USING TECHNOLOGY TO ENHANCE THE TEACHING LEARNING PROCESS

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Abstract

Through this article, an attempt is made to highlight some ways on how teachers can integrate technology into their teaching repertoire to enhance the teaching learning process to make it both an enjoyable and enriching experience. Technology has several advantages: it is being used as a powerful tool by many teachers for making lesson plans and organizing learning activities, for enhancing class-room presentations by employing CD- ROMs and multimedia, assisting in skill development through practice, the test generators and electronic grade books are very resourceful in evaluating student performance, it is particularly favorable with problem based learning, it enhances cooperative interaction among students, it serves very strongly as a motivational and management tool and the assistive technologies are extremely beneficial to students with special needs. It is hoped that the guidelines outlined in this article can provide some assistance to teachers attempting to optimally combine their goals, their students' needs and the power of the Technology-enhanced class-room.

In this new era, rightly called the information era, methods of processing and using information have undergone a dramatic technological revolution. This revolution appears in its infant stages in the field of education. Providing high quality education to students in an information age necessitates teachers to keep abreast of technological developments so that they can integrate these technologies into their teaching repertoire to enhance the teaching learning process. Riel and Fulton (1998) claim that computer and related technologies can enhance not only teacher centered instruction but also provide a very strong support for activity and student centered approaches. The objective of this article; therefore, is to highlight the varied ways in which technology can and is being incorporated into the teaching learning process to make it both an enjoyable and enriching experience. Technology has many advantages: it is being used as a powerful tool by teachers for making lesson plans and organizing learning activities, for enhancing class-room presentations by employing CD- ROMs and multimedia, it is assisting in skill development through practice, the test generators and electronic grade books are very resourceful in evaluating student performance, it is particularly favorable with problem based learning, it enhances cooperative interaction among students, it serves very strongly as a motivational and management tool and the assistive technologies are extremely benefic to students with special needs.

Use of Technology in Lesson Planning

Technology can be used as a powerful tool for organizing learning activities, making lesson plans, keeping attendance records and preparing learning material. The teacher can choose from a wide range of resources. For instance, *Lesson Planning Software* enables the teacher in organizing the lesson plans and connecting particular lesson plans to learning objectives. Likewise, *Poster and Bulletin Board Production Tools* helps a teacher to make and print posters to be displayed on the bulletin boards. Another popular software is *Worksheet and Puzzle Tools.* This software allows the teacher to create worksheets and puzzles on different topics. *Time and Meeting Management Tools* is a resourceful software which allows teachers to plan and organize meetings, schedules and so on. A word of caution - as innumerable software programs, CD's and websites are available, it is necessary for teachers to evaluate their quality and appropriateness

for their students.

Computers and interactive multimedia

Teachers can enhance their presentations and make them more interesting by using computers and interactive multimedia. Today, most presentation software programs allow integration of print, audio and visual material and provide design formats. They even offer valuable advice on their usage through wizards and auto layouts. Microsoft's *Power Point Software* and Apple work's Apple Computer have gained considerable popularity in this respect. Such multimedia presentations are highly recommendable as they immediately draw and hold the attention of its viewers. Students can also use these presentations to prepare and enhance their projects. In fact, many teachers prefer students to create their own multimedia presentations that incorporate text, sound, video and graphics. These teachers are of the opinion that this type of learning activity helps students to achieve multiple learning objectives. Students are highly motivated and learn the content easily and in great depth, as a result of having to design a presentation and present it to others.

CD- ROMs and virtual websites

CD- ROMs and virtual websites prove very expeditious for bringing the outside world into the class-room and giving visual and auditory representations of abstract ideas. Many websites are available that allow students a virtual field trip to illustrate concepts which are difficult to explain by other means. A number of these websites are free and offer visual and auditory representations. For example, life in a remote stormy desert or a snow-capped region can be easily shown by using video clips and still photographs. CDs are available on every topic. *The National Gallery of Art CD* and *Windows on Science* have a rich collection of still photographs and video clips on visual arts and science.

Use of Computer Software in Skill Development through practice

Teachers teach basic skills mainly through direct instruction. Two kinds of computer software packages can be particularly useful for this purpose: *Drill and Practice* and *Tutorials. Drill and Practice Software* allows students to practice and provide feedback on topics they have studied previously. This software doesn't teach a new skill. During the practice session, students are provided with a problem situation for which they must choose a solution. Correct answers to problem situations allow students to move on to a more difficult situation. Incorrect answers are supplemented by remedial problems for additional practice. Several programs are available on spellings, mathematics and foreign languages. Very often teachers find these drill and practice software programs to be interesting and motivating to students. The *Tutorials*, on the other hand, offers instruction and practice on a given skill or topic. The *Tutorials* differ from *Drill and Practice* in that it is based entirely on behavioral theory of learning, as it offers a topic with written explanations, graphic illustrations and demonstrations. The program guides students on a given topic in small sections while providing them abundant opportunities for guided practice. The program then checks students' understanding and provides appropriate feedback. After many practice sessions students are required to take a post test that covers the objectives associated with the *Tutorial*. Students find *Math Blaster* very beneficial. Teachers can use these software programs as powerful and flexible tools to help students to access basic information and enhance skills. Recently, a wide range of web- based software is available. Most of them are free and cover a variety of content areas. Hence, teachers are suggested to check the programs: to make certain that the content is accurate. They offer plenty of motivational practice, gives appropriate

feedback and lead students to appropriate levels of challenge.

Test generators and electronic grade books

Test generators and electronic grade books are advantageous in evaluating the performances of students in the final production stage of the popularly used Communicative Approach. A wide array of software programs have been designed to assist teachers in performance assessment, to record student performance and report results to students and their parents. Test generator softwares such as *Class Manager* and *Easy Grade Pro* allow teachers to create a bank of test questions on a particular topic. From time to time they may add or delete questions as required to present new versions of the same test. Particular text-generator programs enable teachers to write and organize questions in various formats: matching, multiple choice, true or false or information gap filling. Software such as *Rubricator 4.0* helps teachers to develop rubrics for scoring the performance tasks by aligning their objectives and standards to performance tasks. *Electronic Grade Books*, likewise, help teachers to record scores in a database. *Grade-book Software* enables teachers to create reports using charts that illustrate students' performance during a complete academic session. This is an easy and far less time consuming way of preparing reports for students and their parents. Today, one way that most schools have used technology is by developing websites to provide information on various aspects about their school and students' performances. Such school based websites can post daily grades, attendance records, lesson plans and home-work assignments. This can be achieved with software programs which link a teacher's *electronic grade book* to the website. Websites such as *ThinkWave.com* prove very advantageous for teachers, students and parents. Teachers can easily and conveniently transmit information about the class activities to parents and students at all times. Students can maintain a track of their grades and know their position in class throughout the academic year. They can find out about assignments and their due dates on the websites. This allays their fear of not knowing about an assignment due to an absence. Parents also can easily monitor their child's behavior on a regular basis.

Using the web with problem-based learning

Teachers using *problem-based* approach to learning, find the scenario dramatically changed. At present, students don't find themselves limited to local libraries. They can access information from libraries around the world through the internet. Students involved in *problem-based learning projects* can use the internet to avail information for PBL projects and even participate with problem-based learning websites. For example, students in a History class can take a virtual tour of the historical sites of India. Science students can secure data from NASA and scientific institutions around the world. At present, there are innumerable interesting websites that offer students' *problem-based learning* experiences. For instance, *Adventure Learning Foundation* offers curricular materials online on *"Adventure learning Expeditions"*. This website and its resources provide cultural and travel experiences for many places; in addition, it has pictures, maps and *problem-based learning* lesson plans for teachers. However, teachers need to be cautious when they allow students to use the internet. Students must be taught effective search strategies and given lessons aiming at developing search skills. As a precaution, many schools use internet filtering software that blocks sites considered inappropriate for the students.

Using technology for enhancing cooperative interaction among students

Another salient use of technology is apparent in

enhancing interaction and cooperation amongst students as it allows ample opportunities for group work and for cooperative learning. Some ways how teachers can use technology to promote cooperative work are: student groups can be asked to create *multimedia* or *hypermedia* presentations to present and explain particular topics to others. In addition, they can engage in a LOGO Programming project to perform a variety of tasks. Furthermore, students can be asked to work in groups to write and publish an article for the school journal, by using a publication tool

Use of Technology as a motivational tool

In a recent discussion among local teachers who use computer and related technologies in their class-rooms, most spoke emphatically and elaborately about the strong motivational aspects of computers and internet resources. Hatfied (1996) emphasized how the use of computer stations in classrooms increased student computer use and overall motivation. Terrell and Rendulic (1996) reiterated the same idea by stating that feedback via the computer had a positive effect on student motivation. After a large scale study of the Apple Classrooms of Tomorrow (ACOT) Ringstaff, Sandholtz and Dwyer (1995) drew the conclusion that students in technology-rich class-rooms worked together more eagerly in schools. These students, at times, performed beyond expectations in particular assignments. During their free- time, they were seen to be readily and enthusiastically exploring topics being taught, to advance their knowledge further.

Use of Technology as a management tool

The importance of computers and recording technologies in helping teachers to gain effective class-room management cannot be undermined. Many educational softwares and websites offer learning activities which students can pursue on their own without the teacher's direct supervision. A free period due to a teacher's absence can be profitably used by keeping students engaged on computers in the computer Lab. The teachers can also use audio and video recording devices to identify and take action against inappropriate behavior in class-room. It can be used as a communication tool with parents. One useful means to record student behavior is an approach called ABC (AntecedentsBehaviorsConsequences) analysis. The teacher can create a file on a computer for keeping records and chronological ordering of ABC analysis. For example, the teacher can click every time a student moves out of his/her seat unnecessarily. Similarly, teachers can feed signals and messages into the computer for communicating with students and flash them on the screen as and when required. Such electronic signals prove very effective in large class-rooms. Finally, e-mail and cell phone technologies are helping to promote better and more frequent interaction between parents and teachers with the objective of improving all-round development of students.

Assistive technologies

Assistive technologies are very helpful to students with special needs, as they enable them to perform task related with learning and daily living easily. For instance, joysticks have been developed that allow one to control the computer by pointing with their heads or chins. Keyboards can be modified to enable one-handed typist to use them. The large range of assistive devices, that is available at present, enlarges the range of educational scope. For example, *Braille Translation Software* converts text into correctly formatted Braille. *Screen Manifestation Software* increases the size of text and graphics. Such computerized large print can assist students with visual impairment. *Speech Recognition Software* can help students who can only speak a few sounds to perform a ith

variety of tasks such as starting an audio tape or accessing a particular curriculum on a CD ROM. PC Pal, a special computer and LCD screen allows hospitalized students to keep up with their homework and remain in contact with their friends. Special websites like Center for Applied Special Technology (CAST) enhance opportunities for people with disabilities through the use of computers and assistive technologies. It is recommended that teachers assist individuals with disabilities to learn how to use appropriate assistive devices.

In conclusion, I would only like to add that it is common knowledge that all major innovations have both positive and negative effects. But it is too presumptuous to think that technology can take over education, replace teachers or drastically change the traditional school and learning. However, future teachers can expect the incorporation of technology at all grade levels to become a positive tool in the effective teaching practice. Many would agree with Brandt (2000) that technological change in our society will continue at a rapid pace and these changes demand responses by our educational institutions and by teachers. Hence, it is recommended that teachers stay abreast of technological changes and continually upgrade their skills for technology. In fact, the International Society for Technology in Education (ISTE) has laid a set of performance technology standards for teachers. Of course, any new venture thoughtfully carried out offers plenty of opportunities for optimism and vision and the use of technology in enhancing the teaching learning process is no different.

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