

The Why and How of Interactive Whiteboards

Making a Difference Tips and Tutorials for Purchase and Use

Table of Contents

Introduction How To Use an Interactive Whiteboard Incorporating the SMART Board for SMART Teaching Ten Ways to Get SMART With SMART Board Ten SMART Ideas for Using a SMART Board Ten Questions to Ask Before You Buy a Whiteboard Summary of Research on Whiteboards in Classrooms WebQuests and SMART Boards How to Evaluate Online Resources

Introduction

As more and more teachers find that technology is indispensable, they also pick favorites. An overwhelming choice recently is the interactive whiteboard, and for good reason. There are many ways to make use of a whiteboard in the classroom, and the research shows the positive impact on students with their use.

This eBook is designed to help you with your decisions.

To begin with, if you haven't yet selected a whiteboard, here are questions to guide you with the decision making process. If you want to prove its value, a summary of current research and an example of action research will show you the positive impact of whiteboards with students. If you are looking for sound advice on how to use interactive whiteboards, you will find two articles full of great ideas, followed by even more advice and ideas.

We hope you will enjoy reading this eBook and putting the ideas to use.

Jo-Ann McDevitt, Publisher

How To Use an Interactive Whiteboard

Interactive whiteboards are desirable in schools these days. When hooked up to a computer, the whiteboard's screen becomes a "live" computer desktop, which can be tapped to pull down menus, highlight, and move or open files. Users can also circle relevant sections on the projected image, draw geometric figures, and underline. Then they can save the screen — complete with annotations — that they can e-mail, make available on a shared server, or print out.

Most interactive whiteboards connect to computers via USB cables, but some recent models communicate wirelessly using Bluetooth technology. Many interactive whiteboards need LCD projectors in order to project a computer image onto the screen, but some models have an integrated projector behind the screen. These models are more convenient and have fewer wires but are much more expensive.

Wondering how to use an interactive whiteboard in the classroom? Consider these ideas.

Presentations and Projects. Students can present multimedia projects with the whiteboard, controlling the entire presentation without touching a computer keyboard.

Web Streaming and Video. Teachers can show streamed or downloaded video clips using programs like Windows Media Player and QuickTime. Clips embedded into multimedia presentation programs can easily be shown as well. The interactive features of the whiteboard allow users to pause, circle, annotate, highlight, and more. Of course, a DVD or VHS player can be connected to the projector, too.

Printing and Saving Notes. Interactive whiteboards let users print or save anything they've written. Teachers can put notes in a file on a shared server for students to download or post notes on a Web page or blog. Notes can also be printed out and distributed, allowing students to participate in the presentation instead of simply copying from the board.

Encouraging Critical Thinking. Interactive whiteboards encourage critical thinking. Imagine using the whiteboard with concept-mapping software like Inspiration or Kidspiration, for example. Students' ideas could be written directly on the whiteboard; if the teachers switches to outline view, the class can brainstorm together in an organized fashion.

For Students with Special Needs. Interactive whiteboards may be beneficial to students with special educational needs. The large fonts and bright colors might be helpful for both visually impaired students and those who have trouble staying on task, while students who respond well to kinesthetic learning will benefit from touching the board.

By Jeffrey Branzburg

Incorporating the SMART Board for SMART Teaching

Abstract

Technology, ever changing, has become more accessible to teachers in the last few years. Teachers need to be able to use technology to increase their professional development and to have positive contact with students on a regular basis. The action research report discussed in this article illustrates the positive effects of using a SMART Board interactive whiteboard in a fourth-grade classroom. Incorporating this interactive technology increased student contact time and decreased behavioral issues.

Introduction

South Dakota's Rapid City Area School District requires teachers to integrate technology into classrooms on a regular basis. [The SMART Board](#) proved to be an exciting and fun bit of technology to integrate. It is an interactive whiteboard linked to a computer. Users write directly on the whiteboard and see their writing displayed on the computer's monitor. The whiteboard's easy touch screen intrigues students, converting their freehand scrawls into neat computer fonts. Their enthusiastic response to the board made me want one. However the whiteboard is an expensive tool, impossible to purchase with school funds. I applied for and received a district technology grant. Our SMART Board arrived and we eagerly set it up. Then it hit me. What am I going to do with this?

As an educator I also constantly assess my teaching strategies. So what would be the SMART Board's benefits? Would it increase my student contact time? Would student on-task behavior increase or decrease? Questions such as these led to this action research paper.

Classroom Site

My school services 210 students in five separate buildings. The fourth-grade class that participated in the study meets in an annex away from a regular computer lab. 53% of the class, and their parents, participated in this study. There were 12 students (6 male and 6 female) with the following ethnic breakdown: 50% Caucasian, 42% Native American, and 8% Asian. The participants fall in the low- to middle-socioeconomic group, determined by the fact that 67% receive free or reduced lunch. Of all participants in the study, two are on individual education plans.

The Process

The first step was to communicate with the parents through a newsletter, informing them of my intent to incorporate technology into our lessons. I asked them and their students to complete a survey regarding technology use in the classroom. One question asked "when a class uses computers does the teacher spend more or less time with students?" I would ask the same question again at the end of the study. A second question asked whether students were more on task when lessons included technology.

To document technology use in the classroom, I began to keep a detailed journal. This began to take too much time, and I then began writing anecdotal notes in my lesson plans describing how we incorporated technology and the overall success level. This was more beneficial to my study. The class also participated in class meetings. During this time, students shared

their opinions on technology-incorporated lessons. These results were documented in the teacher lesson plans as well. These three methods of data collections allowed for a subjective review of technology integration.

Using the SMART Board in the Fourth Grade Classroom

The SMART Board arrived in the fall. Although it was easy to set up, some problems required innovative solutions. For example ours is an older facility, and the outlets are not easily accessible. Having cords on the floor, even if secured with tape, presented safety hazards. Working together with my custodians and district electrician, we re-routed electrical cords/outlets so that they hung from the ceiling. This created a slightly better situation. Ideally, having wireless Internet and a ceiling-mounted projector would be safer and more convenient.

With the technical difficulties solved, the next task was to implement the SMART Board into the curriculum. What would be the best way to introduce this product? In what lessons would the whiteboard enhance instruction? These questions and my initial questions of increasing student contact time and the effects of the SMART Board on behavior led to the second part of my research.

Introducing the SMART Board brought much excitement – and some frustration. The students had never seen a piece of equipment like this, and at first it was distracting to their attention levels. This confirmed Daccord's (2003) point that incorporating computers can bring technical difficulties and interruptions. He also states that besides technology glitches, he was losing time at the start of class setting up the machines. It can also take more time creating technology-based lessons. I found these challenges as well and was not able to jump right into my teaching. To begin with, the class needed to develop guidelines. For safety, we agreed upon a walkway that students would use to avoid the cords and wires. I then showed some of the features of the SMART Board. Because the whiteboard was new to me as well, we chose to concentrate on the basics of the toolbox. The "newness" of the SMART Board quickly wore off and I was left to the task of implementing its use so deeper learning could take place.

I began with writing – a skill that many students need to develop, especially the editing component. I had discovered that students did not put a great deal of effort into this aspect of writing. Within our Language Arts block, I started using the SMART Board for editing. Using the "notebook" section of its tools, students worked together editing incorrect sentences and paragraphs. McQuin (2002) reports that the SMART Board is useful in demonstrating new procedures and makes saving lessons for absent students easy. In addition, "The SMART Board enables teachers to emphasize and visualize important concepts" (par. 4). Using the electronic pens and keyboard, students began to eagerly share their editing processes. These same students also were completing seatwork in an efficient manner so they could participate more.

As the students' comfort level with the SMART Board increased, they began to use it in Math. Our district adopted a new series this year encouraging inquiry-based skills learning. After working independently or in small groups, students explained their thought processes by drawing or writing on the interactive whiteboard. The students took immediate ownership of this act and began constructing their own learning. As Harvey and Goudvis (2003) state, "constructing meaning is the goal to comprehension... using the constructivist method to instruction, students can enhance their understanding, acquire and use their knowledge, and monitor their understanding." I wanted my students to be actively engaged in lessons and to construct their own meaning to the objectives. Using the SMART Board allowed students to do work on the interactive screen and retrieve it later. This encouraged them to examine their understanding on a regular basis, a task that was not possible when using traditional white boards.

Sally Bowman Alden (n.d.) discusses the use of technology to give students independence and a sense of accomplishment. Incorporating technology as a teaching tool may be one of the most effective ways to build both a child's self esteem and learning skills. This interactive tool was not only increasing student participation in class, it was also bringing a new sense of comradeship to the class. Students appeared to be more comfortable sharing their opinions on issues if they were able to display their answers through the SMART Board. Because students were more actively engaged in learning, I was finding more time to create highly motivating lessons as well as have more one-on-one time with my students.

Lessons Learned

We've used the SMART Board for 10 weeks. By reviewing my anecdotal notes, conferencing with students, and receiving parent input, I have found that incorporating technology on a regular basis improves instruction. My students say that classroom instruction is more organized and that they receive more attention from the instructor during technology integrated lessons. The students have also said that they view using the SMART Board as a reward and tend to behave better during these instruction times. Parent surveys confirmed this as well. Parental testimonials include:

"(Student aaa) enjoys the time you are able to spend one-on-one when others are doing projects on the computer or SMART Board."

"(Student bbb) told me that when you use the "SMART Board" he tends to pay attention more and is able to stay on

task more often."

"My child enjoys when the SMART Board is used because the teacher is able to hand over responsibility to the students."

The results of this study are very positive. Although there were some initial problems, such as classroom movement and setting up of the SMART Board, I found that the benefits of this integration definitely outweigh the drawbacks. Professionally, I come to class with a sense of purpose and can focus on specific objectives for teaching. My students appreciate the more personal contact time that incorporating technology into lessons provides. I also noticed an increase in on-task behavior from my students when I incorporate technology. I attribute this to the fact that the SMART Board is motivating and fun.

I plan to continue using the SMART Board in my classroom. As both students and teacher become more comfortable with its capabilities, we will place more responsibility on the learners in the class. In the future, students can use the interactive board to present projects and to demonstrate higher-order thinking skills. The SMART Board has many untapped uses that I look forward to yet discovering.

By Bobbi F. Adrian

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Bowman-Alden, S. (n.d.). "[The Role Technology Can Play in Preparing Our Children For the 21st Century](#)." Computer Learning Foundation. Retrieved March 30, 2003. Daccord, T. [Teaching History With Technology](#). Retrieved on January 14, 2004. Harvey, S. and Goudvis, A. *Strategies That Work*, Portland, Maine: Stenhouse Publishers. National School Board Association. (n.d.). "[Technologies Impact on Educational Practices](#)." Retrieved April 2, 2003. McQuin, D. (April, 2002). "[SMART Board: Electronic Whiteboard](#)." SMART Board Technologies. Gale Group. Retrieved March 20, 2003. Salinitri, G., Smith, K., & Clovis, C. (2002). "[The Aural Enabler: Creating a Way for Special Needs Kids to Participate in the Classroom Lesson](#)." (University of Windsor) Retrieved March 27, 2003. [SMART Technologies Incorporated](#). Retrieved March 21, 2004.

Ten Ways to Get SMART With SMART Board

"What can I do with a [SMART Board](#)?" was the biggest question I had from teachers after we got our brand new interactive whiteboard.

I decided to present a workshop on the SMART Board at our district level Professional Development Academies and found that most of the teachers, being new to the SMART Board, were not even sure how to use an interactive whiteboard instructionally with their students. The teachers were not as interested in learning the SMART Notebook software as they were with using the SMART Board for integrated, interactive lessons. It is my job, as the Instructional Technology Resource Teacher, or ITRT, to go into the classrooms and model lessons, constantly providing templates, samples, and resources to my teachers. The idea is that they can learn the software as they become more aware of what they can do with the SMART Board with their students. My ultimate goal as an ITRT is to help guide them towards more independent use of technology.

The workshop sessions started out with a quick overview of the SMART Notebook software. I showed them the Page Sorter and Gallery. I had one teacher come up to the SMART Board and develop an "All about Me" page using the clip art from the Gallery and the pens to write anything she wanted about her interests. The volunteer and the other participants got to experience the use of the SMART Board as if they were students. We explored the templates and backgrounds available in the software.

We continued the training with examples of different ways you can use the SMART Board instructionally with the students. I called volunteers up to the SMART Board for at least one example of each of the ten ways to use the tool.

Listed below are the top ten ways in which I have used the SMART Board with students and teachers. Please note that I have given examples of each including the grade level in which I have used them.

1. Notetaking and Brainstorming ~ Give students time to brainstorm on a given topic. Record these shared ideas. Once recorded, these ideas can be dragged and dropped to other areas for grouping. With the SMART Notebook software you can also extend the page to add more notes to the same page, or insert blank pages. Written text can be converted into type-

written text which is helpful if you decide to print these notes for your students to use as a study guide.

American Revolution ~ use KWL charts, for example — Grade 5

Communities ~ For example: What can you do in a suburban area? What can you do in an urban area? What can you do in a rural area? — Grade 2

Graphic Organizers — Circle maps, Tree maps

2. Games ~ Many teachers will use a laptop hooked up to a television or an LCD projector to play games using technology. Try a game of Jeopardy using the SMART Board! The students can choose their topic and the dollar amount by touching the SMART Board.

Number Line Addition with Kenny Kangaroo — Grade 1

Jeopardy Games, Hollywood Squares, Who Wants to be a Millionaire? — all grades

3. United Streaming ~ Our school system has a subscription to [United Streaming](#) through our local public broadcasting station. At United Streaming you can view and download educational movies, images, lesson plans and teaching tools related to *any* and *every* topic! You can view whole movies or just clips of movies.

- “Water: A First Look” — Water properties — Grade K

4. Interactive Flannel Board ~ As a preschool and kindergarten teacher I used a flannel board quite often to tell fairy tales, fables and nursery rhymes. The SMART Board makes a wonderful, easy-to-manipulate flannel board for the younger students.

- Hickory, Dickory Dock, Jack and Jill, Humpty Dumpty — Early Start/Preschool

5. Click-and-Drag activities ~ Most of the activities I do with the SMART Board involve click-and-drag activities. I sometimes call them electronic worksheets, but they are a great way to review concepts the students have already learned.

Continents and Oceans — Grade 2

Measurement Tools — Grade K

Needs/Wants and Goods/Services — Grade 1

6. Interactive worksheets ~ There are Websites that allow you to create your own worksheets which can then be printed out. Why not create the worksheet for use on the SMART Board? It could be used as a guided practice lesson or independent activity at the “SMART Board Center” in your classroom. Students could work in pairs and check each other’s work or you could provide answer sheets for self-checking.

Plant Parts — Grade 4 ~ label the plant parts

[A+ Math](#) — create worksheets online

100th Day Worksheet — Grade 1

7. Board Games ~ Flash animated dice allow students to play board games using the SMART Board. As a classroom teacher I constantly developed my own board games, using file folders for students to play, especially when learning and reviewing math concepts.

- Pick a Path COLBlm — Grade 2

8. Graphic Organizers ~ If you have been a teacher for a while you probably use some kind of concept map or graphic organizer in your teaching. The SMART Notebook software includes some templates of graphic organizers such as Venn Diagrams which are great for comparing and contrasting two things. I have also used triple venn diagram to compare and contrast three things such as the three main Native American tribes our students must know — Sioux, Pueblo, and Powhatan.

Triple Venn Diagram — Indian Tribes — Grade 2

Animal Adaptations — Grade 4

9. Interactive Websites ~ The Internet is full of interactive websites for students to use. We have used these sites in whole group lessons as well as with individual students at the computer center.

10. PowerPoint Presentations ~ PowerPoint is a great visual and auditory tool for teaching and bringing to life unfamiliar concepts. It is a great way to add sound, animation, movies and pictures for teaching.

By Amber Price

Ten SMART Ideas for Using a SMART Board

[The SMART Board](#) is a wonderful tool to use with your students — great for whole group, guided practice, and independent practice exercises. You can also use the SMART Board as a center activity. But after teaching a workshop on “Getting to Know the SMART Board” my teachers had one main concern: “How do we manage the rest of our class while there is only one student who is interacting with the SMART Board at the front of the room? I threw this question back at my teachers and asked them how *they* would handle the management issue. Here are some of their tips:

- 1 Have the students write examples on their own worksheet that is set up like the SMART Board template. For example, if you are doing a Venn Diagram on the SMART Board, the students should be writing answers in their own Venn Diagram at their desks.
- 2 Create pre-made answers on pieces of paper that they can place in their own Venn Diagrams at their seats (using paper, cut-and-paste).
- 3 At our schools, the teachers have plastic rings that can be hooked together to make a Venn Diagram. The students could use these at their seats for more of a guided practice activity.
- 4 Provide the students sitting at their seats or in the circle with an activity that corresponds to the activity currently taking place on the SMART Board. For example, I have had preschool students singing a song (and learning it) while the student at the SMART Board did an interactive flannel board activity. I played a music CD in the background with the music from Hickory, Dickory Dock. The students sitting in the circle sang while the helper moved the mouse up and down the clock on the SMART Board.
- 5 Give students answers or questions on slips of paper, allowing them to take turns coming up to the SMART Board. This will keep them focused on the lesson as they wait for their turn to come. (This reminds me of the zip-around games) For example, each student is given a part of a plant to label. When it is time for that part to be labeled, the student comes up to the SMART Board and either writes the name of the part or clicks and drags the name of the part.
- 6 Create your own whiteboards for students to use at their desks with laminated white poster board, or have students use individual dry erase boards at their seats. Provide the template for the students to place on top of their “whiteboard.”
- 7 Slide in some heavy paper (or a hard copy of the template) into a three ring binder page protector. Students use dry erase markers to write on their pages.
- 8 Create team activities for use with the SMART Board. Split the class into two teams and let the students take turns from each team to go up to the SMART Board and answer questions (such as math problems).
- 9 Create a classroom job of “Presenter” or “Vanna” in which a student is responsible for helping with the SMART Board presentations for the week (for example, have that student help move the slides in a Powerpoint from one to the next.)
- 10 Create a list of rules and procedures for times when you use the SMART Board. These can parallel your current classroom rules (for example, no talking while a student is working on the SMART Board, listen carefully at all times, be gentle with the SMART Board). Make a sign that you bring out only during SMART Board lessons.

I truly believe the SMART Board will take the place of the chalkboards or whiteboards currently used in most classrooms. Managing the use of the SMART Board should be viewed as if you were using the chalkboard or whiteboard as you normally do during lessons. As the teacher, preparing students for lessons is key to managing that lesson.

By Amber Price

Ten Questions to Ask Before You Buy a Whiteboard

Ask these questions to simplify the process of purchasing an interactive whiteboard. First decide which features are important to you and then compare competing products.

Question 1: Do I want a touch-sensitive basic operation or to use a special pen or remote control? Think About: Being able to simply touch the surface to get started makes an interactive whiteboard easy to learn and use for all students.

Question 2: What features do I need in writing tools to work best for my students and me? Think

About:

- a. Plastic, nonmechanical pens are durable and easy to use, especially for younger students.
- b. Pens that do not require batteries or recharging don't add to the total cost of ownership, or downtime.
- c. Whiteboards that work even if the original pens are lost keep classrooms functioning.
- d. The ability to write with a finger makes the technology more accessible to students.
- e. Enabling people to use a tool without launching software or selecting an icon from a toolbar simplifies use.

Question 3: What should the screen offer in terms of surface and durability? Think

About:

- a. Preventing glare and hot spots: Some interactive whiteboard surfaces have special coatings to reduce the glare from projectors. This minimizes eye strain.
- b. Durability: A hard-coat polyester surface improves the longevity of interactive whiteboards, especially in high-traffic environments like classrooms.

Question 4: What do I need in whiteboarding software? Think

About:

- a. Software should be included in the price since the whiteboard's functionality comes from its software.
- b. An interactive whiteboard that includes free software upgrades is less expensive to maintain and does not become obsolete.
- c. Windows vs Mac: An interactive whiteboard that supports both platforms will work in any classroom no matter what computer the teacher prefers.

Question 5: What features do I need in editing software? Think

About:

- a. Edit, organize, erase or change the order of notes
- b. Insert Flash files, attach files and Web links to objects
- c. Convert handwritten notes to text
- d. Move notes from page to page, sort pages of notes

Question 6: Saving and Printing Options Think

About:

- a. Saving notes written over software applications directly into the application such as PowerPoint, Word and Excel
- b. Multiple saving options make it easy for you to save your notes directly into your favorite applications.
- c. Save handwritten notes as text within popular software programs saves time during class.

Question 7: What File Formats Can I Use? Think About: Having multiple formats for saving and distributing notes on an interactive whiteboard makes it easier to share your work.

Question 8: What Other Features Might I Want? Think

About:

- a. The ability to record everything you do on your interactive whiteboard and play it back later.
- b. The ability to write over moving video lets you create and interact with multimedia using your interactive whiteboard.

Question 9: What training and support materials do I get? Think

About:

- a. Free online training resources
- b. Free support materials for content ideas

Question 10: What Warranties and Extra Options do I get? Think

About:

- a. A five-year, unlimited warranty period
- b. A USB cable.
- c. A wireless option.

What You Should Know About SMART 's interactive whiteboards

- All SMART Board interactive whiteboards have the advantage of touch control.
- SMART 's interactive whiteboards have nonmechanical pens that do not require batteries or charging. Students simply pick up a pen to use the tool. If pens are lost, the interactive whiteboard retains full functionality.
- SMART 's interactive whiteboards have extremely durable surfaces that guard against hot spots and glare. SMART 's five-year, unlimited warranty also covers the screen surface.
- SMART Board software comes with each interactive whiteboard or interactive lectern purchase, and upgrades are free. Free education software such as clip art, interactive pieces and more are also available online.

- SMART Board software enables all these features within its Notebook software application. You can also write notes directly into some popular Windows applications.
- SMART Board software lets you save handwritten notes into PowerPoint, Word and Excel software. You can also save handwritten notes as text directly into Excel and Word software.
- SMART Board software lets you save your work in several formats for easy sharing. Notes can be converted to HTML, JPG, GIF, PNG and PDF.
- With SMART Board software you can record activity on the interactive whiteboard as an audio-video file. You can also write over moving video.
- SMART provides a wealth of free online resources, including standards correlated lesson activities and professional development programs, direct access to customer support, as well as comprehensive, on-site training packages.
- SMART Board interactive whiteboards are backed by solid, five-year warranties and ship with the necessary USB cable. A wireless option is also available.

Summary of Research on Whiteboards in Classrooms

Research findings from the U.S., the UK, Australia and Canada demonstrate the positive impact interactive whiteboards have in the classroom. Three aspects are student engagement, learner motivation and knowledge retention. The white paper containing the results of these studies is summarized below. To read the complete white paper and bibliography, download *Interactive Whiteboards and Learning: A Review of Classroom Case Studies and Research Literature* (PDF, 133KB). http://education.SMART_tech.com/NR/rdonlyres/30258C60-24D0-43D5-A1D2-BDE1A93B6F93/0/InteractiveWhiteboardsAndLearning.pdf

Learning

Studies indicate that interactive whiteboards benefit student engagement, learner motivation and knowledge retention. The technology has also been successful in reaching students with a variety of learning styles, including those with special needs. And educators benefit too, enjoying better student involvement, streamlined lesson preparation and enhanced lesson materials.

Student engagement

Proponents of learning theories such as constructivism, active learning and whole-class teaching understand that student engagement is crucial to learning. How do interactive whiteboards promote student engagement?

- Educators can use digital resources while maintaining dynamic interaction with the entire class
- Interactive whiteboards allow computer-based learning without isolating students in front of individual computer screens
- Their large, visible workspace encourages a higher level of student interaction in both teacher-directed and group-based exchanges

Learner motivation

Some students are intrinsically motivated to learn for its own rewards, but others require extrinsic motivations such as incentives, rewards or teacher-defined goals. How do interactive whiteboards motivate learners?

- Intrinsically motivated learners enjoy demonstrating their knowledge on the interactive whiteboard as a means of showcasing individual achievement
- Extrinsically motivated learners are enticed by the “wow factor” and are motivated by the enjoyment of using the technology
- Interactive whiteboards are dynamic and compete successfully with student’s favorite consumer technologies (e.g., games, cell phones, MP3 players), helping keep students focused and on task

Knowledge retention

Students’ ability to retain information is subject to several conditions, some of which are related to engagement and motivation in class. Successful retention is also aided by accurate review notes. How do interactive whiteboards aid knowledge retention?

- Interactive whiteboards help make lessons memorable because students are more engaged and motivated in class
- Different learning styles are accommodated by the technology, improving the chances of retention by all students
- Notes taken on the interactive whiteboard can be printed, e-mailed or saved, ensuring the entire class has access to accurate review material

Learning styles and special needs

The dynamic, highly visual nature of interactive whiteboards is a natural fit for all learning styles. It also helps students with a variety of special needs achieve their educational goals. How do interactive whiteboards accommodate different learning styles and students with special needs?

- Visual learners benefit from note-taking, diagramming and manipulating objects or symbols on the large screen

- Kinesthetic and tactile learners can reinforce learning through exercises involving touch, movement and space on the interactive whiteboard
- Deaf and hearing-impaired students gain from the ability to both see visuals on the screen and the simultaneous use of sign language
- Visually impaired students with some vision ability can manipulate objects and text and participate in ways not possible on a small computer screen
- Special needs students with physical challenges or behavioral issues benefit from the interactive whiteboard. The large screen and touch-sensitive surface facilitate ICT learning beyond standard keyboard-and-mouse applications, and it can also be used to promote good behavior.

Benefits to educators

The efficient use of technology by educators is essential to successfully enhancing classroom learning. Interactive whiteboards can be of great assistance during lesson preparation. How do interactive whiteboards benefit educators?

- Interactive whiteboards are easy for beginners to walk up and use, shortening lesson integration time
- The technology motivates educators to incorporate and develop more digital and interactive resources into their lessons
- Notes and materials can be saved for review and used next class or next year

Download additional research in the United States and other countries.

<http://education.SMARTtech.com/ste/en-US/Why+Choose/K-12+solutions/CS-Research/Research/International/>

WebQuests and SMART Boards

WebQuests are a fun way for students and adults to learn how to use the Internet as a resource and how to read Web content. They help students discover how to read information instead of just scanning it quickly, reinforce good study habits and are a great way to incorporate other learning materials such as newspapers, magazines, textbooks, encyclopedias, etc.

When introducing students to a WebQuest for the first time, it's a great idea to use the SMART Board interactive whiteboard to preview the designated Web pages, highlighting items with the pen tool so that students become familiar with the sites and how to navigate them.

How to get started when organizing a WebQuest

- 1 Start with a subject you're familiar with when creating a WebQuest
- 2 Determine the websites yourself – don't have students use a search engine because they can get off track
- 3 Prescreen all sites to determine age and grade appropriateness
- 4 Include a textbook as a resource for students to use in addition to the Internet
- 5 Because URL addresses sometimes change, be sure to test all links on your WebQuest to make sure they work
- 6 After using your WebQuest for the first time, evaluate it to work out the bugs. Was it too easy? Too hard? Were instructions clear? Did students retain the information? Did any of the links change?

SMART Ideas Concept-Mapping Software

Educators receive a free copy of SMART Ideas when they register their SMART products. SMART Ideas is the only concept-mapping software that has true multi-level concept maps.

SMART Ideas also has 'cliplets' – fully interactive clip art to further engage students. Flipping coins, rolling dice, an interactive protractor, are just a few examples.

WebQuest Resources

It is helpful to visit websites that offer tutorials and examples of WebQuests. Several sites offer fully developed WebQuests for you to use or modify.

WebQuest 101 provides a tutorial on creating your own WebQuest and provides links to many examples.

www.teachersfirst.com/summer/webquest/quest-a.shtml

Theresa Jackson's website has links to other sites about WebQuests and using the Internet in the classroom.

www.nccsc.k12.in.us/tjackson/internetlessons.htm

Resources

White Papers

These documents contain detailed analysis of their discussion topics as well as bibliographies for further exploration.

- [The Truth About Interactive Whiteboard Durability](#) (PDF, 464KB)
- [Evaluating Total Cost of Ownership for SMART Board Interactive Whiteboards](#) (PDF, 62KB)
- [Interactive Whiteboards and Learning: Improving student learning outcomes and streamlining lesson planning](#) (PDF, 209KB)
- [The Truth About Interactive Whiteboard Resolution: Why higher resolution does not always mean greater accuracy](#) (PDF, 473KB)