

Technology's Impact on Learning and Better Understanding

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Abstract

Technology plays a critical role in academic content standards and their successful implementation. Expectations reflecting the appropriate use of technology should be woven into the standards, benchmarks and grade-level indicators. Technology makes subjects accessible to all students, including those with special needs. Options for assisting students to maximize their strengths and progress in a standards-based curriculum are expanded through the use of technology-based support and interventions. Specialized technologies enhance opportunities for students with physical challenges to develop and demonstrate mathematics concepts and skills. Technology influences how we work, how we play and how we live our lives. The influence technology in the classroom should have on math and science teachers' efforts to provide every student with "the opportunity and resources to develop the language skills they need to pursue life's goals and to participate fully as informed, productive members of society," cannot be overestimated.

Introduction

In this present technological era, Technology as a medium of communication is acting as a current driving force behind Teaching – Learning process. Various technologies can be made a part of everyday teaching and learning, teachers using technology in ways that enable students to conduct inquiries and engage in collaborative activities. In traditional or teacher-centered approaches, computer technology is used more for drill, practice and mastery of basic skills.

Effects of Educational Technology

In a 1994 Software Publishers Association (SPA) study, research found that:

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- Educational technology has a significant positive impact on achievement in all subject areas, across all levels of school, and in regular classrooms as well as those for special-needs students.
- Educational technology has positive effects on student attitudes.
- The degree of effectiveness is influenced by the student population, the instructional design, the teacher's role, how students are grouped, and the levels of student access to technology.
- Technology makes instruction more student-centred, encourages cooperative learning, and stimulated increased teacher/student interaction.
- Positive changes in the learning environment evolve over time and do not occur quickly.

Verbal/Linguistic Intelligence: The ability to think, communicate, and create through words both in speech and in writing.

- Computer software which allows young children to write and illustrate their own stories before their fine motor skills are developed enough to allow them to do so by hand.
- Word processing software stimulates learners to interact more closely with their work.
- Audio and video recording can give students instant feedback on their story-telling skills and can help them develop them further.
- Multimedia software helps students produce multimedia reports.
- Telecommunications programs link students who correspond in writing.

Logical/mathematical intelligence: Memorize and perform mathematical operations, ability to think mathematically, logically, and analytically and to apply that understanding to problem solving.

- Multimedia products that graphically illustrate physics concepts.
 - Providing challenging visual/spatial tasks which develop mathematical and logical thinking.

- Develop higher-order mathematical thinking by making abstract ideas concrete.

Visual/spatial intelligence: The ability to understand the world through what we see and imagine and to express ideas through the graphic arts.

- "Paint" programs that allow students who are unskilled with paper and brush create art on computer screens.
- Databases of art work.
- Desktop publishing.
- Camcorders to create documentaries.
- Internet links to museums and virtual tours.

Bodily/kinesthetic Intelligence: The ability to learn through physical coordination and dexterity and the ability to express oneself through physical activities.

- Educational games which challenge fine motor coordination while developing logical thinking skills and mastery over abstractions.
- Construction of lego robots and program their movement through the computer.
- Electronic fieldtrips - programs that allow students to interact electronically with a scientist who is exploring the depths of the Mediterranean or the inside of a volcano.

Musical Intelligence: The ability to understand, appreciate, perform, and create music by voice or instruments or dance.

- Students can hum into a synthesizer and make it sound like any instrument they want.
- Musical Instrument Digital Interface (MIDI) makes it possible to make music on an electronic keyboard, which can be made to sound like any instrument and then can be orchestrated electronically.
- Interactive presentations of renowned classical music let students understand music on many different levels; listening to it, seeing the score as it is played, hearing individual instruments played alone, reviewing biographical material about the composer and learning about the music's historical and cultural backgrounds.

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Interpersonal Intelligence: The ability to work cooperatively with other people and to apply a variety of skills to communicate with and understand others.

- Clusters of students working together on computers learn more than individual students working alone.
- Electronic networks linking students with their peers within the community and around the world.
- Lumaphones allow students to see a picture of the person with whom they are speaking.

Intrapersonal Intelligence: The ability to understand, bring to consciousness, and express one's own inner world of thoughts and emotions.

- Multimedia gives teachers the tools to turn the classroom into centers of student-directed inquiry.
- Technology offers tools for thinking more deeply, pursuing curiosity, and exploring and expanding intelligence as students build "mental models" with which they can visualize connections between ideas on any topic.
- Individual growth plans, developed jointly by the student, parents and teacher can encourage the development of intrapersonal intelligence. Technology supports such plans with electronic records, videotaped interviews, and multimedia portfolios of student work.

Does Technology Make an Impact on Education?

"Technology is making a significant, positive impact on education. Important findings in these studies include:

- Educational technology as demonstrated a significant positive effect on achievement. Positive effects have been found for all major subject areas, in preschool through higher education, and for both regular education and special needs students. Use of online telecommunications for collaboration across classrooms in different geographic locations has also been show to improve academic skills.

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- Education technology has been found to have positive effects on student attitudes towards learning leads to better understanding and on students' self-concept. Students felt more successful in school, were more motivated to learn and have increased self-confidence and self-esteem when using computer-based instruction. This was particularly true when the technology allowed learners to control their own learning.
- The level of effectiveness of educational technology is influenced by the specific student population, the software design, the teacher's role, how the students are grouped, and the level of student access to the technology.
- Introducing technology into the learning environment has been shown to make learning more student-centred, to encourage cooperative learning, and to stimulate increased teacher/student interaction.
- Positive changes in the learning environment brought about by technology are more evolutionary than revolutionary. These changes occur over a period of years, as teachers become more experienced with technology.
- Courses for which computer-based networks were use increased student-student and student-teacher interaction, increased student-teacher interaction with lower-performing students, and did not decrease the traditional forms of communication used. Many students who seldom participate in face-to-face class discussion become more active participants online.
- Greater student cooperation and sharing and helping behaviours occurred when students used computer-based learning that had students compete against the computer rather than against each other.
- Small group collaboration on computer is especially effective when student have received training in the collaborative process.

Learners could never write well about something until they had understood well about it. Simulations are opportunities to work with learn on how to think well about fairly complex matters. Thus computer simulations are very exemplify how to enhance the learning effectiveness leads to better understanding by utilizing various information technologies and teaching methods. Technology provides simulation. They are very much useful in teaching as well learning science. The learner can manipulate the size, shape, orientation and

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dimensions of any diagrammatic illustrations through simulation. For instance, topics such as wave motion, Brownian motion, gaseous diffusion, the effect of pressure on gas, seed germination, interference and diffraction pattern of light waves, satellite motion etc. can also be very well taught and learners can also be benefited leads to better understanding with the help of various technologies. Thus technology leads to active, constructivist methods of teaching and learning and enhance the understanding level.

Conclusion

The new emerging trend towards technology therefore enables self – paced learning through various tools such as assignments, computers, etc., with sensitive to different learning styles and continuous assessment of students’ progress. With the result, the teaching – learning enterprise has become more result – oriented. Teacher must have knowledge and skills to use new digital tools and resources to help all students achieve high standards. In the future educational scenario, Technology will be necessary to enhance the effective integration and incorporation of technology which helps in standard quality education, where it provides accessibility, empowering personal capabilities to utilize technology – oriented strategies of teaching and learning which is much required for the upliftment of the learners understanding.

References

1. **Barnett. R** (2004), Learning for an Unknown future, Higher Education Research& Development 23(3), 247-260
2. **Manoj Kumar Dash**, Integration of ICT in Teaching and learning, article from EDUTRACKS, vol 6,No.12 August 2007. pp 11 and 13.

Webliography

3. <http://www.ed.gov/Technology>
4. <http://www.spa.org/>
5. <http://www.nsba.org/sbot/toolkit/tiol.html#Enhanced>

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