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Interactive Whiteboards Enhance Classroom Instruction and Learning

Although the first interactive whiteboard was released in 1991, only in the last several years have whiteboards become a must-have tool in K-12 classrooms. New emphasis on developing 21st century skills for students, the requirement for educator proficiency in technology, and research documenting increased learning with the use of interactive whiteboards have spurred its adoption.

Fundamentally, an interactive whiteboard combines a dry erase whiteboard with an LCD projector and is usually mounted on a wall or floor stand. Powered by easy-to-use software, the whiteboard becomes a computer screen viewable by an entire classroom.



The projector projects the content from a computer onto the surface of the board while the teacher controls the content either with a pointer or a touch of the hand instead of a keyboard and mouse. The combination of software with the projector results in much more than simply a projected image.

Anything that can be done on a computer monitor, can be replicated on the interactive white board. A teacher can create engaging lessons that focus on one task such as a matching activity where students use either their fingers or a pen to match items. Another teacher might integrate multiple items into a lesson plan such as websites, photos, and music that students can interact with, respond to verbally or even write comments on the board itself. Image size and placement can change with a simple touch to the screen. This technology makes the one-computer classroom a workable instructional model. Imagine taking a class on a photo safari to Africa complete with embedded videos, animal sounds and mapping software.

Research has repeatedly demonstrated that students learn better when they are fully engaged and that multisensory, hands-on learning is the best way to engage them. Interactive whiteboards facilitate multisensory learning whether it is a collaboration exercise for math problem solving or a Google Earth tour of the Amazon rainforest.

In September 2008, Newsweek magazine reported that more than 70% of primary and secondary schools in the U.K. have interactive whiteboards compared to only 16% in the U.S. Not surprisingly, the majority of the research findings originate in the U.K., although recent U.S. studies report increased student engagement, school attendance, and higher test scores. Judging from recent news reports, it is likely that a portion of the new federal education stimulus funding will be invested in interactive whiteboards.

Classroom applications for using interactive whiteboards include:

- Multimedia lessons and presentations including audio and video
- Collaborative problem solving
- Showcasing student projects and presentations
- Virtual field trips
- Recorded lessons that can be used by substitute teachers
- Documentation of student achievement

There are now many interactive whiteboard companies to choose from, and most feature video, image, and lesson libraries. Here are some of the leading brands:

- **SMART** introduced the first interactive whiteboard in 1991 and it is the world's best-selling interactive whiteboard. A leader in introducing touch technology into the classroom, SMART boards allow teachers to access 6,600 learning objects and customizable lesson plans. <http://smarttech.com/>
- **Promethean** now offers an integrated system that packages the interactive white board, Learner Response System, lesson design and delivery software and online support and professional development. <http://www.prometheanworld.com/>
- **Mimio** is a system that creates an interactive whiteboard out of a standard whiteboard. For districts that are trying to manage tight budgets and already own whiteboards, Mimio is a good option. It also includes online training and certification. <http://www.mimio.dymo.com>
- **Nunonics** features electromagnetic technology and a multimedia pen to utilize a full range of cross-curricular activities and training. Their website, <http://www.interactivewhiteboards.com/>, offers the following research statistics:
 - A study by the University of Wisconsin confirmed that using visual aids improved learning up to 200%.
 - Harvard and Columbia Universities found that student retention is improved up to 38%.
 - Wharton School of Business proved that the time to explain complex subjects is reduced by 25% to 40%.
- **eInstruction's** newest product offering, *Interwrite Workspace*, includes more than 4,000 digital, K-20 teaching resources from math to language arts and science. Publisher-independent, *Interwrite Workspace* includes 50 tools to create, display, organize, record and share teaching materials. <http://www.einstruction.com/>
- **Polyvision's** *eno* board can be used as a traditional marker board, a magnetic board, or an interactive white board with no plugs or cables. It promises the lowest total cost of ownership for schools and districts looking for the most affordable interactivity. <http://www.polyvision.com/>

NEA member Chad Lehman | Horace Mann Elementary School in West Allis, Wisconsin, has seen a marked increase in student attentiveness and engagement since his district began integrating interactive white boards into elementary classrooms. As his school's media specialist and technology coordinator, Lehman reviewed the district's technology plan which recommended both SMART and Mimio. Although SMART had a much larger user community, he chose Mimio because it was more affordable and portable whereas SMART boards are mounted on walls.

"The down side to choosing Mimio is that they have fewer software and lesson resources," Lehman stated. "Our district has invested heavily in computers, video equipment and LCD projectors, so Mimio is very popular." He went on to say that the district technology goal is to have an interactive whiteboard in every classroom, but finding the money could be a problem. Lehman did not know if his district would receive any new federal stimulus funds, but said it was not likely that they would be used to buy interactive whiteboards. "This kind of technology helps us teach students 21st century skills, and I'm confident we'll continue to fund our implementation and training on this."

There are interactive whiteboards that meet every school and district budget. Teachers report that increased student engagement is the number one benefit to teaching with this tool. The technology allows teachers to integrate multiple information streams into a coherent lesson individualized for their students. Interactive white boards provide an extraordinary opportunity to create classroom environments where students with different learning styles can engage and learn from each other. This easy-to-learn technology ensures that both students and teachers are developing 21st century skills.

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