New Learning Technology

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Abstract:

The paper focuses on the changes in the world created by technology which leads to the discussion about the changes within the current student and the role of technology in teaching & learning process. It then covers how the changes being made in society have affected the requirements for students. These requirements bring into light the fact that technology integration can play a large role in changing our learning environments to better support the development of higher-level thinking skills needed by the 21st century. This leads to the discussion of emerging technology and practices.

Introduction:

The world is changing and the requirements for people entering into this world are different than they have been in the past. This paper will look at this major change, new requirements for this change and the impact of this change on the theories about learning.   Many reasons could exist for a new theory to be developed. Perhaps an older theory doesn't quite answer questions about learners or may be the old theory leaves out an explanation for cognition within the brain.

Change in the requirements of our new world:

The main reasons educators would believe that change is needed are that they can see a change in the current student population, and they can also see a change in the requirements of our new world. Students are facing an entirely different world than the generations before. This generation of students differs in many ways, but one thing which stands out is that they have more access to technology than previous generations. For example research has found that quite a few first grade aged students use a computer on a weekly basis during the summer holidays. Researchers have also found that by the year 1999, a surprisingly large percentage (97%) of kindergarteners had access to computers at home or school. Statistically, even lower income students that might not have access to technology at home find a way to make use of it, by either going to a library, their school, or to a friend's house.   These statistics clearly show that technology plays a very important role in

student's lives. It also helps to clarify why educators believe a change is needed in the way teaching and learning occurs. If students are so engrossed in the use of technology outside of the classroom, they obviously value it. It would then be logical to say that if technology were integrated into the classroom the learning environment would be more relevant to the current student population. ***Why are children of today becoming so engrossed in the use of technology at such an early age?*** The world we live in has become a technical world. Nearly all aspects of society have been influenced by technology. According to *Research on computers and education: Past, present and future,* the fact that virtually all segments of society have changed dramatically by information technologies and will continue to change in the future cannot be ignored. Schools must be a part of these changes and research should proceed with the assumption that technology is and will continue to be a growing element within the schools. This is the main reason the student population is so interested in the use of technology. It is impossible to grow up in a world that has become technological in nature and not be influenced by it.

As stated above the world we live in has been changed dramatically by information technologies. What does this mean for young adults entering into the workplace of the 21st century? What are the requirements of this century and how can the integration of technology help? The requirements of the 21st century are dramatically different than those of previous times. In fact, core subject knowledge is no longer enough, students need higher-level learning skills. The demands of the 21st century require young adults to be able to "use their knowledge and skills—by thinking critically, applying knowledge to new situations, analyzing information, comprehending new ideas, communicating, collaborating, solving problems, making decisions". Not only does the 21st century demand these high-learning skills, they are needed to be successful in this ever changing world that we live in. Authors of *Computers in the classroom: The impact of technology on student learning state that,* the world in which we live is increasingly sophisticated, multifaceted and nuanced. People need high-level learning skills to respond, learn and adjust to ever-changing circumstances. As the world grows increasingly complex success and prosperity will be linked to people's ability to think, act, adapt and communicate creatively. Technology integration, if done properly, can do many things to help in the process of creating more authentic learning environments and more.

Learning technology:

Learning technology is defined as the application of technology for the enhancement of teaching, learning and assessment. It includes computer based learning and multimedia materials and the use of network and communication systems to support learning. Learning technology clearly embraces a wide range of applications, some of which in the past have been classified under various

acronyms such as **CAI** (Computer Aided Instruction), **CAL** (Computer Aided Learning), **CBC** (Computer Based Learning), **CBT** (Computer Based Teaching). Newer technologies which are included within learning technology have also brought with them their own acronyms. For example, CAA(Computer Aided Assessment), CMC(Computer Mediated Communication). An essential component in a learning technology package is the ease with which the learner can interact with the contents. This is often referred to as the HCI(Human Computer Interface).

Application areas of Learning Technology:

The Main application areas of the learning technology are as follows,

- Drill & Practice
- Tutorials
- Information retrieval system
- Simulations
- Micro world
- Cognitive tools for learning
- Productive tools
- Communication tools

1. **Drill & Practice**: This package offer structured reinforcement based on question and answer interaction and should give the student appropriate feedback.
2. **Tutorial**: This Package is used to teach new concepts and processes. Material is presented to the student in a structured format. Tutorial software usually includes worked examples and gives the learners the opportunity to assess their understanding with question-answer and feedback.
3. **Information retrieval system**: This system store knowledge in structured way and allow the learners to browse or search for information as required. They include on-line database; structured information system such as dictionaries and encyclopedias & also hypertext and hypermedia reference system.
4. **Simulation:** Simulation model is an experiment or a real life or imaginary situation. The context of the simulation may be business plan or a laboratory experiment or an animation of the working of a chemical plant. Simulations usually based on interactive graphics and give the learner the ability to visualize a process and explore the effect of changing parameters on operation system.
5. **Micro words:** Micro words use the computer to create a problem solving environment and are derived from the work of the cognitive psychologist Jean Piaget

6. **Cognitive tools for learning:** These tools are based on the constructivist principal that learners needs to construct their own understanding of new concept, these tools give the learner a way of representing their understanding of new knowledge and concept.

7. **Productive tools:** These tools includes application such as word processors spread sheets, database, graphics desktop publishing and presentation packages, whilst these tools are not specific to learning technology, it used within a pedagogical framework, they can support learning process and by improving student productivity.

8. **Communication tools:** Computer mediated communication tasks several forms including electronic mail, electronic conferencing, video conferencing and the World Wide Web. These tools allow learners to share ideas and information to co-operate, to collaborate on joint works and can also be used for submission & publication of student's assignment and of tutors comment on student work.

Emerging technology and Practices:

Learning technology alone does not necessarily advance learning; well-integrated learning technologies and practices often do. With learning principles and practices in mind, technology is being used in service of learning. New technologies may advance learning; even traditional technologies, when implemented with pedagogically sound practices can result in significant learning gains emerging learning technologies and practices.

Games, Simulation & Virtual worlds provide educators with opportunities to engage learners in an immersive and interactive environment that requires knowledge decision making and information management skills. However the use of these environments in teaching & learning can be controversial; their association with play and fun is often consider non-educational. Even so, they are gaining cultural acceptance. Research suggests, they can play a significant role in facilitating learning through engagement, group participation & immediate feedback and by providing real world contexts.

References:

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