TECHNOLOGY MEDIATED COMMUNICATION: CHANGING THE WAY WE LEARN

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Abstract

Technology has made ardent strides in all fields and education is no exception. The blackboards have given way to smart boards and learning material is not just printed books anymore – computers and tablets are changing the way children learn. Technology has certainly seen much success in transforming the learning experience. However, there are certain negative effects of technology which can be lessened by allowing the facilitator to play an active role in the monitoring process. Traditional methods of learning cannot entirely be sidestepped as they too play an important part in learning. When used in the right manner, technology will most certainly create an engaged and evolved learning experience for all.

Technology is a significant tool in the process of education. The adoption of technology across various industries clearly shows, ways in which its adoption has improved outputs. The ultimate adoption of any new tool in education is to derive an improvement of learning outcomes of the students. While this is the end goal, technology tools can be used in the various facets of the teaching/learning processes which can directly/indirectly contribute to the end objective. All these technologies have made learning fun and dynamic. In this article the focus is brought about on recent technological shifts in education.

Keywords: Technology, Communication, Assessment, Software, Hardware

Introduction

When technology is planned to mediate in the process of information sharing that consists of verbal and non-verbal transactions between teacher and students, or between and among students, in a classroom setting, the concept of Classroom (Technology Mediated) Communication initiates. The planned sessions of a classroom are transacted through the technology. It may be direct or indirect intervention by the technology. The technology or Information and Communication Technology (ICT) tools for mediation may be computers, internet, educational satellites, audio-visual equipments, tablets, mobiles etc.

Classroom (Technology Mediated) Communication is any form of communication between two or more individual people who interact and/or influence each other via

technology (through the internet or a network connection) or using social software. It doesn't include the methods by which two technologies communicate, but rather how people communicate via technology.

Components of Classroom (Technology Mediated) Communication

The main components of Classroom (Technology Mediated) Communication are the student, the teacher, the planned lesson and the technological tools. For the Technology Mediated Classroom Communication, the student has to be at the centre of the teaching-learning process, i.e. learner centered environment is expected to be provided. The teacher is the lesson planner/designer, indeed the manager for the classroom activities and the facilitator for learning through technology. The lessons should incorporate the use of different Information and Communication Technology tools for lesson development, hence, enhancing the teaching-learning process. Technology is planned to be used for exploring the knowledge and is integral to learning.

Computer Mediated Communication

Computer Mediated Communication (CMC) has been basically described as "any communication patterns mediated through the computer" (Metz, 1992, p.3). It may be direct or indirect intervention by the computers for the teaching-learning process. For indirect mediation, the teacher should have the basic knowledge and skills related with the Computer Based Instructional pattern. For direct mediation, one should understand that CMC is essentially a medium of written discourse. In order to participate, one must have a minimum working knowledge of computer modems and communication software and know the step-by-step process of engaging in interpersonal computer-mediated communication.

Derek R. Lene (Interconnect '94 Teaching Learning & Technology Conference) compiled that CMC appears to include following primary advantages:

- Enhances flow of information (collaboration through communication over distance)
- Allows for intellectual exploration
- Provides the capability to store, process and transmit messages
- Breaks down barriers to communication (status differences / geographical boundaries)
- Eliminates stereotypical classifications as well as preconceived barriers related to individual/ personal bias
- Provides for a constant flow of ideas
- Allows timely sharing of ideas
- Supports open discussions and exploration
- Provides accessibility to information and subsequent sharing of the same

- Convenient
- Flexible
- Independent learning (learn/communicate at your own pace).

Integrating Technology in Classroom

The world is witnessing a digital revolution. Today's children are evolving in a world that is very different from that of most adults. Computers, mobile phones, the internet and other digital media play an active role in the upbringing and development of children. Understanding and internalizing technology is an organic process for the youth of today. Technology is intertwined with the very growth of the child itself – from helping him/her build an identity, to social acceptance and behaviour. It is thus inevitable that in the near future, technology will replace the traditional modes of learning. Tablets and computers will be the equivalent of books, a mouse – the equivalent of a pencil, and the internet – an extensive library of knowledge.

Integrating technology into classroom learning can help students in many positive ways:

- **The 3 C's (Communication, Collaboration and Creation):** The use of internet technology has opened up a world of learning and opportunity for learners, giving them the chance to communicate, collaborate and create. This has given rise to a different kind of learning that goes far beyond the boundaries of the classroom.
- **Innovative Learning:** The use of tablets and computers creates an innovative and visual learning experiences for learners, and helps to engage their interest. Videos, virtual lessons and assessments help create a certain level of excitement and are great learning tools, especially while teaching subjects such as Mathematics and Science. Application based learning is enhanced and the learner feels involved in the lesson.
- **Greater Access:** E-learning has given form to a wholesome learning experience, where learners can access learning material from anywhere. Distance learning has taken great strides, providing knowledge even in remote areas.
- **New Roles and Responsibilities:** With the advent of e-learning, the role of the teacher has changed from that of a dispenser of knowledge to a facilitator and a guide. Teachers now can spend more time attending to and helping learners individually. However, the role of the facilitator has become even more important in making sure that learners' activities are monitored in the best possible manner.
- **Personalized Education:** As learners can get individualized instructions from the computer, learning becomes a more engaging process. Learners of different capacities have the freedom to learn and engage at their own pace.
- **Increased Focus:** The use of the internet as a research medium gives learners the chance to immerse themselves in projects and learn in a more exciting manner.

- **Bridging the Gap in Communication:** Technology has even helped to fill in the communication gap between parents and facilitators. Daily/weekly e-reports are sent directly to parents. Parents too have the chance to track their child's progress and converse with teachers easily via school web forums.

Innovative Tools of Technology in the Classroom:

Tablet Learning: Many schools have already made the switch to tablet technology for learning. With this tool, learners can access content at the touch of a screen, anywhere and anytime. The touch interaction introduces an additional level of engagement and increased stimulation, less learning time and enhanced knowledge retention. Tablets lend themselves to a great kind of technology in teaching due to easy portability and convenience. They offer access to text and reference books, audio and video resources, internet research, document preparation and review, and much more.

Online Testing and Assessment: There are several online testing software and applications available to schools today. Learners can take these tests on their digital device and receive instant scores. Practice tests that can be accessed from any device are also very useful and engaging for learners, and act as a substitute for after-school coaching. This allows the facilitators the liberty of time that would have been traditionally spent assessing written tests.

Facilitator's Notes: Customized applications have been introduced that allow facilitators to write notes digitally so that they can be saved for the learners to access later.

Assessment Reports: Teachers can also send daily/weekly/monthly assessment reports to parents and communicate with them in a more convenient manner. Reports, assessments and updates are uploaded on to common forums accessible to both parents and children, leading to absolute transparency.

Technology has certainly seen much success in transforming the learning experience. However, there are certain negative effects of technology which can be lessened by allowing the facilitator to play an active role in the monitoring process. Traditional methods of learning cannot entirely be sidestepped as they too play an important part in learning. When used in the right manner, technology will most certainly create an engaged and evolved learning experience for all.

Technology in education has been one of the most burning issues right from primary schooling to higher education/skill development. Some such technological tools that can be used in classroom across and their impacts are summarized below:

Hardware

a) **Audio/Visual Teaching Aids:** Projectors and smart boards are a great addition to the standard chalk boards in the classroom. Projectors enable teachers to mix-up different kinds/formats of content from various sources with the traditional talk-n-chalk and make it interesting for the students. Some benefits of smart boards include the increase in interactive instructional tools, display

attractive graphics, improve lectures with audio-visual tools, provide better instructional material, and can also cater to all learning styles.

b) **Classroom Response System (Clickers):** A classroom response system (or personal response system, student response system, or audience response system) is a set of hardware and software that facilitates teaching activities such as the following.

i. A teacher poses a multiple-choice question to his or her students via an overhead or computer projector.

ii. Each student submits an answer to the question using a handheld transmitter (a clicker) that beams a radio-frequency signal to a receiver attached to the teacher's computer.

iii. Software on the teacher's computer collects the students' answers and produces a bar chart showing how many students chose each of the answer choices.

iv. The teacher makes 'on the fly' instructional choices in response to the bar chart by, for example, leading students in a discussion of the merits of each answer choice or asking students to discuss the question in small groups.

c) **Tablets:** As curriculum meshes with technology in the classroom, teachers are discovering that tablets can be game-changers. Students can research without leaving the classroom, teachers can project and manipulate 3-D objects on a screen and a virtual library is available at the swipe of a student's fingertip. Backpacks are lighter, teachers' handouts are almost impossible to lose and it's harder for a dog to eat homework.

Software

a) Learning Management Systems: A learning management system (LMS) is an online platform that enables the delivery of materials, resources, tools, and activities to students both in and out of the classroom environment. It allows teachers to offer tailored instruction that can be accessed by students anytime, anywhere without geographic constraints. The key benefits of implementing a Learning Management System are

i. **Communication:** An LMS adds an asynchronous communication channel between the teacher and students to share multi-format content aligned with learning objectives of the students. The students discover curriculum material and courseware in an organised structured environment both inside and outside the classroom.

ii. **Differential Learning:** An LMS extends the classroom beyond the four walls and also allows for one-to-one interaction between the student and teacher. This allows for differential learning and personal attention for individual students without taking precious classroom time.

iii. **Community and Collaboration:** An LMS enables peer-to-mentor and peer-to-peer communication and collaboration and mirror some of the

collaborative activities students participate in the digital world. This opens up varied opportunities and improve student engagement in the classroom.

Content/Courseware

a) **Digital Textbooks and Multimedia Content:** A growing trend points to the importance of shifting K-12 schools from printed textbooks to digital educational resources. Digital content is more flexible and cost-effective than print material such as textbooks. Digital resources can be updated easily without the cost of reprinting. They are available anytime, anywhere for students and teachers to access in the classroom or at home. They can be personalized to meet the individual needs of students and they allow for richer content, including high-definition graphics, videos, simulations, interactive lessons, virtual labs, and online assessments.

b) **Digital Assessment:** Technology can make the formative assessment process even easier and provide tools for analyzing data quickly and painlessly. There are many technological tools that allow teachers to create and deliver formative assessments in just a few minutes and collate student results instantly. Some of the tools include classroom response systems, tablets and mobile devices and Google Forms.

Labs and Kits

There are several new kits and tools which are available that teachers can introduce in the classroom to drive student engagement and widen their horizon. Robotic kits can improve the engineering skills and hands on project work among students. Many new tools are being developed and introduced which teachers and students can use in the class for students to conduct science experiments and learn by observation. Language enhancement kits can help students practice and learn speaking and listening skills.

Conclusion

Overall the progress in technology has enabled a vast number of new tools and systems to be built and deployed in classrooms to improve overall delivery process, make it more efficient and ultimately drive learning outcomes. There is no one tool that fits in all situations and so teachers need to evaluate every tool on its merits and how it fits within their instructional methodology curriculum. Thus, the teachers should be encouraged to be open to new ways of instruction which is possible only because of these new tools in class. Transformation and reinvention... the way of life.

References

- Becker, Henry Jay. 1999. Internet Use by Teachers: Conditions of Professional Use and Teacher-Directed Use. Teaching, Learning and Computing: 1998 National Survey of Schools and Teachers, Report 1. Irvine: Center for Research on Information Technology and Organizations, University of California, Irvine.
- Birchard, Karen. 2001. "Distance Education: European Commission Adopts $13.3-Billion Plan That Is Expected to Promote Online Education." Chronicle of Higher Education April 16.
- Bransford, John D.; Brown, Ann L.; and Cocking, Rodney R. 1999. How People Learn: Brain, Mind, Experience, and School. Washington, DC: National Academy Press.
- Cognition and Technology Group at Vanderbilt. 1997. The Jasper Project: Lessons in Curriculum, Instruction, Assessment, and Professional Development. Mahwah, NJ: Erlbaum.
- Dabla A, Promoting the Use of Information and Communication Technologies for Primary and Secondary Education: The Case of the States of Chhattisgarh, Jharkhand and Karnataka in India http://www.csdms.in/gesci/IT_for_Change.asp
- DRAFT National Policy on Information and Communication Technology. www.education.nic.in/secedu/**ict**.pdf
- Dwyer, David. 1994. "Apple Classrooms of Tomorrow: What We've Learned." Educational Leadership 51 (7):4 - 10.
- Galanouli D, 2004: Teachers' perceptions of the effectiveness of **ICT**-competence training. portal.acm.org/citation.cfm?id=1006357
- Grover S, Technology as a Tool and Enabler in the post-NCF 2005.
- Means, Barbara. 2000. Accountability in Preparing Teachers to Use Technology. Paper prepared for the Educational Technology Leadership Conference, Washington, DC, January 13-14
- MHRD - National Policy on ICT in School Education www.csdms.in/gesci/mhrd.asp
- Moyle K, Computing technologies in school education: policies and standards and standard policies. http://www.aare.edu.au/05pap/moy05462.pdf
- Mehendale A, Kasinathan G,, Ramachandran V, Critique ICT Education. http://www.itforchange.net/media/NPISE/Detailed_Comments.pdf
- National Policy on ICT in School Education, IT for Change, November 2007 http://www.csdms.in/gesci/IT_for_Change.asp
- Pellegrino, James W.; Chudowsky, Naomi; and Glaser, Robert, eds. 2001. *Knowing What Students Know: The Science and Design of Educational Assessment.* Washington, DC: National Academy Press.

- Reil, Margaret. 2000. New Designs for Connected Teaching and Learning. White paper commissioned for The Secretary's Conference on Educational Technology Evaluating the Effectiveness of Technology, Washington, DC, September 11 - 12.
- Reil, Margaret., and Becker, Henry Jay. 2000. The Beliefs, Practices, and Computer Use of Teacher Leaders. Paper presented at the annual meeting of the American Educational Research Association. New Orleans, LA, April.
- Sheingold, Karen, and Hadley, Martha. 1990. Accomplished Teachers: Integrating Computers into Classroom Practice.New York: Center for Technology in Education, Bank Street College.
- Tinker, Robert. 2000. Ice Machines, Steamboats, and Education: Structural Change and Educational Technologies. White paper commissioned for The Secretary's Conference on Educational Technology Evaluating the Effectiveness of Technology, Washington, DC.
- Thornburg, David D. 1999. Technology in K - 12 Education: Envisioning a New Future. White paper commissioned for the Forum on Technology in Education: Envisioning the Future, Washington, DC.
- White, Barbara Y., and Frederiksen, John R. 2000. "Metacognitive Facilitation: An Approach to Making Scientific Inquiry Accessible to All." In Teaching in the Inquiry-Based Science Classroom, ed. Jim Minstrell and Emily H. van Zee. Washington, DC: American Association for the Advancement of Science.