

Interactive Whiteboards

Interactive Whiteboards are technology tools that can be used in the classroom to assist teachers and students. By using an interactive whiteboard, users have the ability to control any Windows-based application remotely. This whiteboard also allows the user to draw and write within computer applications. The student is able to then save their work as a computer file, to be reviewed at a later time or printed and taken home. The teacher and students can access the Internet from a large screen, using their fingers as the computer's mouse. Teachers' lesson plans can be developed and delivered through the use of the whiteboard. All of these activities allow students to learn more effectively and to retain information learned. According to one study, math scores in one school district showed a remarkable increase.

Background Information on the Whiteboard

There are three different types of whiteboards, along with many different options to add to the setup of the whiteboard. Just like a computer can have many components, an interactive whiteboard also has different options. First, the way build of the whiteboard is an option. There is the front projection that allows you to work with existing projection units and computers. A rear projection unit includes a projector that can be a mobile unit or a permanent installation. Finally, a setup is available for those who have flat-panel displays, allowing for a cover to fit over your LCD panel. The whiteboards also come in many different sizes, with the larger boards being advantageous to the learning process.

The whiteboards can be easy to use, with the right training and practice. In any use of technology, training is not required, but suggested. Based on the purchase of the unit, training may also be part of a package deal the seller can offer. For one package deal, an interactive whiteboard was purchased for the Elyria School District's Elementary School, Oakwood Elementary School in Elyria, OH. The cost for the package was \$4,583. For this purchase, the school will receive one front project interactive whiteboard, computer with all necessary software including Windows and Microsoft Office, and training on the use of the whiteboard.

Because the whiteboard and computer contain many different components, maintenance of the components can become expensive. An example is the light bulbs on the projector unit for a front projection model. The light bulbs can cost up to \$300 per bulb. Other items that may need maintenance include the computer and monitor, the purchasing of additional markers and erasers, used on the whiteboard itself, and other general maintenance on the whiteboard, projector, and computer.

The History of the Interactive Whiteboard

The Interactive Whiteboard, created by SMART Technologies, was originally invented in 1991. It allowed users to control Windows-based applications remotely, through the interactive screen. This technology sparked the capability of interactivity in classrooms, presentations, and meetings.

In 1992, SMART Technologies, residing in Calgary, Alberta, Canada, partnered with U.S. computer company, Intel Corporation. This association allowed for more financial security for the company, along with “joint marketing efforts and Intel’s equity ownership in SMART.” This early partnership was a key building block in the company’s continued growth today.

SMART Technologies currently holds three patents with the U.S. Patent and Trademark Office, as well as patents pending worldwide. This means that SMART Technologies owns the rights to make, use, and sell their product exclusively.

Case Studies in the Use of Interactive Whiteboards

John F. Kennedy Centre, Hong Kong, China helps Special Needs Children



At the John F. Kennedy Center School, located in Hong Kong, children are taught Chinese characters. Unlike typical children, these children are **special needs students**, and the center is run by the Red Cross. This school is among the first to integrate technology in the classroom.

The teachers were challenged by the students with their difficulties to learn and retain the knowledge of writing the Chinese language. The children, because of their special needs, caused difficulty for the teachers in keeping them focused in the learning process.

With the use of the Interactive Whiteboards, these children are able to see the characters in large-scale. With the size of the board, the children can see and write their letters collaboratively, with the teachers helping them. The teachers are able to turn learning into a game.

The whiteboards allowed the teachers to use just the screen for teaching, allowing them to discard extra needed props used in the past. The students retained the information they were learning.

Gloucester City Public Schools, Gloucester City, NJ, United States



Thousands of miles away, at the Gloucester City Public Schools, four schools making up the district, was considered a low performing” district based on the standards of the federal **No Child Left Behind** act. The district is also considered a low income area.

The superintendant wanted the district’s students to improve, specifically in math areas. With the help of the state, the district obtained funding. This funding, along with additional monies raised, and enabled the school district to place the whiteboards in 35 of their classrooms.

The lead math facilitator for the district spearheaded the initiative to add the interactive whiteboards to the classrooms. Part of his project included designing the lessons that were used to teach the students through the whiteboards.

His idea was that the addition of the whiteboards would allow another dimension in the math learning as the majority of the learning was not visually-centered. By adding the interactive component to the learning model, the district’s middle school’s math scores have increased by 16 percent.

In the past three years of use, the facilitator has created over 1,200 lessons focusing on math, reading, science, and social studies. There have been 140 lessons designed for each grade for grades three through ten.