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Modern Technology in Teaching Mathematics

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Abstract: Schools today face ever-increasing demands in their attempt to ensure that students are well equipped to enter the workforce and navigate a complex world. Research indicates that computer technology can help support learning, and that it is especially useful in developing the higher order skills of critical thinking, analysis, and scientific inquiry.

Keywords: Curriculum, Facilitator, Strategies Technology.

Introduction

Mathematics is a complex and difficult subject. The tendency for most students is to consider the subject as one that is boring, creating lack of interest in the topics being discussed. This poses a great challenge for teachers and educators, especially in the primary and intermediate levels. Teaching mathematics using technology is the best solution for this. By applying technology, teachers can develop students higher-order thinking skills and creativity. The use of technology when studying mathematics is not a new issue, since humankind always has been looking for solutions to avoid time consuming routine work. The use of technology has a long history in mathematics. Technology is an essential tool for learning mathematics in the 21st century, and all educational institutions must ensure that all their students have to access technology. Effective teachers maximize the potential of technology to develop students' understanding, stimulate their interest, and increase their proficiency in mathematics. When technology is used strategically, it can provide access to mathematics for all students. Technological tools also motivate students. When students allow becoming active in learning, they can develop their own strategies and understandings. With the help of technology, students can discover mathematical relationships and connections. The purpose of this study is to further understand the emergence of the roles of facilitator and mediator. With the right teaching techniques, teachers can turn struggling students into budding mathematicians. The secret is carefully guiding them with the help of technology.

Technology in the Mathematics Classroom:

In primary school, it is important to learn to do arithmetic fluently. Using technology to do this thinking for the student would be inappropriate. In secondary school, however, students have mastered arithmetic and should be focused on more advanced skills and concepts. Computational support can be very important. Mathematics education in secondary schools in India has been experiencing reforms directed toward the integration of technology in mathematics courses. Despite the mandate that accompanies the education policy document, that computer technology be integrated in the range of courses in the secondary mathematics key learning areas, there is evidence to suggest that computers are not widely integrated into Indian secondary mathematics classrooms. The international evidence suggests that one reason for the teachers not embracing technology is the fear that, it might replace teachers in the school system. Other experts attribute the ineffective integration of technology to the lack of adequate knowledge, about when and how computers could be used in mathematics instruction, and lack of adequate level of training. This ineffective

integration is obviating the benefits that are expected by integration of technology in the classroom teaching.

Teachers Role

In a balanced mathematics program, the strategic use of technology enhances mathematics teaching and learning. Teachers must be knowledgeable decision makers in determining when and how their students can use technology most effectively. Knowledgeable teachers have adequate resources to support their work and are continually growing as professionals. Discuss current challenges facing the field of how will current teachers have the opportunity to develop technical skills for teaching mathematics? How should the teacher preparation programs guide their students in developing mathematical solutions by using technology?

Use of Technology

Today, in many locations around the world, there is a significant gap between the knowledge and skills. Employers report that they need students who are better prepared in skills such as professionalism and work ethic, oral and written communication, teamwork and collaboration, critical thinking and problem solving, application of information technology, and leadership. So the emphasis in schools is increasingly on learning how to learn, rather than just acquiring specific technical skills that keep changing anyway. Researchers are designing new interactive multi-touch 'smart' desk classrooms which have been found to boost pupils' mathematical skills. Using multi-user desks in the "classroom of the future" the children were able to work together in new ways to solve questions and problems using inventive solutions.

What is technology?

Starting from magic slate, book, magic lantern, Blackboard, OHP, radio, Slide rule video tape, Television, Calculator, computer, Interactive Board, Apple I pad all come under technology. Paper money and coins, beans, bears, buttons, and other small items are helpful for counting and computation skills. Straws, grouped by tens, are great for teaching Mathematics. Geo boards are useful for introducing geometric concepts. Clinometers are useful for teaching and learning of Trigonometry. An abacus allows children to conceptualize math formulas by working with tangible objects. These may include digital cameras, video cameras, interactive whiteboard tools, document cameras, or LCD projectors. More recently other tools have emerged, such as Sliderocket, Prezi, Glogster, Animoto, and Magic Magnify. Since the 1980's, the importance of computer support in the teaching and learning of mathematics has been emphasized more and more. Information and Communication Technology (ICT) is basically an umbrella term that encompasses all communication technologies such as internet, wireless networks, cell phones, satellite communications, digital television computer and network hardware and software; as well as the equipment and services associated with these technologies, such as videoconferencing, e-mail and blogs etc. that provide access to information. How to use Technology as tools of Teaching There are various types of technologies currently used in traditional classrooms. Among Software used for teaching learning Mathematics are Graphic Calculators , Dynamic graphing tools , Dynamic geometry tools , Microsoft Excel / spreadsheet , Microsoft Mathematics , Geo Gebra , Auto shape , Mat lab.

Role of technology to develop students skills and creativity

The field of educational games and serious games has been growing significantly over the last few years. The digital games are being provided as tools for the classroom and have a lot of positive feedback including higher motivation for students. There are many other tools being utilized depending on the local school board and funds available. The use of technology in mathematics teaching at the college and university level today is harder to describe. Most university students at Universitys seem to have calculators from their upper secondary studies, as well as easy access to computers and Internet both at campus and in their private environment. Many study halls at the university include the possibility to make wireless network connections and since many students carry laptops with them in school, it is almost as if these students have instant access to tools for

calculations and visualization. This is probably true for most university students in Sweden and in the Nordic countries.

Conclusion

Researchers have found that when technology makes abstract ideas tangible, teachers can more easily build upon students' prior knowledge and skills, Emphasize the connections among mathematical concepts, Connect abstractions to real-world settings. Technology is used not only complement mathematics teaching and learning, but also prepare all students for their future lives.

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