Using a Smart Board to Teach Math

Summary of Research
Research findings support . . .

★ Quality, Ongoing Professional Development
★ Gains in Student Achievement
★ Complete integration and readily accessible use of the SMART Board
★ Placement of SMART Board in classrooms
Of 3,192 students in grades 3-8 in MATH, 43% used SB and outperformed students on the Ohio Achievement Test of Math as compared to grade level peers in grades 3, 4, 5, 7, and 8.

Swan, Schenker, & Kratcoski, 2006-07
In Swan’s study of 31 Ohio teachers using SMARTBoards in math, students scored above the mean on standardized test when used an average of 4.7/week as compared to students scoring at or below the mean when used 3.1/week.

Swan, Schenker, & Kratcoski, 2006-07
“Teachers whose students scored above the mean on standardized math tests were more likely to use SMART Board interactively and to focus SMART Board activities on visualization of concepts and processes, most especially problem solving.”

Swan, Schenker, & Kratcoski, 2006-07
“Perhaps even more so than in math, the contrast between teachers whose students scored above the mean on standardized assessments and teachers whose students scored at or below the mean seemed to be between student-centered and teacher-centered uses of the whiteboards.”

Swan, Schenker, & Kratcoski, 2006-07
Of 92 elementary math students, an average score gain of 20.76 points using SMART Boards as compared to control group average gain of 11.48 points.

Zittle, 2004
2006-07: A 3rd Grade class of 20 math students; baseline math score on participants pre-test score was 52.4%. Post-assessment average after 1 year of SMART Board integration was 80.8%; 100% of students passed the Ohio Achievement Test for math that year.

Oleksiw, 2006
In a 1st grade classroom in Wichita, KS, SMARTBoard technology was integrated everyday in math. A pretest/posttest design was used. The control group was a 1st grade class at the same school with a similar student population.

<table>
<thead>
<tr>
<th>Problem Solving (4 points)</th>
<th>Growth of SB Class</th>
<th>Growth of Class w/o SB</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1.4 points</td>
<td>0.9 points</td>
</tr>
<tr>
<td>Coin Combinations</td>
<td>63%</td>
<td>44%</td>
</tr>
<tr>
<td>Coin Values</td>
<td>48%</td>
<td>14%</td>
</tr>
<tr>
<td>Time to the Half Hour</td>
<td>86%</td>
<td>68%</td>
</tr>
</tbody>
</table>

Clemens, Moore, & Nelson, 2001
The level of teacher understanding of integration and effective use of the technology in math has a direct impact on student’s stimulated learning through participation and understanding.

Miller, Glover, & Averis, 2002-2004
Math Motivation with SMART Board Technology

Research study by Marcy Savoie
2007-2008
Math and Student Motivation

Method:
Gave three 10 question surveys to fifth grade special education students to determine how the students feel about learning math facts and concepts.
Math and Student Motivation

Question #1 Math class is interesting.

![Bar chart showing responses to the question.](chart.png)
Math and Student Motivation

Question #2 I understand what I am learning in math class.
Math and Student Motivation

Question #3 Math class is hard for me.

- Pre-SMART Board
- Introductory SMART Board
- Concluding SMART Board

Legend:
- 1=agree
- 2=not sure
- 3=disagree
Math and Student Motivation

Question #4 I try my best in math class.
Math and Student Motivation

Question #5 I can’t understand what I am learning in math class.

- Pre-SMART Board
- Introductory SMART Board
- Concluding SMART Board

Legend:
- 1=agree
- 2=not sure
- 3=disagree
Math and Student Motivation

Question #6 I can understand what the teacher is teaching me on the board.
Question #7 I like to tell my family what I am learning in math class.
Question #8 Math class is boring.

- 1=agree
- 2=not sure
- 3=disagree

<table>
<thead>
<tr>
<th></th>
<th>Pre-SMART Board</th>
<th>Introductory SMART Board</th>
<th>Concluding SMART Board</th>
</tr>
</thead>
<tbody>
<tr>
<td>1=agree</td>
<td>3</td>
<td>7</td>
<td>6</td>
</tr>
</tbody>
</table>
Math and Student Motivation

Question #9 I like math class.

<table>
<thead>
<tr>
<th></th>
<th>Pre-SMART Board</th>
<th>Introductory SMART Board</th>
<th>Concluding SMART Board</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>![1=agree]</td>
<td>![2=not sure]</td>
<td>![3=disagree]</td>
</tr>
</tbody>
</table>

1=agree  2=not sure  3=disagree
Math and Student Motivation

Question #10 I look forward to math class.

![Bar Chart](chart.png)

- Pre-SMART Board
- Introductory SMART Board
- Concluding SMART Board

Legend:
- 1 = agree
- 2 = not sure
- 3 = disagree
Conclusion

Forget the chalk and use your Smart Board!