SMARTboard: The SMART Way To Engage Students

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**Description of Teaching Context**

For the past seven months, I have been working in a self-contained second grade classroom at Gray’s Woods Elementary School in the State College Area School District. There are twenty-two enthusiastic students (ten boys and twelve girls) who help to create a dynamic classroom filled with individual personalities and a collaborative learning environment. There is a strong sense of community among the students in the classroom, which has been developed over the course of the year because of numerous team-building activities. This is demonstrated by their consideration for others’ feelings, their willingness to share, and desire to initiate new friendships.

Among these twenty-two students are two children who receive speech and language service approximately two times per week for thirty minutes. Three students have been referred to the Instructional Support Team (IST) for further support in the classroom. One of the students receives Occupational Therapy for thirty minutes each week and four of the twenty-two students receive Title One support for reading instruction for thirty minutes on a daily basis. Other than these specific times that are provided for additional support services, the students spend the majority of classroom time as a whole group.

Out of the 22 students in the classroom, 22 students have access to a computer at home and the same 21 students also have easy access to the Internet. At school, the students have access to a computer lab as well as two computers within the classroom. While there is no designated computer lab teacher, my classroom has a designated computer lab period in which the classroom teacher instructs the students.
using district wide grade level competencies and unit-related activities. *(see Appendix A for full inquiry brief)*

**Wonderings and Questions**

**Main Wondering**

I will first observe student engagement and involvement during a lesson for certain areas of the curriculum, such as Math and Social Studies. I will then begin to incorporate the SMARTboard into different lessons throughout the curriculum, measure student engagement and involvement while using the technology. I will also interview students on how they feel about the SMARTboard and what their likes and dislikes are. After collecting data, I answered my wondering as to whether using the SMARTboard does truly increase student engagement and learning during a lesson.

*How does using a SMARTboard to enhance curriculum lessons and activities increase student engagement and involvement during a lesson?*

**Sub-Wonderings**

- How are lessons without the use of the SMARTboard comparatively engaging to lessons with the use of the SMARTboard?
- How does the use of the SMARTboard during Math enhance the curriculum and affect student engagement and involvement that is taking place during this time?
- How does the use of the SMARTboard during Social Studies enhance the curriculum and affect student engagement and involvement that is taking place during this time?
• How does the use of the SMARTboard during Reading Stations enhance the curriculum and affect engagement and involvement that is taking place during this time?

• How does the use of the SMARTboard during Calendar Math enhance the curriculum and affect student engagement and involvement that is taking place during this time?

**Data Collection and Analysis**

**Clear Description of Data Collection and Analysis**

In order to help investigate my wondering and to see how the SMARTboard could enhance or detract from a lesson and how students react to the implementation of this piece of technology, I collected many types of data. I collected data before, during, and after the SMARTboard was introduced into my classroom.

**Before**

Prior to beginning my inquiry, I surveyed the students’ parents in my classroom in order to get a feel for how involved the students were with technology outside of school. I sent home a short survey which asked the parents about how often their child uses a computer at home, if they use the internet frequently, what types of websites they visit, and if the parents encourage the use of the computer at home.

This survey helped me understand what kinds of experience the students had with technology and what their interests were outside of school, in a technology aspect. I used this information to help design SMARTboard lessons that involved some favorite websites of the students. *(see Appendix B for parent survey)*
During

The majority of my data collected happened during my inquiry. The data I collected involved many activities and lessons that I designed and gathered for the use of the SMARTboard during instruction, observations of the students engagement and involvement from several professionals, and pictures of the class.

Planning for the SMARTboard is the key aspect of incorporating its use in the classroom. In order to set the project up, I needed to plan lessons that incorporated the use of the SMARTboard that coincided with what I was teaching during that lesson. I had to plan ahead of time to research and create a SMARTboard activity that directly connected the activity to the topic of the lesson. I also needed to plan lessons that involved the SMARTboard in a variety of subject areas in order to get a feel for how the SMARTboard enhanced several different aspects of the curriculum, and not just one area. (see Appendix C for examples of SMARTboard lessons)

As I would teach the lessons that involved the use of the SMARTboard, I had my mentor and PDAs come into the classroom and observe some of the lessons. I asked them to focus on how the students reacted to the SMARTboard, what their participation was like during the lesson, and their opinions on whether the SMARTboard truly enhanced the curriculum or whether it simply was a fun activity that the students enjoyed. I also had the observers look for different patterns they noticed while I was teaching, such as what the students did while I manipulated the SMARTboard, how the students’ behavior changed depending on my location in the room, and if the students stayed attentive during a long activity. (see Appendix D for observation notes)
In order to provide hard evidence of how the students’ involvement and engagement changed during a SMARTboard lesson, I also took pictures of what their participation was like when the SMARTboard was in use and what their participation was like during a lesson without the SMARTboard. These pictures helped me to compare how the students’ engagement and involvement was affected by the SMARTboard. (see Appendix E for pictures)

After

In order to collect data on my students’ opinions and feelings about the SMARTboard, I interviewed the class, as a whole, and asked for their opinions and input on the SMARTboard. I took a class poll on whether the students liked or disliked the SMARTboard activities and allowed for an open discussion on their true feelings. I then wrote a journal about what the students had to say during this meeting for part of my data. (see Appendix F for this journal)

In order to collect more data about the students’ feelings about the SMARTboard, I administered a student survey that had the students give themselves ratings about how they felt during a SMARTboard activity and if they felt as though they participated more or less during these times. I used this information to compare how I perceived their participation with the SMARTboard and how they perceived their own participation with the SMARTboard. (see Appendix G for a copy of the survey)

Explanation of Findings

After analyzing my data, I was able to see strong patterns that related to my use of the SMARTboard during lessons and this information helped me to make strong claims about my inquiry.
Claim #1: Students enjoy the hands-on aspect of the SMARTboard, which results in an increase in student participation during a lesson.

The main focus of my inquiry was to observe whether introducing the SMARTboard into the classroom would cause an increase in student participation and engagement during lessons. When I first brought the SMARTboard into the classroom, this immediately sparked the students’ interest. They wanted to know what it was and how they could use it. After showing the students how the SMARTboard worked, the students were extremely eager to get involved with anything that had to do with the SMARTboard.

I knew that the first couple of times that I would use the SMARTboard, student participation would increase because of the novelty of the tool. The data that I collected throughout the entire inquiry helped me to see that the interest level for the SMARTboard held throughout the project, regardless of when it was implemented. This was direct evidence of how the students were still motivated to participate in every lesson, even after two months of SMARTboard lessons. I had my mentor take pictures during a Language Arts lesson. These pictures were clear evidence of the difference in participation when a lesson involves the SMARTboard because in the picture where the SMARTboard is in use, every single student’s hand is raised. (see Appendix E for the pictures)

The observation notes that my mentor and PDAs took clearly state the class’s excitement each time we used the SMARTboard. One student was even quoted to saying, “Oh good – the SMARTboard!!” When students see that the projector is turned on and that there is a possibility they might be using the SMARTboard, the class goes to sit in front of the SMARTboard immediately! It is clear throughout my mentor’s and PDAs’ observations that the students are more eager to participate and become engaged in a lesson when it is
on the SMARTboard, and they are able to manipulate it. My mentor made several comments about students who were not as engaged as the other students, and how these students show a significant increase in participation when the SMARTboard is in use. (see Appendix D for observation notes)

It is also important to note how the SMARTboard meets a variety of learning styles. The SMARTboard meets visual learners by providing a large area for the students to view. The kinesthetic learners’ needs are met because these students get to go up to the SMARTboard and actually move and manipulate objects. Auditory learners’ needs are met through the discussion that takes place during a SMARTboard lesson. Students discuss different answers and question for understanding. Tactile learners’ needs are met because these students can show their creativity on the SMARTboard and not be afraid to take risks because the objects can be easily changed. These students also have a chance to use their creativity when explaining an answer by having a concrete object to manipulate for which they can draw and explain their answer.

**Claim #2: The SMARTboard allows for students to easily edit an answer, allowing them to feel more comfortable taking risks and providing opportunities for natural extensions of a lesson.**

When using the SMARTboard, children who are normally not as attentive or engaged are more eager to participate because of the opportunity to use the SMARTboard. All of the children in my classroom enjoy using the SMARTboard, and this is evident through the student survey I gave after my inquiry. The results showed that over half of the class always enjoys using the SMARTboard, less than half of the class enjoys using the SMARTboard most of the time, and less than 25% of the class only sometimes enjoys using
the SMARTboard. Not one person in the class answered that they never enjoy using the
SMARTboard. This shows the increase in the number of students who want to participate
during a SMARTboard lesson.

The students with lower abilities are much more willing to attempt higher level
activities on the SMARTboard because it is not only fun for them to participate, but they
also have the support of the class when they make a mistake. The SMARTboard gives
students the opportunity to fix their mistakes easily. Having the work displayed on the
board in a clear manner also allows for natural extensions to happen during a lesson.
Students make stronger connections between their learning and the activity because they
are much more attentive when they have the opportunity to manipulate the SMARTboard.

In one particular lesson, my students were participating in a SMARTboard activity
on fractions. The lesson was designed to have the students separate shapes into different
amounts of equal parts. Students were very successful with this part of the lesson and even
the lower-ability students showed a strong understanding of this concept. The
SMARTboard allowed for students to split the shapes in multiple ways providing many
visual examples of how a shape can be divided. In order to extend the activity, I had the
students picture the shapes as food and gave them word problems relating to the shapes.
An example of a type of problem I would ask was, “I have a pie split into fourths. If I ate
three pieces of the pie, how many pieces would be left?” I called on students to answer the
question and then showed them examples of how these fractions would be written. As an
additional extension, I allowed some of the students to come up and write their own
fractions. These were all natural extensions that were easily explored due to each child’s
involvement and willingness to take risks writing the fractions. *(evidence of this lesson is clearly stated in my mentor's notes-see Appendix D for observation notes)*

**Claim #3:** The students will lose interest in the SMARTboard activity if the majority of the class is having trouble manipulating the objects for the activity.

Some of the activities and notebook pages that I have created for the class to use were not as easy to manipulate as others. Once particular website that I chose for the students to use was a website in which the students dragged money and dropped it into a box to gather a specified amount of money. Before the lesson, I plugged in the SMARTboard and tested the website to make sure it worked. When the lesson began, I started to notice that each student who took a turn on the board was having trouble dragging and dropping the money. As the lesson continued, I started having more behavior problems as children became uninterested in participating because of the difficulty of manipulating the object (dragging the money).

This particular lesson helped me to reflect on previous lessons that I had taught where the students were having trouble manipulating the objects during the lesson. I realized that any time the students were having difficulty, behavior problems started and students became less willing to participate in the lesson. It is extremely important to change the activity if you begin to notice the students having trouble moving the objects on the SMARTboard. My mentor took notes on my fraction lesson and commented that she noticed this pattern too.

**Claim #4:** Technology is not always dependable, so always have a back-up plan in case the SMARTboard, computer, projector, or notebook page and/or website are not working.
The set-up in my classroom for the SMARTboard is not permanent. The SMARTboard is on wheels and the projector is on a bookshelf, making these objects easily movable by the students in the class with a simple bump. One of the main problems I experienced during my inquiry was orienting the SMARTboard multiple times a day in order to use it for my lesson. If the SMARTboard is not oriented, when the students touched the screen, the board would detect the touch in a spot that was not in line with the student’s finger or pen. The ideal situation would be for the projector and the SMARTboard to be permanently installed in the classroom.

This was not an option in my current classroom, so it was extremely important for me to remind the students to not touch the SMARTboard and the projector unless directed to do so. Also, each day that I was using the SMARTboard for one of my lessons, I made sure to orient the SMARTboard in the morning or at lunch so the students would not have any wait time while I fixed the SMARTboard. My mentor and I both noticed a pattern with the students when the SMARTboard was not working properly. The students would lose complete interest in the SMARTboard and the activity, if the technology was not properly working. Several students even commented, during our class meeting, that the only part of the SMARTboard they disliked was when it was not working properly. One student shared, “It makes me mad when I go to use the SMARTboard and it’s off. Then we have to wait while you orient it again.”

**Reflection and Implications for Future Practice**

Throughout the process of my inquiry, I formulated many ideas about what use the SMARTboard has in the classroom and how it can increase student engagement, involvement, and participation during a lesson. I also came to realize how important
technology can be in the classroom and how it can truly enhance the curriculum. This particular inquiry helped me to explore many different types of activities and ways to enhance my lessons that I would have not been able to do without the SMARTboard. Allowing the students a hands-on opportunity to be involved with the lesson as well as motivating all levels of learners to participate in an activity greatly increased learning and attentiveness.

I plan to continue to incorporate the SMARTboard into my lessons for the remainder of this year, and the future, if possible. I have also talked to many professionals that are interested in the SMARTboard and have learned about grants that can be applied for to receive a SMARTboard for your own classroom that would be mounted onto the wall and a permanent accessory for the teacher’s use. The use of the SMARTboard has allowed for me to extend the curriculum and provide enrichment for the class on particular topics.

Through this inquiry and other experiences that I have had through the PDS, I have noticed that any form of technology can become a great tool during lessons to increase engagement. SMARTboards are extremely expensive, so if I am not able to have one in my future classroom, I will incorporate any form of technology into the classroom if this is available to me. This inquiry has strengthened my interest in technology and motivated me to keep growing as a learner and discover new technologies to use in my classroom.
Appendix

Appendix A

My Teaching Context

For the past seven months, I have been working in a self-contained second grade classroom at Gray’s Woods Elementary School in the State College Area School District. There are twenty-two enthusiastic students (ten boys and twelve girls) who help to create a dynamic classroom filled with individual personalities and a collaborative learning environment. There is a strong sense of community among the students in the classroom, which has been developed over the course of the year because of numerous team-building activities. This is demonstrated by their consideration for others’ feelings, their willingness to share, and desire to initiate new friendships.

Among these twenty-two students are two children who receive speech and language service approximately two times per week for thirty minutes. Three students have been referred to the Instructional Support Team (IST) for further support in the classroom. One of the students receives Occupational Therapy for thirty minutes each week and four of the twenty-two students receive Title One support for reading instruction for thirty minutes on a daily basis. Other than these specific times that are provided for additional support services, the students spend the majority of classroom time as a whole group.

Out of the 22 students in the classroom, 22 students have access to a computer at home and the same 21 students also have easy access to the Internet. At school, the students have access to a computer lab as well as two computers within the classroom. While there is no designated computer lab teacher, my classroom has a designated computer lab period in which the classroom teacher instructs the students using district wide grade level competencies and unit-related activities.

Rationale

Throughout my internship experience, I have had numerous opportunities to learn new technology in my methods courses. Because of my high interest in technology and the many resources I have available for my use, I have become extremely motivated to use technology in the classroom as often as possible, through iMovie, Podcasting, StudioCode, blogging, and various interactive websites that relate to the Reading and Math Curriculum. I have discovered a heightened sense of motivation while using these tools and programs in the classroom and would like to extend this motivation even further.

Recently, I visited another mentor teacher’s classroom in the district and observed her using the SMARTboard during a Calendar Math lesson. While observing, I noticed all of the students were extremely engaged and eager to participate in the lesson. From this observation, I was motivated by my own desires to learn how to use the SMARTboard and incorporate the use of this tool in my classroom. Our school had a SMARTboard and projector available, so I scheduled a time to meet with our Technology Support Teacher and learned how to set-up and manipulate the SMARTboard in my classroom.
My inquiry will focus on finding numerous ways to incorporate SMARTboard activities into different aspects of the curriculum to further engage the students during lessons that I am teaching. Through the use of this technology, I will plan lessons that are already in the district’s curriculum, adding pieces to the lessons that incorporate the use of the SMARTboard. My inquiry will focus on whether the use of the SMARTboard helps to engage the students or if there is no difference in the students’ engagement during a lesson without using the SMARTboard. I will collect data that is based on the students’ likes and dislikes of the lessons I teach, some with the SMARTboard, and some without. Through data collection and thoughtful planning, I will hope to find an answer to my wondering as to whether the SMARTboard is a truly motivating factor for students.

Wondering

How does using a SMARTboard to enhance curriculum lessons and activities increase student engagement, involvement, and learning during a lesson?

First observing student engagement and involvement during a lesson will be measured for certain areas of the curriculum, such as Math and Social Studies. I will then begin to incorporate the SMARTboard into different lessons throughout the curriculum, measure student engagement and involvement while using the technology. I will also interview students on how they feel about the SMARTboard and what their likes and dislikes are. After collecting data, I hope to answer my wondering as to whether using the SMARTboard does truly increase student engagement and learning during a lesson.

Sub-Wonderings

• Is the Math curriculum more engaging and successful for all learners when the SMARTboard is incorporated into different lessons?
• Is the Social Studies curriculum more engaging and successful for all learners when the SMARTboard is incorporated into different lessons?
• Are Reading Stations more engaging and successful for all learners when the SMARTboard is incorporated into different lessons?
• Are lessons without the use of the SMARTboard comparatively engaging to lessons with the use of the SMARTboard?
• Will using the SMARTboard in curriculum increase student interest in other technologies, both in school and at home?

Data Collection

Surveys

• I will send home a Parent Survey in order to collect data on the students’ access to a computer and Internet in their homes and what their usage of technology is like.
• I will send home a second survey to see if the students’ usage of their computers at home has increased due to the implementation of the SMARTboard into the curriculum.
Interviews
• I will interview a few students on their liking of different subjects in the curriculum, then re-interview these same students to see if their interest in these same subjects has increased due to using the SMARTboard throughout the curriculum.

Observations
• I will have both my mentor and PDA observe the students during lessons whenever I do not use the SMARTboard and make observations about student engagement and involvement.
• I will then have both my mentor and my PDA observe the students during lessons that include the SMARTboard and make observations about student engagement and involvement.

Timeline

February
• Learn how to use the SMARTboard and set up the SMARTboard in my classroom.
• Make observations of students’ engagement during lessons before the SMARTboard is incorporated into the curriculum.
• Interview students on their feelings of different subjects in the curriculum.
• Survey the parents of the class on whether the students have access to computers and Internet in their homes and how often they use this technology.

March 2-March 5
• Begin to implement the SMARTboard in a few lessons—Math.
• Have mentor or PDA make an observation of the students’ engagement during their first SMARTboard lesson.

March 9-March 13
• Continue to implement the SMARTboard in a few lessons—Math.
• Have mentor or PDA make an observation of the students’ engagement during a SMARTboard lesson.

March 16-March 20
• Continue to implement the SMARTboard in a few lessons—Math and Calendar Math.
• Have mentor or PDA make an observation of the students’ engagement during a SMARTboard lesson.

March 23-March 27
• Continue to implement the SMARTboard in a few lessons—Math, Reading Stations, and Social Studies.
• Have mentor or PDA make an observation of the students’ engagement during a SMARTboard lesson.

March 30-April 3
• Continue to implement the SMARTboard in a few lessons—Math, Reading Stations, and Social Studies.
• Have mentor or PDA make an observation of the students’ engagement during a SMARTboard lesson.
• Send home parent survey on whether students’ use of technology at home has increased due to implementation of the SMARTboard.
April 6-10
- Continue and possibly videotape lessons
- Create survey for students regarding the use of the SMARTboard in the classroom
- Write inquiry paper draft
- Summarize findings - Did the SMARTboard help to increase student engagement and involvement?

April 11
- Inquiry paper draft due

April 13-April 17
- Correct Inquiry paper draft
- Continue to implement the SMARTboard.
- Continue to make observations on the students’ engagement during lessons.

April 20-24
- Prepare Inquiry Presentation

April 25
- Present at Inquiry Conference
Appendix B

Dear Parents and Guardians of Room 20,

I am Emily Goettler, the PSU intern in your child’s classroom. I am working on an inquiry project involving technology, and I am curious to know your child’s interest in this area. In order to gather some background information on your child’s interest and use of technology at home, I have a short survey that I would greatly appreciate if you could answer. The survey results will help assist me in planning activities that involve the use of technology in the classroom. If you could complete the survey and return it by Monday, March 23, 2009, this would be extremely helpful. Thank you in advance for taking the time and for your support. If you have any questions, please contact me at esg5016@psu.edu or call Gray’s Woods Elementary at (814) 235-6100.

Thank you,

Emily Goettler

Name of Child (optional): __________________________ Date: __________

Do you have a computer(s) in your home? YES NO #____

Does your computer have Internet access? YES NO

Approximately how much time does your child use the computer during the week?

Minutes/hours per day: ___________ Days per week: ______________

If given free time, would your child choose to use the computer YES NO

Are there any particular websites or programs your child likes to visit while using the computer?

Please list the names or addresses of these websites.

____________________________________________________________________________________________________

________________________________________________________________________________________________________

Are there any particular websites or programs that you encourage your child to visit while using the computer?

Please list the name or address of these websites or programs.

____________________________________________________________________________________________________

____________________________________________________________________________________________________
Appendix C

Social Studies Lesson Example

**Step 4** - I will call students attention to the bulletin where it says what kind of land there is where they will be making a home. I will tell them that it is important to be aware of what kind of environment they will be living in because not only will it help them to think of what living will be like, but also what kind of materials will be available to help them build their homes.

**Step 5** - Students will then move over to the SMARTboard where a t-chart will be displayed, comparing the pioneers’ homes to our homes today. The t-chart points out simple attributes, such as how many rooms the house has, to how the house was made and with what materials. The notebook page also shows examples of real log houses that may have been built.

**Step 6** - Students will then go back to their desk sets where I will explain the next part of the lesson, which is brainstorming what materials and resources they will have to make their home and also what life will be like. Each group will be given one piece of paper to write down some of the resources they think they might find near their home that would be useful for both building the home and living in general.

<table>
<thead>
<tr>
<th>Pioneer Homes</th>
<th>Our Homes Today</th>
</tr>
</thead>
<tbody>
<tr>
<td>one room-with kitchen and beds in it</td>
<td>carpeted or wood floors</td>
</tr>
<tr>
<td>used tools such as chain saw, power drill, and other machines to build home</td>
<td>many rooms—each separate</td>
</tr>
<tr>
<td>fireplace as decoration</td>
<td>home made from materials in the area, such as logs</td>
</tr>
<tr>
<td>make your own tools to build home</td>
<td>built with bare hands</td>
</tr>
<tr>
<td>fireplace as heat and stove</td>
<td>home made from many different materials, such as concrete, available at stores</td>
</tr>
<tr>
<td></td>
<td>electric stove or microwave</td>
</tr>
</tbody>
</table>
Math Lesson Example

I will call all students to come sit in front of the SMARTboard so everyone can see.

I will introduce the first page, which has a rectangle, a square, and a circle on it, titled "Can you make fourths?" I will call on a student to come up, use the pen, and split the shape into fourths. After a student has finished splitting the shape, I will ask the class to touch their nose if they agree or put their hands on their knees if they disagree. If the answer is not correct, I will ask another student to go up to the board and fix the answer. I will then re-check with the class as to whether they agree or disagree. I will do this for each shape.

Can you make fourths?

Website Example

You need 42 cents.

[Image of coins]

[Image of wooden texture]
Appendix D

From: cjb14@scasd.org
Subject: smartboard 4/2
Date: April 2, 2009 4:02:06 PM EDT
To: esg5016@psu.edu

Things that went well:
Engaging – students were participating/ anticipating others ideas
      easy for Kelly to fix her own mistakes in a quick manner and move on to further hers and others thinking
Natural extensions happened – showing fourths in different ways – rectangle
      Tyson – no other way to do it – say another child start to draw – oh, yeah, there is another way!
Observation – when you’re back with computer – Garrett/Addison talking; Marissa Lyndsey playing with hair; Sammy bumping into Noah
      when in front with you manipulating smartboard, all very attentive – They tell you what to do. Sitting up straight, hands to self, raising hands, etc.

Why do you think there is this difference? What could this be telling you concerning management?

This lesson did not go as expected. Why do you think this happened? What about your questioning strategies led this? How did you allow the kids to debate among themselves? Why didn’t you tell them the answer? Do you think this was effective?

Did you notice the connections they're making across disciplines? Tyson said – We going to investigate our wondering.

From: cjb14@scasd.org
Subject: smartboard 4/1
Date: April 2, 2009 4:29:50 PM EDT
To: esg5016@psu.edu

You first pulled up a money website. The kids were really struggling with manipulating coins and you decided to change. Why did you change this? Was there any way you could have anticipated this happening?

You pulled up a fraction site....you were ready to move on to something else. Why?
What did you learn from this?

Fractions:
What questioning strategy did you use to help them and regain their attention? You had them visualize the way 1/3 would look after they cut the circle into 1/2. Why did you do this? How did it help them? You also went back and asked them if the picture they had in their head was the same as the smartboard. Many of them were very honest and said no. They told you how they thought of it and also explained why their picture was incorrect. What great learning just took place!

Your questions were great here! It followed a logical order. You allowed them to select the next fraction. Did you plan to do this? Do you think it worked? Why?

After this, you began a conversation about eating the pie. You asked them to color in what the pie would look like if you ate 4 out of the 5 pieces. Then, you asked them to write the fraction for what you ate. At first, this was difficult for some of them. Why do you think so? Do you think they understand the parts of the fraction (numerator, denominator) at the beginning of the lesson? What about at the end of the lesson? You provided lots of practice for this and the results were shown. What do you think the next lesson should be for them?

**Observation Notes**

**INTERN: EMILY GOETTLER**
**DATE: 04.03.09**
**ACTIVITY: SMART BOARD CALENDAR MATH**

Goal: Observe students

Notes:

~ Peyton obviously loves this --”Oh, good – the Smart Board!”
~ “Why didn’t you put up the schedule?” Its funny, they don’t let teachers get away with anything. 😊
~ Nice countdown to get them transitioned to the rug—“We need to be ready in 3….2….1… Good job!”
~ Nice idea to have a student explain expanded form
~ “Does everyone understand?” Are you sure they all do just because no one said they didn’t understand?
~ I like having the students who are not participating thinking about what they’d do. Candy modeled this well then you did the same. Good!
~ Nice way to check understanding—“thumbs up or thumbs down”—again, are you sure they all understand because everyone showed thumbs up?
~ One boy in the back was disrupting others around him—Candy moved him closer to her.
~ Another boy was way off near the cabinets—eventually you waved him over near the group.
~ Good observation that James was struggling with the Smart Board pen—he did great using the Smart Board.
~ “Sounds like pros to me!”—great feedback when they counted by 25
~ Glad Candy moved the 3 quarters back above the chart—other problems may involve these coins and having coins in another column may confuse the students.
~ Great positive feedback after students correctly showed the coins
~ I like that you explain why you’re having them do things—“Let’s review what we learned.”
~ Good clarification “What do you mean by that?” Eventually the students realized his error and corrected himself.
~ Most participated when you asked them to show their thumbs.
~ “Does everyone see why that shape is 3-D?” You could have another student explain why the shape fits there.
~ I love that you used a Venn diagram then explained the center section. It’s hard for them to visualize 3-D pictures when they are photos. Next time, you could have the objects ahead of time.
~ Great reminder of what 2-D means—you might have done this before starting this activity since several may not recall the difference.
~ Good review “What shape is that?”
~ Is there a way you can keep track of who had turns? Maybe popsicle sticks, a checklist, etc...
~ Nice—“Let’s give Sam respect and listen to his question.”
~ “Check yourselves please.” Great wait time—it worked very well.
~ Nice example of co-teaching—you two do a great job of jumping in with comments, questions, clarifications when needed.
Appendix F

Emily Goettler
Reflection Journal
4 April 2009

After my math lesson on Friday, we were running a few minutes ahead of schedule, so I decided to poll the class and take opinions and thoughts on the way the students felt about the SMARTboard. I asked the students to please be extremely honest about their feelings and don’t worry about hurting mine, I just really needed to hear their honest opinion. All of the students promised to be honest, and one student even asked if they would get in trouble for any of their answer!! I explained that the more honest they were, the more they would help me, so no, they wouldn’t get into any trouble!

I started off the polling by having all of the students close their eyes and raise their hands for different questions. I started off with simple statements: “Please raise your hand if you like the SMARTboard.” “Please raise your hand if you do not like the SMARTboard.”

It was interesting to see that all of the students raised their hands for liking the SMARTboard, and one student raised his hand again for not liking the SMARTboard.

In order to hear further opinions from the students, I asked the students to first tell me some things that they like about the SMARTboard. One student raised his hand and said, “I like how we get to do things on it rather than just watch.” Another student said, “I like watching you [the teacher] do things on the SMARTboard. It’s fun because you sometimes have trouble with it like us.” I asked her to explain what she meant a little further, and she explained, “Well, I like the SMARTboard when I can use it right, but whenever I can’t get it to work, I don’t like it. It makes me mad sometimes when I can’t get things to work right.” A lot of the students agreed with this same statement.
I thought this was a great segue into hearing what some of the students didn’t like about the SMARTboard. A few students raised their hands to say they agreed with the fact that they don’t like the SMARTboard when they have trouble working it. Another student raised his hand and stated that he didn’t like the SMARTboard when “every time someone bumps the projector or the SMARTboard, we always have to re-orient it.” Several students agreed with this statement also. One student suggested, “Why don’t we just put the SMARTboard on the wall and screw it in, and maybe we could glue the projector to the shelf?” I explained that we could not do this but if we are all extra careful, we won’t have to orient the SMARTboard over and over because, if it isn’t moved, it will still work. The students agreed to keep trying to be extra careful.

The one student who raised his hand for not liking the SMARTboard offered some great insight into why he doesn’t like the SMARTboard. He said, “I don’t like it when we spend too much time on one activity. I like when what we do is quick and everyone gets a turn. I also like when we do a bunch of different things rather than just one thing.” This information was great to hear because it can help me when I am planning lessons for the SMARTboard. After he made this statement, I asked the class to raise their hands if they agreed with what he said, and eighteen out of the twenty-two students raised their hands in agreement.

Although I cannot fix all of the problems that the students talked about, I can incorporate many of the suggestions they made. Now, while I am planning, I will make sure to plan quick, short activities that involve giving lots of students many turns on the SMARTboard. Also, I will make sure to try and set up the activity before the students join me on the carpet so, if the board or projector are off, I can orient the SMARTboard. This
may not be possible for every activity, depending on who is in the room to help me at the
time and what activity is planned prior to my lesson, but I will plan setting the
SMARTboard up well in advance. If the activity is in the morning, I will set the
SMARTboard up first thing, and if the activity is in the afternoon, I will set the SMARTboard
up right after lunch. This data is a significant contribution to my inquiry project and will
also greatly assist me in making claims.
Appendix G

Name: ____________________________________________________________

1. I enjoy doing activities on the smart board.

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
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</thead>
<tbody>
<tr>
<td>Never</td>
<td>Sometimes</td>
<td>Most of the Time</td>
<td>Always</td>
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</table>

2. I like using the smart board for math.

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<th>4</th>
</tr>
</thead>
<tbody>
<tr>
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</table>

3. I like using the smart board for reading stations.

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4. I like using the smart board for social studies lessons.

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5. I like using the smart board for calendar math.

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6. I participate more when my teacher uses the smart board? Yes No

7. I like when my teacher uses the smart board for a:

   short lesson        long lesson
Student Survey Results

I enjoy doing activities on the SMARTboard.

<table>
<thead>
<tr>
<th>Opinion</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
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</tr>
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</table>

I like using the SMARTboard for Reading Stations.

<table>
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I like using the SMARTboard for Math.

<table>
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I like using the SMARTboard for Social Studies lessons.

I like using the SMARTboard for Calendar Math.

I like when my teacher uses the SMARTboard for a:

I participate more when my teacher uses the SMARTboard.