progress, and provide timely feedback to support individual student growth and development.

Overall, modern pedagogical technologies have the potential to revolutionize education by making it more interactive, engaging, and accessible to students of all backgrounds. By embracing these innovative tools and approaches, educators can create a more inclusive and effective learning environment that prepares students for success in the digital era.

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