

TEACHING MATHEMATICS USING PEDAGOGICAL TECHNOLOGIES

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Abstract: *This article discusses the benefits of using pedagogical technology in mathematics, focusing on its impact on students' understanding and reasoning.*

Key words: *Mathematics, pedagogical technology, visual, interactive.*

Mathematics is an essential subject that is taught in schools around the world. It plays a significant role in various aspects of our lives, from problem-solving to critical thinking. In recent years, the incorporation of pedagogical technology in mathematics education has gained importance. Pedagogical technology refers to the use of technological tools and resources to enhance the teaching and learning experience.

To begin with, the use of pedagogical technology in mathematics offers visual and interactive learning experiences. Traditional teaching methods often rely on textbooks and lectures, which can be challenging for some students to grasp complex mathematical concepts. However, with the help of technology, teachers can present information in a more engaging and interactive manner. For instance, interactive computer programs and simulations can visually represent geometric shapes or solve complex equations. These visual aids make it easier for students to understand and remember mathematical principles. In addition, pedagogical technology provides opportunities for personalized learning. Every student has a unique learning pace and style. While some students may require more practice, others might grasp concepts quickly. Pedagogical technology allows teachers to tailor their instruction to individual student needs. For example, online platforms and apps can offer personalized practice exercises and quizzes based on students' performance. This personalized approach enables students to learn at their own pace, providing a deeper understanding of mathematical concepts.

Moreover, the availability of online resources and educational platforms provides students with a wealth of information beyond the classroom. In the past, students had limited access to learning materials, primarily relying on textbooks. However, with pedagogical technology, students can access a wide range of resources, including video tutorials, online courses, and interactive games. These materials not only supplement classroom learning but also allow students to explore mathematics at their own convenience, reinforcing their understanding and curiosity. Another advantage of utilizing pedagogical technology in mathematics is the ability to foster collaboration among students. Mathematics is often seen as an individual subject, with students working on problems independently. However, technology allows students to collaborate and discuss mathematical concepts with their peers. Online platforms may provide features such as group activities, forums, or video conferencing, enabling students to engage in collaborative problem-solving. Collaborative learning enhances students' comprehension as they exchange ideas, share different approaches, and collectively work towards a solution.

Furthermore, pedagogical technology helps make mathematics more accessible to students with different learning abilities. There is a vast range of students in any classroom with varying levels of mathematical aptitude. For some students, mathematics can be particularly challenging, leading to frustration and disengagement. Pedagogical technology provides various tools, such as adaptive software and virtual manipulatives, that can accommodate diverse learning needs. These tools offer additional support, alternative explanations, and opportunities for practice, ensuring that all students have equal access to mathematical education. Additionally, the integration of pedagogical technology in mathematics can enhance students' problem-solving skills. Mathematics is not solely about memorization; it requires the ability to analyze problems, think critically, and develop problem-solving strategies. By using technology, students can access a range of mathematical problems and puzzles that can challenge their thinking. Mobile apps, online platforms, and interactive games offer numerous problem-solving scenarios, allowing students to develop their logical reasoning, analytical skills, and creativity.

Moreover, pedagogical technology in mathematics can provide immediate feedback to students. Traditionally, students would submit their assignments, wait for the teacher to grade them, and then receive feedback, often days later. However, with pedagogical technology, students can receive instantaneous feedback on their work. Online platforms and computer programs can automatically assess students' answers, pointing out errors and providing corrective feedback. This prompt feedback allows students to learn from their mistakes and correct misconceptions immediately, thus improving their understanding and performance. Furthermore, the integration of pedagogical technology can make mathematics more engaging and enjoyable for students. Mathematics has often been viewed as a dry and dull subject, making it challenging for students to stay motivated. However, with the use of technology, instructors can incorporate gamification elements into their lessons. Online games, quizzes, and interactive exercises can turn learning mathematics into a fun and engaging experience. This gamification not only boosts students' motivation but also increases their involvement in the subject, leading to a more profound and lasting understanding.

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