

ROLE OF EDUCATION TECHNOLOGY IN PROFESSIONAL EDUCATION

Article

ABSTRACT

Education technology has an important role to play in professional education and the importance of this role is forever on the increase. It is this realization that has made education technology an integral part of professional education all over the world today, whether it is in the field of science, technology, medicine, management or other fields. However, when it comes to the field of teacher education, which too is professional education, education technology is not as widely used at present as it should be. Teacher education can also benefit from education technology as much as any other professional educational field can, and in some respects, more than any of them.

INTRODUCTION

In today's age of information overload, the teacher's importance as information provider has come down. The Internet and the World Wide Web have made phenomenal amounts of information easily accessible to all. But this information is only raw material and to help children create knowledge from this raw material, the teacher has to be techno-savvy, for which information technology should be part of her professional education. Besides, the age when it was enough for education to teach simple skills to solve simple problems is probably over for ever and in today's world every child in the process of growing up has to learn to solve complex problems spanning a multiple of disciplinary fields.

Speaking about the role of technology in education, Gilbert Valdez, Ph.D. says:

"...as the world becomes more complex – virtually year-to-year instead of the generation-to-generation pace of most of the last century – educational needs continue to shift from teaching and learning isolated skills and information within each content area, to teaching skills that enable students to solve complex problems across many areas. [And for this] educators must prepare for a technology-rich future and keep up with change by adopting effective strategies that infuse lessons with appropriate technologies".

EDUCATIONAL TECHNOLOGY FOR STUDENTS AND TEACHERS

Today's students need to use technology tools for

a variety of purposes and reasons. They need to use it to enhance learning, increase productivity and promote creativity. They need to depend upon it to collaborate in constructing technology-enhanced models, prepare publications, and produce other creative works. Technology can help them in collaborating and interacting with peers, experts, and others. They need it to locate, evaluate, and collect information from a variety of sources; to process the collected data and to report results. And, going further to real life problems, they can use technology resources for making informed decisions and for solving problems based on strategies developed by themselves.

And for this, according to Dr Valdez, Ph.D, it is vital that "[1] teachers understand the importance of students learning to use educational technology as an important component of their preparation for further education, work, and life in general; [2] teachers demonstrate their support of technology use by developing their own skills, knowledge, and strategies necessary to model effective uses of technology; [3] teachers learn and use effective ways to integrate technology into their curriculum and use technology in ways that enhance instructional opportunities and successes for all students; [4] teachers learn uses of technology that provide assessment feedback to parents, students, and the teacher about how well the student is learning, and then use that

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visual displays including diagrams, visual textbooks, overhead transparencies, videos, movies and so on. The computer, the LCD projector and the Internet provide us with wonderful technologies to address the needs of these students.

Computer based simulated learning situations, video games and so on offer great opportunities for children whose intelligence and learning style are predominantly kinesthetic. Similarly, technology offers us far greater opportunities to cater to the needs of children with other kinds of intelligences and learning styles than traditional education does.

It is the responsibility of enlightened education to see that individual children are encouraged to use their preferred intelligences in learning and instructional activities are so designed as to appeal to different forms of intelligence. Equally important is that assessment of learning should measure multiple forms of intelligence.

The educational needs of today's children include a range of skills to express themselves not only through paper and pencil, but also audio, video, animation, design software as well as a host of new environments (e-mail, websites, message boards, blogs, etc). They need to have the ability to crunch, compare, and choose among the glut of data now available in web-based and other electronic formats. At the same time, they also need the skill to ensure their own safety and security on the Internet and to identify and negotiate 21st century risks.

But all this is possible only when the teacher herself is technology-enabled, which in turn, is possible only when education technology becomes a part of her professional preparation and development.

The multiple challenges of special education today too call for the use of education technology in the teacher's professional education.

As the MOSAIC report [2000] says, until recently the education system had taken a narrow view of special education, treating it as a mini school system within the school system "where teachers, largely cut off from the rest of the education system, faced a group of students with an incredibly wide range of abilities and disabilities

data to improve learning productivity; [5] teachers understand and instil into their students the social, ethical, legal and human issues surrounding the uses of technology; and [6] teachers help students to develop positive attitudes toward technology uses that support lifelong learning, collaboration, personal pursuits, and productivity."

EDUCATIONAL TECHNOLOGY- INTEGRAL PART OF PROFESSIONAL TRAINING

None of these important goals can be achieved unless education technology becomes an integral part of the professional training and development of teachers.

Education technology should be part of the professional training of teachers also because children's learning styles differ and the use of technology makes it easy for teachers to cater to these different learning styles. Today we recognize that students have different types of intelligence, they differ not only in the 'quantity' of intelligence but in its very nature, and their learning styles differ according to the dominant type of their intelligence.

Traditional classrooms and teaching activities have been developed essentially to meet the needs of students with verbal-linguistic intelligence and their learning style needs.

Children with logical-mathematical intelligence think conceptually in logical and numerical patterns making connections between pieces of information. While traditional classrooms do provide opportunities to address the learning needs of these children, the challenges education can offer these children can be multiplied many times with the use of education technology. Technology based education can offer them more varied and challenging opportunities than traditional education can in problem solving, in classifying and categorizing information, in working with abstract concepts to figure out the relationship of each to the other, in questioning and wondering about natural events, in performing complex mathematical calculations, in working with geometric shapes and so on.

Similarly, a section of learners in every learning situation are visual-spatial learners whose intelligence is predominantly visual-spatial, and they need to 'see' to fully understand the content of a lesson. Their preferred mode of thinking is in pictures and they learn best from

and made the best of it". Today we recognize that there is a need to change that situation and understand that since children with disabilities have to live in the common society, it is better for them to be educated not separately in special schools but in common schools.

However, students with disabilities frequently experience great difficulties in the general education system, including the emphasis on learning from the printed text. We can make use of education technology to create flexible teaching methods and curriculum materials to meet their needs. We must today accept the fact that students bring different needs and skills to the task of learning, and the learning environment should be designed to both accommodate, and make use of, these differences. To promote improved access to the general curriculum for all learners, including learners with disabilities, Rose & Meyer (2002) have identified three key principles or guidelines:

1. Presenting information in multiple formats and multiple media.
2. Offering students multiple ways to express and demonstrate what they have learned.
3. Providing multiple entry points to engage student interest and motivate learning.

Following these guidelines, we can help students for whom printed reading materials pose challenges by giving them electronic texts which can be modified, enhanced, programmed, linked, searched, and so on. Text styles and font sizes can be modified to suit the requirements of learners with visual disabilities. They can be read aloud by a computer-based text reading programme. They can be enriched by integrating them with illustrations, videos and audio.

CONCLUSION

So long as education technology does not become an integral part of the professional education of teachers, they will not be able to cater to the needs of the Net Age children. Today's children are rightly described as Netizens – citizens of the world of Internet. It is common for children to spend as much time on the Net world as in the physical world of their neighbourhood – and in many cases more hours per day in the Net world than in the neighbourhood. In a sense, for a vast section of them, the world is their

neighbourhood. The children we are educating today in our schools are in moment to moment communication with their peers across the world through blogs, through chats, through emails, through Orkut and Facebook and through a score of other similar means [apart from television which has made the global village a reality], they share their lives with children across the world and share the lives of these children from across the world. Our children, sitting in our homes, live and experience what other children are living and experiencing right at this moment in China, in Japan, in Korea, in England, in France, in the US, in Egypt, in Palestine, and in South Africa. It is these children that we educate in our classrooms and to educate them their teachers cannot be still living in a bygone age.

Education experts point out that lack of professional development for technology use is one of the most serious obstacles to fully integrating technology into the curriculum. Traditional training sessions or one-time-only workshops, both of which have only surface impact, have not been effective in making teachers comfortable with using technology or adept at integrating it into their lesson plans. What we require instead, is making education technology part of the professional education of the teacher and giving every teacher intensive training in it at her training stage itself.

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