

Teachers and Technology: the interactive white board.

Introduction

As more and more teachers are accepting the need to integrate technology in the classroom, a wide range of different options are available for educators to choose from when planning creative and instructionally valid technology-based lessons. Following an increase in teacher competency incorporating basic software into their classes, focus has shifted to more dynamic uses of technology in the classroom. Competition is high among the designers of instructional applications and tools, especially considering the rapid development and evolution of such resources. Teachers demand high quality materials and tools that are easy to master and use in order to create exciting lessons that positively affect their students

Significance of the topic

One piece of equipment that is being utilized by more and more teachers in the classroom is the electronic interactive whiteboard. The device serves as both a visual presentation tool and as an interactive teaching resource. The whiteboard is an electronic device that interfaces with a computer where the computer images are displayed on the board so they can be manipulated interactively (Weiser,1996).

Once touted as a tool for business meetings and development, the interactive whiteboard has gained popularity with teachers when used simultaneously with a computer and video projector as it creates an interactive learning community. Instead of having to crowd around one or two computers, the interactive whiteboard can not only display material on a screen, but also respond to human interaction, responding to both computer commands, and touch commands on the screen. Being touch-sensitive, means students can control the board and manipulate applications with their finger or pens. Students can annotate notes on the screen or compose original material that can be saved, printed or disseminated electronically.

The whiteboard was originally marketed to teachers as a high-tech version of a chalkboard or flip chart that eliminated the need for chalk or markers (Lee, 1992). The ability to write and save notes, as well as the growing popularity of its use in distance learning and communication, sparked interest in the interactive board. As the product became more popular and therefore less expensive, universities and school districts began experimenting with the use of the interactive board as a teaching device. According to Mary Ann Bell, "the interactive whiteboard has gained recognition as an attractive instructional aid, receiving awards in technology reviews and appealing to schools through special pricing and incentives.

Different versions available

Competition between different producers of interactive technology remains high. Some of the more popular versions available include:

SMART Boards: one of the more popular brands of interactive whiteboard these boards are considered useable and cost efficient. SMART Boards do use membrane technology that isn't as durable as some designs and can be scratched easier than those products with electro-magnetic surfaces. On the plus side, the high resolution of the SMART Board makes it the perfect match for a classroom. Teachers respond to the easy orientation of the SMART Board and the accessible Floating tools that make accessing writing, highlighting, erasing, and annotating functions simple.

QuickTime™ and a TIFF (Uncompressed) decompressor are needed to see th

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www.smarttech.com

Diamond boards: these have shortcut keys on both the left and right sides of the board that enable the user to do everything at the touch of a button rather than having to open each application through a menu. There are different models available depending on desired resolution and size of board.

Hitachi boards: one of the most popular boards utilizing an electro-magnetic board. These boards can be used as a standard dry erase board with the additional feature of having electro-magnet pens that can also be dry erase pens enabling the user to use the board and save and print annotations without having to use a projector. The Hitachi boards can also boast having handwriting recognition capability and fast tracking of pen movements.

www.hitachi-soft.com

Mimio: the brand name of a series of tools for use on a traditional flipchart or whiteboard. Some schools choose Mimio because of the low cost. Mimio attaches to a whiteboard, connects to a computer and uses infrared and ultrasound technology to track the position of the marker and eraser on the board. It can be attached to different boards and is both PC and Macintosh compatible.

www.mimio.com

Discussion on the topic based upon research

Although the popularity of the use of interactive whiteboards is growing, there is a lack of cumulative research to collect and analyze data regarding the affect such technology has on student learning. Most of the 'research' available comes in the form of testimonials of teachers and students who are utilizing the tool (to read sample testimonials, access www.smarttech.com). Some of the initial research into the use of interactive whiteboards in the classroom includes Michael J. Weimer's study conducted in a school in Indiana where two individual classrooms completed two projects, one using SMART Boards and one lacking a technology component. The objective was to determine the level of motivation of students for each of the projects. Weimer collected data by conducting a survey using questions utilizing the Likert scale as well written comments and concerns. The quantitative and qualitative results both indicated greater motivation in student learning and enthusiasm for student control of the direction of the lesson. Weimer also conducted study hoping to identify a correlation between using the interactive whiteboard and increased note taking skills. However, the results of this test were inconclusive. Mary Ann Bell's study to investigate use and perceptions of the interactive electronic whiteboard as an instructional tool involved thirty participants who completed a 67-item survey. The results indicated a high degree of satisfaction with most aspects of the board and its use in the classroom. Some of the negative responses centered on teacher training, cost, and the logistics of finding space to house the board and projector.

Various responses posted by teachers and students on the internet indicate that one of the major benefits of the interactive whiteboard is the building of a classroom community around computer technology. No longer do students have to crowd around a single computer to observe a demonstration of an application, instead the computer becomes a shared resource. The boards allow for quick access to a huge database of different resources, especially when linked to the internet. The combination of computer and whiteboard not only creates an interactive learning environment, but also saves time on note taking while enhancing student understanding of material through tools that can highlight or write over projected/computer images. In her article *Why Use an Interactive Whiteboard? A Baker's Dozen Reasons*, Mary Ann Bell summarizes the function of the boards and lists the benefits of such technology. Her enthusiasm for the technology includes observations such as the ease of use for demonstrations for classroom or staff development, the tactile and visual elements that address different learning styles, the critical thinking students display when monitoring the board, and the benefits of the board for students with limited motor skills who find mouse clicking frustrating compared to touching a large screen. The ability to display web sites, audio clips, and movies at the touch of a button also appeals to educators who work with students who are exposed to more and more visual and audio images.

Summary

Despite the need for more research in to the educational benefits of interactive whiteboards, testimonials from classrooms that utilize such technology indicate a higher level of enthusiasm and motivation. The creativity that the interactive qualities of the board instill in students leads to an increased participation that traditional presentation methods lack. The unique qualities of the board foster an inquisitive student who wants to monitor and control the direction of class instruction.

As with any (relatively) new technology, the interactive whiteboard will not find wide acceptance in the school system until more training and professional development opportunities are made available for teachers and the cost of the units become more affordable. Not until more assessments are conducted to determine the instructional value of such boards will school boards and districts consider making the resource an integral part of every teachers' classroom.

References used

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Lee, Y. (1992). Whiteboard helps users collaborate. InfoWorld, 3.

Related links on the web for the topic

www.whiteboardsetc.com

Describes the basic premise and use of interactive whiteboards.

www.projected.co.uk

A sales site for interactive whiteboards that briefly describes some of the benefits and downfalls of different types of board.

www.smarttech.com

Links to technology and education websites as well as descriptions of some of the interactive whiteboards available on the market.

www.smarterkids.org

A collection of lesson plans, integrated technology curriculum ideas and teacher and student testimonials. Plus a reference library housing recent articles written on technology in the classroom

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