The Effects Interactive Whiteboards Have on Student Motivation

Research Synthesis

Mandy McEntyre

EDIT 6900
After many weeks of completing preliminary searches, I decided to research Interactive whiteboards. I have always been interested in classroom technology. This interest recently increased since I had an opportunity to “play around” with a SMART board in a technology class I took this summer. This experience along with my curiosity to learn more about Interactive whiteboards in hopes of creating a presentation to convince the leadership in my school to purchase Interactive whiteboards for classroom use are the major reasons that led me to pursue Interactive whiteboards as my research topic.

As I began to search, I quickly found that Interactive whiteboards can yield a variety of search results. Therefore, I decided to specifically focus on the effects Interactive whiteboards have on student motivation in the learning process. I chose to address this particular issue because I feel that it would be major player in the leadership’s decision as to whether or not the boards would be purchased. It is my hope that through creating a compilation of a variety of research-based articles showing how Interactive whiteboards affect student motivation in the learning process, my school’s leadership will be swayed to purchase the boards that will help to provide the students at our school with enriched learning opportunities.

The Search:

Once I had formulated my research question, I began to seek out a variety of resources that would support my chosen topic. This proved to be a more tedious task
than I had first imagined. I began by searching Google Scholar and Galileo using the keywords “Interactive whiteboard” and “student motivation.” The result was a slew of articles. The only problem was that many of the articles yielded by my search were not peer reviewed. A second problem was that many of the journals noted were British publications due to the fact that Interactive whiteboards were first marketed in England many years back, thus a greater research opportunity exists as more experience has been had using the boards. However, after much searching I was able to locate a site containing lists of peer reviewed journals in the United States and England. As I began to look more closely at my research, I found that these articles noted that increases in student motivation were tied to opportunity to interact with the board. Therefore, I decided to explore how degree of student interaction and other factors influence student motivation with Interactive whiteboards.

**Findings:**

From my review of each and every source, I found a pattern among the author’s findings. This pattern was that every author except one felt that Interactive whiteboards positively affected a student’s motivation to learn. Why is this true? Higgins and Hall (2005) note in their article that “children of the 21st century have been part of a multimedia world from birth and as a result are comfortable with such technologies” (as the Interactive whiteboard) (106). I had never really considered this point before though I find it to be very true because I daily hear about the newest video, computer game, or movie my students have. In addition to this finding, Smith, Wiggins, Wall, & Miller (2005) note that the pupils “zest for learning is enhanced by the element of surprise that IWB
can bring to a lesson as it leaves students wondering what will happen next” (p. 95). With these features, most any topic can become an engaging and attention-grabbing lesson.

As was mentioned previously, the majority of my research supported the predictions I had made from the outset. These predictions included that Interactive whiteboards were key to increasing one’s motivation to learn. There was one study I found to the contrary though. This particular study written by Solvie (2001) found that there was not a significant difference in student attention and motivation when using an interactive whiteboard as opposed to when one was not used. I am however unsure of the findings, as there is some discrepancy in the article and the methods used to produce the findings. However in the majority of research I found, having Interactive whiteboards are beneficial to motivating students to learn though this does not occur simply by having an Interactive whiteboard in the classroom. Rather increased motivation comes from giving students opportunities to interact with the whiteboard. Furthermore, Smith, Wiggins, Wall, and Miller (2005) all found that motivation was tied to ability and age. While data on this finding is inconclusive, these points among other remain important focus points for the Interactive whiteboard research process.

As I have previously discussed, Interactive whiteboards definitely have a positive influence on student motivation to learn. However, it is only when students are given the opportunity to interact with the board that true increases in motivation can be measured. To illustrate this point, I note a study conducted by Miller and Glover (2004). In their study, Miller and Glover found that when teachers use Interactive whiteboards as a “glorified dry erase board” or as a projector screen, students lacked attentiveness and
motivation. However, when students were given the opportunity to physically move objects around on the board, student attentiveness and motivation greatly increased.

Smith, Higgins, Wall, & J. Miller (2005) support these findings in their article as they state, “Students enjoy interacting physically with the board, manipulating text and images” (p. 94). Through allowing students to have increased time to interact with the board, the classroom becomes less teacher-directed as the teacher must now facilitate instead of lecture (Hall and Higgins, 2005, p. 112). In effect, this concept may be harder for some teachers to follow through with. However, when it is done, major gains in student learning and motivation are made.

Overall Interactive whiteboards seem to, in most cases, lead to increased student motivation and engagement. Although, some of the research I found suggests that Interactive whiteboards are more successful with elementary age students than with middle and high school students. In support of this, one article stated that “teenagers may not be as eager to leave their seats as young pupils” (Smith, Higgins, Wall, and Miller, 2005, p. 95). However, through discussions with teachers at the middle and high school level, I have heard statements to the contrary. These interviewees have said that Interactive whiteboards have increased motivation and understanding for even their lowest performing students. Take Bob for example who used to sleep through math class. However, after the teacher began to teach via the interactive whiteboard, Bob jumps out of his chair each day to answer question and come to the board. This experience brings us back to the point that ample opportunity for student interaction is key to increasing motivation with the Interactive whiteboard no matter the grade or ability level.
While two major points related to student motivation and learning were discussed above. I did find several additional points that prove to be positive reasons for using interactive whiteboards to increase student motivation to learn the new technology. First of all, as Hall and Higgins (2005) note in their article, Interactive whiteboards contributes to making lessons “more enjoyable and fun,” which in turn can increase motivation greatly (p. 107). Secondly, there are times in which teachers may (with student permission) display a student work for constructive criticism, which can be a major motivator to those students who need that extra push to perform to their highest potential (Wall, Higgins, & Smith, 2005, p. 859). Thirdly, Starkman (2006) finds that Interactive whiteboards are “a conduit to the curriculum” (p. 2). No matter the type of lesson or subject area, the Interactive whiteboard can prove to be a valuable tool to help ensure all areas of curriculum are presented in an engaging and motivating way. Lastly and perhaps most importantly is a comment recorded by Smith, Higgins, Wall, and Miller (2005) in which a teacher interviewee notes that her students enjoy the visuals used to explain some topics. She goes further to say the students seem to have these images burned into their brain after finishing a lesson, thus providing a visual that students can recall for a school project (p. 97). In addition to the visuals, oral skills can be improved as students explain the pictures/diagrams noted on the screen. As you can see, there are many, many reasons to purchase interactive whiteboards, all of which go hand in hand to increase student motivation.
Implications:

From the findings noted above, several implications for Interactive whiteboard use can be pulled. They are as follows:

- Most importantly, ensure students are provided with multiple opportunities to interact with the board within each lesson.
- Employ a variety of effects (show and hide, sound effects, movie clips, etc.) when creating Interactive whiteboard lessons.
- Utilize student work when completing Interactive whiteboard activities.
- Build curricular-based units that provide students with opportunities to explore the topic using hearing, sight, and touch.

If these areas are covered, the certainty that increases in student motivation and learning go hand in hand with Interactive whiteboard use.

Conclusion:

In conclusion, it can be said that when used effectively, Interactive whiteboards can indeed provide a multitude of rich learning opportunities for students. From demonstrations to Jeopardy-type games and everything in between, when student participation is encouraged the sky is the limit in terms of student learning potential. Interactive whiteboards take learning to a whole new dimension, beyond teacher-centered lectures to teacher facilitated explorations utilizing sight, sound, and touch. In effect, interactive whiteboards can move students from being one-dimensional thinkers to well rounded critical thinkers who have a repertoire of experiences to pull from.


