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The Impact of a SMART Board on the Literacy Teaching and Learning in an Inclusion Third Grade Classroom

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The Impact of a SMART Board on the Literacy Teaching and Learning in an
Inclusion Third Grade Classroom

by

Stephanie Anne Ferris

A thesis submitted to the Department of Education and Human Development of the
State University of New York College at Brockport in partial fulfillment for the
degree of Master of Science in Education

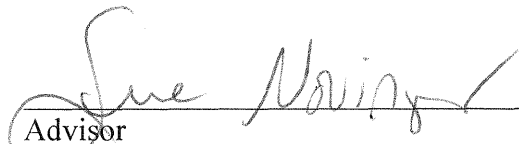
September 2010

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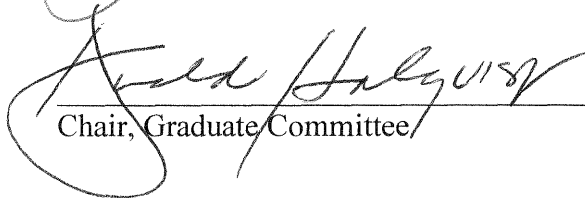
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Stephanie Anne Ferris

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Advisor Date 9-22-10



Chair, Graduate Committee Date 9-22-10

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Abstract

This thesis reviews the impact of a SMART Board on the literacy learning and teaching in a third grade inclusion classroom. The research answered the following questions: How does the use of a Smart Board impact the teaching and learning of literacy in a third grade inclusion classroom? How will my pedagogy need to change to adapt to the integration of the SMART Board technology? How will using interactive technology impact the way my students construct knowledge? How will using interactive technology influence my students' motivation and engagement in learning? The SMART Board brought interactivity, creativity and fun into the classroom and created new social interactions between students while they constructed meaningful understanding of content.

Chapter 1

Introduction

Last June, my principal sat down with me to discuss how my third year of teaching had gone. She commented on my classroom management, preparation of lessons, and my students' success on the third grade New York State ELA test. Then she came to the topic of technology and asked, "How did you integrate technology in your teaching this year?" In my head I was thinking "ummm..." and knew that I couldn't possibly say that my use of the computer lab once a month was anything sufficient to what students in 2009 need. The truth was, I knew how important it was to expose my students to a variety of educational technologies, and I had used computers programs and an ELMO machine periodically through the year, but I just hadn't done enough. Consequently, I ended up making the integration of technology one on my goals for the next school year.

Weeks later, as luck would have it, my principal announced to the faculty that the district had purchased 50 SMART Boards and our school would be receiving one for each grade level. I was fortunate enough to be elected as the third grade teacher on my team to receive a SMART Board. I had never used a SMART Board before, but had heard about all of the amazing opportunities it could bring to a classroom, and couldn't wait to see how it would influence my teaching and the learning of my students.

In my third grade inclusion classroom it can be difficult to motivate my students, especially students with learning disabilities. For this study, I wanted to see

how the use of technology, specifically a Smart Board, would affect my teaching and how it would impact the learning that takes place in my classroom.

In my past three years of teaching third grade and the past two years of teaching with the inclusion of special education students, I have found it hard to reach all of my students and engage them during all parts of the academic day. I understand the importance of reaching all learners, and it has been difficult to do that with the heavy content of third grade and the pressure of state assessments. This school year I was fortunate to have an interactive white board installed in my classroom. Right away, I was looking forward to researching many programs to use with the SMART Board not only to improve my instruction and incorporate technology in my classroom but also to give my students with learning disabilities more opportunities to learn using modalities that work best for them.

The purpose of this study was to examine the use of technology integration in my classroom, specifically the use of a new Smart Board that was installed in my classroom this summer. I wanted to see how this new technology influenced the learning that takes place on the part of my students. I also wanted to see how the integration of more interactive lessons using technology would impact my teaching practices and pedagogy. This research project grew out of my desire to integrate more technology in my classroom since it has been growing in popularity and need as we move further into the 21st century.

The theory for this study was grounded in Piaget's theory of Constructivism. The theory of constructivism is the belief that humans learn and create meaning

through their experiences. New learning is constructed from background knowledge that the learner brings to each experience. The theory of Constructivism is based on the fact that learning is active (Hoover, 1996). The participants in my study actively took part in using the interactive white board and constructed new understandings through the interactions with each other, with me as the teacher and with the technology. I believe that the changes I saw in my teaching and the changes I observed in my students' learning came about because of their experiences in the classroom using the SMART Board.

My research began with the following questions: How does the use of a Smart Board impact the teaching and learning of literacy in a third grade inclusion classroom? How will my pedagogy need to change to adapt to the integration of the SMART Board technology? How will using interactive technology impact the way my students construct knowledge? How will using interactive technology influence my students' motivation and engagement in learning?

This research is important because I studied the impact of using interactive technology in the elementary classroom. Recent studies are showing that more technology needs to be brought into schools (Barone & Wright, 2008). Students are using more and more technological and media devices at home such as computers, iPods, and handheld video games. These "toys" make it fun to play at home. Because not as much technology is used at school, the school day doesn't hold as much excitement and "fun" feel for students. One teacher I've worked with often says that if he could just project himself on a television screen, he could get his

students to pay attention. I believe that if I can show significant changes in students' motivation and engagement in school as well as a deeper understanding of concepts because of the use of interactive technology, there can be more of a push in my school and other schools to purchase technology for classrooms and provide teachers with professional development to use these new technologies.

If these research questions didn't get investigated, I believe our schools would not be going in the right direction of moving our students forward. Technology is our future and if we don't give our students ample opportunities to use new equipment and software to learn, we are not setting them up for success in their future for learning.

For the purpose of this study the following definitions will be used:

1. A SMART Board will be defined as a touch screen interactive whiteboard that uses touching similar to the way a mouse click works on a normal computer. The computer's video output is projected onto the touch sensitive whiteboard screen so that a person's finger or a SMART Board marker can be used as a mouse (SMART Board interactive whiteboards, 2009).
2. Motivation and engagement will be defined as a behavior showing on-task, active learning on the part of the student. A motivated and engaged student will have positive energy toward learning and show and interest and sustained effort in the activity they are working on (Russell, Ainley, Frydenberg, 2005).

This research was completed with a qualitative study approach. This approach was the most appropriate for my study because the majority of the research was done by observing students in their natural classroom environment. Students also answered some written questions but the questions were open-ended and did not ask for any certain response.

Introducing the SMART Board in my classroom was an intervention to see how my students' motivation towards learning and understanding of new concepts can be influenced by new technology. I used the SMART Board as a teaching tool in all content areas including reading, writing, spelling, math, social studies, science and health. The students in my class worked in large groups, small groups and individually with the SMART Board so that they had a variety of experiences to use the interactive technology.

Chapter 2

Literature Review

As I began to research technology use in the classroom, I found that computers, the Internet and interactive whiteboards (some by the name brand of SMART Board) were influential in elementary classrooms. Most notably, I found that integrating technology into today's classroom is an important step to teaching students and preparing them for being citizens in the 21st century (Barone & Wright, 2008). Also widely described in the research I found is the fact that the use of interactive whiteboards in classrooms positively impacts the motivation and engagement of not only the students, but also the teacher (Hodge & Anderson, 2007). Finally, I found that teaching practices and strategies for learning have changed with the advancements interactive whiteboards have made for the elementary classroom (Shenton & Pagett, 2007). A more detailed description of my findings, organized under subheadings, is found below.

Interactive technology continues to impact today's classrooms

In a discussion last year with my colleagues at a professional development session over the summer, we discussed the importance of integrating more technology into today's classrooms. The group of us, who all had a variety of teaching experience, talked about how in this day and age, many of the tried and true methods some teachers (often more veteran teachers) rely on are not working as successfully as they used to. In Barone and Wright's (2008) *Literacy Instruction with Digital and*

Media Technologies, the authors discuss the fact that pencil and paper modes of literacy are perhaps not as effective as they used to be, and instead new ways of teaching literacy are evolving, especially with the arrival of the internet. A few examples of new literacies include using laptop computers to have students blog and instant message ideas about a story (Barone & Wright, 2008), and ERW or electronic reading workshop which includes reading e-books and completing online discussions (Larson, 2008). A more detailed description of these new literacies is given later in this chapter.

One possible reason why technology has not been as commonly used in classrooms today is that teachers don't feel comfortable using new technology (Barone & Wright, 2008). In order for teachers to buy into changing their pedagogy and using new technology, sufficient professional development needs to be offered (Bennett & Lockyer (2007). In Glover and Miller's (2007) study of three schools that integrated interactive whiteboards, the school with the most success was one that supported all teachers with professional development. Similarly, a teacher in Pamela Wheaton Shorr's (2006) article *The New Digital Wave*, one teacher suggests to other newcomers that taking advantage of training sessions the school offers is important.

Another possible reason for teachers to feel hesitant to incorporate new technology in their teaching is that they are suspicious of change. Technology was perhaps not covered enough in their teacher education program and they don't feel there is enough time or energy to put into trying something new (McGee, 2000). Several studies suggest, however, that adding technology into one's curriculum can

be very beneficial for students (Larson, 2008; Shorr, 2006; Bennet & Lockyer, 2008). In Larson's (2008) study, the researcher taught her class of undergraduate education students to integrate technology into their future classrooms. As a result of using interactive technology in their lesson plans, the teacher candidates made teaching more responsive to their students' needs. Interactive technology can personalize lessons so that a variety of individual learning styles are met (Shorr, 2006). One teacher in Shorr's (2006) study found that overly hyperactive students who normally have trouble sitting still could get some energy out by using the interactive whiteboard. Another study (Bennett & Lockyer, 2008) found that students' technology skills grew as a result of using interactive whiteboards. A teacher participant in the study noted that students were talking more about computers and were able to easily explain to each other how to use the new equipment (Bennett & Lockyer, 2008).

One thing we know all teachers believe in is that they want their students to be set up for success. We want our students to become valuable members of the community and of society. The truth is, in order to do that in the 21st century, using technology in the classroom is crucial. In Todd Wright's (2008) words,

What makes today's kids really sit up and fires their neural fibers?
Technology. Kids don't see laptops, MP3 players, cell phones, PDAs,
DVD players and video games as technology, it's just life. Schools
need to connect education to their students' lives with technology. (p.
298)

With today's students, some of whom have a limited attention span and a need to be visually stimulated, technology integration is inevitable (Jewitt, Moss & Cardini, 2007). I strive to do this in my own teaching and encourage my colleagues to hold the same philosophy as well. It is from this belief that I began the exploration into SMART Board technology and found interest in this study.

Interactive whiteboards influence student motivation, engagement and participation in classroom activities

Above all positive changes interactive whiteboards (IWBs) can bring to a classroom, I have found that students' level of engagement, participation and motivation have been the most influenced. In Sue Hodge's (2007) self study of integrating an IWB (interactive whiteboard) in her elementary classroom, she noted that the IWB "commands instant attention and engages the viewer" (Hodge & Anderson, 2007, p. 277). In a similar study, but focused on IWBs in foreign language classrooms, the authors noted that the whiteboard brought excitement to the classroom and a positive attitude from students (Gerard, Green & Widener, 1999).

Another account of students being engaged as a result of the IWB technology is in McClaskey & Welch's (2009) study on how whiteboards engaged students diagnosed with autism. As a result of their study, the students with autism were engaged for up to 45 minutes compared to 15 minutes before the integration of new technology began. The teachers believed that the reason for these outcomes was because they were able to create an active learning environment for their students and

that the interactive whiteboard “trained the students’ attention” (McClaskey & Welch, 2009, p. 31). Similarly, Eaton found that IWBs worked great in engaging kinesthetic learners because students could get up and use manipulatives just by touching the screen and it got the students working on the SMART Board right up in front of the class (Eaton, 2005). Visual learners as well became more motivated and engaged because of their use with an IWB. Students who didn’t understand a math concept written as an equation better understood the concept when it was visually represented on the screen (Jewitt, Moss & Cardini, 2007).

These similar findings indicate that interactive technology, specifically IWBs, can have a significant impact on our students and on their ability create new meaning through their experience with the IWB. I believe we would be doing a disservice to our students if we denied them of these exciting opportunities to be engaged by technology.

Another exciting possibility of an IWB is the fact that it is so interactive and enhances movement and participation in the classroom. In Shenton & Pagett’s (2007) study of introducing IWBs to teach literacy, the teachers found that a key feature of their lesson was the student interaction with the board. They noted in interviews how much the children enjoyed walking up to the board and writing with the pens or using the touch screen (Shenton & Pagett, 2007). Many have seen that the children’s excitement about using the whiteboard boosts conversation among students, and creates more movement around the room as well, as Gerard et al. (1999) found focusing on foreign language classrooms.

Especially with young students, the excitement with the whiteboard lies in the fact that it is a touch screen and can easily be manipulated. Lots of hands on activities are developmentally appropriate for young learners, and the IWB easily lends itself to make such activities (Bennett & Lockyer, 2008). As Hennessy, Deaney, Ruthven & Winterbottom (2007) put it, “there’s something about touching a screen that really excites them” (p. 289). Similarly, Bennett & Lockyer’s (2008) teacher participants found that all students wanted a turn at the board. Students shared new understanding they were making and showed a high level of engagement, asking the teacher to use the board to help explain a concept when it wasn’t currently being used (Bennett & Lockyer, 2008).

As teachers, we work hard every day to motivate our students. We try new strategies, apply new methods and sometimes even put on a 3-ring-circus to keep our students motivated. Several studies argue that technology is the number one motivator for students. One such study documented that the teachers were able to engage less able students and keep their students’ attention span for longer (Kennewell & Beauchamp, 2007). McGee (2000) found in her study of motivation that when technology was incorporated, students were more willing to revise and modify their work more than they would if the traditional pen and paper method was used. I find that encouraging students to edit their own written work is very difficult, and would be encouraged to try any strategy that would motivate them to be better with that skill. Even if motivating a quiet or shy student is the goal, features on the

IWB like the hide-and-reveal or drag-and-drop can give the teacher a reason to get a student out of his or her seat and up to the board (Jewitt, Moss & Cardini, 2007).

Another encouraging observation of one study (Bennett & Lockyer, 2008) found that the talk between peers in the classroom became positive and helpful. One teacher participant noted that the students who were waiting for their turn on the IWB gave supportive feedback to their classmates as they worked on a task. In Eaton's (2005) study of integrating technology into a third grade classroom, the author describes how students were asking to stay inside from their outdoor recess time so they could work with the interactive technology program their school had in place. If only every classroom in America could have the materials to motivate all learners to have this attitude!

It's obvious that several studies (Jewitt, Moss & Cardini, 2007; Bennett & Lockyer, 2008; Larson, 2009) discuss that interactive technology positively impacts the motivation and engagement of students, but what about the teachers? One particular study (Glover & Miller, 2007) noted that in one school, student motivation and achievement increased because of the integration of technology, and staff morale was enhanced because of the positive improvements of the school's students. As a teacher surrounded by teacher colleagues, I know how hard it can be to be introduced to new things and to accept them happily, but in this case the teachers were pleased with how the technology impacted their students. Because of this, I wondered how it would impact their teaching.

Interactive technology has an influence on teaching practices and traditional pedagogy

Since I will involve myself as a participant in my study, I am interested in finding out how the whiteboard will influence my teaching practices and pedagogy. I want to be able to use the IBW as more than just a “glorified chalkboard” (Shorr, 2006, p. 25) and actually use the variety of interactive techniques it can add to an activity (Shorr, 2006). One program that proves to be easy to use and interactive is SMART Notebook. It comes with the name brand SMART Board IWB and offers a variety of interactive tools. In Bennett & Lockyer’s (2008) study, SMART Notebook was the program most often used, beating out Microsoft Word and Excel. The teachers involved in Bennett and Lockyer’s study reported that SMART Notebook made transitions between lessons easy as well as the ability to save work and return to it the next day (Bennett & Lockyer, 2008).

In Shenton & Pagett’s (2007) study, one teacher found the IWB gave her more flexibility in teaching, and she enjoyed the fact that she could work on something, save it and come back to it. In Gillen’s (2007) study, the teachers found that they could take a digital photograph of the computer screen at the end of one lesson, and show it to the class the next day so the students could draw on past-shared experiences.

In another study using technology (McGee, 2000), the teacher felt that her new technology made her a better teacher, lesson planner and problem solver. This feeling was apparent in other studies as well (Jewitt, Moss & Cardini, 2007; Bennett

& Lockyer, 2008). In one such study (Jewitt, Moss & Cardini, 2007), the authors explained what they believed to be the three most important aspects of any good IWB lesson. Those three aspects are multimodality (students using a variety of resources to learn), interactivity (engaging the whole class in participation) and pace (increasing the efficiency of classroom delivery). The authors noted that by paying attention to these three aspects of one's pedagogy during planning, the lesson would flow smoothly. Most importantly, the time each teacher spends with her students will be used more effectively and efficiently (Jewitt, Moss & Cardini, 2007).

In McClaskey & Welch's (2009) study using whiteboards with students who have autism, the teachers involved saw extraordinary results not only in their students, but also in the way they themselves were teaching. The teachers' expectations of the children with disabilities increased dramatically. The researchers also discovered that as a result of their time with the IWB, the teachers were much more willing and excited to use more and more technology in their lessons (McClaskey & Welch, 2009). Bennett and Lockyer (2008) note that there doesn't need to be a huge change in a teacher's current pedagogy. Some teachers found that it took little time to integrate an interactive whiteboard into their already planned lessons. None of the teachers in the study resisted change either, however, so they were willing to do what was needed to make their experience with the IWB worthwhile (Bennett & Lockyer, 2008).

Sue Hodge (2007) found in her self-study that she too became a better teacher. As Hodge says, "I was able to be prepared in a fraction of the time, with better visual

resources from a variety of places. I was more thoughtful when constructing lessons and concept progressions” (Hodge & Anderson, 2007, p.279). She also found that the IWB supported different lesson structures, including large group, small group and even one-on-one conferencing with students (Hodge & Anderson, 2007).

Another change the interactive whiteboard made for teachers in several of these studies was that it made them more creative planners. In Shenton & Pagett’s (2007) study, one teacher the researchers worked with noted that the IWB made her teaching more experimental. The IWB has the ability to bring images to the class that no other technology would. Of course, in order to update a lesson with a creative image of activity, actual planning needs to take place. A number of studies (Shorr, 2006; Jewitt, Moss & Cardini, 2007) I found suggested that planning ahead with an IWB will allow one to use it most effectively. Shorr (2006) notes that gathering materials before the lesson begins is better than fiddling with it during the lesson so that “your time on the whiteboard will be about learning, and not wasted on the mechanics of the technology” (Shorr, 2006, p. 26). In a similar study (Jewitt, Moss & Cardini, 2007), preplanning by teachers sped up the lesson and was a better use of teaching time. Learning about the IWB’s features and planning my use of the interactive technology ahead of time was an important factor for me to consider as I began using one in my classroom.

Interactive technology is impacting literacy learning

The focal point of my research was to find out how the IWB could influence literacy learning. As an elementary school teacher and literacy graduate student, I

have a profound interest in teaching literacy and finding the latest and greatest ways for students to learn how to read and write. One article that discussed the introduction of “new literacies” and their importance in today’s schools was Barone & Wright’s (2008) work with digital and media technologies and literacy instruction. Although this classroom was not equipped with an IWB, they did have laptops for every student in the class. It was fascinating to read about the possibilities that could come from having this type of technology in a classroom. One example the authors share is an online graphic organizer students filled out to practice the week’s comprehension strategy of sequencing. Students then discussed their findings with a partner using the Think-Pair-Share strategy, but instead of talking to their partner, they used instant messaging (Barone & Wright, 2008). This strategy could improve students’ writing fluency and spelling skills. Later, the class used an online Venn diagram to share information about a book they read, then joined online blogs about their particular book and discussed what they had learned with other classmates. In an example of an online Book Blog showing comments by two students, it is evident that the students were using specific examples from the book and using inferences to make conclusions about the story they had read (Barone & Wright, 2008). Using an online blog to discuss a book is a fun way for students to share their reading comprehension for a book they read with the rest of the class.

Another researcher who took on the subject of new literacies is Lotta C. Larson. She authored two studies including *Electronic Reading Workshop: Beyond Books With New Literacies and Instructional Technologies* (2008) and *Reader*

Response Meets New Literacies: Empowering Readers in Online Learning

Communities (2009). Both of her studies explain the need for today's classrooms to move from the Industrial Age to the Digital Age. Larson notes that using new digital literacies including electronic books, Internet-based reading and writing and online communication experiences can give a teacher a head start on moving her students to the Digital Age (Larson, 2008).

In the participating classroom, Larson set up a new aspect of the classroom teacher's already existing reading workshop. Larson called it ERW (electronic reading workshop). ERW gave students the opportunity to read books online (e-books), blog about literature responses, have online discussions with classmates and create technology based projects that supported reading they had done (Larson, 2008). In a similar study (Larson, 2009) conducted by Larson where students participated in online discussions, the author found that students responded deeply to literature, perhaps more deeply than if they had written it in a response journal. One possible explanation for this may be that when participating in a discussion through typed language, the writer can think more inquisitively about his or her idea or response before sharing it, something a student may not do when talking in person (Larson, 2008).

Although some of these strategies may seem "new-fangled" and an unfamiliar teacher may make the argument that this would be moving away from student face to face interaction, it is a way of communicating that is fun and familiar to students living in today's society. Using computers and instant messaging is natural to

children and is seen to them as something they do for fun at home. Larson (2008) would argue that these digital literacy strategies actual strengthen students' communication skills and build a sense of community. The authors (Barone & Wright, 2008) of this article suggest that if we can bring more of these "new literacies" into schools, we can not only motivate kids, but perhaps improve their literacy abilities as well.

SMART Boards can support new literacy learning in a similar way. Shenton & Pagett (2007) found that the IWB gave teachers the ability to modify, save and revisit texts they use with their students. This strategy could help students build an understanding for reading comprehension or editing writing, for example, since the teacher can use the SMART Board to return to these topics over a number of days. With the use of the Internet at their fingertips, the teachers were also able to have access to a wider variety of texts including big books, pictures and moving images that supported their literacy lessons. This could improve literacy learning because students have an opportunity to be exposed to a larger variety of texts and images that can build their reading skills and comprehension.

In Martin's (2007) study using IWBs to teach children how to write, the teacher researcher discusses how she used interactive Big Books during her writing block. The Big Books eliminated her need for print copies of the book and allowed the text and illustrations to be manipulated using highlighter pens and thought bubbles (Martin, 2007). These teaching tools can build reading comprehension and concepts about print for young readers.

Similarly, Gerard et al. (1999) found that SMART Boards gave teachers a chance to correct a paper in front of the whole class on a big screen. Students were able to see a piece of writing on the large screen and it built their foreign language reading and writing skills. This feature would be helpful in my classroom while teaching writing. Many times students need assistance in a similar area and having a large screen where I could demonstrate a writing conference to the whole class would be very helpful.

The research I have found about the integration of technology, specifically SMART Boards, proves that technology is needed in today's elementary classrooms. I am fortunate enough to have a SMART Board in my classroom and been amazed to see how interactive technology has impacted my planning and teaching, the learning of my students, and their involvement and motivation to learn.

Chapter 3

Methods

In order to discover the impact that a new SMART Board would have in my third grade inclusion classroom, I began a 7-week teacher action research study of my teaching and of my students' learning. As I collected and analyzed data, I tried to answer the following questions: How does the use of a SMART Board impact the teaching and learning of literacy in my third grade inclusion classroom? How will my pedagogy need to change to adapt to integration of SMART Board technology? How will using interactive technology impact the way students construct knowledge? How will using technology influence my students' motivation and engagement in learning? To complete this study, I used the qualitative research method of teacher action research. I collected data using observations, reflections, journaling, photography and student work samples.

Participants

This study was completed in a suburban community in Western New York. The elementary school where this study took place houses about 440 students from grades K-5 and is one of four elementary schools in the district. The elementary school where the study took place has 20 classrooms with an average of 21 students per classroom. The ethnic make-up of the school is 92% Caucasian students, 6% Black, 1% Asian and 1% Hispanic students. About 28% of students are eligible for

free or reduced lunch and there is a 98% attendance rate (New York State Report Cards, 2008-2009).

The participants of this study included children and myself as the teacher researcher. The children who were asked to participate are 21 third grade students between the ages of seven and nine. Twelve girls and nine boys were included in the study. Eighteen students involved in the study are Caucasian one student is of Asian descent, one Black student and one of mixed-race. Three students in the classroom have IEPs (Individualized Education Program) for learning disabilities. One of the three students with an IEP is self-contained to the 15-1-1 special education classroom for ELA, and mainstreamed into my classroom for all content areas. The other two students are mainstreamed into the inclusion classroom all day with the support of a consultant teacher for various subjects. Five students receive AIS (Academic Intervention Services) support for ELA and six students receive AIS support for math. Two students receive speech services twice a week.

I was included in the study as a participant observer. I am the teacher and researcher of this study. I took notes throughout the duration of the study while my students worked. Another part of my role as teacher researcher involved collecting data including photographs and student work samples. I also asked my students to complete journal entries about their experience with the SMART Board.

All participants in my study were asked to participate using a signed consent form (Appendix B). Student participants needed to get signed consent by a parent or guardian. Students also needed to give signed assent after listening to me explain to

them the conditions of participating in this study (Appendix C). A classroom aide served as an eyewitness during the assent process and signed each assent form after students agreed to participate. All participants returned consent forms signed by their parents and agreed to participate themselves by giving me signed assent. Since there were no participants who did not give consent and assent, there was no need to exclude anyone in my classroom from the study.

A focus group of five students was chosen to be highlighted in this study. These students were not aware that they were focus participants. The focus group students were chosen because of their individual learning styles, ability level, motivation toward school, engagement in learning and availability during the ELA block of our day. My focus group included Jimmy, a motivated student who loves to read, Emily, an above grade-level reader who has lots of technology skills, Carly, a helpful friend to her peers who shows inconsistent reading comprehension skills, Jamie, a student receiving AIS support who is not intrinsically motivated in school and Mitchell, a smart student who has difficulty staying engaged on independent tasks.

Participant confidentiality was ensured. No real participant names were written on any documents. Instead, pseudonyms were used. All data including written notes, student work samples, student journals and photographs were kept in a locked filing cabinet when they were not being used for data analysis. All materials for this study were kept in a locked filing cabinet until this study was complete, at which time all documents were shredded or deleted.

Classroom

The study took place in my third grade classroom. The dimensions of the classroom are about 30 ft. by 30 ft. A classroom map is included, as Appendix SS, to better understand the set up of the room. One wall is a stretch of windows. Every other wall has white boards, bulletin boards and chalkboards. Also located in the classroom is a large carpet with an easel where students sat on the floor for small group work and large group discussions. Student desks are arranged in three large groups. One wall adjacent to the windows is where three desktop computers are located as well as the SMART Board. In front of the SMART Board is a carpet area where students sat in small groups while the teacher worked at the board or where students stood as pairs as they worked together at a center.

The district where the study took place decided to purchase 50 SMART Boards for the 4 elementary schools, middle school and high school. In the summer of 2009, the elementary school received six SMART Boards, one going to each grade K-5. In a meeting with my third grade team and my principal in the spring of 2009, it was decided that the third grade SMART Board would be installed in my classroom. In order to allow many students the opportunity to benefit from this new technology, the other third grade teachers and their classes used my classroom and the SMART Board from time to time when my class was out of the room.

Materials

During the duration of my teacher action research study, I based my pedagogy on the district curriculum maps for all subject areas. Some of my literacy instruction

was based on the district's reading program, Rigby Literacy. Writing lessons were based along the 6+1 Traits of Writing. District and state standards were followed and incorporated with the new technology to complete this study. The SMART Board was the primary technology material used in this study, as well as the classroom computers. The application software primarily used on the SMART Board was Smart Notebook, a program that came with the SMART Board.

In order to collect data, I used a variety of instruments, including teacher journals, student journals, photographs and student work. A detailed description of these instruments as well as how they were used is described in the next section.

As I collected data of students interacting with the SMART Board, the participants used this new technology in a variety of ways. One of the ways the SMART Board was used was in large group lessons, discussions and activities. Using the program SMART Notebook, I used the SMART Board to keep ongoing notes in several subject areas, like notes about the book we are reading as a class, and notes about the subject we are learning about in social studies. As a large group, I used the SMART Board to model making a graphic organizer and for editing a piece of writing.

The SMART Board also supported small group lessons. The focus of my research was done during our ELA block, since I was most interested in how the SMART Board would impact literacy learning. Therefore, I ended up creating several SMART Board "centers," 20-minute mini-lessons for students to complete as

a pair or individually. The SMART Board was also used in the content areas to create review centers for math, social studies and science.

Another way the SMART Board was used is individually by a student. Some students found the SMART Board useful to practice cursive handwriting, or just to play on during recess.

The software used on the SMART Board during this study included SMART Notebook, Microsoft Word, Microsoft PowerPoint, and Mozilla Firefox for Internet searching.

Data Collection

This study lasted approximately seven weeks, from the end of January until the middle of March. Collecting data over multiple weeks of the school year was important in order to gain enough information to fully understand how the SMART Board technology impacted the learning and teaching in the classroom.

Data were collected primarily by me, the teacher researcher, in a written journal. This journal includes specific accounts of what was happening in the classroom and my recorded reflections of the activity. This included descriptions of the space being used, the objects and materials used by the participants, the activity or event happening, the goals of the lesson and details about the participants. At times I added specific dialogue that students said. I also added my opinions about the students, feelings about how the lesson went and connections or questions between my observations and my research questions.

Journaling happened several times a week for about 30 minutes to an hour of the day. Usually, I started my notes for the day by observing the students working at the SMART Board during centers, and then added to the notes later when I had more time. Because I was the primary teacher in this classroom as well as the researcher, I found small times during the day, like silent reading and writer's workshop, to have brief, intense periods of note taking. Journaling helped me answer all of my research questions.

Another way I collected data was using student journals. Every other week during the study, I created a journal response that students answered. The journals included open-ended questions that could pose a variety of responses. In the first journal, students were asked to finish the sentence "The SMART Board is..."(Appendix D). This response received a variety of responses, including definitions ("The SMART Board is a big computer and you don't have to use a mouse..." Appendix E), and enthusiastic sentence endings ("The SMART Board is really fun..." Appendix I). In the second journal, students were asked to give me one piece of advice concerning the SMART Board and asked if they thought the SMART Board in the classroom was a good or bad change to center time (Appendix J). In the third journal, students were asked to use details to describe their favorite activity on the SMART Board (Appendix S).

After each journal entry, I collected the notebooks to read over them and compare them to my observations. Student journaling was helpful to this study because it gave me a chance to compare the observations I made of the students

interacting with the SMART Board with their own interpretations and opinions about their experience. Comparing the teacher journal and student journals together made my data more credible. Student journals helped me answer two research questions, including, how my students are constructing knowledge and how motivation and engagement may be impacted as a result of the SMART Board.

Photography was also used in this study as a way of data collection. Taking pictures of my students not only allowed me to capture more of what my classroom set up and location of the SMART Board looks like, but I also to show expressions on my students' faces and how they physically interacted with the SMART Board.

Photography was an important piece of data to collect because it continued to help me triangulate the data I found in other sources, especially my journal and the student journals. As I took notes on how students interacted with the SMART Board, discussing how they worked well together taking turns touching the board, for example, photographs showing this interaction helped support what I describe in the notes. As students were using a new interactive feature of the SMART Board, and wrote about it in one of their journal responses, a photograph of that activity happening helped their comment come alive. Photography as a data collection strategy helped me answer my question about how my pedagogy will need to change, how students are constructing knowledge in new ways, and how the SMART Board is impacting motivation and engagement.

I also collected several pieces of student work as well as examples of the lessons I created. Any lesson or activity that involved the SMART Board and has

documented student work involved, I collected. This included mostly Smart Notebook files, but also a few documents created using Microsoft Power Point. All of these computerized documents were printed as a hard copy. While most of the documents I printed are hard copy, I also saved several electronic copies of websites, games and interactive lessons that were used on the SMART Board. Having these documents are important to my study so I can show examples of what content was covered using the SMART Board over the seven week period and so I can give credit to the progress my students made and understandings they created. Student work samples helped me answer how my pedagogy needs to change, how motivation and engagement may be impacted and how my students are constructing new understandings. Student work was important to collect so that my data is triangulated and credible as a teacher action research study.

Limitations

There are a few factors that affected this research study. First of all, student absenteeism impacted who was observed on each day. This factor only minimally impacted the study. Also, because data were collected during the ELA block, the one student in my class who is in the self-contained classroom for ELA was not in the room for most of the data collection. Similarly, four other students who leave for AIS in reading and writing were out of the room for an hour of the ELA block, and consequently did not have a lot of data collected on them.

Data Analysis

In order to analyze my data, I began by setting out time weekly to review all of the information I had collected thus far. Once I had a few observation journal entries, reflections, student journals, photographs and student work samples collected, I set out all the data in front of me on a table and began looking for patterns. To start the themes I was looking for, I used my four research questions: How does the use of a SMART Board impact the teaching and learning of literacy in my third grade inclusion classroom? How will my pedagogy need to change to adapt to integration of SMART Board technology? How will using interactive technology impact the way students construct knowledge? How will using technology influence my students' motivation and engagement in learning? These four questions were used to create a coding system. The first question was coded as letter A, and I used the letter T if the data impacted teaching and L if it impacted learning. The second was coded as letter B, third question as letter C and fourth question as letter D.

Each time I sat down to analyze the data, I started by looking through each type of data individually. I began by looking through the weeks of notes made in my journal and coded for each question accordingly, reading through my notes and writing a question code next to the notes if it seemed to help answer the question. Often, the coding overlapped each other, as much of my note taking seemed to help answer several questions. As I moved onto the other instruments, like student journals and student work samples, I used post-it notes to add the coding letters. Once each type of data was reviewed for the research question themes, I started to look at each theme individually, zooming in on how the four different types of data

were helping me answer each question. This continued on a weekly basis throughout the seven-week study.

Throughout the study I also paid attention to how well each question was being answered. I was interested to see if I was collecting enough data to answer each question equally. As I created each journal entry for students, I thought about what else I wanted to find out from them regarding their feelings about the SMART Board. When I thought I hadn't collected enough data for question 4, about how motivation and engagement was being impacted, I created the third journal response where students were asked what their favorite activity was on the SMART Board.

A few weeks into the study, I realized that my first question was too similar to the other questions. The first question, how will the SMART Board impact the teaching and learning in my classroom, was really the first question I created when I thought up my study. Then I created three more focused questions off of the first one. When I began writing up my findings, I decided that since my first question was too similar to the other questions and the data would be repeated, I used only the more focused questions to organize my findings.

Another way I analyzed data began after my study was complete. I went through the journaling I had done and wrote down each way the SMART Board was used. Doing this helped me to gain better understanding of how often I used the SMART Board for full group, small group and individual instructional purposes. I did the same for which students were being observed using the SMART Board, both with my journal and the photographs.

When it came to student journals, I first took out the entries of my focus students, since I knew I would be using their responses. Then I read through the rest of the responses making two piles; one pile I thought I might be able to use, and one pile that would not be used. I made this determination by comparing each response to my research questions, and asking myself if the response would help me answer any of the questions, either in a positive or negative way. I continued coming back to the “don’t use” pile as I wrote up my findings, but most of those responses were discarded because the response did not help me answer any questions.

As I reviewed the photographs I had taken, I noticed that they were helping me answer all three-focus questions. Although I kept my photographs as electronic files until they needed to be printed, I created an inventory of the photographs to easily organize them. They were written down by date and then I briefly noted the activity used, students in the photograph and used the question coding system as well.

As my findings chapter came together, I continued to review all of data collected from each instrument. I wanted to make sure that as I made each point, it would be proven with the strongest pieces of data and most vivid descriptions possible.

Chapter 4

Findings

The purpose of this study was to discover the impact interactive technology, specifically a SMART Board, would have on a third grade inclusion classroom. The plans for this study began when my district purchased several SMART Boards and one was installed in my third grade classroom. I fought to have this interactive technology added to my classroom as opposed to the other third grade classrooms for several reasons. One reason being that I already had a strong interest in technology integration and I was determined to find new ways to use it in my teaching. Another reason was I knew I would be teaching the inclusion classroom for the second year in a row, and I had heard that the SMART Board could help motivate, engage and connect with visual and kinesthetic learners. I knew that many students in my class in the fall would have special learning needs, so the thought of bringing in a new piece of technology that could work to their advantage was very intriguing to me.

The study took place in my classroom over a span of seven weeks. Once the SMART Board was introduced, it easily became the focal point of the classroom. It has a dominating presence. Not only because of its size and technological design that at first glance may make it seem as though it belongs in a dentist's office rather than a classroom, but also because it's a piece of equipment that commands one's attention.

The school where this study took place is in a suburban community. All 21 students in the classroom were involved in the study as participants. Five students

were chosen to act as a focus group for the study. The focus group included Jimmy, Emily, Carly, Jamie and Mitchell. To keep my students' privacy all names included in this research are pseudonyms. At no time will my students' real names be used. I participated in the study as teacher researcher.

The focus group students are five students in my classroom who showcase a variety of learning styles, motivation towards school and academic achievement. Jimmy is a White nine-year-old boy who enjoys school. He loves to read and participates frequently throughout the school day. His mother is a 2nd grade teacher in a neighboring district and she also received a SMART Board in her classroom this school year. He showed a high level of interest in the SMART Board and often compared what we did in school to stories his mother told about her SMART Board. Jimmy does well academically and loves to be challenged in reading and math. He is generally an intrinsically motivated student.

Emily is a White nine-year-old girl. She is widely considered a "tom boy" by her family and classmates and succeeds both on the sports field and in the classroom. Emily is a smart child who shows a high level of involvement in her schoolwork. She is looked up to by her peers and always participates in classroom activities and discussions. Emily showed an early interest in the SMART Board and has a good background of technology skills that made the transition to use it easy for her.

Carly is a White nine-year-old girl who enjoys school and has a very supportive family. She has a positive attitude towards learning but shows inconsistency in her understanding and struggles academically. Carly lacks

confidence in her work even though she often has good ideas. She works better in a small group with a teacher and is a visual learner. Carly showed an interest in the SMART Board early on but did not take the initiative to participate in all SMART Board activities.

Jamie is a White nine-year-old girl. An interest in school is not a priority for her and she does not put her full potential into her schoolwork. Jamie is very creative and is a good reader but seems to have no intrinsic motivation to complete anything school related on her own. It is difficult to motivate her in activities that involve work. Her participation level varies depending on the task and content area. She was very interested in the SMART Board when it first arrived and continued with that interest throughout the study.

Mitchell is a White nine-year-old boy. He frequently participates in lessons and does well academically. Mitchell enjoys the social aspect of school, and is easily distracted while working independently on a task by talking with friends or walking around the room. Mitchell's interest in the SMART Board was apparent from the beginning of the study, as he made sure to be a part of each activity involving the new technology.

In order to collect data and provide triangulation, I used four main instruments. The main data collection instrument used was the journal I kept that recorded student interaction with the SMART Board. I also took photographs of students during lessons involving the SMART Board. Another instrument used was student journal responses. This instrument helped gain information about student

views of the SMART Board. Finally, I collected teacher created files and student work that was done on the SMART Board, mostly done with the program Smart Notebook, which was the program I most often used during the study to create lessons for the SMART Board.

When I created my study questions I began with one umbrella question that encompassed the idea of my study: How does the use of the SMART Board impact the teaching and learning of literacy in a third grade inclusion classroom? I then developed three other questions that focused my research: How will my pedagogy need to change to adapt to the integration of the SMART Board technology? How will using interactive technology impact the way my students construct knowledge? How will using interactive technology influence my students' motivation and engagement in learning? Some of the questions are based on how I as the teacher was impacted and some of the questions were used to find out how students were impacted. Since my umbrella question brought together the focus questions, I have organized my findings using the focus questions as headings, then by participant. Each of the instruments will be discussed in thick descriptions for each participant.

How will my pedagogy need to change to adapt to the integration of the SMART Board technology?

Myself as Teacher Researcher

It was late January when my study began. I had already spent a few months getting to know the ins and outs of the SMART Board and getting used to its presence in my classroom. Before beginning the study, I had used the SMART Board in many ways as a glorified chalkboard. I used the colored “pens” (really pieces of plastic that are used to write on the whiteboard in color) to take ongoing notes or to draw a picture to represent a mathematical equation. It was exciting the first time I thought to pull up a map on Google.com on the SMART Board and draw on it using the pens to show the seven continents. My students thought it was amazing the first time I used some of the interactive features Smart Notebook offered. Prior to the beginning of the study, any of these uses of the SMART Board were fairly good, but they were just examples of me getting used to the new technology. I wanted to wait until later in the year to begin the actual study so that I could give my students a taste of what the SMART Board could really offer.

Looking back to the first week of my study, I wondered if the original excitement that the new equipment brought to our classroom in the beginning of the year would be shown through the data I collected. The answer? Absolutely. Every time something new was introduced on the SMART Board, be it a simple highlighting feature or a shape that fades away with the touch of a finger, the students thought it was the coolest thing they had ever seen. To be honest, the excitement level stayed high for me as well. It was fun as the teacher to find a new feature in the Smart Notebook program and embed it in a lesson, just waiting for the students’ reaction.

One of the first significant pedagogical changes that became necessary was to update the set-up of the classroom. From September through January, the focus of the classroom was on the carpeted area in front of a regular dry-erase whiteboard. That area was used for a number of activities including large and small group discussions, read aloud and small group work at an easel. At the time, the SMART Board was on an adjacent wall with a small carpet in front of it, but with a group of desks not far away, the set up of the classroom did not show that it was the focal point (Appendix SS). Once the SMART Board began being used for more lessons, I decided to make it the focal point of the room. On January 26th, I noted in my journal the need more feng shui. “A change of desks is absolutely needed. The SMART Board is not in a location that allows enough movement by teachers and students” (1/26/10). I also drew a quick sketch in that same entry of what turned out to be the new layout. A picture I took of the SMART Board after the change shows the large working area that was created (Appendix KK). The quick fix proved itself to be worthwhile. Now, anytime the SMART Board was used, students had a clear view of the screen and enough working space to move around.

Another significant pedagogical change I noticed as I began to integrate more interactive technology was the need for professional development. If I was to explore Smart Notebook by myself, I could have spent hours upon hours figuring out the simplest of tasks. Instead, I looked up professional development sessions my district was offering on interactive whiteboards. Lucky for me, I was able to enroll in two sessions that fit my exact needs. Over the course of several weeks and ten hours of

training, I quickly gained a wide variety of skills, techniques and lesson ideas to add to my “toolbox.” Appendix Y shows the Smart Notebook file I created at my first training session.

The professional development sessions taught me how to make my lessons, specifically those related to literacy, more interactive. In one lesson toward the beginning of my study, I was so proud of the fact that I had updated a rather tedious district writing task and found a great way to model the assignment. In this particular lesson in which students listen to a story and write a similar narrative piece of their own, I need to model for them how to fill out the graphic organizer. With the addition of the SMART Board, I pre-typed in the sentences into Smart Notebook so they could be clicked and dragged into the appropriate section of the organizer. The lesson was the first time I had pre-planned to use the SMART Board and doing so proved to be worthwhile. In a note to myself after the lesson, I wrote, “Next time, have students participate interactively by coming up to help move sentences around (1/26/10).” As my understanding and comfort with the SMART Board grew, I was able to make lessons more interactive.

Later that week I put to use another new feature I had learned from a professional development session. The activity was an ELA (English Language Arts) center activity to be completed by a pair of students during our two hour ELA block (Appendix Z). The lesson was differentiated by ability. Some students used the highlighting feature to find adjectives in a paragraph I created and some students found nouns and verbs. Once they had highlighted the adjectives, nouns and verbs,

the next slide asked students to sort nouns/verbs and adjectives/not adjectives in a new interactive activity I had just learned about from a colleague called the vortex. The vortex is an application in the Smart Notebook program that is used to sort words or pictures. I was looking forward to introducing the vortex sort to my class because I knew they would think it was as neat as I did (Appendix LL). Jimmy noted in one of his journal responses that the vortex was a center activity he enjoyed. When asked what his favorite activity on the SMART Board was, he replied “I like to use the SMART Board at centers. I like vortex on the SMART Board” (Appendix T). Overall the planning for this lesson was easy and only took a few minutes to put together. It was also very easy to create two differentiated lessons that were similar but with slightly different grammar material.

In early February, about three weeks into my study, I was still searching for more interactivity. I noted in my journal, “I feel like centers have hit a road block. How can I make them more interactive? (2/11/10).” A few weeks later, my lessons had become more interactive and offered a wider variety of features from the Smart Notebook program embedded into the lessons. One lesson that I created to teach alliteration showcased just that. Within one 10-15 minute center activity created for a pair of students to work together at the board, I showed that I had learned a lot from the trainings and from playing around with Smart Notebook on my own time. The lesson included features such as using the pens to write sentences and fill in a chart, a vortex sort, drag and reveal and fade away (Appendix AA). Each different technique made the lesson more unique and got the students excited about learning a new topic.

At first touch with the fade away feature one student smiled and said “whoa!”

(2/23/10)

Another way the interactivity of the SMART Board benefited my instruction was when it came to teaching spelling. Spelling has previously been taught mostly through homework practice, repetition and memorization, but there always came certain spelling lists that were especially difficult for the whole class. One such list was the singular and plural nouns list (Appendix BB). Using the program Smart Notebook, I was able to quickly and easily create a SMART Board ELA center that asked students to practice the endings on plural nouns (2/10/10). With the use of the SMART Board, the students at the center were able to see the words big on the screen and practice figuring out the endings for each word. This change in spelling practice was fun for the children since they were used to completing the homework packet as their main spelling related activity.

As the weeks went on, I noticed how the SMART Board continued to impact my literacy instruction. One unexpected way in which the technology impacted my pedagogy was by bringing literacy and the content areas together. Since I was creating new SMART Board centers, I decided that I could bring in bits and pieces of content related information. I noted about the idea first in my notes on February 10th (2/10/10), and again on March 18th (3/18/10). One example of a lesson that brought literacy and the content areas together was the paragraph-editing center. Paragraph-editing is a skill third graders practice for the New York State ELA exam, and I found that creating paragraphs using social studies and science content would bring two

subjects together (Appendix CC). While correcting errors I purposely made in the paragraphs using the highlighting pens and erasing features, my students were reading information about space and communities over and over again. I continued to bring content areas and literacy together throughout the school year using the SMART Board.

Integration of this new interactive technology also had its downsides. In an unexpected change to my pedagogy, the SMART Board called for different modes of classroom management. I quickly found out that during centers, when a SMART Board center was being used, the rest of the class (students not at the SMART Board center) became distracted because they were watching the students at the SMART Board. I noted this issue on February 5th:

“[A] downfall to using [the SMART Board] in full group center time [is that] everyone else in the room can see what is happening either on the computer or on the huge [SMART Board] screen. I ask students to keep their eyes on their own work and that the point is to challenge themselves when they come to that center. Although I can’t be watching at all times, they generally seem to be obeying that request. (2/5/10)”

A month later, I noted in my journal that the situation with SMART Boards during centers had become calmer now that the routine had been set in place.

“Students are still excited to get their name called, and some are still continuously

asking if they can go next, but the general population of students are getting used to the routine and can focus on other work when they are not at the SMART Board (3/2/10).”

In another instance involving classroom management, certain students using the board made very loud noises when their finger touched and dragged on the board. Although this seems a minute detail, it became distracting to other students and gave the kids a reason to laugh at their classmates. I found a solution, though! If students used their fingernail to drag items, it would work efficiently and quietly.

Some lessons required more than expected classroom management because the activities I planned for my students ended up to be more difficult for them than I had anticipated, and the lesson required my assistance. In one particular lesson involving paragraph editing, students needed to switch to a split screen in order to check to see if they had edited the paragraph correctly (Appendix DD). On February 5th I noted “although they are able to check their answers themselves, the order of operations to do all of that is a new skill and needs teaching (2/5/10). As students gained more technology skills, my need for stepping in to help with directions happened less frequently.

Overall, the SMART Board impacted my pedagogy in a number of positive ways. It made me a better teacher by creating interactive lessons that met the various learning needs of many of my students. I also found out that taking professional development training sessions gave me the chance to really improve my skills with the Smart Notebook program. The skills and techniques I learned from the training

sessions also taught me that by planning ahead of time, I can really maximize teacher time with the SMART Board. Even though I still often used the SMART Board unplanned at the last minute, my best lessons were done when I had taken the time to create them before hand.

How will using interactive technology impact the way my students construct knowledge?

In order to integrate the SMART Board into my literacy instruction, I created two weekly centers for students to participate in as pairs or individuals. The majority of these SMART Board centers were mini-lessons based on different grammar rules. Most of the data I have collected (teacher notes, pictures and student work samples) came from the students working in these centers. Another instrument, the student journal responses, did not necessarily ask students to limit their answers to literacy related activities, so some of them have mentioned the content areas in their responses.

Jimmy

As I mentioned earlier, Jimmy was very excited about the SMART Board from the first day we started using it. During the study, he showed that using the SMART Board helped him learn how to identify and use proper grammar, alliteration and synonyms.

In late February, Jimmy and his partner Kelly were working together on a SMART Board center with the focus of alliteration (Appendix AA). After learning about alliteration and practicing writing their own alliteration sentences, the pair needed to complete a vortex sort of alliteration phrases and non-alliteration phrases. At one point, Jimmy comes up to the phrase, “excellent eggs” (2/23/10). He is unsure of which category to sort the phrase until Kelly encouragingly says “Think Jimmy!” Jimmy then chooses the alliteration category. On Jimmy’s next turn, he gets the phrase “exciting party” (2/23/10) and drags it into the alliteration side. It immediately twists back at him on the screen (instead of gradually disappearing into the circle). I noted his next reaction: “‘Ugh!’ he sighs as his hands go flying to his head. ‘See, because it’s the same two letters’ says Kelly. ‘Oh!’ says Jimmy” (2/23/10).

After a few more turns, Jimmy gets the hang of it and at one point says “this one’s right,” (2/23/10) as he finds a phrase and sorts it correctly. This incident shows the process by which Jimmy learned how to identify phrases with alliteration. In the beginning, it seems as though he confuses alliteration with simply using adjectives. With some encouragement and help from his partner, he is able to do it on his own. The fact that students can try out an answer and quickly have it checked for them is a great piece to the SMART Board’s interactivity (and more specifically the vortex sort application). This vignette also shows the power of students working together to help each other learn a new concept.

At another SMART Board center, where Jimmy practiced writing and identifying proper nouns, he and his partner worked to brainstorm proper nouns that fit into three categories (people, places and things). A picture (Appendix MM) taken in early February shows Jimmy writing another word underneath their full list of nouns. The work shown on the SMART Board shows that Jimmy and his partner understand what proper nouns are and used that knowledge to think of and categorize the nouns. It also shows that (except for two words) the boys understand that proper nouns need capital letters. Because Jimmy and his partner are visual learners, the fact that they were able to manipulate the hands-on words on the board was helpful to them. Using the SMART Board as opposed to other classroom tools, they had a physical experience with their learning and their understanding of the content became more solidified.

Emily

Emily's technology skills were strong when she entered third grade and using the SMART Board only improved them. She became self-sufficient with the ways of the SMART Board quickly and even helped me out when I came to a problem. In her second student response journal on February 22nd, she suggested I "always lock the slides or words" when creating a lesson on SMART Notebook (Appendix L) when asked to give me one piece of advice concerning the SMART Board.

SMART Board mini-lessons at centers also helped Emily learn spelling rules. At one particular center involving plural word endings, Emily worked with her

partner, Layla to problem solve the plural ending for the word ‘self’. In my journal, I wrote about their interaction: “Students are problem solving their ideas about plural endings. Working in a partnership is proving to be beneficial. Students continue to work together (3/4/10). When the girls came to the multiple-choice question for ‘self,’ they read over the choices aloud and worked together to come to an answer.

“Emily: ‘Can’t be two ff’s, I think it looks like elves.’

Layla: ‘Ok, so it has to be selves.’”

Emily also used the SMART Board to help her create and sort proper and common nouns. At this center, she and her partner Alison worked together seamlessly to fill in lists of people, places and things (Appendix EE). The girls thought of creative places like ‘Haiti’ and wrote down names of athletes like ‘Drew Brees.’ Creating these lists of nouns would help the girls recognize proper nouns when doing paragraph-editing activities, like the one that shows up on our third grade New York State test.

In a picture (Appendix QQ) taken of Emily working with a partner at the SMART Board creating sentences using alliteration, we can see that Emily understands alliteration and is using the knowledge she’s learned so far from the mini-lesson to write a sentence. Previous to the slide shown in the photographs, Emily and her partner learned what alliteration was by taking part in the interactive center that included the definition of and examples of alliteration. By taking a physical part in the activity and manipulating the words on the SMART Board, Emily created a stronger understanding of the content. Her experience with this content was

more interactive than if she had used a pencil and paper to complete the activity, and Emily was therefore able to become more involved in the learning process.

The data collected on Emily shows that the SMART Board helped her solidify her knowledge of using alliteration. She also took part in opportunities to interactively practice grammar and spelling rules. Like Jimmy, Emily's data show that working together in partnerships allowed students to help each other use new knowledge and put it into practice.

Carly and Jamie

Carly and Jamie were partners for many of the ELA SMART Board centers when I collected data, so I decided to intertwine the information about them.

Unlike Jimmy and Emily, Carly does not get consistent high grades in reading and writing. She struggles in math, too. However, in her March 15th response journal she writes that the SMART Board "helps me learn multiplication, division and lots of math stuff" (Appendix V). Carly is a student who is sweet and willing to work with any of her peers, while Jamie does not get along with many of the children in my class, but she does get along with Carly. I partnered them because I hoped they would work together well and their time at the SMART Board would be spent on the mini-lesson instead of being off-task. This partnership turned out to work very well.

On January 28th, the girls worked together on a center that was designed for students to practice finding and sorting nouns and verbs (1/28/10). Their first task was to read a paragraph and use the highlighting feature to find nouns and verbs.

While completing this activity, I noted how the girls were helping each other nicely. On their own, the girls decided to take turns with each sentence. When Jamie fails to highlight the word 'today,' Carly says, "I just did the same word in that sentence that you didn't do." Jamie searches the sentence, finds the word 'today' and says, "Oh! Today is a noun" (1/28/10). The SMART Board supports the social interaction between Jamie and Carly because its huge screen allows both girls to view each other's progress with the task. The shared experience lets both students think about what the other has done and offer a comment to their partner as they watch the other work.

As they continue working, Jamie is finding it easier to get correct answers, and the easy way for the girls to self-correct their work allows their completion of the work to move along nicely. On Jamie's next turn, she reads a sentence and finds the noun 'drink' correctly and then accurately highlights 'running' in the same color. As I write in my notes, "she realizes herself it isn't a noun, then quickly erases it" (1/28/10). The SMART Board supported this lesson by making it more interactive and fun. Self-correcting is a skill that is difficult for students to take ownership of, but is a very important skill to have. By making the task easy and fun with the use of the SMART Board eraser, Jamie willingly corrected her errors and completed her work on her own.

Carly and Jamie both enjoyed using the SMART Board at centers, and when asked in a journal response if the SMART Board had changed center time, they both answered that it had, and both wrote that it was a good change (Appendices M & N).

Their positive feelings about the SMART Board continued when I paired them up again to work together at a center on February 10th. This center, written about earlier in Emily's section, asked students to create lists of nouns. The picture attached (Appendix NN) shows the list the girls have created together, which include both common and proper nouns. On the next slide, the directions are a bit more involved. Another picture of the girls at the center shows them reading the directions (Appendix NN). The page begins with the definition of a proper noun and examples of common and proper nouns are given as well. The activity asks students to write a proper noun next to each common noun and a common noun next to each proper noun. Their completed page is attached (Appendix FF).

As the girls begin the activity, Carly goes first. Carly reads the common noun 'holiday' and writes 'Valentine's Day' for the proper noun, completing her first turn accurately. Jamie takes the next turn reading 'lake' and writing down 'Lake Ontario' next to it. When Carly comes to her next common noun, 'player' she is confused. Jamie cannot help her and suggests she take her next turn with the common noun 'team.' Jamie writes down 'soker.' Soccer is not an accurate answer as a proper noun, but neither Jamie nor Carly correct it. Still hung up on 'player,' Carly asks me for help since I am sitting near by. I ask her if she knows the names of any sports players. She writes down 'Derik geter.' Although she incorrectly makes his last name lower case, she understands that his first name should be capitalized (Appendix FF).

As they continue the activity, the girls correctly complete the lists of common and proper nouns. They continue to help each other complete each response, with minimal help from me. At times, when it is Carly holding the marker, Jamie helps with the answer, and visa versa. As evidenced in their completed page, (Appendix FF), although they wrote the appropriate common noun for each proper noun, some of the common nouns (country, state) appear to be capitalized. This could be because the girls don't understand which words should be capitalized, or because their handwriting is inconsistently sized. The vignettes given of Carly and Jamie continue to support the fact that students working together at the SMART Board leads to successful completion of the center. If they were working alone, the center may not move along as smoothly. The SMART Board itself supported the students working well together because of its interactive nature. The girls both became active participants in their learning and shared the fun experience of using the SMART Board together. They were able to easily watch and follow along with their partner's progress and share comments along the way. If either partner became confused with the task, the other was there to help, which led to less teacher assistance and more student independence.

Their data also support the fact that the SMART Board is an effective way to teach students grammar rules in an interactive way. Rather than having students sit at their desks and answer questions with a pencil, they are standing up at the board, working together writing and easily erasing their work, and most importantly problem solving.

Mitchell

Like most students in the class, Mitchell was always very excited to use the SMART Board. At one of the few centers I created for students to work individually, Mitchell approached the board and (as always), read the directions to himself. This center, (Appendix DD) asked students to read and edit two paragraphs taken from *Tell Me A Story*, one of the big books from the district's Rigby Literacy reading series. The book, about child labor, immigration and the Triangle Shirtwaist Fire in 1911 in New York City, not only gave me a chance to have students practice paragraph editing, but it was also an easy way to integrate social studies curriculum into an ELA center.

As Mitchell worked through the paragraphs, I noted his progress in my journal. "Instead of replacing [a period] with a [comma], he takes the period seriously and makes the next word uppercase. His next step is to slide down the shade that hides the paragraph with the correct answers – he does so and checks his work. [Mitchell] shows he understands that sentences start with a capital letter, but didn't realize the two incomplete sentences that [should be] bound together with a comma" (2/5/10). With the use of the SMART Board, Mitchell could easily manipulate the parts of the sentence and punctuation to quickly create his own solid understanding of punctuation rules.

On Mitchell's turn at the common and proper noun center, (Appendix EE), he was paired up to work with Shannon. After reading the directions, the pair get right

to work and Mitchell takes his first turn, as seen in the attached picture (Appendix OO). The biggest distraction at this center is Mitchell's need to make his writing look neat. He erases more than one of his entries just to rewrite it again. Although it happens quickly, it breaks up the flow of he and Shannon's time at the center. Mitchell's first word that he writes underneath the 'things' category is 'Dog,' written with a capital 'D.' As he continues through the center, however, he corrects this error and writes the rest of the common nouns with a lower case letter (Appendix GG). The pair does not try out any proper nouns until Mitchell writes the first 'Ili Manning' under the 'person' category. Although he spells the player's name wrong, he shows capital letters for both the first and last name. On his next turn, Mitchell writes another appropriate proper noun, and on Shannon's next turn she does the same.

When they come to the last column, 'place' the pair experiments with some proper and common nouns and their accuracy of capitalization is inconsistent. They correctly capitalize 'New York' but give a lower case letter at the beginning of 'florida,' only to correct the problem again when writing 'Virginia.' On the next slide, Mitchell and his partner improved their ability to capitalize proper nouns and leave common nouns lower case when completing the second part of the center (Appendix GG). It is evident that the pair needs further practice with this skill. Like the other children at this center, they worked well together to complete it with a high level of accuracy. After completing this interactive center, Mitchell and Shannon will hopefully use the knowledge they have created in their everyday writing. The SMART Board itself contributed to the Mitchell and Shannon's success at this center.

First, its huge size and bright screen draws one's attention to the activity at hand, which was evident while observing these two. Second, the fun, exciting, video-game-like nature of the SMART Board is intriguing to children, even when the content is skills practice. Finally, because Mitchell and Shannon both shared an interest in using the SMART Board and were anticipating their names being called to get started at the center, they worked well together.

Whole Class

As a whole class, the vignettes given of the focus students support the way my students constructed knowledge. In addition to those findings, the majority of my class also gained a plethora of technology skills, benefited from being able to quickly check the accuracy of their work, and supported their growing knowledge of grammar skills.

Building Technology Skills

Early in the study, I noticed how much my students were building new technology skills. I wrote about it on January 28th; “[The SMART Board] is building students’ technology knowledge. They have quickly gotten grasp of [the] Smart Notebook program. When they make a mistake, they understand how to erase, then fluidly go back to the highlighting pen without wasting much time” (1/28/10). Often, throughout the course of the study, I noted that students were working at the SMART Board center with ease (2/5/10, 2/10/10). I believe this easy flow at the center is partially due to their knowledge of the content at the center, but is also due to the fact

that they have quickly picked up the technology skills needed to complete the center. I only needed to model it once or twice for students to understand how to move to the next slide, erase their work, delete something or hide an item. As I began to see the ease with which my students used the SMART Board, I knew I would be able to gradually add in more interactive pieces, like the center on alliteration (Appendix AA) and the center practicing nouns and verbs (Appendix Z).

Self-Checking Work

Students also benefited from the way they could easily self check their work while working at each SMART Board center. With a typical pencil and paper center that students would complete at their desk, there was never a great way for students to check their work unless a teacher was floating around the room doing it for them. With the SMART Board, I quickly realized that by using a few of its interactive features (like the split screen and shade), I could build a self-check into the center. On February 5th, I wrote about this factor in my journal. “The [SMART Board] is beneficial to use to teacher paragraph editing rather than in a packet because [students] can check their work. The split screen and shade feature work great for this!” (2/5/10). An example of this feature is shown in (Appendix DD). While several students mentioned that they liked paragraph editing centers in their journal responses, one student was more specific. When asked about her favorite activity to do on the SMART Board in the third journal response, Kelly said, “I like to do the paragraph editing. I think it helps with making sure your paragraph is correct. I like it because it is fun and you can learn from it too!” (Appendix X).

The SMART Board tools also made it easy for students to edit their work. On January 28th I noted that Jamie, a student who is typically disorganized and unprepared with materials, erased and re-wrote her response with ease (1/28/10). No need for sharpened pencils and erasers here!

Growing Grammar Knowledge

Another way the SMART Board impacted the way that my students constructed knowledge was by supporting their growing understanding of grammar. In the past, with no set reading or writing curriculum from my district, actual grammar lessons were seldom taught and instead modeled through lessons with another focus. With the shift of teaching centers on the SMART Board, I thought it would be a great opportunity to create mini-lessons with the focus of different grammar rules. Of course, these centers could be created without a SMART Board, but because teaching grammar is sometimes tedious, I thought it would be fun for students to practice it using interactive technology. On February 23rd, I wrote about this change in my notes.

“During today’s [overview] of centers, we reviewed directions of a worksheet that had students using adjectives and adverbs in sentences. I asked students to tell me what an adjective is and had several hands raised. Volunteers were able to tell me what an adjective and adverb are. I think the several grammar [SMART Board] lessons I [created] are responsible for this!” (2/10/10).

In her second journal entry, Alison also made a note about how the grammar SMART Board centers have helped her. When asked if the SMART Board has made a good or bad change to centers, she writes, “It is a good change because it helped me with punctuation and it helped me learn adjectives and nouns” (Appendix P). Throughout the two months that my study took place, I observed several students who had shown growth in understanding and using grammar rules. For the students, using the SMART Board was fun; it reminded them of the interactivity that playing on their laptop computers or touch screen video games at home brings. Because of this enthusiasm, the children in my class always participated to the fullest and were excited to do any SMART Board related activity I had planned for them.

At one particular center toward the end of the study, students used synonyms to change one or two words in a sentence with the goal of making it sound more interesting. I observed Corey and Alison working together. Their completed page can be found in the appendix (Appendix II). The first sentence they came across was read aloud by Corey.

“‘I’m hungry’ said my sister,” Corey reads. Alison thinks of a synonym.

“‘I’m ‘starving’ can be for I’m ‘hungry,’” she suggests.

“Good one” encourages Corey, and Alison crosses out hungry and replaces it with starving. Next, Corey makes a suggestion.

“How about ‘yelled’ for said’. He starts to write yelled. ‘Oh no! I have a better one, hollered!’ Corey starts to write hollered and spells it ‘hollard’.” Alison then corrects his spelling.

“Here take off the ending.’ Alison erases ‘rd’ and writes ‘red’”
(2/23/10).

Later that morning in my notes, I commented on how Corey and Alison worked together. “Corey and Alison understand what synonyms are, but have different ideas of what they should write. They work together well to decide words to use and help each other discover new ideas” (2/23/10). I believe that using the SMART Board had a part in bringing out these positive behaviors in my students because both students shared an interest and were enthusiastic about using the new technology. As in the previous examples, the SMART Board brought upon this collaboration between students because they shared the experience of the task. The large screen allowed Alison and Corey to easily observe each move that the other made. As they watched their partner, each student could think about what their next answer and be better ready when their turn came. Also, these students knew that having a SMART Board in our classroom was a privilege not all third graders had, and they were going to get the most out of it that they could.

How will using interactive technology influence my students' motivation and engagement in learning?

Jimmy

“I think it is great, fantastic, amazing” (Appendix E). The previous statement is what Jimmy wrote when asked what he thought of the SMART Board in our classroom. Those words really sum up how Jimmy felt about the new technology in our classroom and how many of the students in my class feel. To be honest, I’ve been heard using similar words to describe the SMART Boards integration into my teaching. In another journal response, Jimmy writes that adding the SMART Board to our center time was “a good change because it made center time more fun” (Appendix K). In the same journal entry, Jimmy suggested that I begin using the SMART Board more during our read aloud portion of the day. Although I’m not sure what he meant by using it for read aloud, perhaps it could be used to help document what we’ve read. Since Jimmy is an avid reader himself and loves read aloud, it doesn’t surprise me that he would want to bring it together with another thing he loves: the SMART Board. His suggestion made me wonder how I could complete his request.

Whenever I observed Jimmy working at the SMART Board, he was motivated and engaged at his task. On February 23rd while he was working with his partner Kelly, I noted that “they are totally and completely engaged in this center,” (2/23/10) which is not always what I can say about him when he is working at his desk on paper

and pencil centers. Jimmy had his eyes focused on the SMART Board and continued through the activity without interruption because he knew what was expected of him. He and Kelly were “quietly and politely taking turns” throughout their time at the center (2/23/10).

Jimmy’s enthusiasm toward the SMART Board, and the fact that his mother has a SMART Board in her classroom, led him to choose an interactive Smart Notebook project for his book report (Appendix JJ). As he presented his project on the SMART Board, the rest of the class was interested and engaged in his presentation more than any other student’s work. I was impressed by the way he made it interactive (with help from his mom) while supporting information about the book he read. In his project, Jimmy created a cityscape background (a feature that represented his book) with pull down tabs for each character. Jimmy had students come up to the board and pull down each tab as he read the bulleted information about each character. This little interactive piece made his project a crowd pleaser by engaging and wowing his classmates. The audience sat eagerly in their spots, quiet expect for a few “oo’s” and “ahh’s”, with their hands raised to the ceiling in the hopes to be called up to help Jimmy.

Emily

To put it in Emily’s words, the SMART Board is “fun because we can do all kinds of things on it like math and fun things” (Appendix F). Although Emily is an intrinsically motivated student who completes her daily work with no problem, it was

evident that Emily was motivated to use the SMART Board whenever she had the chance. When I observed her on February 10th, Emily and her partner Alison were smiling and laughing as they worked through the entire center, evidence of two girls enjoying themselves. They only needed one quick reminder from me to continue moving on, but they were only pausing to think of a great word to write down, not because they were off task (2/10/10).

Emily shared some of her favorite activities with me in her third journal response. "My favorite activities are math, Jeopardy, the social studies review and paragraph editing" (Appendix U). It is great to hear from Emily that she enjoys learning about the content areas on the SMART Board. One of my goals to use the new technology was to integrate technology with the content areas, and judging by Emily's positive feedback in both math and social studies, I would say I found some success with that goal.

Carly

As I read through the journal responses my students handed in each time they wrote one, I remember one that Carly wrote as my favorite. When asked what she thought of the SMART Board in the classroom, Carly wrote, "I like it because it's not just a fun website smart board it's a help us learning smart board" (Appendix G). I think in Carly's words, this sums up the idea lots of my students had about the SMART Board. They think it is fun but they realize it is supporting the learning they are doing as well.

The SMART Board certainly supported Carly's learning, and kept her motivated through center time, as well as in the content areas. In her second journal response she noted that she would like to do more math on the SMART Board (Appendix M). During center time, though, the SMART Board center helped her stay on task. During many of the times I observed Carly, I noticed she stayed calm and encouraged her partner Jamie to stay on task (2/10/10). She did not become frustrated with Jamie or distracted by her like many students do.

Carly (along with many other students) also enjoyed using the SMART Board during recess. She was often the first one to ask to use the SMART Board at the beginning of recess and would willingly share it with anyone else who wanted in. Carly practiced cursive handwriting, math problems and played around with the different interactive features. One of her favorites became the recording feature and would watch her cursive handwriting be replayed over and over.

Jamie

As I mentioned in the introduction, Jamie has trouble staying on task during independent working times like centers. She asks for help a lot even though she is capable of doing much on her own. I knew that integrating the SMART Board would be great to support her learning and motivation towards learning, because it continued to decrease after the beginning of the school year. In her first journal response, Jamie wrote that the SMART Board was "very, very smart and fun to play on" (Appendix H). It is interesting that Jamie uses the word 'play' here since she rarely gets the

opportunity to 'play' freely on it during recess, which means she must be referring to the other times that she uses the SMART Board for centers. Using the SMART Board during centers is a bit like playing because it is so different from the paper and pencil centers students are used to.

This playful feel to the SMART Board helped Jamie get motivated and engaged during centers. I purposely paired her up with Carly, because I knew that if a problem arose, Carly wouldn't come running over to me complaining about Jamie (like some of the other girls do) and instead their time would be spent learning (1/28/10). Each time that I observed Jamie on the SMART Board she stayed engaged for the full 15-20 minute time slot she was there. This is longer than the normal time she is able to work at her desk and stay on task without one-on-one adult supervision.

Jamie was always sure to get her center time in on the SMART Board. On March 4th, I noted this in my journal. "'Miss Ferris, I haven't done the SMART Board center yet.' Jamie has continuously come up to me this morning to remind me she hasn't completed the center" (3/4/10). While I am happy that she is excited to get on the SMART Board for this center, she is so excited that it is distracting her from completing the work she needs to do at her desk.

Mitchell

Another student who can't wait to get on his daily SMART Board center is Mitchell. "Miss Ferris, am I next on the SMART Board center? I haven't gone yet" Mitchell asks (3/4/10). Do students remind me that they haven't finished their Time

for Kids or cursive writing centers? No. The SMART Board is by far the most sought after and exciting center to finish each week. As Mitchell put it in his first journal response, the SMART Board is “really fun. Sometime[s] I wish I had one” (Appendix I).

Mitchell, a student who needs several reminders to stay on task during centers, worked well during the SMART Board centers and used his partner for help. On February 10th I noted that Mitchell and his partner “stayed on task during [the] center and [they] used each other for help” (2/10/10). Mitchell is also a very active boy so standing up at the SMART Board and the interactivity of the center helped him be engaged throughout his time working at it.

Mitchell wrote that his favorite SMART Board activities include SMART Board centers and math problems (Appendix W). He also suggested in another journal response that Brainpop.com should be used more often (Appendix O). Brainpop.com is an educational website with videos on all content area subjects appropriate for a variety of grades. The videos feature the same two characters, Tim and Moby, so students become familiar with them and begin to trust what the video has to say. After watching the video students can take quizzes and complete other interactive activities to show their understanding of the video.

The Brainpop website was very popular among all of my students and was great to use on the SMART Board because the videos could be easily played on a big screen for all students to see and the review quiz could be done as a class by having students come up to the board and click a multiple choice answer. Whenever a

Brainpop video was shown or a quiz was being taken together, the class would be totally silent. Once one student was called up to answer a question the rest of the class would either cheer because the question was answered correctly or shoot their hands in the air because they wanted a chance to answer it.

Whole Class

As a whole class, my students were very enthusiastic, motivated and engaged with all SMART Board related lessons. They were most engaged when they worked individually or in pairs. As a full class, the SMART Board got the class excited when we could pull up something on the board and see it blown up on a large scale, like pictures maps and websites.

As I mentioned earlier, many of the SMART Board related activities that I created for this study were ELA centers based on grammar practice. On January 28th, I noted the students' enthusiasm toward the centers. "Students haven't been too excited about learning and practicing grammar, [but] when they have something to do [SMART Board] related, they are excited to do the center and are disappointed if they aren't called to go up and do the center next" (1/28/10). Caroline and Ronnie enjoyed their time at a SMART Board center as seen in the attached picture (Appendix TT). The excitement towards the new interactive centers continued through the study. Each week they were excited to find out what their new task on the SMART Board would be. I wrote about their excitement in my journal on February 5th. "Students

are chomping at the bit to get to come up to the center. As I call each student the kids are trying to anticipate when they will be called up” (2/5/10).

The excitement toward the new interactive centers benefited the variety of learning styles in my class, especially the visual and kinesthetic learners. Matthew and Sabrina, two students who receive extra help in reading and writing and are both hands-on learners were partnered up at the SMART Board on February 5th. I was originally worried about their ability to be independent at the center and how well they would stay engaged. It turned out that my concerns were not needed and I noted how well they worked together at the center.

“These two students are in my lowest reading group. I put them together so the pressure would be taken off of them.

Surprisingly, these students worked seamlessly together, taking turns and gave each other ideas and constructive criticism” (2/5/10).

In their student journals, Sabrina and Matthew wrote about how the SMART Board has positively change centers for them. Sabrina mentioned how the centers have gotten more fun (Appendix Q). Matthew says that “it is a good change” and it “helps me learn” (Appendix R). For two students with learning disabilities, these examples from Sabrina and Matthew prove that a SMART Board is an effective tool in engaging and motivating children who find difficulty in academics.

At times, the SMART Board has been so engaging to students that it distracts them from other work they are supposed to be doing at their seats. At the beginning of the study I realized quickly that the excitement toward the SMART Board might

actually cause a problem. I noted this issue of February 5th in my journal. “[The] downfall to using [the SMART Board] in full group center time- everyone else can see what is happening either on the computer or on the huge SMART Board screen” (2/5/10). Once the newness of the SMART Board centers wore off, students got used to the fact they just had to wait their turn, and accepted that their time not spent at the SMART Board needed to be productive. By the middle of February, students knew how to work appropriately at their seats while a pair of students used the SMART Board, as seen in the attached picture (Appendix PP).

Chapter Summary

As evidenced in the data collected, the SMART Board positively impacted the motivation and engagement of my students. The students found the SMART Board ELA centers fun and exciting. They practiced grammar rules in a fun way and remained engaged throughout the whole center.

I was amazed at what an impact the SMART Board made in my classroom over the span of just a few weeks. After just having used the SMART Board for such a short amount of time compared to the amount of time I spent teaching without this interactive technology, I wouldn't want to teach without one! As a teacher, it inspired me to find new and interactive ways to plan my lessons. I was excited to explore the way technology could bring literacy and the content areas together, and I'll be continuing this endeavor in my future teaching. I was also inspired by the way my students were constructing knowledge, different than they would without the SMART

Board. Students created knowledge through their intimate experience with the content and their ability to manipulate words, letters and symbols at their fingertips. Students were also constantly motivated and engaged when the SMART Board was used. If a couple of periods would pass without the SMART Board being used they would inquire about when it would be turned on. During center time, students would be waiting with bated breath until their names were called to being the SMART Board center I had prepared for them. I feel lucky for my sake and for my students' sake that my classroom was given a SMART Board this year. I look forward to the ways it will revolutionize the activity in my classroom in the future.

Chapter 5

Summary, Conclusions and Recommendations

The use of a SMART Board in my classroom had many positive impacts on the teaching and learning of literacy in my third grade inclusion classroom. After the seven week study I had learned so much about how my teaching had changed, how my students were constructing knowledge and how much their motivation and engagement toward learning had been impacted by this new piece of technology.

Summary and Conclusions

As I reflected on my research, I found that the SMART Board impacted my pedagogy. Overall, I found that my pedagogy changed however much I wanted it to change. The SMART Board was versatile enough for me to use it at any time during my instructional day. I could use it just as a simple white board or as a large interactive computer screen. I could use it planned or unplanned. As Bennett and Lockyer (2008) found in their study of IWBs in Australian classrooms, the new technology doesn't necessarily call for pedagogical reform. However, I did find that if I wanted to use the SMART Board to its best potential, as Jewitt, Moss & Cardini (2007) describe as being multimodal, interactive and fast, I would need to plan ahead. I found that once I was fluent with the program Smart Notebook, it was easy to create an interactive and multimodal lesson in a short amount of time. Sometimes, I just used some time out of my daily planning period to whip up a short ELA center.

In order to become a skilled SMART Board and Smart Notebook user, I quickly learned that taking as much professional development as I could would benefit me. As Pamela Shorr (2006) found in her study of IWBs, the teachers involved suggested that future IWB and SMART Board users should take advantage of training sessions. I was able to sign up for two great professional development courses specifically developed around creating Smart Notebook interactive lessons and I quickly learned a lot. I didn't mind taking the time to learn more about the SMART Board through the training sessions because I was excited about the possibilities of how furthering my knowledge could benefit my students. Of course, taking the extra training was a choice I made and was not required, so it was time out of my school day that I did extra work, but it was certainly worth it. Without the training, I don't think my pedagogy would have grown in its interactive features and variety of activities.

Once I had spent some time with Smart Notebook and had taken a few hours of training, I began to use the SMART Board more interactively and thought to use it to bring the content areas together with literacy. With some planning ahead, I found that the SMART Board really made it easy to bring science and social studies into my literacy instruction. Because I was already creating new lessons and ELA centers, I simply used content area information and blended it into the lesson. Bringing the content areas and literacy together on the SMART Board is one of my goals for my future teaching because of this research.

As I became familiar with the features of the SMART Board, I began to think differently about teaching and learning. I started to think about how interesting my teaching was becoming as it got more interactive. Using the SMART Board encouraged me to use the computer in general as a resource in the classroom more than I had before. I used the Internet (informational websites and graphics) more on the SMART Board to support lessons. The SMART Board even made me incorporate the other computers in my room into lessons more often since I saw how engaged students were in SMART Board lessons. Also, as my experience using more SMART Board features increased, I thought about how the ways my students learning could change. Overall, as I became familiar with the SMART Board's affordances, I wanted to use the board more and more in my instruction.

One small way that the SMART Board impacted my pedagogy but ended up making a big difference was the change in my room arrangement. Days into my research, I realized that the furniture (student desks and carpet) needed to be moved to make the SMART Board the focal point of the room. Similar to my situation, Glover & Miller (2007) found that with the right room arrangement with this technology, the SMART Board would complement the learning environment rather than interfere with it. Once I changed the focus of the classroom to be around the SMART Board there was much more room to move around and work on it. The change also made the SMART Board my main "teacher directed" lesson spot, rather than the previous spot that was in front of a regular whiteboard.

Another thing I quickly learned was that if I ever came to a technology crisis, asking a student usually helped me find the answer. Students are so capable with their technology skills these days and using the SMART Board only developed those skills. As Shorr (2006) put it, "When in doubt, hand it to a kid!" (p. 24). This philosophy certainly helped me out a few times and I noticed that even my students who did not have strong technology skills in the beginning of the year began to develop more sound skills because of their frequent use of the SMART Board. I believe my students felt a sense of ownership with their newfound technology skills and that they were proud to be regarded as experts and problem solvers by their teacher and peers.

Not only did the SMART Board have a positive impact on my pedagogy, but it also impacted the way the students in my class constructed knowledge. One of the major ways that the SMART Board impacted my students learning was because it made the learning more interactive. Because I teach the inclusion classroom, I have students who are classified with learning disabilities, several students on attention deficit or hyperactivity medication, and many of these students with special needs are visual and kinesthetic learners. With a SMART Board, students can see an assignment on a big screen. They can use visuals to represent their understanding and use their fingers to touch the screen and physically interact with an activity. Similar to my findings about visual learners, Jewitt, Moss & Cardini (2007) found that an IWB could help visual learners understand concepts.

To give my data a literacy focus, I mostly collected data during our ELA block while students were working at the SMART Board on grammar related centers. Most of these centers were created by me, using the district curriculum map and state standards for the content as well as other Internet and teacher resources to create the activity. By making the learning interactive, I could reach a variety of learning styles and have my students up and moving more than they would be with a paper and pencil activity. Because students were so engaged and motivated to participate, they became more focused on the activity and as a result created a more solid understanding of the content.

As the students became more comfortable using the SMART Board, they wanted to use it on their own. One particular student created a Smart Notebook activity for his book report project. Larson (2008) found that with new interactive technology, students in her study were more willing to extend their reading experiences through the use of computer technology.

From the moment the students entered the classroom this year and saw the SMART Board, they were hooked on the new technology. I was concerned that by the time I started my study (months into the school year), the excitement surrounding the SMART Board would have worn off and it would be difficult to collect data showing the impact the SMART Board would have on student motivation and engagement. This was not at all the case. Even through the end of the seven-week study (then seven months into the school year), my students were still enthralled with the classroom's new toy. As they saw it, the SMART Board really was a toy. To the

students, the SMART Board is just like a cool piece of technology they use at home and their engagement factor could stand next to their video games, cell phones and mp3 players. As Barone and Wright (2008) found in their study of digital technologies, students will become more connected with their education if technology is used.

ELA center time in my classroom is a busy part of the morning. Students are independently working so they have a chance to talk with friends or move around the room while they get their assignments done. As the SMART Boards became more integrated into the centers, I found that out of all the centers that they needed to work on, students were most engaged while working at the SMART Board. I also observed that students worked very well together in pairs at the SMART Board, when they didn't necessarily have the same level of camaraderie at other times during the day. Bennett & Lockyer (2008) also found that students worked together well at the SMART Board and stayed engaged while working at it. I was impressed when I saw the patience and the politeness that my students exhibited when working together. It was almost as if they were pretending to be the teacher as they gave each other help or constructive criticism. I believe that my students showed these behaviors around the SMART Board because of its visual and interactive nature. At eight years old, my students have grown up with technology. Many of them know how to work a computer or a video game better than their parents and bringing this technology into the classroom allows my students to take ownership of the knowledge they are constructing because they are creating it in a way that is interesting to them.

Recommendations

Don't get me wrong, the introduction of the SMART Board in my classroom this year was just as exciting for me as the teacher as it was for my students. Speaking with other teachers in my school, the attitude is that everyone wants a SMART Board. For me, it makes teaching fun, especially when I'm planning lessons knowing that my students will enjoy participating in them. As a result of my research, I believe it is important for all classrooms to use interactive technology. SMART Boards are possibly the best case scenario when it comes to interactive technology (Bennett & Lockyer, 2008), but other less expensive and more accessible technologies are out there, including document cameras, computers and student response systems like Clickers. It has already been announced that more SMART Boards will be installed into more classrooms in my school next year, giving each grade level K-5 two SMART Boards, including one in the literacy specialists' room and one in the self-contained special education classroom. As more interactive technology is brought into classrooms, students will be able to make more of a connection to their learning and become more motivated and engaged in school.

Even though this research project is ending, my interest in furthering my knowledge about the SMART Board has not. As I extend my knowledge further, I want to see how the SMART Board can be used to explore more "new literacies" discussed in several studies including work by Larson (2008, 2009), and Barone & Wright (2008). These researchers describe new literacies as literacy skills that are learned through technology and social interaction. Based on the original five

literacies (reading, writing, speaking, listening and viewing), new literacies bring those themes together using technology and a social component. For example, a student might use instant messaging or an online blog to discuss ideas he or she has created about a book the class is reading together (Barone & Wright, 2008). Another example might have a student reading an e-book followed by an online literature discussion on a website like Moodle (Larson, 2009). These new literacies have the potential to promote growth in literacy skills, establish communication among peers and help create a sense of community in a classroom (Larson, 2009). I feel I have only scratched the surface with the possibilities the SMART Board has on impacting literacy learning, and learning more about the new literacies will help me learn more about making literacy learning more interactive still.

Another way this research could be extended in the future is by exploring how the content areas and literacy can be brought together with the use of interactive technology. As I mentioned earlier, I was already able to connect literacy with science and social studies by preplanning my ELA centers and creating cross-curricular activities, but like literacy learning, I feel I have only scratched the surface. I believe there should be more of a push in schools to cross the curriculum with literacy and the SMART Board could be an avenue in doing so. I have already shown that students' interest in learning, engagement in activities and motivation towards school was positively impacted because of their experiences with the SMART Board, so by bringing all of the content areas together using the SMART Board I could make my students interested in their education even more. If this is done, I believe that

overall, similar to Glover & Miller's (2007) findings, enthusiasm towards school will improve, academic achievement will increase and teachers will want to use more technology in their instruction.

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January 26, 2010 (Tuesday)

10¹⁰-10³⁰ SMART BOARD writing lesson, pulling details into paragraph

* collect student work from this activity, save notebook file

AT used SMART Notebook to type

AL detail sentences from graphic organizer (for district narrative task), then pulled them together to write in order and use markers to add transition words, intros & conclusions.

AE Students stayed silent during 20 min. period

- a few types were found, students waited quietly & patiently while I corrected them, they continued to help me by looking for other errors

AL
- usually @ this time of day, the kids wouldn't be able to stay quiet - patient for this long a period of time
- they enjoy watching me use the SB even for 'boring' or 'laborious' tasks.

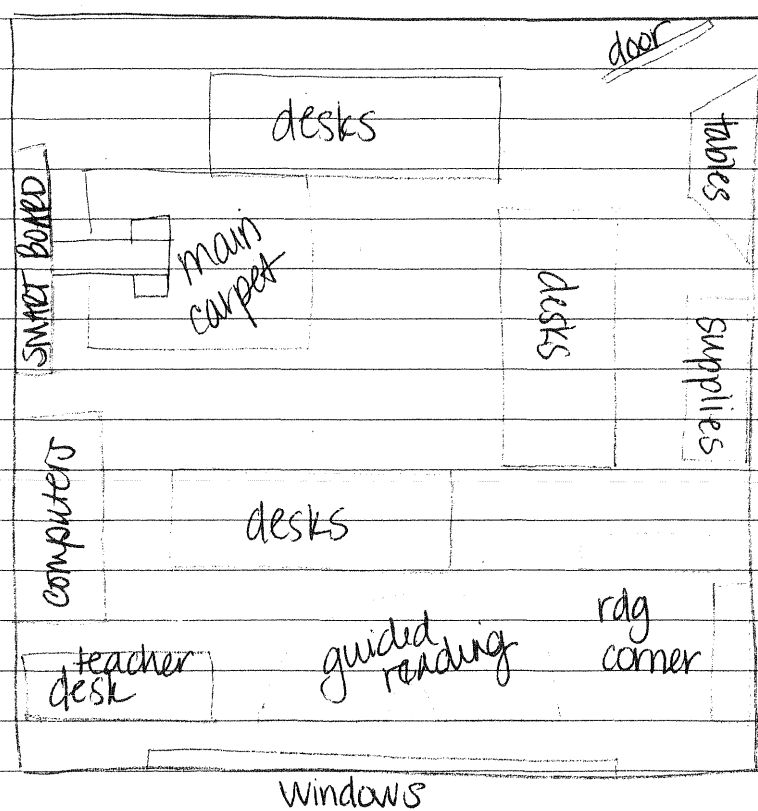
AT (B)
This activity allowed me to manipulate sentences & model for the class on a large scale, while moving around sentences to make "editing" process more interactive.

- next time, have students participate interactively by coming up to help move sentences around

(2)

Jan. 26, 2010 (10⁴⁰ am) AT AL (B)

A change of desks is absolutely needed. The SB is not in a location that allows enough movement by teachers & students. Here ~~are~~ is a possibility I'm considering



~~1/21/10~~ 1/21/10

Girls using SB + notebook to
write in cursive using recording
feature
(B, V, C)

AL (D(dunny recess))

1/27/10

Changed set up to desks to have
SB be the focal point of the room

(B)

AT
AL

1/28/10

10⁵ am

~~1/28/10~~

Activity: adjective practice @
SB, vortex sort then paragraph
highlighting adjectives

(B)

AT

A- highlights "warm" + "steam"; looks
unsure

AL

V- Steam is a thing

A- erases steam

V- reads next sentence aloud

A- highlights "picked", getting
confused between interesting
nouns + adjectives

A reads next sentence, highlights
"bright", V highlights "wool"

(4)

1/28/10 continued

AT

Teacher - interjects to discuss mistakes in confusing verbs + adjectives

"remember that a verb describes a noun",

"what is the noun in that sentence?"

A+V go back to read next paragraph, this time they found all of the adjectives correctly in the passage

AL

Teacher goes through w/ them in last paragraph, praising their correct work + new understanding

AL

(2)

10³⁰ Jamie + Carly practicing noun activity

The girls quietly work together @ SB. One student (Jamie) is usually suspect in classroom of being trouble maker. At this activity, they work together nicely.

With help from teacher, the girls work together to take turns reading sentence + highlighting nouns first then verbs.

I noticed how nice it was that the girls were helping each other ~~more~~ when Jamie fails to highlight "today", Carly says "I just did the same word in that sentence that you didn't do." Jamie - "Oh! Today is a noun!"

Jamie reads sentence, finds "drink" correctly, then highlighting

(B)

1/28/10 continued

"running", she realized herself it isn't a noun, then quickly erases it herself

(C) AL

SB is building students technology knowledge, they have quickly gotten grasp of small notebook program. When they make a ~~minor~~ mistake, they understand how to erase, then fluidly go back to the highlighting pen w/o wasting too much time.

(B)

AL

(1055)

Enthusiasm - Students haven't been too excited about learning + practicing grammar. When they have something to do SB related, they are excited to do the center and are disappointed if they aren't called to go up and do the center next.

(1109) Violet + Andrew take turns erasing their highlighting, passing the eraser to each other

2/1/10 Students come in to check morning message on SB, large size & bright colors make message stand out + easy to read - (C) How could I make m. message ~~effective~~ interactive?

(B) AT

2/3/10 Use SB to show photographs to accompany Tell Me A Story, Striker conversation

(B) (C)

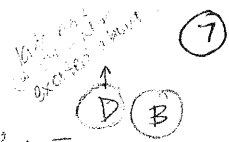
AL AT

2/4/10 show youtube.com clip from Mary Poppins ^{(B)(C)}
WOMENS suffrage _{ATM} (6)

2/5/10 Students individually approach SB to read directions about what to do @ center. Their directions indicate that they should read a paragraph taken from Tell Me a Story (Rigby Literacy big book) (about child labor, immigrants and Triangle Shirtwaist Fire 1911 in NYC) and make changes in capitalization, punctuation. Paragraph editing is a skill on the 3rd grade NYS test that students need to practice. (D)(C)

* Mitchell reads P2, finding error #3 incorrectly. Instead of replacing "." with a "," he takes the period seriously and makes the ~~next~~ next word uppercase. His next step is to slide down the shade that hides the paragraph w/ the correct answer - he does so easily and checks his work. Mitchell shows he understands that sentences start w/ a capital letter, but didn't realize the two incomplete sentences that were bound together with a ~~sentence~~ comma (C)

AV * Carly on P1 shows she understands that sentences begin w/ a capital letter and ends w/ a period. On P2 she crossed out period and left it blank w/ putting a comma. She's showing she understands that she would be left w/ two incomplete sentences.



* Downfall to using SB in full group center time -
everyone else in the room can see what is happening

AL either on the computer or on the huge SB screens.

req. I ask students to keep their eyes on their screen work and that the point is to challenge themselves when they come to that center. Although I can't be watching at all times they generally seem to be obeying that request.

AL also, certain fingers sound very loud on the
req. screen when they drag something across the screen. It can become distracting and a reason for people to start laughing. My solution is that fingers use their fingernail instead of a fingertip. It always works!

* Allison approached the center & was just starting to correctly put a comma on #2. that she
AL applied to. She did not correctly change the capital W in women, or she would have gotten all the change correct.

AT The SB is beneficial to use to teach paragraphs
AL using rather than as a format is because they can check their work. The split screen & scroll feature work - great for this!

(9)

*(Sabrina+Matthew) These two students are in my lowest reading group. I put them together so the pressure would be taken off them. Surprisingly, these students worked AT seamlessly together, taking turns and gave each other AL ideas & constructive criticism ☺ (C) (D)

2/9/10 SB center on common/proper nouns AT AL
- first response to SB journal entry (B)

2/10/10 Continue SB center on common/proper nouns
→ rest of class calm during centers (pictures)

* Carly + Jamie (pictures)

Jamie reads directions aloud. Carly stands by listening to directions. ▽

• directions are to read common nouns + think of a corresponding proper nouns and same for proper nouns listed AT, AL

• Jamie doesn't understand what the word "player" (C) refers to and Carly can't give her help, Jamie skips to "team" and writes "soaker", not understanding completely the directions.

• Carly asks for clarification on "player" and I (C) ask her if she knows the names of any sports AT players. She writes down "Derik Geter." (B)

* They need some reminders on how to scroll down page

• Jamie writes "Bondove" for band, stating it's her favorite band. (C)

• For the next part clarification needs to be given for how to find a common noun for the proper nouns given

(B) like "United States".

(10)

2/10/10 continued

• Jamie suggests "America". I remind her that America is another proper noun. Teacher "The United States is a -" Jamie "country!" C AT

• Carly writes "country" (C)

• next proper noun given is "Spanish" Jamie pauses and looks @ Carly for help.

• Carly - "language?" Jamie "Yeah!" and writes it (C)

(A) Meanwhile, students working @ seats are working quietly, staying on task @ their own centers. Carly + Jamie are working relatively quiet, not making any sudden outbursts that would distract a peer enough to look over @ SB.

Mitchell + Shannon @ noun center (D) AT

• Students use inside voices to work @ centers, two at a time come A up to SB to do center on nouns, some students @ centers

• activity asks students to write 10 nouns in each group AT listed (thing, person, place) (B)

• Mitchell and Shannon need a few reminders to stay on task and keep working in order to complete activity (D) in ~~given~~ given time (D)

• the two work back and forth, taking turns writing nouns +L

• became somewhat concerned w/ what their handwriting (D) looked like

• some words confused on capitalization (ex: Mitchell's first word is written as "Dog." The rest of the "things" are correctly lowercase, not proper" A AT (C)

• In the "person" column, Mitchell decides to write "Eli Manning" (Eli Manning), the first actual proper noun listed + capitalized. (C)

(11)

2/10/10 continued

- Shannon then writes "teacher", while Mitchell responds again with the name "Michael". (C)
- Shannon then follows with the name "Shahah".
- Teacher: I like how ~~some~~ some of you people are proper nouns and some are common nouns." (C)
- In the "place" column, they begin with a proper noun "New York". Shannon then writes "Florida" but does not capitalize it. A+ (B)
- They continue w/ "town" and "Virginia", correctly capitalized by Shannon. (C)

Alison & Emily @ noun center

- Alison & Emily move quickly through this center, taking turns writing. They do not keep to ~~the~~ one column, and switch between proper & common nouns including "Haiti" and "turtle". (C) (D)
- They only needed one reminder to keep up the pace of working. (D) (B)
- Their pace at this center is quick and they show that their skills with the SB technology comes easy to them.

* Students stayed on task at this center and used each other

(new ideas) bring content & literacy together through Smart Board

(12)

2/11/10

verb center

- directions to read

AT

- highlighting verb in sentence

#L

(A) I feel like these centers have hit a roadblock
How can I make them more interactive?

AT

Social studies vocabulary - Jeopardy game

AT

#L

(B)

2/23/10

Figurative Language / Alliteration

Layla + Emily

- Students read notes aloud about what alliteration is. They take turns reading aloud

(B)

AT

& clicking & writing.

#L

- They smile & say "whoa" when they use the new "fade away" feature on slide 2

(A) During today's review of centers, we reviewed directions of a worksheet that had students using adjectives & adverbs in sentences. I asked students to tell me what an adjective is & had several hands raised. Volunteers were able to tell me what an adjective and adverb are. I think the several grammar lessons I created during centers are responsible for this.

Corey + Alison

* teacher reminder to have students read directions aloud to each other

- Corey goes ahead and just presses the reveal box w/out reading directions

- Alison slows him down & tells him when he's not following directions

* This is an example of a student getting too excited and is getting ahead of himself.

(D)

2/23/10 continued

Jimmy + Kelly

- Quietly + politely taking turns to create sentences using alliteration, they are totally and completely engaged in the center. Back and forth, helping each other think of ideas for sentence.

Vortex:

- While Jimmy tries to figure out which circle "excellent eggs" should go in (alliteration or non-alliteration). He seems to stall and can't come up w/ the answer.
- ~~Jimmy~~^{Kelly} encourages him, saying "think Jimmy" as he chooses the right answer. Kayla then steps in w/ her turn.
- On Jimmy's next turn he gets "exciting party" and drags it into the alliteration side. It shoots back out @ him "Ugh!" he says as his hands go flying to his head "See, because it's the same two letters" says Kelly.
- "Oh!" - Jimmy
- ~~Jimmy~~ Kelly takes her next turn + finds a correct answer.
- Jimmy's next turn "this one's right" as he finds a correct answer, an example of alliteration.
- On another turn, they came to a picture that is too long to be shown on the tab. Jimmy shows Kelly this time how to click on the button for the whole message to show.
- "Tasty ice cream" they say aloud together as Kelly correctly chooses "not alliteration"
- Done w/ sort
- Their words then slow up as a sorted table.

3/2/10 SB center is becoming calmer. Now that students are used to using the SB frequently during center time. Students are still excited to get their name called, and some are still continuously asking if they can go next, but the general population of students are getting used to the routine and now focus on their work/centers when they are not at the SB

(A) Need for PD (B)

3/4/10 Using SB station to support spelling words. (B)

This week we have a more difficult Friday spelling list - singular and plural nouns and verbs. I usually don't teach anything during the school week about the spelling rule. Even though it's important there just isn't enough time during our 45 min block to fit in a teacher directed lesson. Instead, students practice the rules during center activities. Today, since the list consists of 40 words (20 singular + plural matches) I decided to create a SB center for the rule so their practice would be more interactive. I sat on briefly to make sure students were practicing correctly.

Slide 1: students write plural version of words ending in "f" that need to be changed to "ves" / then write rule.

Slide 2: choose one word from slide 1 and write

Cont 3/11/10

(B) (D)

ending in y that add an "s" (play, day, spray) / then write rule

Slide 3: " ending in y, change to "es" / write rule

Observations: students are problem solving their ideas about plural endings. Working in a partnership is proving to be beneficial. Students continue to work together.

Emily - "cant be 2 fls, looks like dicer"
Layla - "ok, so it has to be selves"

*Kiana has continuously come up to me this morning to remind me she hasn't completed center.

3/9/10

(B) (C)

Add page for students to self check their work
→ paragraph writing center w/ science
→ to use with students, some of the pages for science, some for writing, some for management

(C) (B)

3/16/10 Synonym center that defines what a synonym is, gives examples, has two students practice to make it sound like a real sentence.

3/16/10 * Corey sees sentence that says "I'm Hungry" said my sister

A: "I'm hungry" or "I'm hungry"
B: "I'm hungry"

16
C

C: How about 'yelled' for suit. [He starts to write yelled] Oh no! I have a better one: 'hollered'. [Corey starts to write hollered, spells it "hollard"]

A: Here take off the ending. [Alison erases rd and writes red]

→ Slide 5 - writing a poem (3/16 10:30)

C: Lets do chess for the category

A: Okay

[Corey writes chess]

A: I don't think we should do chess, it's too hard to find synonyms

C: What about game

A: Okay

C: and fun

A: Well that doesn't really mean the same thing as game

C: But chess is fun

A: Okay

Further down

Corey and Alison understand what synonyms are, but have different ideas about what they should write. They work together well to decide words to use and help each other discover new ideas

Jimmy Kelly Slide 2 Synonym poem 3/16 10:30

J: I like McDonald's, no, sports.

K: How can you make a synonym for sports?

J: hockey, football, soccer!

K: Okay, we can do sports

[writes sports on line 1. Kaysi starts to write sports

3/16 Andrew + Violet 10:30

* Students are currently working on a synonym center @ their desks which involve

slide 1

A: I went to the store
V: We should change went
A: How about 'drive'
V: Yeah
[Andrew writes store]

students reading poem "Do your ears hang low" then use a list of bigger words to use as synonym for the words in the original poem

slide 2

A: Let's change the word said
V: Showed, yelled
A: ok how about showed

slide 3

V: My puppy is missed
V: ^{gone} How about my puppy is gone.
A: Yeah

①

* Mitchell: Miss Fems, am I miss on the SB center? I want to go to yet

3/16 10:40 Aidan + Vivian

(B)

4/10 8:30
18 15

A-V A Synonym is a word that means the same thing.
These two students are speaking in ^{as much as} ~~unison~~ ^{unison} as they read the directions together. At the beginning of the independent SB centers at center time, students were not always reading the directions and they would just try to skip right to the activity. Now, weeks later, I am noticing lots of working together to make sure each

(D)

3/16 10:45 Caroline + Alitracell

Grammar! C: "I went to the store." Going ^(reaches) (D)
M: If it were going it would say "I am going or I'm going to the store"
- silence -
M: you could say "I go" to the store
C: okay! [She writes "I ^{to} went to the store"]

update from 2/10 idea

3/18 - Based to bring literacy + content together (B)
(paragraph editing w/ content vocabulary passages)

- breaks up mobility during centers, students stand, get brains activated, out of seat (D)

19

3/22 Students worked individually to complete a SB center on subject - predicates. Working independently was good but not all students got to work @ the center today. Next time I'll need to add the amount of work students need to complete when working on their own since they tend to work slower.

B. Consent Form

STATEMENT OF INFORMED CONSENT FOR PARENTS OF MINORS

This form describes a research study being conducted with students. The purpose of the research is to learn about how integration of a SMART Board will influence the teaching and learning of literacy in a third grade inclusion classroom. The person conducting the research is a student at the College at Brockport SUNY. You are being asked to give permission for your son or daughter to participate in this research. If you agree to allow your child to participate in this study, your child will be part of classroom observations of students using the SMART board including notes and photographs taken by the researcher. Your child will also be asked to respond to journal entries about their interaction with the SMART Board. This study will take place each day in school during the six-week research period, beginning January 3rd.

A possible benefit from being in this study is to learn more about how to use the SMART Board and to feel increased motivation towards school and learning because of this new technology. Your child may also feel they can participate more in class activities and discussions around the SMART Board. Other benefits from being in this study could be that information will be learned that would encourage administration to purchase more technology like SMART Boards for classrooms.

A possible risk of being in this study is the feeling that some questions asked as journal prompts or interview questions are of a personal nature. There are no other anticipated risks. Your child does not have to answer any question s/he does not want to. You and your child will have a chance to discuss any questions you have about the study with the interviewer/ researcher at any point during the study.

Your child's participation in this study is completely voluntary. Being in it or refusing to be in it, will not affect your child's grades or class standing. S/he is free to change her/his mind or stop being in the study at any time.

I understand that:

1. My child's participation is voluntary and s/he has the right to refuse to be observed or complete a journal response. S/he will have a chance to discuss any questions s/he has about the study with the researcher at any time during the study.
2. My child's confidentiality is guaranteed. Her/his name will not be written on any research documents including notes, journal responses or student work. Instead, a pseudonym will be associated with your child in all observations, student work samples and photographs. There will be no way to connect my child to research documents. If any publication results from this research, s/he would not be identified by name. Results will be given anonymously and in group form only, so that neither the participants nor their schools can be identified. Participation will have no effect on grades status.
3. There may be minor personal risks and/or benefits because of participation in this project. Minor risks and/or benefits are described above.
4. My child's participation involves being a part of classroom observations in which the researcher will be taking written notes and photographs. Your child will also be asked to complete written journal responses about their involvement with the SMART Board.

5. If my child does not participate, he/she may still be in photographs taken with students interacting with the SMART Board, but the teacher researcher will not include my child in the notes for the study.
6. Samples of my child's work will be collected by the teacher researcher. My child's name will not be on any work sample, only a pseudonym.
7. Approximately 25 people will take part in this study. The results will be used for the completion of a research project by the primary researcher.
8. Data and consent forms will be kept separately in a locked filing cabinet by the investigator and will be destroyed by shredding when the research has been completed.

You are being asked whether or not you will permit your child to participate in this study. If you wish to give permission to participate, and you agree with the statement below, please sign in the space provided. Remember, you may change your mind at any point and withdraw from the study. Your child can refuse to participate even if you have given permission for her/him to participate.

I understand the information provided in this form and agree to allow my child to participate as a participant in this project. I am 18 years of age or older. I have read and understand the above statements. All my questions about my child's participation in this study have been answered to my satisfaction.

If you have any questions you may contact:

Primary researcher	Faculty Advisor
Name: Stephanie Ferris	Name: Dr. Sue Novinger
Phone Number: (585) 349-5600	The College at Brockport SUNY Department of Education and Human Development (585) 395-5935
Email address: sferris@spencerportschools.org	Email address: snovinge@brockport.edu

Signature of Parent /Date

Child's name _____

I give my child permission to have their photograph taken. (Parent signature)

C. Assent Form

To Be Read to Third Grade Students

Just like you, I have to go to school to continue my education. One of the projects I have to do for my college class is a research study with students. You may remember me mentioning the research study I will be doing this year based around the SMART Board in our classroom, and I would like you to participate. I am interested in finding out how the SMART Board impacts me as a teacher, and how it impacts your learning especially in the area of reading and writing.

While we are working during our normal school day you may notice me taking notes, taking photographs and asking to collect samples of work that you have completed. I will also be asking you to complete short journal responses once in a while based on your experience with the SMART Board.

Your parent or guardian has already given me permission for you to take part in this study but it is up to you to decide if you would like to. If you choose to participate in my study, but change your mind later, please tell me and I will stop taking notes on you and you will stop answering journal responses about the SMART Board. I won't photograph you or collect samples of your work. As I am collecting my research I will not use your name on any notes, journal entries, photographs, work samples or any other piece of information and not share the research information with anyone. Instead of your name, I will use a pseudonym which is a made up name to put on any observations I make about you or any work samples I collect. If you choose not to participate in the study, you may still be in some photographs taken of the students in our class, but I will not include you in the notes that I take for the study.

If you would like to participate in my study about the SMART Board, write your name and date on the lines below.

Thank you very much!

Miss Ferris

Name: _____

Date: _____

Witness over the age of 18: _____

Date: _____

I give Miss Ferris permission to take my picture. (student signature)

D. Student Journal 1

_____ Pseudonym: _____ Date: _____

SMART Board Journal Entry #1

Finish the following sentence:

The SMART Board is _____

Answer the following question:

What do you think of the SMART Board in our classroom? Please use details to explain the answer.

E. Jimmy

JC. Pseudonym: Jimmy Date: 2/1/13

SMART Board Journal Entry #1

Finish the following sentence:

The SMART Board is a big computer and you
don't have to use the mouse. You can
also draw on the smartboard and colors
are black, red, green, and blue.

Answer the following question:

What do you think of the SMART Board in our classroom? Please use details to explain the answer.

I think it is great, fantastic, amazing.

F. Emily

E.C. Pseudonym: Emily Date: 3-9-14

SMART Board Journal Entry #1

Finish the following sentence:

The SMART Board is fun, I love it we can use it
kind of things like math, science,
and things.

Answer the following question:

What do you think of the SMART Board in our classroom? Please use details to explain the answer.

I think the SMART Board is very fun
and we can use it for math, science,
and things.

G. Carly

(LISC)

C.G. Pseudonym: Carly Date: Feb. 9

SMART Board Journal Entry #1

Finish the following sentence:

The SMART Board is A Speail machine to help
US learn.

Answer the following question:

What do you think of the SMART Board in our classroom? Please use details to explain the answer.

I like it because its not just a fun website
smart board. It's a help us learning smartboard.

H. Jamie

J.M. Pseudonym: Jamie Date: _____

SMART Board Journal Entry #1

Finish the following sentence:

The SMART Board is

playful + fun +

Answer the following question:

What do you think of the SMART Board in our classroom? Please use details to explain the answer.

It is fun + helpful + easy to use.

I. Mitchell

M.V. Pseudonym: Mitchell Date: _____

SMART Board Journal Entry #1

Finish the following sentence:

The SMART Board is really fun, sometime
I wish I had one.

Answer the following question:

What do you think of the SMART Board in our classroom? Please use details to explain the answer.

I think that it
is really cool and really
fun the play with.

J. Student Journal 2

_____ Pseudonym: _____ Date: _____

SMART Board Journal Entry #2

Answer the following question:

Give Miss Ferris one piece of advice concerning the SMART Board:

Answer the following question:

Has the SMART Board changed center time? YES NO

If yes, it is a good or bad change? Please explain:

K. Jimmy

Pseudonym: Jimmy Date: 2/22/10

SMART Board Journal Entry #2

Answer the following question:

Give Miss Ferris one piece of advice concerning the SMART Board:

I think you should use
the smart board for
read aloud.

Answer the following question:

Has the SMART Board changed center time?

YES

NO

If yes, is it a good or bad change? Please explain:

Yes is a good change
the cause it made center
time more fun.

L. Emily

EC Pseudonym: Emily Date: 2-22-10

SMART Board Journal Entry #2

Answer the following question:

Give Miss Ferris one piece of advice concerning the SMART Board:

Always lock the slides or words!! use it in
social studies more

Answer the following question:

Has the SMART Board changed center time? YES NO

If yes, is it a good or bad change? Please explain:

It is good change. The only change is that
it makes centers fun!!

M. Carly

CG Pseudonym: _____

Date: Feb. 22.

SMART Board Journal Entry #2

Answer the following question:

Give Miss Ferris one piece of advice concerning the SMART Board:

We should do more math on the SMART board

Answer the following question:

Has the SMART Board changed center time?

YES

NO

If yes, is it a good or bad change? Please explain:

yes! It is a good change because we need to learn a lot!

N. Jamie

JM Pseudonym: Jamie

Date: 2/20/20

SMART Board Journal Entry #2

Answer the following question:

Give Miss Ferris one piece of advice concerning the SMART Board:

The SMART Board is so difficult

Answer the following question:

Has the SMART Board changed center time?

YES

NO

If yes, is it a good or bad change? Please explain.

yes it is a good change but I don't know

O. Mitchell

MV Pseudonym: Mitchell Date: 2/22/10

SMART Board Journal Entry #2

Answer the following question:

Give Miss Ferris one piece of advice concerning the SMART Board:

we should do brain pop
more on the smart board

Answer the following question:

Has the SMART Board changed center time?

YES

NO

If yes, is it a good or bad change? Please explain:

good because it is very
very, fun

P. Alison

AL Pseudonym: Alison Date: 2/22/10

SMART Board Journal Entry #2

Answer the following question:

Give Miss Ferris one piece of advice concerning the SMART Board:

Answer the following question:

Has the SMART Board changed center time?

YES

NO

If yes, is it a good or bad change? Please explain:

It is a good change because it helped
me with punctuation and it helped me learn
adjectives and nouns.

Q. Sabrina

ST Pseudonym: Sabrina Date: 2/2/10

SMART Board Journal Entry #2

Answer the following question:

Give Miss Ferris one piece of advice concerning the SMART Board:

W- The Smart board needs a payon!

Answer the following question:

Has the SMART Board changed center time?

YES

NO

If yes, is it a good or bad change? Please explain:

It gets funner.

R. Matthew

ME Pseudonym: Matthew Date: 2/22/10

SMART Board Journal Entry #2

Answer the following question:

Give Miss Ferris one piece of advice concerning the SMART Board:

The smart Board is out
to much.

Answer the following question:

Has the SMART Board changed center time?

YES

NO

If yes, is it a good or bad change? Please explain:

I think good change. yes it help
myself

S. Student Journal 3

_____ Pseudonym: _____ Date: _____

SMART Board Journal Entry #3

Answer the following question:

What is your favorite activity to do on the SMART Board? Please be specific and use details.

T. Jimmy

Pseudonym: Jimmy Date: 3/25/10

✓
Graded
10/1

SMART Board Journal Entry #3

Answer the following question:

What is your favorite activity to do on the SMART Board? Please be specific and use details.

I like to use the smartboard
at centers. I like vortex on the
smartboard.

U. Emily

Pseudonym: EMILY Date: 3-15-10

SMART Board Journal Entry #3

Answer the following question:

What is your favorite activity to do on the SMART Board? Please be specific and use details.

My favorite activities are math Jeopardy, the social studies review and paragraph editing.

I like Jeopardy for a couple of reasons 1) It has to do with math 2) it is a fun review game, and 3) it is math into a game.

V. Carly

Pseudonym: Carly Date: March 15

SMART Board Journal Entry #3

Answer the following question:

What is your favorite activity to do on the SMART Board? Please be specific and use details.

My favorite activity to do on the smart board is to use it for math. It helps me learn multiplication, division and lots of math stuff. It is fun for games but it is fun for math too.

W. Mitchell

Pseudonym: Mitchell Date: 3/15/10

SMART Board Journal Entry #3

Answer the following question:

What is your favorite activity to do on the SMART Board? Please be specific and use details.

What I like to do on the
SMART board is doing SMART
board centers and math
problems on the SMART
board.

X. Kelly

25 Pseudonym: Kelly Date: 3/15/10

SMART Board Journal Entry #3

Answer the following question:

What is your favorite activity to do on the SMART Board? Please be specific and use details.

I like to do the paragraph editing. I think it helps with making sure your paragraphs is correct. I like it because it is fun and you learn from it too!

Y. Notes from Training Session

Handwriting practice lines consisting of multiple sets of horizontal lines. A small handwritten mark resembling a 'u' is located at the bottom left of the lines.

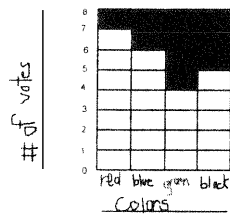
run

fly

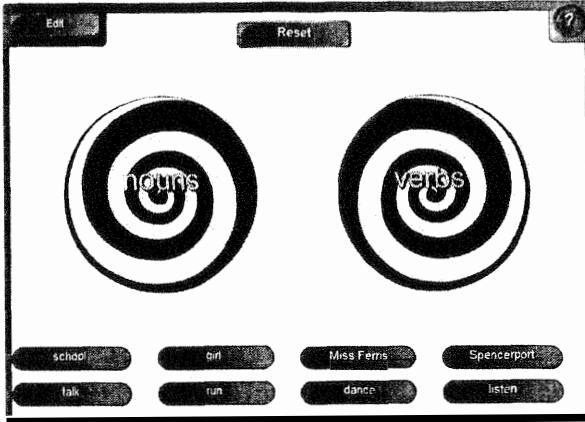
jump



Favorite Colors



Z. Adjectives and Nouns Center



The interface for the Nouns and Verbs Center features two target-like graphics. The left target is labeled 'nouns' and the right target is labeled 'verbs'. Below the targets are two rows of word buttons: 'school', 'girl', 'Miss Ferns', 'Spencerport' in the first row, and 'talk', 'run', 'dance', 'listen' in the second row. At the top of the interface are 'Edit' and 'Reset' buttons.

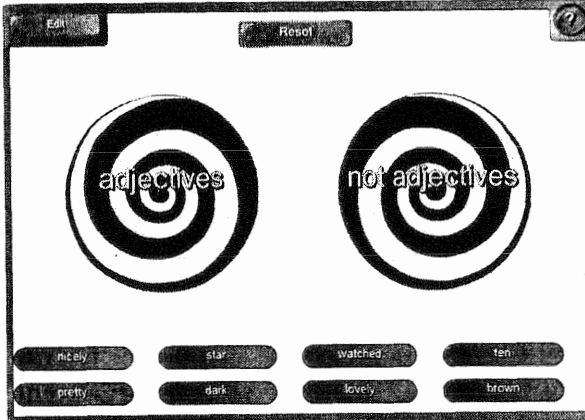
Directions: Use the high lighter pen to find nouns and verbs in this paragraph.
Use the yellow high lighter pen to show nouns, and the green high lighter pen to show verbs

Today is Thursday, January 28th. It is going to be a busy day. You will be working hard during centers, thinking, reading and writing. When you are done with centers, you may choose to read a book or write in your journal. Even though we didn't have library today, we will go there tomorrow.

I'm sure you will be sweating in P.E. today! What will Ms. Gafner have planned for you? Will you need to get a drink after you are done running around. Exercising is great for your body and brain!

Then tomorrow is Friday! We will have a spelling test. Remember to study tonight so you will get a high grade!

When you are done, erase your work so that the next group can start fresh!



The interface for the Adjectives and Not Adjectives Center features two target-like graphics. The left target is labeled 'adjectives' and the right target is labeled 'not adjectives'. Below the targets are two rows of word buttons: 'nicely', 'star', 'watched', 'ten' in the first row, and 'pretty', 'dark', 'lovely', 'brown' in the second row. At the top of the interface are 'Edit' and 'Reset' buttons.

Directions: Use the yellow high lighter pen to find adjectives in this paragraph.

This morning I woke up and I was feeling very groggy. I slowly crawled out of bed and turned on the shower so that the water was scalding hot. The warm steam made me feel more awake.

Next I picked out my clothes. My closet was so dark that I had to squint my tired eyes to pick out an outfit. I decided on a bright pink sweater and black wool pants.

Once I was dressed, I thought about eating a delicious breakfast. I poured myself a fresh glass of orange juice and put an English muffin in the toaster oven. It came out hot and crispy. Next, I spread on whipped cream cheese. My first bite was so yummy! It was crunchy and creamy at the same time.

Finally I was ready for my day!

When you are done, erase your work so that the next group can start fresh!

AA. Alliteration Center

Figurative Language

What is figurative language?
(fig ur a tive)

Did you just say to yourself, "What is alliteration Miss Ferris?"?
(a-lit-er-a-tion)

If you did, that's okay!

Go to the next page to practice some alliteration yourself!

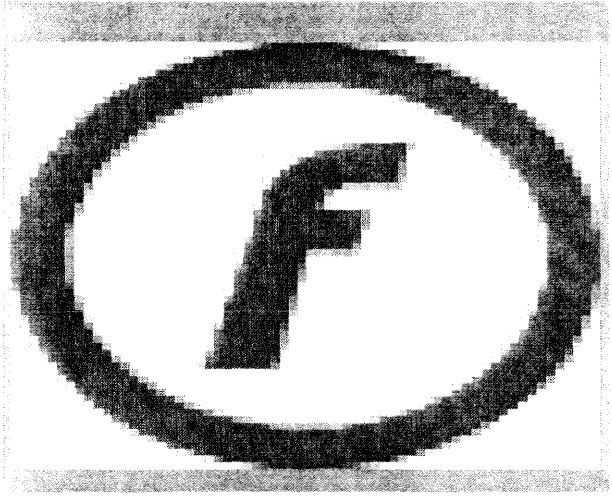
AaBbCcDdEeFfGgHhIiJjKkLlMmNnOoPpQqRrSsTtUuVvWwXxYyZz

You can start by using different letters of the alphabet as your guide!

Aa Angela Abigail Applewhite ate anchovies and artichokes.
Now you try!

Bb Bertha Bartholomew blew big, blue bubbles.
Now you try!

Good Job!



Use this table to help you make a sentence with alliteration!

	noun	verb	adjective	noun
s m e	example: Sarah	example: sells	example: smooth	example: sand

Now try some more!

Cc Chris Casey came crying cow to the carriage.
Now you try!

Dd Dennis drank Dr. Pepper at the dance.
Now you try!

Ff Fran has a funny friend named Frank.
Now you try!

BB. Singular and Plural Nouns Center

Directions: Write the **plural** version of the word.

leaf leaves
shelf _____
knife _____
loaf _____

What is the rule for these words? _____

Directions: Write the **plural** version of the word.

day _____
play _____
spray _____
monkey _____
chimney _____

What is the rule for these words? _____

Directions: Write the **plural** version of the word.

candy _____
bunny _____
penny _____
party _____
city _____

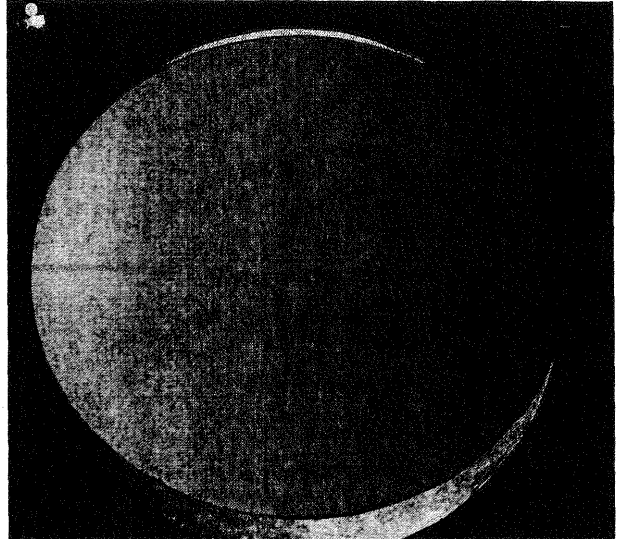
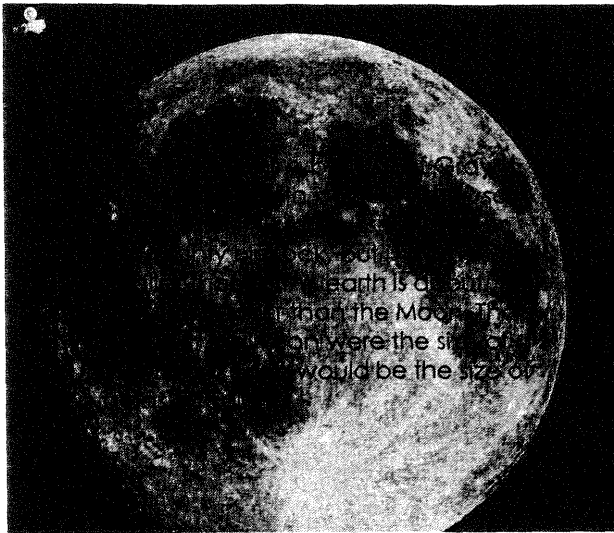
What is the rule for these words? _____

Q.1

Find the plural word for: self

A selffs	C selvs
B selfs	D selves

CC. Paragraph Editing Center

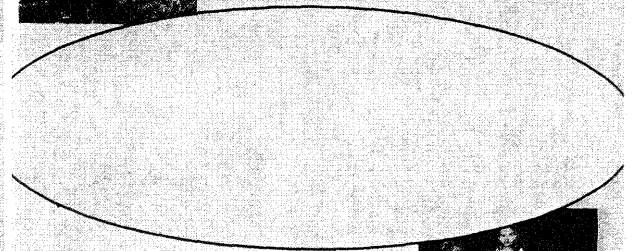


Directions: Use the marker to fill in the missing letters and correct errors in capitalization and punctuation.

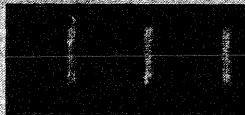
In 1969 two americans, Neil Armstrong an_ Edwin "Buzz" aldrin, became the fi_ t people to walk on the Moon. To Learn about the Moon, they took photos, collect_ _ rocks and soil, a_d perfor_ed exper_ments. they had to go through a lot of training to learn how to do these Jobs with only one sixth of the gravit_ they were used to on earth.



Click the oval to find the answers. Did you find the 5 capitalization errors? Did you use all the correct letters to spell the words?

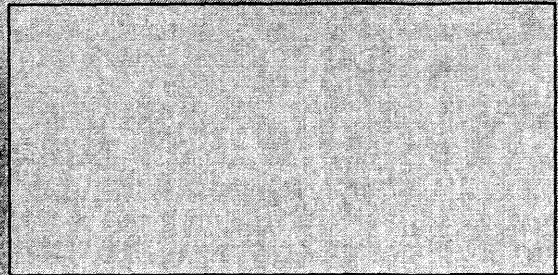
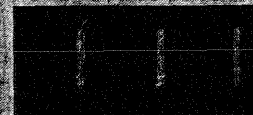


Directions: Use the marker to cross out the words that are spelled incorrectly and write the correct spelling above.



Think about all feh different kindz of mater that exist. It may surprise yu to lern that matter cna be found in won of three forms - solid, llquid- or gas. Thes forms r called states of matter.

Directions: Click on the box below. Did you find all the correct spelling errors?



DD. Paragraph Editing with Split Page

Read the following paragraphs from *Tell Me A Story* and correct errors in capitalization and punctuation.

Cross out the letter or punctuation that is incorrect, and write the correction above.

Newcomers to america were called
immigrants. Like Anna, over One million
immigrants came to America from russia
between 1900 and 1910 to find a better life

Now slide down the shade to see
if you made the correct changes!

Newcomers to America were called
immigrants. Like Anna, over one million
immigrants came to America from Russia
between 1900 and 1910 to find a better life.

A shirtwaist was a fancy shirt worn by
American Women from about 1900 to 1919?
It had a high ruffled collar, puffy sleeves,
buttons down the front, and a fitted waist.

Now slide down the shade to
see if you made the correct
changes!

A shirtwaist was a fancy shirt worn by
American women from about 1900 to 1919.
It had a high ruffled collar, puffy sleeves,
buttons down the front, and a fitted waist.

EE. Common and Proper Nouns Center

A **noun** is a word that names a person, place, thing or idea.

Examples:

Person: The insurance agent sold Betsy a policy.

Place: Most states require car owners to have insurance.

Thing: Betsy saved her money and bought a car.

Idea: Betsy had to make a decision.

Write ten nouns to go with each group of nouns listed below. Two examples are given in parentheses.

thing (cat, table)

person (student, man)

place (country, city)

A **common noun** is the name of a general type of person, place, thing or idea.

A **proper noun** is the name of a particular of person, place, thing or idea.

Examples:

Common nouns: president, teacher, city, singer.

Proper nouns: Barack Obama, Miss Ferris, New York, Taylor Swift.

Write a proper noun by each common noun listed below and write a common noun by each proper noun listed below.

holiday -

United States -

lake -

Spanish -

player -

Atlantic -

team -

Star Wars -

band -

Florida -

GG. Center completed by Mitchell and Shannon

grammar intro - SMART Notebook

File Edit View Insert Format Draw Help

Auto-hide

Groups

Group 1

Nov 17 - 12:31 PM

Mar 8 - 11:01 AM

Nov 17 - 12:58 PM

Feb 10 - 3:45 AM

Feb 9 - 10:17 AM

External Page

Activity: Write ten nouns to go with each group of nouns listed below. Two examples are given in parentheses.

thing (cat, table)	person (student, man)	place (country, city)
Dog	girl	New York
pig	Ili Manning	Florida
Chair	teacher	town
house	Michael	Virginia
liseré	Sharon	walshant

start SMART Stuff grammar intro - SM... 10:03 AM

grammar intro - SMART Notebook

File Edit View Insert Format Draw Help

Auto-hide

Groups

Group 1

Nov 17 - 12:31 PM

Mar 8 - 11:01 AM

Feb 10 - 10:07 AM

Nov 17 - 12:58 PM

Feb 10 - 3:45 AM

External Page

A **common noun** is the name of a general type of person, place, thing or idea.

A **proper noun** is the name of a particular of person, place, thing or idea.

Examples:

Common nouns: president, teacher, city, singer

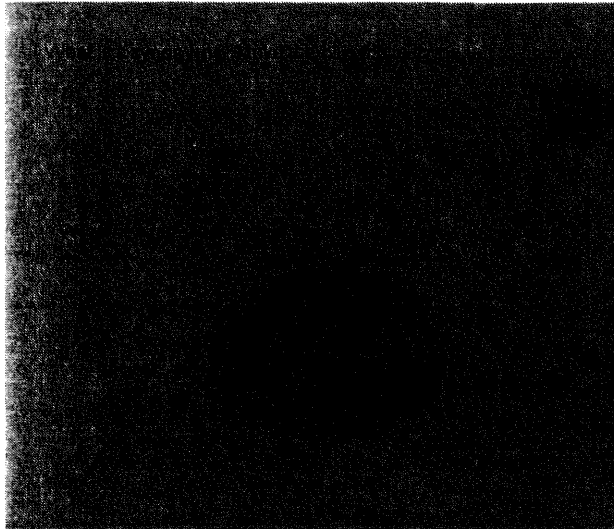
Proper nouns: Barack Obama, Miss Ferris, New York, Taylor Swift

Activity: Write a proper noun by each common noun listed below and write a common noun by each proper noun listed below.

holiday - Christmas	United States - country
lake - Lake Ontario	Spanish - language
player - Lady Gaga	Atlantic - Ocean
team - Chargers	Star Wars - Movie

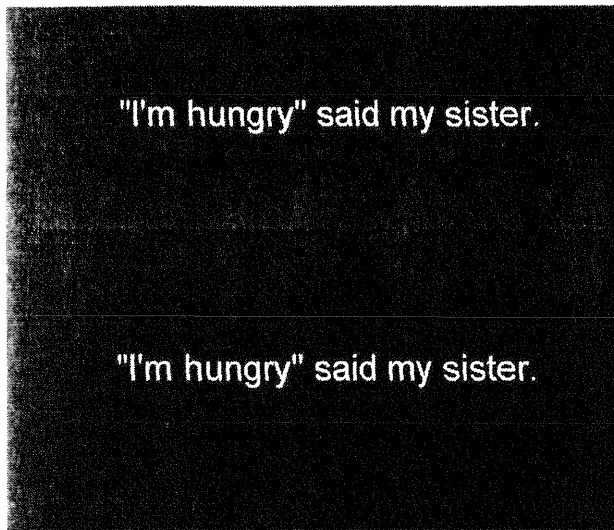
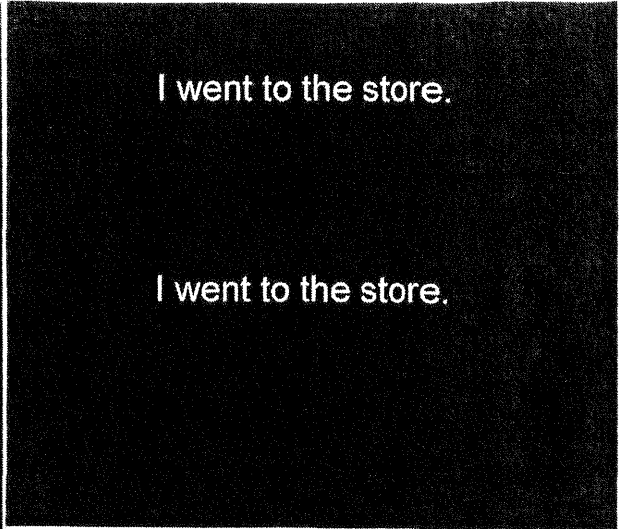
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HH. Synonyms Center



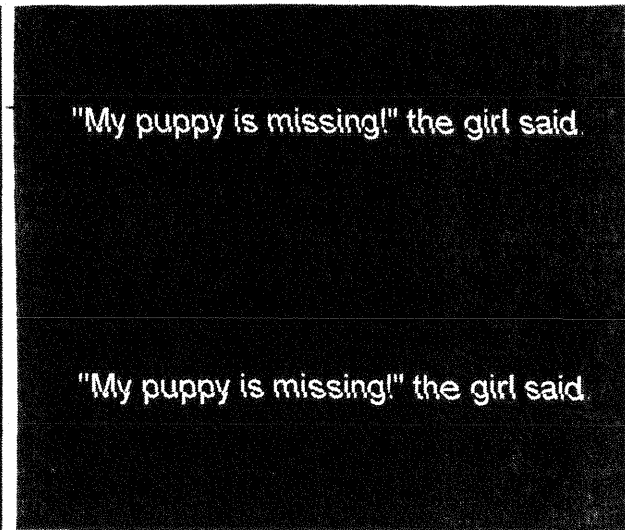
I went to the store.

I went to the store.



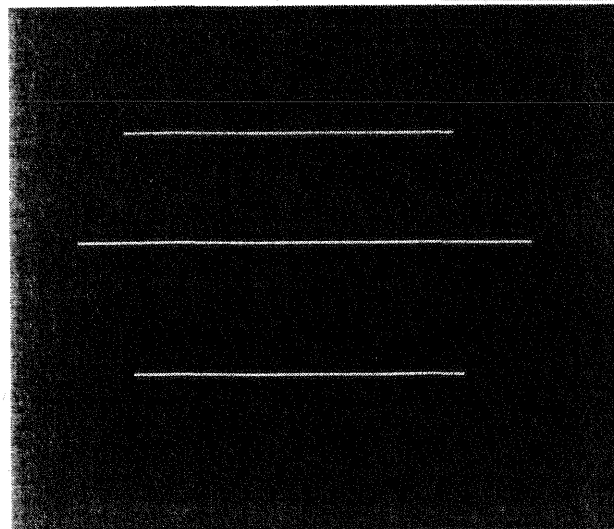
"I'm hungry" said my sister.

"I'm hungry" said my sister.

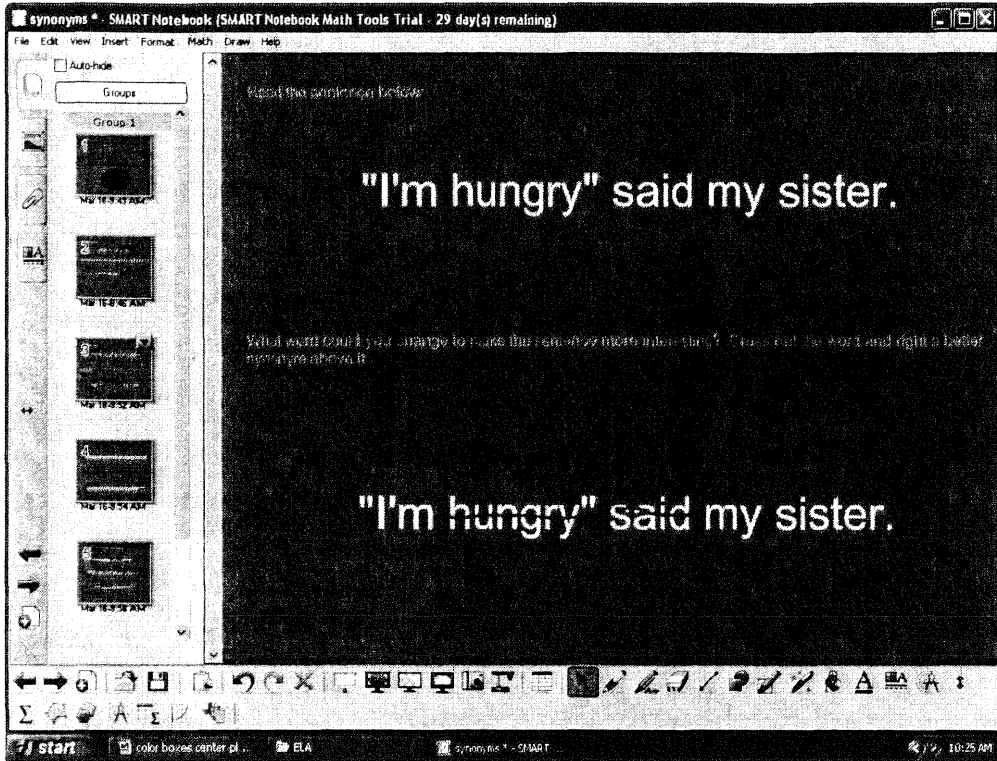


"My puppy is missing!" the girl said.


"My puppy is missing!" the girl said.



II. Center completed by Corey and Alison




JJ. Jimmy Book Report Project




Author
Illustrator
Characters


Setting
Events
Conclusion



This is Jon Scieszka the author of my book 2095.



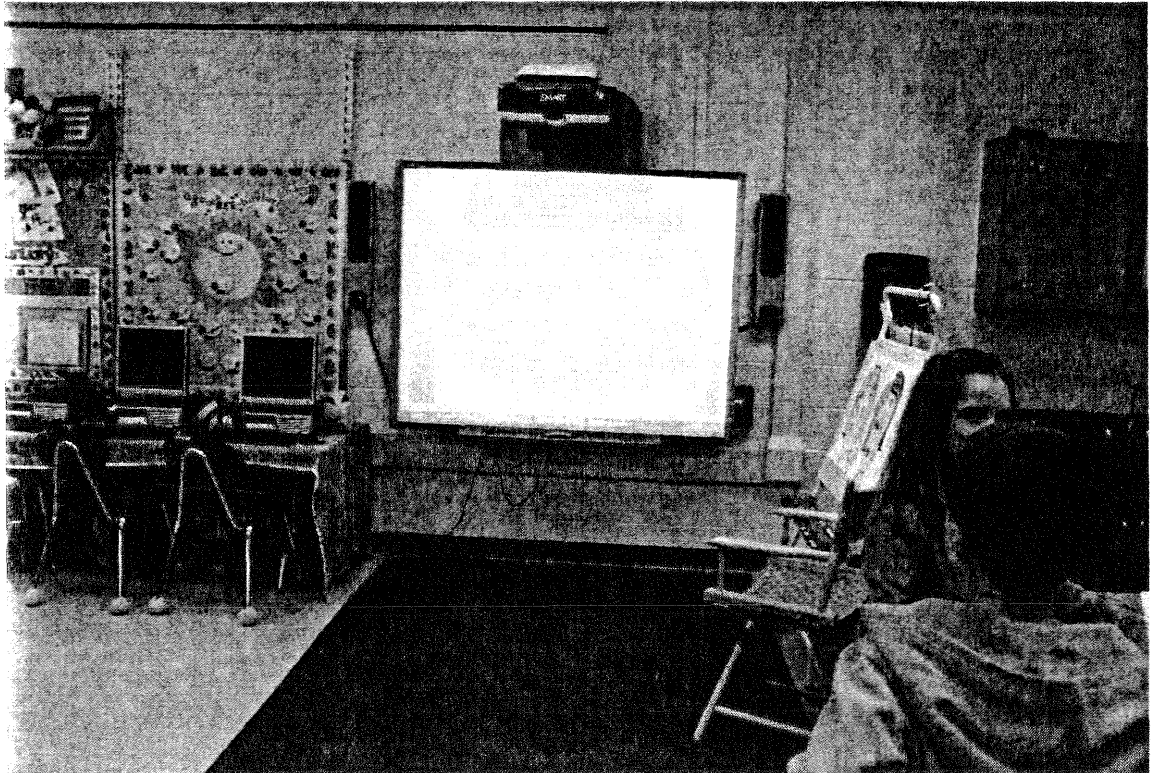
This is Lane Smith the illustrator of my book 2095.



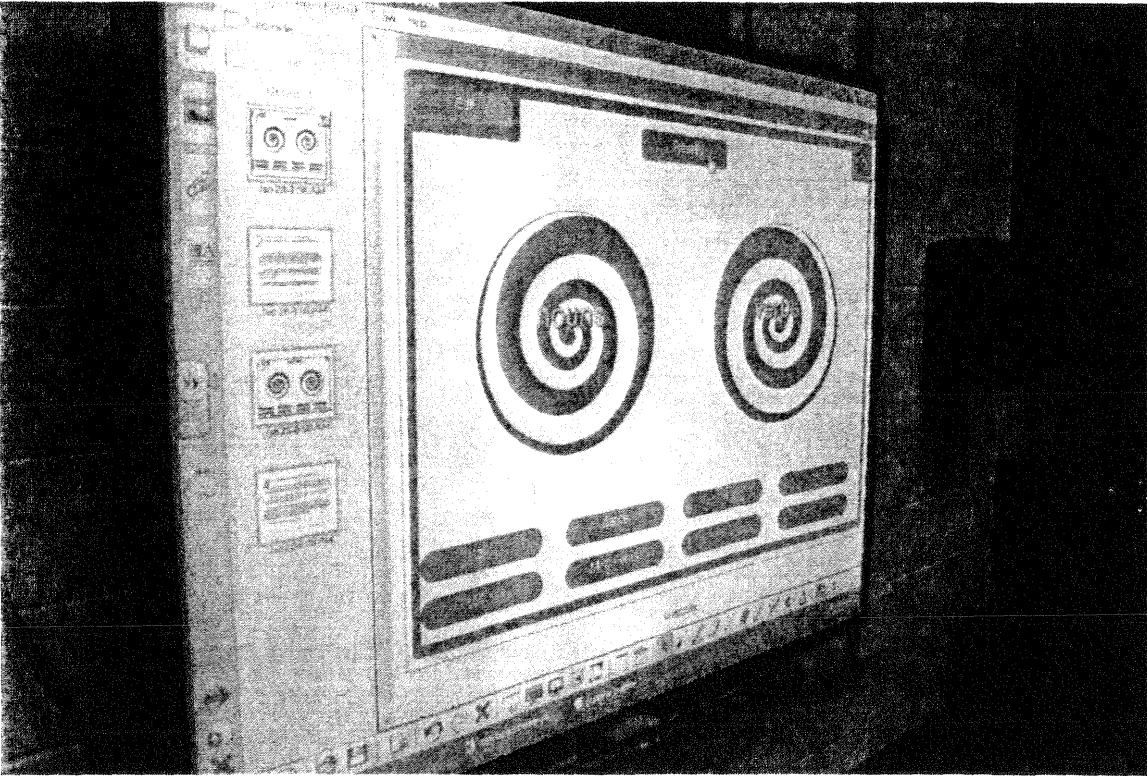
My story 2095 takes place in N.Y. City in 1995 and 100 years later in 2095.

Beginning Middle End

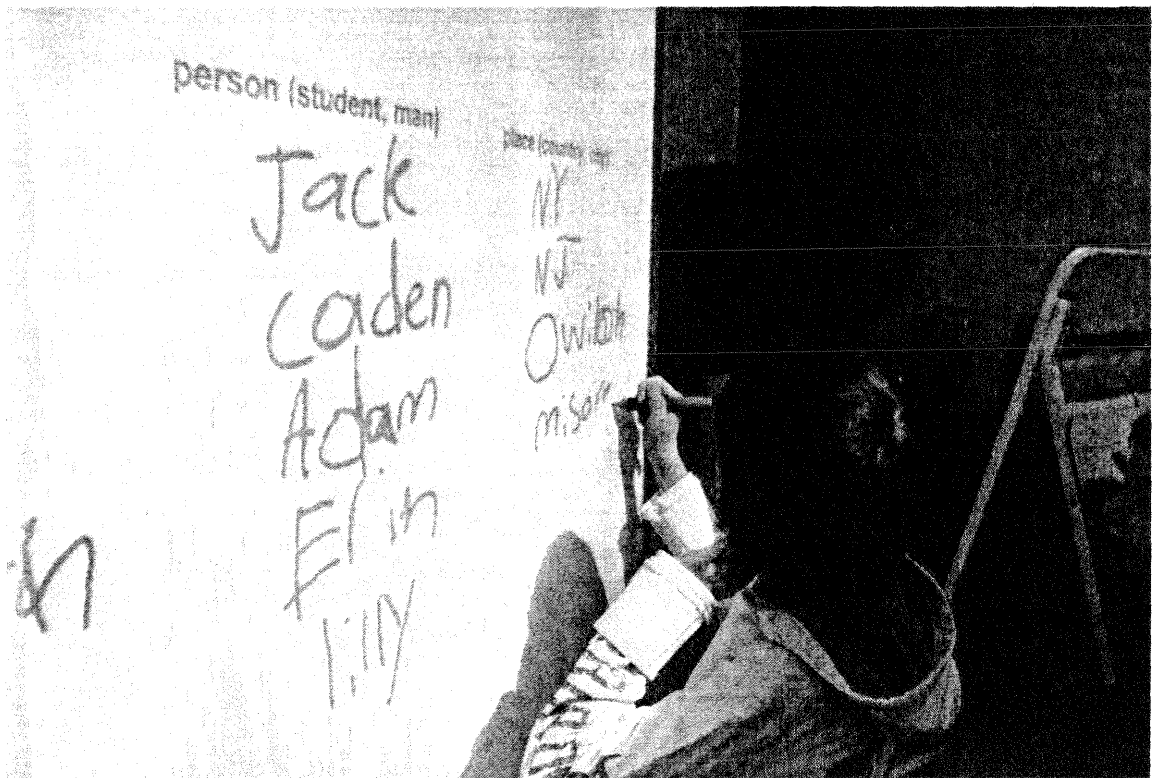
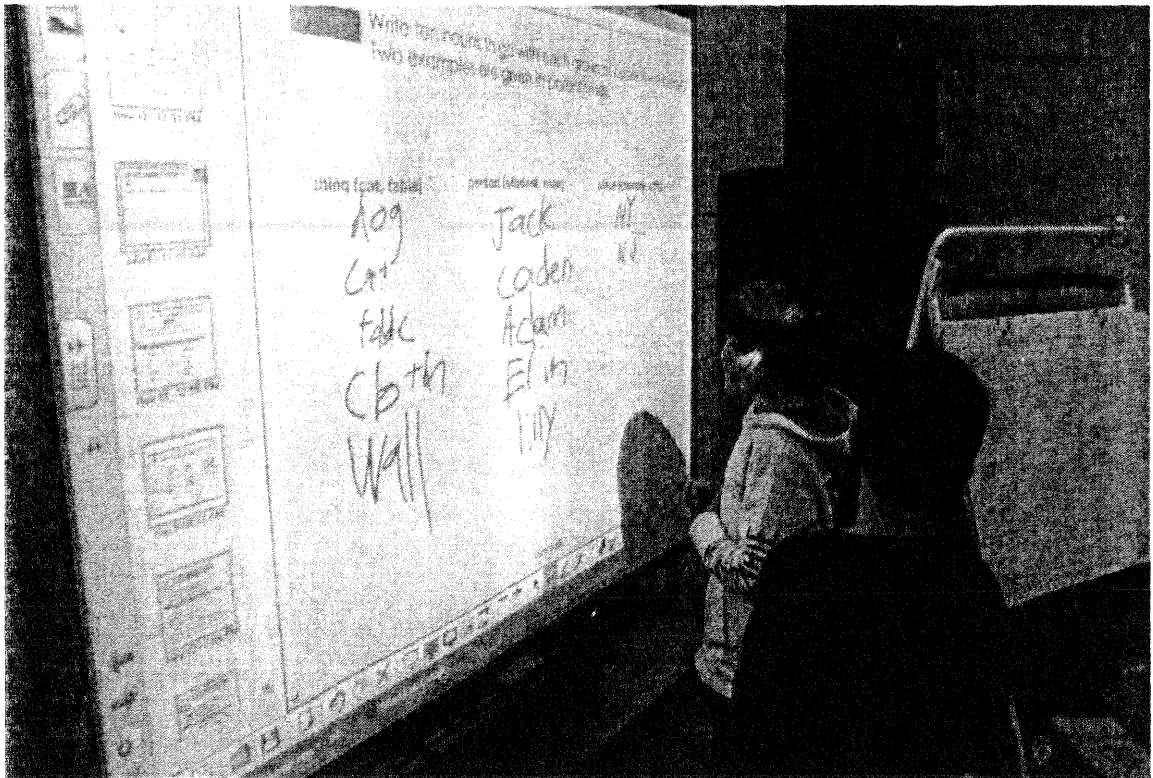
KK. SMART Board new location



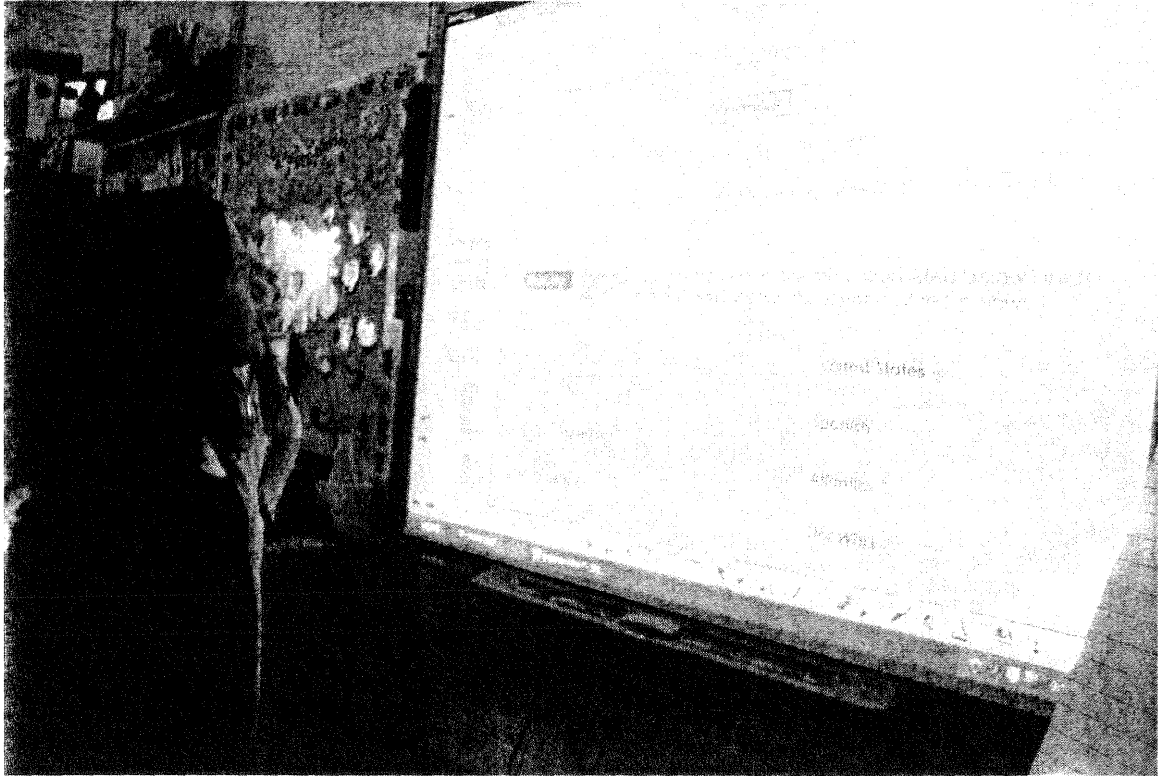
LL. SMART Board Vortex activity



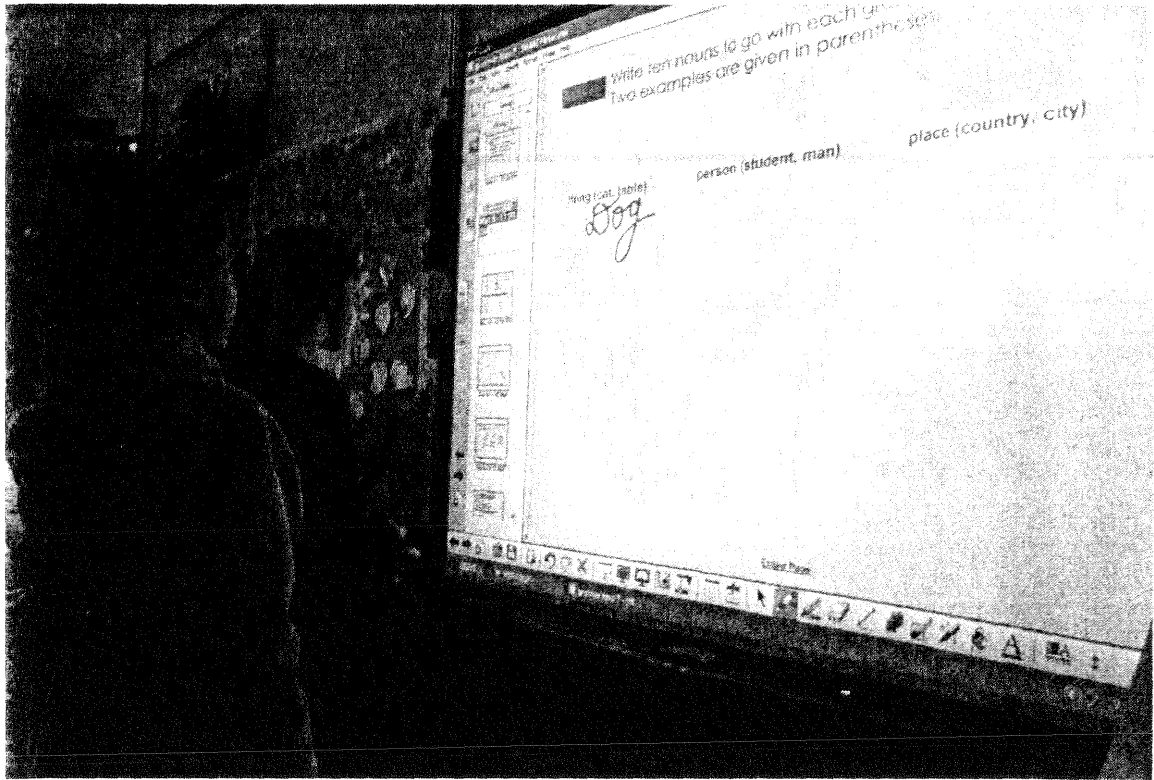
MM. Jimmy and Corey listing nouns



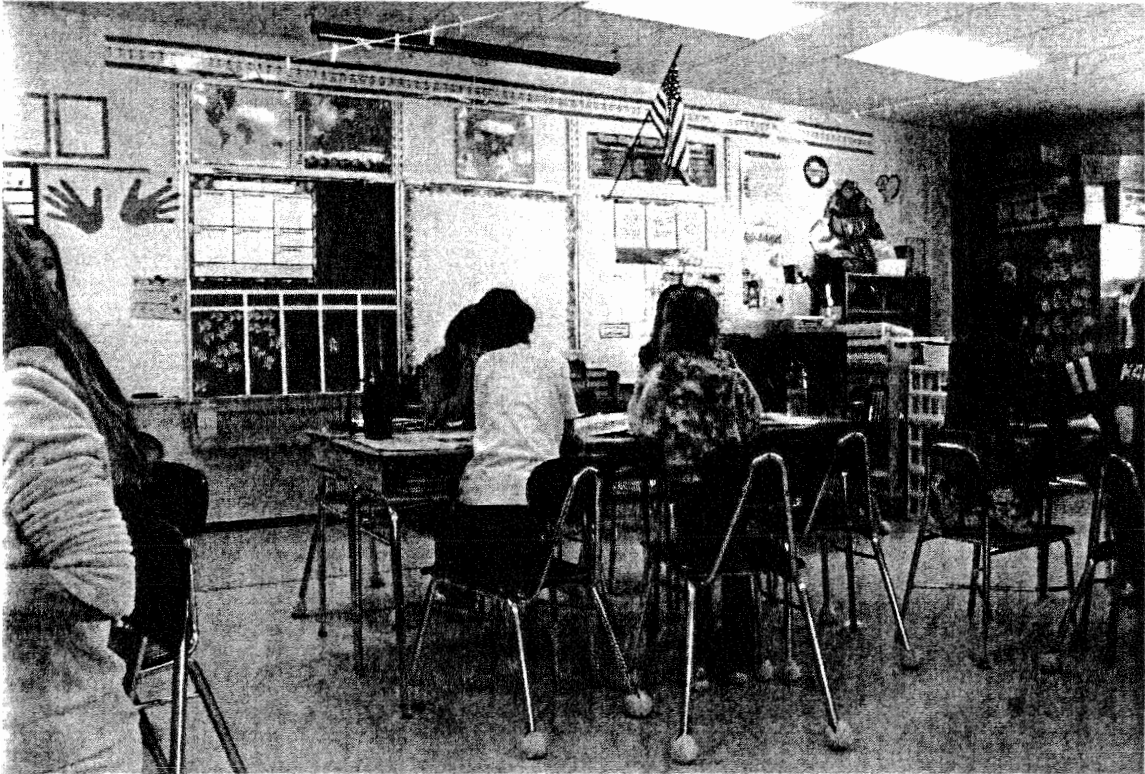
NN. Carly and Jamie at noun center



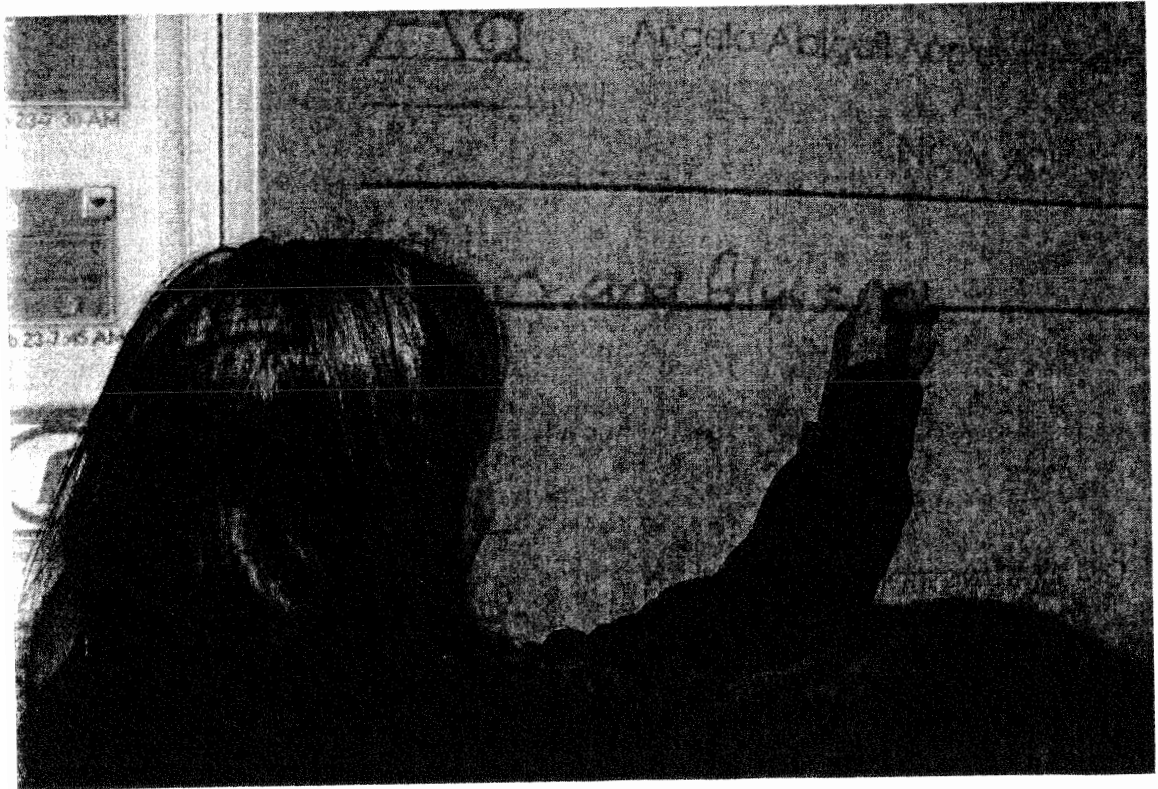
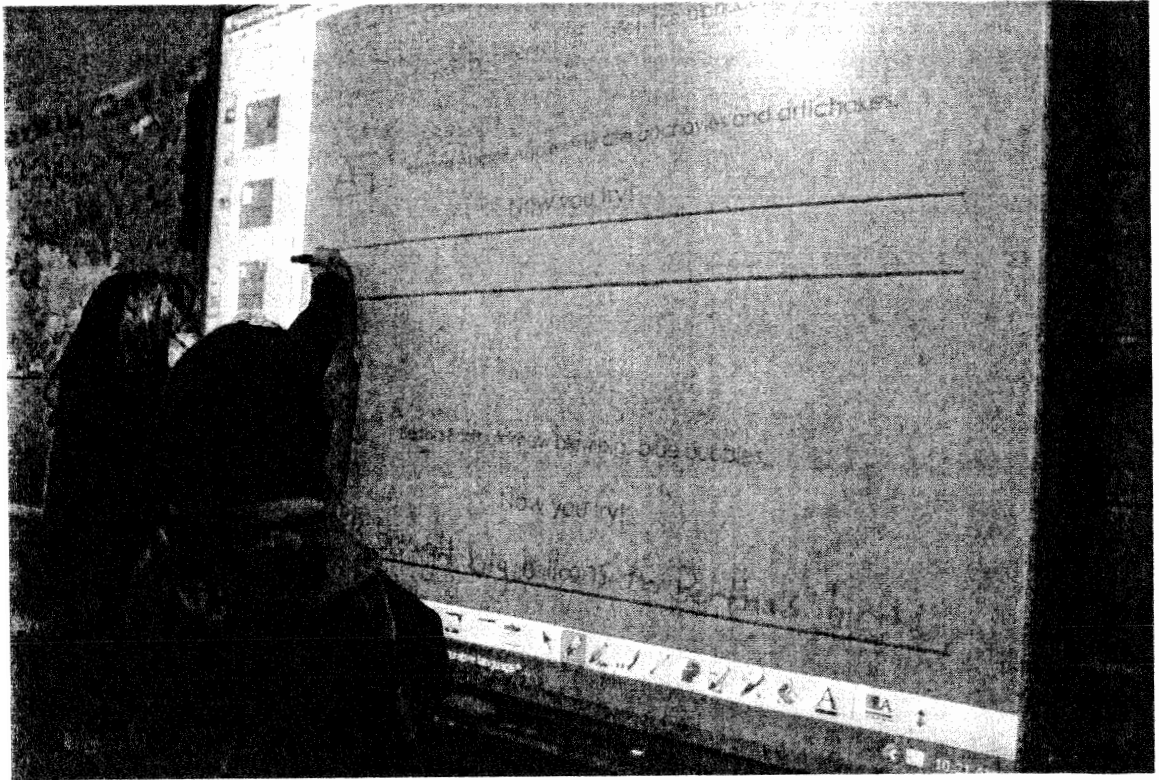
OO. Shannon and Mitchell at noun center



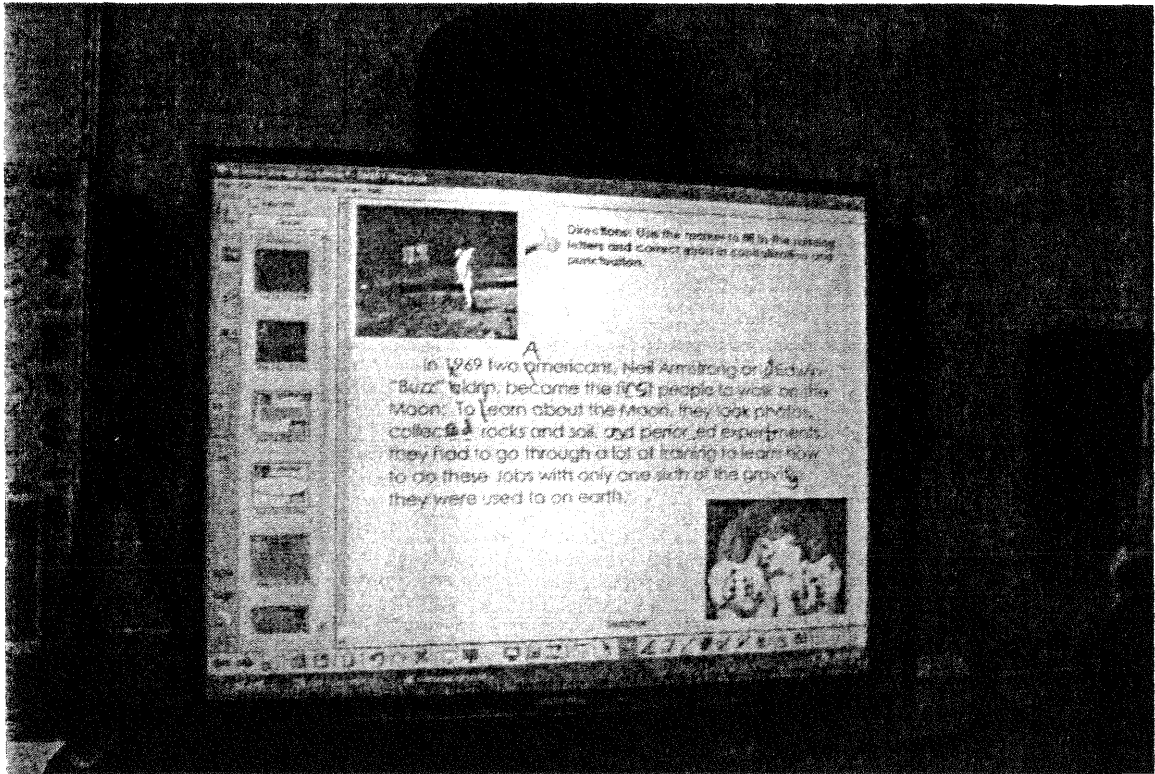
PP. Students working at desks



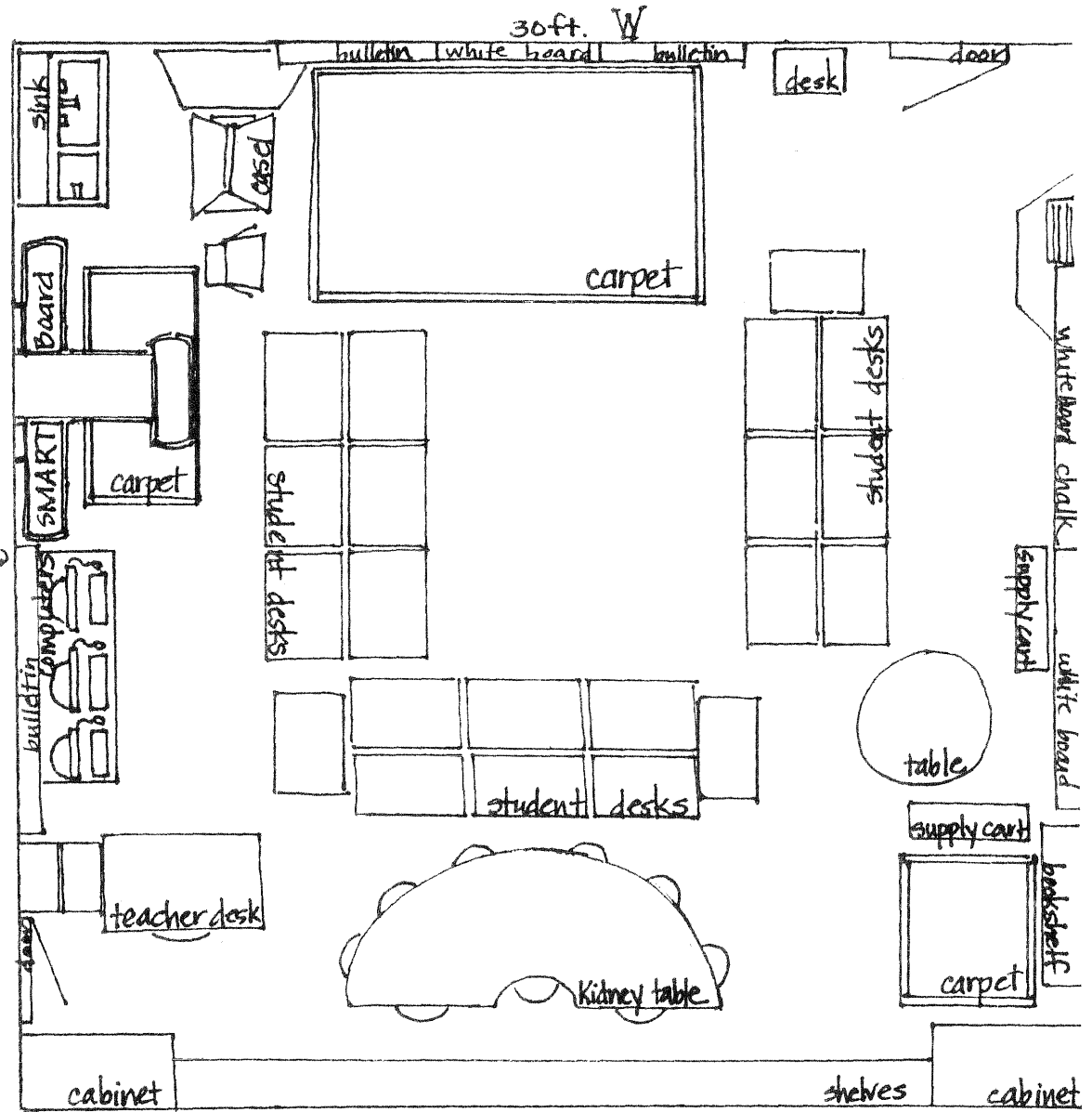
QQ. Emily working at alliteration center



RR. Science paragraph editing with student corrections



SS. Classroom Map



TT. Caroline and Ronnie at Smart Board

