SMART Technologies Research

The interactive whiteboard has been incorporated into learning environments for over two decades, and there is an increasing flow of global research available to support its impact. From the available body of research, several themes and patterns have emerged, including the positive effect interactive whiteboards have on student engagement, motivation, the ability to accommodate a variety of learning styles (including special needs students) and the capacity to enhance student understanding and learning. Observations also indicate that designing lessons around interactive whiteboards can help educators streamline their preparations and be more efficient in ICT integration, thereby enhancing their overall productivity.

Significant Gains for Students – These are just a few studies that highlight the impact of the SMART Board® interactive whiteboard on student learning.

The Effect of the SMART Board® Interactive Whiteboard on Raising State Test Scores – Tammy Oleksiw (2007)
This project studied the effect of the introduction of an interactive whiteboard on raising test scores by enhancing motivation, attentiveness and comprehension in a grade-three math class.

Key Findings
• Statistically significant and meaningful interactions between whiteboard use and grade levels were found
• The SMART Board® interactive whiteboard truly proved to be an effective tool that amplified motivation, stimulation, and understanding in math

Read more at Oleksiw Report 2007

Student Teachers' Use of Technology-Generated Representations: Exemplars and Rationales – University of Virginia (2008–09)
In this study, researchers at the University of Virginia conclude that SMART Board® interactive whiteboards improve student learning outcomes and teacher quality of life when used with appropriate pedagogy and digital resources. The research study focuses on how to best prepare math and science teachers to use interactive display systems to promote understanding.

Key findings
• Pre-calculus students, in a class taught using a SMART Board® interactive whiteboard, along with technology for generating dynamic representations, demonstrated a better understanding of several trigonometry concepts than comparable students taught without such technology

Read more at UV Report 2009

SMART Technologies Research

Enhancing Native American Mathematics Learning: The Use of Smart Board®-generated Virtual Manipulatives for Conceptual Understanding – Frank Zittle (2004)
This paper by Frank Zittle, Vice President and Director of Research for the Center for Educational Evaluation and Research, focuses on the achievements of Navajo elementary students participating in a multimedia-enhanced geometry lesson.

Key findings
• Navajo elementary students whose teachers used a SMART Board® interactive whiteboard tended to show greater pre-test to post-test mathematics gains than students whose teachers did not use the SMART Board interactive whiteboard, especially when the teacher encourages collaboration and reflection

Read more at Zittle Report 2004

The Effects of the Use of Interactive Whiteboards on Student Achievement – Kent State University (2008)
The research investigated whether the use of the SMART Board® interactive whiteboards in English language arts and/or mathematics lessons improved student learning in those areas as measured by student scores on state achievement tests. The study examined the reading and mathematics achievement test scores of all students in the third through eighth grades in a small urban school district in northern Ohio and compared scores between students whose teachers used interactive whiteboards for instruction and those whose teachers did not.

Key Findings
• Results show slightly higher performance among students in the interactive whiteboard group
• Positive results were especially pronounced at the fourth and fifth grade levels and significant interactions between achievement gains and grade levels were found in both mathematics and reading/language arts
• Teachers whose students scored above the mean on both assessments were found to use the whiteboards more frequently (almost every day) than the teachers whose students scored at or below the means on these tests

Read more at Swan Report 2009

The Effects of the SMART Board Interactive Whiteboard on High School Students with Special Needs in a Functional Mathematics Class – Meredith Zirkle (2003)
Meredith Zirkle, who received her master of education degree from Eastern Mennonite University in Harrisonburg, Virginia, is a math teacher at Spotswood High School in Virginia. She analyzes the SMART Board interactive whiteboard's effect on the achievement of 11 students with special needs in a functional mathematics class.

Key findings
• The SMART Board® interactive whiteboard was a positive tool for assisting in the math achievement of special needs students in a functional math class

Read more at Zirkle Report 2003

SMART Technologies Research

Evaluation of the Primary Schools Whiteboard Expansion Project – British Educational Communications and Technology Agency (BECTA) (2007)
A report commissioned by BECTA and written by the Education and Social Research Institute at Manchester Metropolitan University, a highly ranked research facility, proves that increasing students' exposure to interactive whiteboards through curriculum integration has a significant and positive impact on student achievement.

Key findings
- Students of both sexes who were considered average or high achievers made greater progress in mathematics with more exposure to interactive whiteboards
- Boys who were low achievers in science made seven-and-a-half months of additional progress when they had two years of exposure to interactive whiteboards as compared to no exposure

Read more at BECTA Report 2007

SMART Board® interactive whiteboards shown to be highly effective for collaborative learning– Ian Fogarty (2011)
In February 2011, Fogarty began a three-month study to determine the effect that different types of technology had on group dynamics during a collaborative exercise. In particular, he wanted to analyze small groups of students' collaborative experiences working on a single laptop versus a multiuser, multitouch SMART Board® interactive whiteboard.

Key Findings
- Students collaborating on interactive whiteboards outperformed those collaborating on a laptop on post-tests
- The SMART Board 885ix interactive whiteboard system created an inclusive collaborative experience, where everyone could explore and participate
- Interactive whiteboards are an effective way to promote student-centered learning
- Collaborating on interactive whiteboards had a positive effect on different types of lessons and ways of solving problems

Read more at Fogarty Report 2012

For more information, please visit the SMART Research Library at smarttech.com/research