

Enhance Learning and Improve Student Success with Interactive Display Technology



Never before have there been so many technology tools at our disposal for educating in entirely new, exciting, and promising ways. Among them the interactive display board stands out for its ability to amplify web-based resources and transform the way an entire roomful of students interact with educational content.

— Gene OrNSTead, 10/21/16

Introduction

The impact of classroom display board technology is not to be underestimated. The deceptively humble chalkboard, first introduced at West Point Military Academy in 1801, was in reality a transformative technology that freed instructors from the costly and time-consuming burden of individual handheld slates, thus fueling a dramatic increase in class size and propelling the reach of education into the American population. The chalkboard reigned supreme until the early 1990s, when concerns about chalk dust and its effect on computers and students with allergies prompted the transition to whiteboards. Instructors applauded the new tool for delivering the ability to emphasize, highlight and expand their lessons with multiple colors, while the classroom as a whole benefited from the elimination of chalkboard mess.¹

Concurrent with widespread adoption of whiteboards in education environments, new technology began to link the boards with computers, offering the ability to save content written on the board to a computer hard drive as well as to provide instant print outs, spawning the short-lived nomenclature "copy board."

First introduced in 1991, interactive whiteboards (IWBs) represented a transformative shift on par with the entry of the chalkboard into the classroom. With the ability to display to an entire room anything on a computer, plus the ability to manipulate that content directly on the surface of the screen, IWBs delivered unprecedented opportunities for empowering teachers, engaging students, and promoting interaction. The original IWB system, still most widely installed today, consisted of a large display board connected to a computer and projector. The computer's desktop is transmitted onto the board's surface, where users can control the computer with a pen, finger, or other device. The board is typically mounted to a wall or floor stand. Accessories such as student response systems enable further interactivity.

Recently, a new option for interactive classroom display has become available, in the form of large-format touchscreen LED displays. Offering the benefits of a projector-based IWB system, these displays deliver added functionality with reduced power consumption and maintenance requirements, often at a lower overall TCO (total cost of ownership). As with any IWB, large-format touchscreen LED displays can be used in place of the ordinary whiteboard, or as a multimedia display for video and graphics data, an electronic copy board, or a computer screen on which the computer image can be controlled by touching or writing on the surface of the panel. Interactive touchscreen LED displays go beyond this standard IWB functionality in delivering a multifunctional classroom media center, among offering other added benefits.

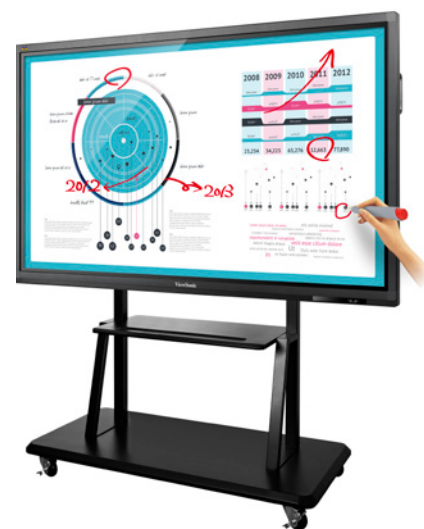
Evolution of the Interactive Classroom Display

- 1801** ← Chalkboard
Introduced: 1801
- Mid 1800s** ← Widely adopted: Mid-1800s
First classroom-wide writing/display surface
- 1960s** ← Whiteboard
Introduced: 1960s
- Mid 1990s** ← Widely adopted: Mid 1990s
Introducing color; eliminating mess
- 1991** ← Interactive Whiteboard
Introduced: 1991
Adoption: Ongoing
Transformative computer/Internet connectivity
- April 2014** ← Interactive LED board
Introduced: April 2014
Adoption: Ongoing
Multifunctional HD display;
easy setup/maintenance; lower TCO

In Praise of The Interactive Whiteboard

Today, interactive white boards are firmly established as an important instructional tool and are widely used in classrooms from elementary schools to university lecture halls. Instructors routinely praise their ability to foster interaction and focus student attention, while education researchers project that their use will continue to grow exponentially.² With the myriad of benefits IWBs bring to the classroom, it's easy to understand the enthusiasm for this versatile device.

Many ed-tech proponents hail interactive whiteboards for their ability to rapidly integrate technology tools into the classroom. Because IWBs are similar to conventional whiteboards, even technophobic teachers can comfortably use the most basic functions of IWBs, then transition with experience to benefiting from the full range of features. Even for beginners, IWBs make it easy to expand curriculum development and enhance presentation content by integrating multiple materials into a lesson: virtually any electronic file or any content from the Internet can be used – not to mention any online educational resource or app. Students and teachers can then annotate and highlight these materials directly on the screen with a fingertip or stylus – bringing a new level of interactivity to the classroom.



Teacher enthusiasm for IWBs is palpable in the education blogosphere and on professional sites like Edutopia.org. Just one example of a great many, Sue Holland, a seventh-grade science teacher with over 34 years of experience, who has been using an IWB for three years, raves: "It's very powerful learning! I can insert links to the Internet, or go right to a streaming video on the web. During a lesson, if a student asks, 'What about this?' I can say, 'Let's take a look' and go online to view it, instead of just talking about it."

Holland's students use the board in a variety of ways as well, both individually and in groups. "I just stand back, and the kids are engaged. For example, we study diseases of the human body in seventh grade. The kids will research a disease, create a PowerPoint presentation, and then share it with the class. They can change their presentation while standing at the board, or write on the board if someone asks a question."³

Well suited for any type of classroom, lecture hall, or distance-learning environment, the possible uses for IWBs are virtually endless. Among their many features, IWBs offer:

- Teacher-directed viewing and navigation of any website, app, video or document to support learning objectives
- Dramatic emphasis of key learning points with onscreen highlighting and annotation

"Anybody can use it – it's limitless. Unless the students are engaged in a project at their desks or they're taking a test, we use the [interactive white] board throughout the day, even if I just show them a short video. I use it all the time!"

- Save and print capability, for instant handouts, supplementing notes and absent students
- Facilitation of group projects and individual presentations
- A collaborative work environment for text documents, spreadsheets, design projects, etc.
- Video conferencing connectivity
- Text/data entry via floating on-screen keyboard
- On-screen editing and recording of changes or additions
- Support for effective special needs education
- Student feedback and assessment with optional audience response accessories



IWB Usage Snapshot K-12 Chalkboard

- 65% of K-12 teachers use their IWBs daily
- Usage time averages 4-5 hours/week
- Teachers use IWBs for a range of subjects, including math, science, and reading
- More than 45% of teachers develop their own content
- National Survey of Interactive Whiteboard Usage: 2001⁵

Documented Improvement in Learning Outcomes

Clearly, teachers and students alike find that IWBs enhance the classroom experience. One oft-cited landmark study involving 85 teachers and 170 classrooms demonstrated the benefit of IWBs in terms of student achievement.⁴ Research author Robert Marzano, recipient of the 2008 Brock International Prize in Education, states that:

The study results indicated that, in general, using interactive whiteboards was associated with a 16 percentile point gain in student achievement. This means that we can expect a student at the 50th percentile in a classroom without the technology to increase to the 66th percentile in a classroom using [these] whiteboards.

Marzano identifies three features of interactive whiteboards that contribute to even greater success, stating that while each of these is helpful, classrooms which combine all three will experience the greatest boost in student achievement, a 31 percentile point gain in his study.

- Graphics and visuals – Using graphs, charts, and other visuals to represent information, such as pictures and video clips downloaded from the Internet, was associated with a 26 percentile point gain in student achievement.
- Reinforcing instruction – Using what Marzano calls "interactive white board reinforcers" to signal that an answer is correct or to present information in an unusual context boosts understanding. This includes applications that enable instructors to uncover information hidden under objects and drag and drop correct answers or acknowledge correct answers with virtual applause. Save and print capability, for instant handouts, supplementing notes and absent students
- Audience response – Employing an audience response accessory such as a handheld voting device that students use to enter their responses to questions, further resulted in 26 percentile point gain in student achievement.

Integrating IWBs into The Classroom

As with the addition of any new ed-tech tool, training and professional development are critical to success. Instructors must progress down the path from learning to use the technology, accepting it, integrating it into their daily curriculum, and learning to use it well. When this happens, when instructors are as comfortable and adept with their IWBs as they are with a dry erase marker, the technology delivers on the promise of simple, intuitive collaboration and learning – and a demonstrated improvement in student achievement.⁶

Creating a school-wide culture of tech integration and an openness to take risks is one way to help ensure the success of classroom IWBs. Professional development (PD) should focus attention on how the tool will bring value to teachers and their students, not just on how to use the technology. Education IT staff must address the common teacher complaint: "Why would I try this when I've been doing just fine without it all these years?"

Ed-tech experts offer a five step process to do just that:

1. Build a tech team.
2. Scaffold effective professional development.
3. Make time for PD.
4. Demonstrate the relevancy.
5. Provide encouragement and support.⁷



Findings from the Marzano study noted above support the importance of teacher training, finding that some teachers had better results without the interactive whiteboards. Marzano notes that the key is how the teachers used the technology. This includes taking time to organize and pace the content well, avoiding excessive use of visuals, reinforcing features in lieu of clarifying content, and using a voting accessory but not adjusting teaching based on the findings.

Interactive Large Format Displays: New Option, New Advantages

Administrators, educators, students, and the research agree: interactive whiteboards bring learning to life and improve student success. The options for their use are as unlimited as the imagination and the ever-expanding resources available on the Internet. Choices in IWB technology are somewhat more limited. Until recently, projector-based systems were the only available IWB technology, with some variation in implementation among suppliers. Large-format touchscreen LED displays, available in the education landscape since 2011, offer a new alternative with expanded benefits, reduced maintenance requirements, and better overall TCO.

In contrast to projector-based IWB systems, interactive large format displays deliver a multifunctional media center, offering greater flexibility of use. With this new breed

of large-format LED, high-definition display technology meets interactive whiteboard functionality, offering a vivid HD video display and the features and benefits of an IWB all in one wall-mounted or cart-based solution – and all without the distracting shadows IWB projectors often throw across the screen.

A simpler, easier to manage solution, interactive large format displays are also more cost effective than traditional IWBs. By reducing staff time needed for installation, lowering energy consumption and reducing ongoing maintenance, interactive large format displays deliver a better overall total cost of ownership. No projector means no bulbs to replace, no filters to clean, and no time wasted on image calibration. Large format displays also eliminate the shadows cast when someone approaches a projector-based board and spares those at the front of the room from blinding projector lights. Compatible with any laptop, iPad or other tablet, interactive large format displays are simple to set up – in most cases instructors just connect the board and they're ready to go. And while many interactive large format displays include special styluses, most do not require them, working as easily and intuitively with a fingertip as an iPad or smartphone.

ViewSonic® Interactive Large Format Display Benefits

ViewSonic interactive large format displays were developed with the expertise of over 25 years of display technology innovation, along with the latest insights into what educators want in a classroom display. Offering an immersive interactive experience, ViewSonic's interactive displays deliver a host of advantages for a smarter, more engaged classroom.

Stunning, High Definition Visuals – Even in Well-lit Rooms

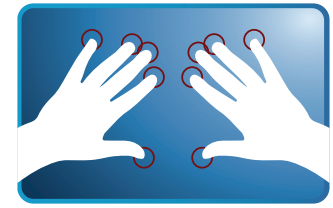
Full HD 1080p resolution delivers superior pixel-by-pixel performance for outstanding image clarity and detail, bringing high-definition media content to life for a more immersive and realistic viewing experience. Exceptional visual performance in well-lit rooms is also guaranteed, thanks to a 350-nit brightness level and an advanced antiglare coating. And with easy, projector-free functionality, viewing is free from shadows and projector glare as well. ViewSonic interactive LED display boards even look good when not in use, with an attractive ergonomic design featuring rounded corners and reflection-free tempered glass overlay.



Advanced 10-point Touch Capability Fosters Group Interaction

Enjoy increased student involvement with 10-point simultaneous touch technology, which enables up to six users to write or draw on the display's surface with styluses or their fingers – up to 10 functional touch points at one time. Engineered with user ergonomics in mind, ViewSonic's interactive

displays offer a consistent, smooth, soft, and highly responsive touch experience, further fostering student satisfaction and involvement. The slim design and thin bezel eliminate the dead angles that can exist in a Windows® 8 touch environment, for an improved overall user experience.



Protective Ergonomic Design

Designed for years of safe, durable use, ViewSonic interactive large format displays feature rounded corners to help prevent classroom injuries and provide a safer learning environment for active students. Likewise designed to safeguard the display itself, the glass cover features a highly scratch-resistant surface (rated 7H on the pencil hardness scale), which is designed to withstand everyday abrasions. Included hardware mounts the display securely to the wall for safe, stable use. An optional trolley stand offers additional flexibility for mobility and height adjustment.

10 POINTS



Energy-Saving LED Backlight: Good For Cost Reduction As Well As The Planet

ViewSonic® interactive large format displays feature an energy-saving LED backlight with a lifespan of over 30,000 hours* of average use, for more than a decade of durability. By consuming less power than traditional projector-based IWBs, ViewSonic interactive displays provide a lower cost of ownership and deliver a higher ROI, making them smart long-term investments.



Versatile and Easy-to-Use

Busy instructors need technology that's intuitive and easy to use. ViewSonic's interactive displays get users up and going quickly with plug-and-play set up and a host of flexible connectivity options that enable use of a variety of digital devices. Quickly connect to a PC, laptop or tablet to begin benefiting from the expansive universe of online educational apps and content. Inputs include HDMI for connecting to high-definition content sources, plus USB, DVI and VGA ports. ViewSonic's interactive displays are available in 55", 65", 70", 75", and 84" screen sizes.

ViewBoard[®] Software Provides Tools For Effective Teaching

Easily write, highlight, edit, and transform documents and images on-screen in real-time to engage students, promote interaction, and achieve improved learning outcomes for your students. ViewBoard additionally features screen recording, magnification, and spotlight functionality to further enhance classroom learning and distance education.



ViewSonic Quality & Support

ViewSonic has been developing leading quality displays for over 25 years. From desktop displays used throughout Fortune 1000 companies to interactive billboards, digital kiosks and interactive display boards, ViewSonic is known for outstanding quality, service and support. We stand behind our products with a 3-year limited warranty and quick and friendly customer support. Plus, at less than half of a half percentage, our large format display failure rate is tops in the industry.

Conclusion

Nearly a hundred years ago, celebrated educational reformer John Dewey admonished: "If we teach today's students as we taught yesterday's, we rob them of tomorrow." Never before have there been so many technology tools at our disposal for educating in entirely new, exciting, and promising ways. Among them the interactive display board stands out for its ability to amplify web-based resources and transform the way an entire roomful of students interact with educational content. The advent of interactive large format displays further expands the options for achieving the documented benefits delivered by this transformative classroom technology.

For more information, contact ViewSonic sales at salesinfo@viewsonic.com or visit www.viewsonic.com

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