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Interactive Teaching & Learning Using the ACTIVboard

by Elizabeth Whiting

How does the use of the interactive whiteboard promote interactive teaching and learning?

How does the use of the ACTIVboard support instructional strategies that lead to the development of literacy, problem-solving, creativity and collaboration skills of students?

For years we have mainly used technology as a vehicle for kids to reinforce and demonstrate what they have already learned. A few years ago, my principal asked the technology committee, "How are you using technology for instruction?" We replied with droves of projects used to reinforce and display what the kids had learned. The kids had made slideshows in KidPix multimedia software. They had created projects using the software Claris for Kids. The list went on and on. She repeated, "How are you using technology for instruction?" After much thought we named Windows On Math and Windows On Science laserdisc technology and one or two other software titles that actually helped teach information. It was an “Aha” moment for me. Since then, I have given much thought to the question.

After receiving a laptop last year from my school district, I latched onto PowerPoint, excited about the possibilities for using technology for instruction. The one thing that I was not satisfied with was the quality of a presentation, interactive or demonstration, on a tiny little TV screen way above the eye level of the students. Then, last spring I saw a demonstration of the interactive whiteboard at the state technology conference. The possibilities for positively impacting student achievement were immediately obvious. The interactive whiteboard is big enough for all to see. It is truly interactive because students become actively engaged with the screen itself. Students can manipulate information directly on the screen by using an electronic pen to drag images, write or draw, highlight information and activate links to cause actions or sounds which then can be seen easily by everyone in the class. This is different than traditional passive viewing of information such as a math problem, spelling word or concept presented on a T.V. screen projected from a laptop. When viewing information from a large T.V. monitor, students could only respond by mimicking what they see and hear, by manipulating concrete materials, or by writing on paper at their desks.

Students can also interact with the ACTIVboard using wireless devices called ACTIVotes. Each child has a wireless device that can be used to answer questions. Talk about truly interactive and engaging! Every single child in the class can become involved with the lesson and can respond to every single question posed by the teacher.

We started slowly, by introducing the kids to the whiteboard and

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showing them how to use the pen. The children learned quickly and we were able to easily move on to lessons directly related to the curriculum. The kids were enthusiastic. Each day as I reviewed the daily schedule, the children cheered every time I announced that we would be taking a trip to the "boardroom." I documented each lesson taught on the board and the follow up activities and lessons in the classroom in my research journal. In my special education inclusion classroom, I began to notice patterns of involvement and achievement by children identified with special needs, and by children who were not formally identified, but who I suspected had some special needs. I noticed the same kinds of patterns with the average learners. Reluctant writers were becoming involved in the writing process. Students with severe processing deficits were quickly performing math computations. Students with attention difficulties were listening, paying attention and participating in lessons. Many students were asking questions and making comments that reflected a deeper level of thinking than I had previously seen.

We entered this research project to look for evidence that the interactive whiteboard truly does have a positive effect on student achievement. Specifically, we wanted to look at how the interactive whiteboard would lend itself to the nine research proven instructional technology strategies influenced by a meta-analysis of research on instruction conducted by Robert Marzano (1998) as noted in the article *Building Better Instruction: How Technology Supports Nine Research-Proven Instructional Strategies* (Brabeck, Fisher & Pitler, 2004). In my own research, I found all nine strategies were evident, but that there were two in particular that were easily integrated with our second grade lessons using the whiteboard and that are key strategies used to help second graders learn. They were "non linguistic representations" and "similarities and differences."

The "nonlinguistic representations" strategy is one that most primary teachers realize is extremely important, but one that has always required much work to prepare and include in lessons. The board made this easy to do. For example, I have always taught ordinal numbers by gathering 20 objects from the classroom and my home, displaying them in front of the classroom, then having kids label them with ordinal numbers. On the board, I dragged 20 objects onto the screen and the kids labeled them. It took much less time and the kids understood the concept with no problems. We used the board to show PowerPoint presentations about American Indians and forest animals and famous Americans and Ancient Mali and the list goes on and on! We brought in photos from the Internet of actual people and animals and artifacts related to these areas of study. We used virtual manipulative objects to teach math lessons. We used pictures in the software Kidspiration to plan stories for writing workshop. Using pictures and tactile activities to teach second graders is a strategy so important to teaching second grade that it is probably used by many teachers who do not know of its research proven background. The interactive whiteboard makes it easy and natural to use this strategy in lessons across the curriculum.

The second strategy from the effective instructional technology research that I feel is so important to second grade teaching and learning is "identifying similarities and differences." Comparing and contrasting ideas is a powerful way to help children

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understand concepts. Again, the whiteboard made it easier than ever to apply this important strategy. We could look at large pictures of actual coins, and compare their physical characteristics to help the kids remember which coin is which. We dragged pictures of different animals onto a T-chart labeled "insect/not insect" and compared the physical attributes to help us do the sorting. We compared photos of people from Mexico to ourselves and compared their clothing, shelters and food to our own. We used a gigantic 100 chart to highlight numbers and find patterns within those numbers. Again, this strategy could easily be applied to lessons across the curriculum using the whiteboard.

These examples show that the interactive whiteboard not only had a positive effect on student academic performance, but I found it very easy to integrate lessons on the board with the content and instructional strategies that I had been previously using. Of course, research-proven strategies are very important to good instruction, but anybody who has ever taught in the classroom knows kids have to be engaged, motivated, and having fun. Again the interactive white board fills this requirement. The students (as well as all the teachers in our study) have loved every minute of our time in the "Boardroom." We are learning together and I see this technology as the future for teaching and learning in primary grades. Someday I hope there will be one in every classroom.

References

Brabeck, K., Fisher, K., & Pitler, H. (2004). Building better instruction: How technology supports nine research-proven instructional strategies. *Learning and Leading with Technology, 31*(5), 7-11.

Marzano, R.J. (1998). *A theory-based meta-analysis of research on instruction.* Aurora, CO: Mid-continent Research for Education and Learning.

About the Author

Elizabeth (Betsy) Whiting is a second grade teacher at Deer Park Elementary School and is enrolled in a masters program at Virginia Polytechnic Institute and State University studying instructional technology. She may be reached at Betsy.Whiting@fcps.edu.