There's Always Another Way:

Multiple Techniques to Increase Student Engagement and Participation in the Classroom

Rebecca N. Balch
Lemont, Intern
2nd Grade
rnb127@psu.edu

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I. Background Information

A. Teaching Context

The State College Area School District, located in Centre County, Pennsylvania, is in a suburban area. The students of State College Area School District come from a 150 square mile attendance area, with over 7,000 students enrolled in the district. The district itself is a relatively wealthy district, with computer technology integrated into the learning process (State College Area School District, 2004).

Specific to my teaching context, I have been student teaching since September 2004 at Lemont Elementary School, a junior primary and primary building, in a second grade classroom. There are twenty-two students in my class: thirteen males and nine females. The students are also from mixed economic backgrounds. All students have unique individual differences; the room is behaviorally, culturally, academically, and physically, as well as emotionally and socially diverse.

Behaviorally, approximately twelve children have unique needs, in the areas of achievement, motivation, and ADD/ADHD. Socially and emotionally, there are roughly three to five children who have unique needs, in the areas of emotional disturbance, limited confidence, and limited social skills. Academically, the entire class has varying needs, ranging from gifted and talented to special education. Additional areas of diversity are within the realms of physical and age-related developmental differences.

- *High Achievers*: There are multiple high achievers in the class. These students work very diligently, cautious not to make errors. While the students sometimes take longer to complete assignments, the assignments are always neat and thoroughly completed.

- *Motivation*: A few children in the classroom possess low motivation to complete activities. The children always complete the activities, but are not always engaged in the learning process.

- *ADD/ADHD*: Several children take medication for ADD/ADHD. As these abbreviations stand for, the students have difficulties paying attention for long periods of time; others are more hyperactive. When directions are precise and activities are engaging, an observer would not be able to determine that these students have these unique needs.

- *Emotional*: There is a child in the classroom who has an oppositional-defiant emotional disturbance.

- *Limited Social Skills*: There are a few students in the classroom who have limited social skills. As a result, making friendships is a challenge. These children are not aware of appropriate actions and behaviors when working with others.

- *Confidence*: One student is not very confident in her ability to complete work individually.

- *Gifted/Talented*: There are five gifted and talented students in the class. Two are gifted in math, receiving math enrichment once a week, for thirty minutes. These same two students, along with three others, are talented in reading. These five students are in the same guided reading group, receiving reading instruction at their appropriate level.

- *Title I*: Five students are in Title I. They receive special instruction for thirty minutes, four times per week. These students are in the same reading group, allowing them to receive instruction and excel at their individual levels.

*All together, there are four total reading groups, meeting the needs of each student.

- *Special Education*: There is one autistic child in the classroom.

- *Learning Support*: Two children receive learning support in the area of language arts, in a resource room, for two hours each day. These children are not in the classroom for any language arts instruction.

- *Physical*: Seven students have glasses and one student has hearing aids

- *Age-Related Developmental Differences*: The age range in the classroom is rather large. Some students just turned seven at the beginning of the school year, while others were already turning eight-years-old. This age difference has been noticed to affect various areas of development. While this is not the case with all students, some of the older students have more developed fine-motor skills and better coordination than the younger students. A few areas that this difference affects can be seen in students' handwriting and reading levels. For instance, one child receives special assistance with writing.

B. Deciding On an Inquiry

How Can I Increase Student Engagement, Participation, Attention, and Focus during Lessons?

I chose my inquiry project, based on increasing student engagement, participation, attention, and focus, because student attention and focus were a problem in my classroom. Many students were having trouble completing work from not paying attention to directions, and were constantly laying their heads on their desks. Additionally, only a handful of students would raise their hands on a consistent and constant basis to answer questions. As a consequence of not being attentive, students were neither engaged nor participatory.

From having many students with ADD/ADHD or other special needs in my classroom, as mentioned above, I wondered if presenting instruction in a more engaging and appealing manner would help to maintain all students' attention. Being a firm believer in Howard Gardner's Theory of Multiple Intelligences, I truly believe that all children learn in different ways, and also began to question how students' participation would change if content was presented to accommodate a greater range of learning styles. Therefore, given a diverse classroom, along with the need to increase attention and participation, my goal to involve all learners in the learning process, via different methods of instruction, directly corresponded to my classroom's needs.

My initial inquiry was more specific than the inquiry project I actually facilitated. While still based on the same outcome of increasing overall student engagement, my first question was: *"How can I implement American Sign Language in the classroom to improve student attention or focus, along with engagement and participation, during lessons?"* I came to this preliminary idea from my high level of interest and study of American Sign Language. After taking both Sign Language I and II, fulfilling credits for my communication disorders concentration, I learned that sign language is used in many ways, not just in communication with Deaf or hard-of-hearing individuals. Such uses included implementing sign language in the classroom to assist classroom management practices. Combining my knowledge of sign and my belief in Multiple Intelligences, I began to see that sign language could be used as a form of kinesthetic learning for children. By providing "silent responses" to questions, I felt that all students would be able to participate, supplying answers during lessons in the classroom.

While positive initial changes were observed, which will be demonstrated later, I found that using Sign Language alone was not the only way I could increase engagement in lessons. During the beginnings of my inquiry, I began to come across many concerns. For instance, teaching signs in the initial stages of my inquiry, during spelling and social studies lessons, required substantial time that was not normally planned into the daily schedule. Not wanting to take away from instructional time, I was having difficulty trying to incorporate signs while meeting the objective(s) of lessons simultaneously. If this inquiry was started in the beginning of the year, gradually introducing sign to students, it may have been different; but, trying to introduce many signs in January and February just to begin my inquiry project became challenging. Also, while lessons were going well in spelling and social studies, I came to a roadblock with how to use sign language in all lessons, such as math and science. Lastly, even though many students enjoyed sign, it was not a method of increasing engagement for all students.

Given these observations, I decided that sign was not the only way to increase overall class engagement. While still employing sign language and kinesthetic strategies, I decided to

broaden my question to incorporate many techniques that could be used to foster greater participation, attention, focus, and ultimately student engagement. Thus, my inquiry question became, "*How Can I Increase Student Engagement, Participation, Attention, and Focus during Lessons?"* The additional techniques employed through the remainder of my inquiry were based on teaching to incorporate many learning styles in the classroom. At this time, lessons began to include technology, drama, role-playing, visuals, motivating materials, cooperative learning strategies, every pupil response techniques, and original songs and chants. With increasing the strategies and learning styles employed, I once again hoped to reach more students and academic subjects to increase engagement, as sign first did when introduced in the classroom.

C. The Importance of My Inquiry

Students are diverse in more ways than what is apparent to the eye. When a classroom is filled with twenty-two students, there is a great probability that all of these students learn best through different learning strategies. I believe that when all students' learning strategies are not supported in the classroom, the harder it is for students to engage and participate, let alone remember the content of a lesson. As teachers, we all want our students be engaged in lessons, receiving maximum educational benefits. Engagement, as described in an article entitled Motivation in the Classroom, in *The Journal of Educational Psychology*, is defined as the following:

"Engagement includes both behavioral and emotional components. Children who are engaged show sustained behavioral involvement in learning activities accompanied by positive emotional tone. They select tasks at the border of their competencies, initiate action when given the opportunity, and exert intense effort and concentration in the implementation of learning tasks; they show generally positive emotions during ongoing action, including enthusiasm, optimism, curiosity, and interest. The opposite of engagement is disaffection. Disaffected children are passive, do not try hard, and give up easily in the face of challenges. Disaffected children can be bored, depressed, anxious, or even angry about their presence in the classroom; they can be withdrawn from learning opportunities or even rebellious toward teachers and classmates" (Skinner, 1993).

As described by Brian Cambourne, engagement is also a Condition for Natural Learning:

"Providing the conditions that support learning is what good teachers do. Engagement is what learners do. The relationship between teaching and learning—the success with which learning occurs—depends on the existence of both. Engagement means learners are intellectually involved, that they are thinking about what they are doing, they are mentally, even emotionally engaged with what is happening" (Bertrand, 2002, p. 13-14).

Given the benefits of engaging student in lessons alongside the harmful effects on student outcomes when they are not engaged, further highlighted the importance of engaging students in the learning process. After noticing students displaying characteristics associated with disaffection, such as constantly laying their heads on their desks, tapping their pencils, calling out or whispering with friends, stating phrases, such as, "This is too hard," "I do not understand," and "I quit," I became concerned that students were not receiving maximum learning benefits from lessons. At times, students were neither mentally, nor intellectually and emotionally involved in the learning process. After noticing these characteristics and observing my students' learning styles, as well as special needs, I again found that conducting an inquiry project based on increasing student engagement, participation, attention, and focus would be perfectly suited in my classroom to enhance students' learning potential.

D. Questions and Wonderings

- Main Research Question/Wondering:

While I had many questions I wanted to answer while implementing inquiry in my classroom, my overall inquiry question was, "*How can I increase student engagement, participation, attention, and focus during lessons*?"

- Research Sub-Questions/Wonderings:

After determining my overall wondering, I began to question whether or not my approaches would successfully increase student engagement in the classroom. I wondered if motivation and progress would increase from students being more engaged in lessons. Wonderings even expanded into the realm of classroom management; I was curious to determine if fewer off-task behaviors would be displayed in the classroom by allowing all students to be participatory and engaged in the lessons. As these were a few of my sub-wonderings, all of the various sub-questions that came to my attention at the start of my inquiry are noted below.

  - How will overall achievement change (if it changes at all) if students are more engaged, attentive/focused, and participatory during lessons? Generally, in addition to increasing overall engagement, will learning and retention increase with implementing lessons based on different learning styles and sign language?
  - Will student motivation increase if engagement increases? How will this motivation change? What lessons will be most affected?
  - Will student attention/focus, engagement and participation actually change? Will the techniques I choose interest students (keeping high levels of attention and participation) for a long period of time or only when it is novel to the class?
  - How will students respond to songs/chants, signing, etc? Will students enjoy or dislike certain methods?
  - Will off-task behaviors decrease if students are more engaged in lessons?
  - Will pair-shares make students more comfortable to participate? Will more students raise their hands to participate when using pair-shares?

II. My Inquiry Plan

A. Inquiry in My Classroom

As previously mentioned, there were seven different techniques used across all lessons, to increase student attention, focus, participation and engagement. The techniques utilized during lessons included visual representations of information, sign language or every pupil response systems, technology, songs and chants, motivational materials, drama or role playing, and cooperative learning strategies. The purpose for applying a vast array of strategies was to increase the opportunity and potential to not only study, but also elevate participation and engagement across all academic subjects or content areas. Additionally, by using such a vast array of techniques, more learning styles would be supported in the classroom. Below are descriptions, providing examples of how each of the noted strategies were implemented in the classroom.

Visual Representations

In addition to solely displaying models representing the subjects of study, such as the Statue of Liberty, using visual representations integrated viewing a large cut-out of an object containing facts, or assembling a figure on the board during the progression of a lesson, as content was presented. For instance, during a lesson on Mount Rushmore, a model of the mountain was created to share with students. However, a history of popcorn lesson represents how a visual was created during the course of a lesson; as the lesson progressed, a popcorn bucket became filled with popcorn facts. As information was shared with students, popcorn-shaped cut-outs displaying this information were added to the visual display, called "Room 18's Bucket of Popcorn Facts". The same holds true when presenting a lesson on the Great Seal of the United States. The front and back of the symbol was assembled as each object seen on the Great Seal was discussed. Lastly, large cut-outs of places, monuments, or objects, such as the Empire State Building, the Washington Monument, the Capitol Building, and blue jeans were used in lessons to present facts to students. These facts were written on the cut-outs prior to the lesson. (See Appendix A1 for visual representations.)

Sign Language and Every Pupil Response Systems

Sign Language was primarily implemented during morning letters. Morning letters are always educational, teaching students about a topic from the current unit of study. For example, during the Land of Make Believe unit as Fairy Tales were being discussed, a morning letter about wizards was presented to the class. During this letter, students were taught the sign for magic. Whenever the word magic or magical appeared in the letter, students were allowed to sign the sign for magic. Thus, whenever there was a morning letter, students were taught a sign relating to the letter, which they were able to sign throughout the duration of the letter.

Sign language and every pupil response systems were additionally used during spelling, printing, and social studies. Generally, in spelling and social studies, all students were able to provide an answer to a question by making a letter from the sign language manual alphabet or holding up a number, each corresponding to a given answer. An additional technique used in the classroom allowed students to express that they had the same idea as another student. When students shared an idea, other students in the class with comparable ideas could make a sign

stating they had the same idea. This "me too" strategy allowed all students to express that they had similar ideas, receiving recognition for their work.

Signs were also incorporated into printing. After modeling how to correctly make a certain letter of the alphabet, students were taught signs for words that contained the given letter found in their printing booklets. When a word was signed, students would carefully print that word in their booklet. (Appendix A2 for sign language pictures and students' printing booklet.)

Technology

Next, technology was used as a motivational tool, providing students with the opportunity to broaden their understanding, while gaining a realistic perspective of concepts. For instance, during the American Album unit students were given the opportunity to take virtual tours of the Empire State Building, as well as the Statue of Liberty. The virtual tours gave children the chance to see authentic pictures of the places in their natural surroundings, realizing distinguishing features, such as the great height of the buildings. In math, the *Investigations* computer program, called SH_Shapes, was used. With this program, concepts from class were further expanded, in a way that could not be done without the use of a computer. Using technology in science provided students with evidence, supplying concrete validity for scientific concepts. To provide an example, when differentiating between colors that would reflect or absorb the greatest amount of light, light probes were used. When using these probes, students could view a graph that displayed a number corresponding to the amount of light what was reflected. This graph then provided direct evidence to support or facilitate the modification of ideas and claims students proposed. (See Appendix A3 for technology pictures.)

Songs and Chants

Original songs and chants were also used to foster engagement and participation during lessons. There were many types of songs and chants used in the classroom: songs using sign language, songs using an echo or repetition strategy, and songs with accompanying motions. When using an echo chant, the class could be broken into two groups; one group would lead and the other would echo, then the groups would switch roles. The songs using sign language were primarily implemented during spelling and math, while the songs using repetitions and motions were used during morning letters and socials studies lessons.

To illustrate a song using sign language, when teaching the rule that when adding the suffix *ing* to a word that has a silent *e*, the *e* is dropped and *ing* is added, an *-ING Chant* was created and implemented in the classroom. Students were taught the sign for *drop*, in addition to how to sign an *e*, as well as the combination *ing*. Whenever these three words or letters were seen in the following chant, students signed them.

<u>-ING chant</u>
(To *If You're Happy and You Know It*)
When you have a word that has a silent "e," *clap*clap*
When you have a word that has a silent "e," *clap*clap*
Drop the "e" and add i-n-g,
When you have a word that has a silent "e." *clap*clap*

To demonstrate a song using echoes and motions or movements, the Mount Rushmore chant was implemented in the classroom. While some songs or chants solely required hand motions or movements, this particular chant was a little different. It still required movements, but the particular movement called for each child to hold up a card that had George Washington, Thomas Jefferson, Abraham Lincoln, or Theodore Roosevelt on it, when the given president's

name was mentioned in the song. Again, the class was broken into two groups and each group had a turn being the lead and the echo.

Mt Rushmore Chant
Who's on Mt. Rushmore?
George Washington's on Mt Rushmore.
Who's on Mt. Rushmore?
Thomas Jefferson's on Mt. Rushmore.
Who's on Mt. Rushmore?
Theodore Roosevelt's on Mt. Rushmore.
Who's on Mt. Rushmore?
Abraham Lincoln's on Mt. Rushmore.

Washington, Jefferson, Roosevelt, and Lincoln
Washington, Jefferson, Roosevelt, and Lincoln
Famous president's on Mt. Rushmore
Famous president's on Mt. Rushmore
Symbols of our country
Symbols of our country

(See Appendix A3 for a complete listing of all songs and chants used in the classroom, the cards corresponding to the Mount Rushmore Chant, and pictures of students engaged in a lesson.)

Motivational and Organizational Materials

Motivational and organizational materials were primarily used during station and math activities, which are times when children are rotating groups and not always receiving direct instruction from the teacher. Approximately once a week during stations, students were required to write their spelling words five times each. To make the activity more exiting, instead of using just plain, lined paper, papers that used visuals were created, corresponding to a topic discussed during the morning letter. For instance, after a morning letter and lesson about the history if ice cream, students wrote their spelling words five times each on a paper containing ice cream cones. Each cone had a word on it and contained five scoops of ice cream: one scoop for each time the word had to be written. Pages using an American Flag, a rainbow, and fish were all also used for similar spelling activities at stations. Related pages were also created and used during stations to reinforce other spelling skills. (See Appendix A4 for spelling papers and related station activities.)

Motivational materials consisted of numerous hands-on activities, such as putting together words containing suffixes, utilized during station times as well. Other motivational materials included props students used individually during lessons. The props utilized always corresponded to current lessons. For instance, during the study of the history and early days of the Post Office students were required to write a letter. Thus, props for this activity included old-looking paper to write on, a "quill pencil" to write with, and a mailbox to mail the letter in. (See Appendix A5 for these props.)

For math, to help students be more organized, which would increase the time students are engaged in activities, Choice Time Folders were created. With the *Investigations* math program, skills are often reinforced with numerous activities or games students can participate in and play, during a time called *Choice Time*. During one unit of study, there have been up to seven choice time activities. With so many required activities for students to complete, it became hard to manage materials, while also determining whether or not each child had completed all activities. Students often did not know what activities they had to start or finish. Furthermore, the time

students could be engaged and participating in activities was frequently wasted, because students were asking repetitive questions dealing with directions, as well as completing activities incorrectly from not following directions, even after guidelines were stated several times.

As mentioned, striving to correct these problems to foster increased student participation and engagement in activities during *Choice Time*, Choice Time Folders were created. These folders contained a sheet for each *Choice Time* activity. Each sheet then contained the title of the activity, simple directions, and a checklist to determine what needed to be completed, as well as what had been completed. A supplemental challenge activity was provided at the bottom of these papers for students to complete if they finished early. (See Appendix A6 for these Choice Time Folder papers.)

Drama, Role-Playing, and Cooperative Learning

Next, drama or role playing was used in the class to simulate activities, such as writing and mailing a letter during the early days of the post office. Role playing was also used in a charades like manner during a social studies lesson, where students had to identify the good or the service being acted out by a small group. Students were often put into small groups and cooperative learning strategies were employed in just about all subjects. Before answering a difficult question, pair-shares were facilitated, where students turned to their neighbor and shared their ideas before the entire class discussed the topic as a whole. Pair-shares were also implemented during *Today's Number* in math, where students had to determine a number sentence for how to get to the total number of days they have been in school. Throughout science stations, students were put into small groups to work, after the class was asked a question they had to answer. Students then moved to different stations seeking an answer to the posed guiding question, such as "What things are needed to make a shadow?"

While brief descriptions of how the different techniques to increase student attention, focus, participation and engagement in the classroom were provided, categorized in appendix B1 are all of the lessons facilitated in the classroom using these seven areas of inquiry, corresponding to the subject each was implemented.

B. Methods of Data Collection

Due to the large amount of methods used in the classroom to increase engagement, attention, focus, and participation, various strategies were used to collect as much evidence and data possible. The seven ways utilized in the classroom to college data are listed below:

1. Videotapes of lessons

   I videotaped numerous lessons where inquiry elements were incorporated into the classroom.

2. Anecdotal notes/observations

   Personal Chart

   I created a personal chart to document my individual ideas about how I thought lessons incorporating inquiry elements went each day. I included student reactions, and overall feelings about their participation and attention levels. At times these notes were more detailed than others, specifying exact occurrences and quotes when necessary. (See Appendix C1 for these charts.)

   Mentor/PDA evaluation sheet comments

   Throughout the implementation of my inquiry project, my mentor and PDA wrote notes on student performance, capturing quotes and behaviors that I was not able to write down as I was teaching.

3. Student Survey

   I created a student survey, asking questions about the different strategies I used to increase attention, focus, participation, and engagement during my inquiry project. The survey had eight questions and students either circled a YES or NO response, answering a variety of questions about their feelings towards sign language, the use of visuals during lessons, songs and chants, and partner work. At times students were asked to describe why they responded in the way they did to a particular question. (See Appendix C2 for the Student Survey.)

4. Reflective Intern Journals

   As a course requirement, interns had to write a weekly reflective journal, noting classroom observations. Each week I wrote a journal detailing all of the lessons I implemented during the week regarding inquiry. I was sure to include my reactions, students' reactions, behaviors, quotes, additional concerns and questions that I had, as well as ways to further implement inquiry in the classroom.

5. Student Work Samples

   Tests, journal writings, independent work samples, etc. were all reviewed to show whether or not students were paying attention to the directions, and to observe what students learned and remembered from the lessons where inquiry elements were employed in lessons. (See D1 for students' Statue of Liberty journal writings and D2 for students' American Album journal writings.)

6. Student Quotes

    Expressions being heard, without children being asked about their feelings toward the strategies I was using to increase engagement, were recorded.

7. Photographs

    Photographs were taken of the class randomly during lessons. In these photographs, I was able to capture student expressions and their involvement in activities. (See Appendix A1 for photographs.)

C. Data Analysis

Before determining my claims, or what I had learned from the different strategies used to increase attention and participation, I had to analyze the data I collected, looking for patterns in student behavior and performance. For each method of data collection, noted below is how I analyzed the evidence or information gathered from each.

1. Videotapes

I compared videotapes where aspects of inquiry were not incorporated into lessons to videotapes where inquiry was used during lessons. I documented noticeable changes in student behavior in the realms of attention and participation in the inquiry-incorporated videotapes. May times, this comparison was done observing student behaviors during the same lesson, determining whether or not students were more engaged when they were able to have an active, participatory role in the lessons, as compared to when their role was more of a listener.

2. Anecdotal notes/observations

I reviewed anecdotal notes/observations, using my personal chart from lessons where inquiry elements such as sign, chants, kinesthetics, and others were used. After each lesson focused on inquiry, I had documented student reactions, engagement, participation, etc. I simply read over the charts, looking for similarities in behaviors.

I also referred back to my mentor teacher's and PDA's observations, which were written on observation forms. I was able to see their reactions and observations of student engagement and attention during lessons. I compared their ideas about student behavior to my own ideas, looking for patterns when students were or were not engaged.

3. Student Survey

By asking students if it is easier for them to pay attention, if they participated more, enjoyed the lessons, and thought they learned more when sign, chants, visuals, etc. were used, I was be able to determine students' beliefs about their own levels of attention and participation. By compiling the YES or NO answers and written responses, I was able to determine the majority of students' opinions on how the different elements if inquiry may have assisted them in paying attention, and why they held those beliefs.

4. Reflective Intern Journals

Journals provided me with a way to document my overall weekly observations in the classroom, recording students' quotes and classroom occurrences. Each week I wrote a journal about every lesson I did with my students that related to inquiry, as well as students reactions. I noted student quotes, and other pieces of evidence, such as test scores. Reading back over these journals allowed me to recount all of the lessons that were implemented using elements of inquiry, while additionally observing patterns in behaviors and personal beliefs across the weeks of study.

5. Student Work Samples

I observed student work samples, seeing if progress had been made after teaching lessons that involved inquiry components. This provided me with information as to

whether or not students' overall achievement levels increased, which was a sub-wondering. It also allowed me to see if kinesthetic learning was beneficial in other areas outside of increasing student participation and attention, such as achievement and motivation. Furthermore, seeing if assignments were completed correctly allowed me to determine whether or not students were paying attention to directions. I collected independent work samples, analyzing them to see if skills taught during inquiry lessons transferred over to the independent work samples. This allowed me to observe if students were really attentive/focused and engaged in lessons.

6. Student Quotes

Recording student quotes allowed me to see if students' motivation or interest in lessons increased as inquiry elements were used in the classroom. By comparing all of the quotes, I was able to determine students' general opinions towards learning styles and activities. Most of the quotes recorded were positive in nature; few had a pessimistic connotation.

7. Photographs

Looking at the photographs allowed me to observe students' expressions that were not always noticeable at all times when teaching. Identifying similarities in pictures, such as smiles, children signing, chanting, and raising their hands, once again allowed me to witness student's attitudes and performances during the course of the project. (See Appendix A1 for photographs.)

III. Claims and Evidence

A. Claims

After analyzing all of the data I collected throughout the course of my inquiry project, I believe the following:

I. When a visual representation is built during the progression of a lesson, students are engaged and appear to retain more information. Visuals also serve as a scaffold when students are required to use the information during independent work times.

II. Using American Sign Language or every pupil response techniques as part of a lesson increases learning, participation, and fosters involvement in discussion, while also serving as an assessment tool for teachers.

III. Using technology in a lesson is a motivational tool, broadening students' understanding by exploring content in a visually appealing and more authentic or realistic manner.

IV. The use of original songs and chants facilitates student engagement and participation, while helping students to remember content.

V. The use of motivational, interesting, authentic materials increases students' ability to stay focused and independently complete assignments.

VI. The use of acting, drama, or role-playing increases participation of students who are kinesthetic learners.

VII. Cooperative learning environments, which utilize strategies such as pair-shares and every-pupil response techniques, increases student participation by giving children motivation and a purpose to participate. Providing students with the opportunity to share ideas before presenting thus increases their confidence and willingness to participate.

B. Research and Evidence Supporting Each Claim

"Human learning is a matter of multiple intelligences, i.e. ways of knowing and representing those knowings" (Bertrand, 2002, p. 20).

One body of research, which supports all of my claims, is Howard Gardner's Theory of Multiple Intelligences. Believing that students are predisposed to learn information when it is presented in a way that corresponds with their natural intelligences, Howard Gardner advocated that when students become engaged, it reflects the "way they prefer to make and represent meaning" (Bertrand, 2002, p. 13). However, students are not always provided with the opportunity to "make and represent meaning" in a way they prefer. One problem students often encounter in the classroom is that schools present most information to students using just two of the eight intelligences categorized by Gardner: linguistic and logical-mathematical intelligences. Many times, students who do not learn best through these two intelligences are labeled as "learning disabled," "ADD," or "underachievers" (Armstrong, 2002).

After finding similarities between this research and the composition of second grade class, the strategies facilitated to increase overall engagement heavily related to Gardner's eight Multiple Intelligences, as categorized below.

1. **Linguistic Intelligence**- These are students who are "word smart."
2. **Logical-Mathematical Intelligence**- This intelligence comprises students who have strength in dealing with logic, numbers, and reasoning.
3. **Spatial Intelligence**- Students with spatial intelligence are "picture smart."
4. **Bodily-Kinesthetic Intelligence**- Students who excel when learning through physical experiences and are said to be "body smart" contain intelligence in this area.
5. **Musical Intelligence:** These students are "music smart."
6. **Interpersonal Intelligence**: This intelligence is composed of students who excel when learning is a social experience; these students are "people smart."
7. **Intrapersonal Intelligence**: students who are "self smart" possess intrapersonal intelligence.
8. **Naturalist Intelligence**: Students with strength in this area are "nature smart."

(Armstrong, 2002)

Linguistic and Logical-Mathematical Intelligences were still constantly incorporated into daily activities with language arts and math studies. Spatial Intelligence was represented with the use of visual representations, while students possessing Musical Intelligence were able to learn through the songs and the chants utilized during lessons. Bodily-Kinesthetic Intelligence was integrated into lessons with the use of sign language, drama, and role-playing activities. Finally, the cooperative learning strategies employed met the needs of students who excel in the area of Intrapersonal Intelligence. Employing all of these strategies allowed each child to "make and represent meaning" in a way that they favored, using learning styles that corresponded with their natural intelligences (Bertrand, 2002, 13).

Claim I: When a visual representation is built during the progression of a lesson, students are engaged and appear to retain more information. Visuals also serve as a scaffold when students are required to use the information during independent work times.

Supporting Research and Classroom Evidence:

While Howard Gardner supports this claim for students who learn best through Spatial Intelligence, Professor Barbara Fulk, of Illinois State University, shares similar beliefs. In an article entitled *Make Instruction More Memorable*, Fulk advocated twenty learning techniques that should be employed in the classroom. Several of these suggested techniques were used throughout my inquiry, such as visual representations. When presenting information during lessons, to "maintain student interest, maximize student engagement, and optimize the memory of content information over time," Fulk recommended to "Keep it visual," "Draw it out," and "Employ a variety of graphic organizers. Charts, diagrams, maps, and semantic webs are examples of visual displays that are useful for facilitating learning and memory" (Fulk, 2000).

As research supports this claim, data collected in my classroom reaffirms that visual representations do engage students, facilitating the retention of information. First, when observing videotapes where visuals were used in lessons, students' eyes were focused on the visual, and students were continuously raising their hands to ask and answer questions or make comments. These behaviors displayed by the class document that students were engaged and participating in the lesson. Anecdotal notes frequently detailed that lessons were "great," "fun," and "very exciting" for students. Other notes written on the chart included, "students loved the visual," there was "lots of participation," and that the "kids were engaged," as well as "attentive." (For this chart, see Appendix C1. For pictures, see Appendix A1.)

On the student survey administered on April 15, 2005, nineteen of twenty students answered YES to the following question: "Do you like when you get to see pictures of the topics we are talking about." On the next question, "Do you think it helped you pay attention when I used props during lessons? (Hint: the popcorn bucket, the bag of potato chips, the jeans, Mount Rushmore)," all twenty students participating in the survey answered YES. When being asked to answer "Why?" the quotes below are responses that students gave as reasons for why they liked visuals/props. The number in parentheses corresponds to the number of students who answered in a similar manner.

1. "It's fun."/ "It's fun to learn." (-5 Students)
2. "They help me pay attention." (-2 Students)
3. "I think they are cool, fun, and learnitive." (-1 Student)
4. "They are cool." (-2 Students)
5. "It makes more sense." (-1 Student)
6. "Because it is very very fun to me and helps me learn about what we do."(2 Students)
7. "I learn a lot by it."(-1 Student)
8. "It looks fun to look at and it helps me know what I'm writing." (-1 Student)
    a. "…what I am writing" refers back to when students were asked to write about a symbol. This student was able to refer back to the visual for information, using it as a scaffold.
9. "Because it makes you learn and you think there are more fun things." (-1 Student)

Given these quotes, along with anecdotal records, it is clear that students had fun learning when visuals were used. As previously defined in *The Journal of Educational Psychology*, engagement included "both behavioral and emotional components" (Skinner, 1993). The article stated that "children who are engaged show sustained behavioral involvement in learning activities accompanied by positive emotional tone… they show generally positive emotions during ongoing action, including enthusiasm, optimism, curiosity, and interest" (Skinner, 1993). With the responses on the survey, students themselves stated that they were engaged, with the positive emotional tone all of the answers possessed. No responses showed signs of disaffection, such as boredom, which is the opposite of engagement.

Moreover, having students clearly state that the visuals helped them pay attention and learn also influenced students' ability to retain the information. In fact, student work samples, such as Statue of Liberty and journal writings, found in Appendix D1 and D2, demonstrate the specific information students remembered from lessons involving visuals.

The passage found below, from an intern journal entry written on April 9, 2005, captured my beliefs regarding students' attention and information retention during the entire American Album unit, the unit where my inquiry project was primarily facilitated. Weeks after the study of certain American symbols, students were still able to remember information from lessons when visuals were used. When students were asked to complete the writing assignment discussed, the visuals used in prior lessons were not in the classroom.

> "Additionally, throughout the whole unit, students were very attentive when visuals and signs were used. My evidence for this comes from reading all students' journal writings about their favorite part(s) of American Album. Students remembered and listed facts that I had even forgot we talked about. The information students recalled and wrote about when writing in their journals was very reassuring; they were paying attention during lessons, and they did learn a great deal of information about America and American symbols."

Many weekly reflective journals, written prior to this point, frequently noted similar observations of student engagement, participation, and attention when visuals were used during particular lessons. The following passages from an intern journal, written on February 26, 2005, describe my observations about a cut-out of the Washington Monument I made to share information with students, as well as a book I made highlighting important places in Washington, DC.

> "Following the song, I also introduced the Washington Monument, as a symbol honoring George Washington. To do so, I shared numerous pictures with the students from many different books. I also made a cut-out of the Washington Monument, displaying facts. Again, I feel that this visual aid, displaying selected facts, captured students' attention. If students were not paying attention to me, they were at least engaged at looking at the display, gaining knowledge they were reading from it. However, I do feel that students were very engaged in the lesson in general."

> "After the letter was read as a class, I shared a book that I made with them. The book highlighted important places found in Washington, D.C., containing photographs, pictures…etc. Again, I feel that students were very attentive, given that students constantly had questions or comments about what we were discussing during the lesson. This strategy was another visual technique for engaging students and capturing their attention."

In another intern journal, written on March 19, 2005, I referenced students' participation and attention during a lesson on the Great Seal of the United States, which was assembled on the board, as each symbol seen on the Seal was discussed.

> "Students were attentive as the seal was assembled on the board, also participating when questions were asked. I feel as though a larger group of students were raising their hands to participate, not just the same 5 kids."

On March 26, 2005, I recounted students' behaviors during a lesson on the history of ice cream, as well as the history of the Ferris Wheel, noting that:

> " Students enjoyed the visual ice cream cone I assembled on the board after the letter, which I used to share more facts about ice cream and the history of ice cream with them."

> "The visual displayed the facts on the wheel's cars as I talked about them. Just like the ice cream lesson, students were very engaged when assembling the wheel as the facts were displayed. All students were attentive and very into the lesson."

As all of this evidence has presented, students were engaged in the lessons where visuals were used, expressing positive emotional tones, while retaining the information for long periods of time, as seen in their journal writings. I found that students are more focused on the lesson when facts are added to a visual, rather than when facts are previously written on a visual. For instance, during a history of blue jeans lesson where a large cut-out of blue jeans was displayed containing facts, students frequently interrupted asking questions about facts that were not yet discussed. While this shows that students were engaged and participating by reading the facts on the display, they were not focused or paying attention to the facts being presented at the given moment. This occurrence did not happen during other lessons when visuals were assembled on the board during the progression of a lesson. In general, the use of visual representations does increase engagement, allowing students to remember information for greater periods of time.

Claim II: Using American Sign Language or every pupil response techniques as part of a lesson increases learning, participation, and fosters involvement in discussion, while also serving as an assessment tool for teachers.

Supporting Research and Classroom Evidence:

When looking solely at the use of sign language in the classroom, much research has been done, publicizing student benefits on language learning. Marilyn Daniels, a researcher and professor in the Department of Speech and Communication at the Pennsylvania State University, facilitated studies dealing with the effects of sign language on the development of hearing children. It was determined that "…simultaneously presenting words visually, kinesthetically, and orally enhances a child's vocabulary development" (Daniels, 1994, p. 291). When comparing classrooms that used sign language as a "multisensory technique for reinforcing sight word vocabulary" to classrooms that did not used sign language, studies found that students who had been exposed to sign language maintained a greater retention of the words (Daniels, 1994, p. 293).

After several studies producing the same results of increased retention of vocabulary words, along with higher scores on Picture Vocabulary Tests, when sign language was used in the classroom, possible explanations were posed. First, as Piaget wrote, "gesture and mime—language in movement—is the real social language of the child" (Daniels, 1994, p. 296). Thus, providing students with a kinesthetic opportunity, corresponding with language, is a more natural way for students to learn. Since sign language presents messages visually, aurally, and kinesthetically, different sections and hemispheres of the brain are used simultaneously, and "the combination of signals creates the probability of a multiple imprint on the learner's memory" (Daniels, 1994, p. 296). Generally, "the more varied the form under which language is presented to the mind through the various senses, the more perfect will be the knowledge of it acquired and the more permanently will it be retained" (Daniels, 1996, p. 194). As Howard Gardner claims, students with Bodily-Kinesthetic Intelligence are able to learn, using their natural intelligence possessed in this area.

Additional benefits from using sign in the classroom have included helping students focus, concentrate, and pay attention, since they are more physically involved in lessons and have to be looking at the teacher to see the signs being used (Lawrence, 2001). Students with mental retardation, autism, aphasia, or speech handicaps have seen improvements in communication when sign language was used (Good, 1993/1994, p. 81).

Furthermore, assessment measures are increased when all students can respond using a sign, since teachers are able to observe each child's answer. Lastly, handwriting has also been known to improve with signing, resulting from the strengthening of finger, hand, wrist, arm and shoulder muscles (Pitino, 2002, p. 62-63).

When referring back to classroom research, after observing videotapes where sign was used in part of a lesson, I noticed that participation increased; some students began to lift their heads off of desks and started to actively participate more in the lesson when sign was being used. Anecdotal notes detailed similar student reactions and behaviors when sign language was first used in the classroom. (See Appendix C1 for these notes and A2 for pictures.) The charts noted:

On Monday, January 24, during a printing lesson using signs, "students got right to work on copying a sentence" and that, "they were more excited to copy with signs."

On Tuesday, January 25, during spelling and social studies lessons, my supervisor observed that students were more engaged. The chart also stated that a certain student lifted his head off of his desk when sign was being used.

During printing and calendar time on Tuesday, February 8, all eyes were on me for the lessons, and that there was "more participation than just one person."

Throughout a morning letter on Tuesday, February 15, when students had the opportunity to make the sign for New York during the letter, there was "good participation," and "students knew answers to questions."

As both videotapes and my anecdotal notes detail an increase in student participation and attention when sign language was being used in the classroom, after analyzing observation sheets written by my mentor and PDA, I found that students were again more engaged and participatory during lessons involving sign. Descriptions of specific lessons and corresponding observations, which indicate greater student participation and engagement, are noted below:

On January 18, 2005, during a syllable lesson, students put words into columns that denoted them as having either one or two syllables. While one student came to the board to put the word in the column, the rest of the class also had a job. Their job was to use their hands to hold up a 1 or a 2, showing me their thinking about which column the word should be put in. After the student placed their word in the column, the rest of the class made the sign for YES or NO in sign language, once again allowing me to see whether or not they agreed with their classmate's decision about in which column the word belonged. This allowed me to observe students' understanding of the concept of syllables. During this lesson, my PDA took notes on four students who did not seem very attentive. When the every pupil response system began, these students started to respond and sign. Out of all the times Student 1 was observed, she was participating seven out of eight of them. Student 2, while sometimes getting answers incorrect, was participating eight of the eight times she was observed. Student 3 participated two out of the five times she was observed, and Student 4 who was laying his head on his desk began to participate. He was actively participating approximately half of the time he was observed.

On January 26, 2005, during a printing lesson where students watched for a sign and then wrote the word that was signed in their printing booklets, my mentor teacher made the following observation: "The signs do seem to capture their attention."

On February 4, 2005, during a printing lesson, my PDA made the following comments:

- "Students seemed more engaged and focused when they watched you sign and then wrote." This quote is in reference to when students were taught several signs for words that contained the letter Z, and then printed words that I signed.
- "The students were <u>all</u> watching you for the sign." This quote is a reference from when students were taught one sign from each of the two sentences that were written in their printing booklets. A word was signed to the class, and the students nicely printed the sentence that contained the signed word.
- When students pretended to have a magical pencil to practice the correct form for making letters before tracing the letters on paper, my PDA again noticed that, "the energy in the room feels more engaged."

Student quotes also detail the participation and enjoyment students had with using sign language in lessons. This passage containing student quotes was from an intern journal, written on January 22, 2005.

> "The previous week I overheard a group of students talking about how they did not like printing because it was "boring." When I heard this, I immediately thought, "How can I make printing more exciting for the students?" After the lesson in printing where I incorporated a sign language component, I had a student ask me "How do you say I like this a lot?" This quote came from one of the same students who previously stated their dislike for printing. Therefore, this quote provides me with evidence that the lesson was at least more interesting for students. When lessons are more interesting for students, I feel the chances that students are engaged and focused drastically increase."

Since students were able to express such enjoyment, along with positive emotional tones associated with engagement, they had to be paying attention and focused on the lesson.

In addition to student quotes, after compiling responses from the student survey, nineteen of twenty students participating in the survey answered YES to both of the following questions relating to the use of sign language in the classroom:

- "Do you like when I use sign language in the classroom?"
- "Do you think being able to sign a word during morning letters helps you pay better attention to the letter?

Based on their responses, most students enjoyed using sign language, and also thought that being able to sign during morning letters helped them pay better attention to the lesson. When viewing the results of the student survey and then reading my reflective intern journals, I found that my reactions, in the realm of student attention, participation, and engagement greatly correlated to the same beliefs students held about their own levels of attention and participation. The following intern journal entries show evidence of my similar beliefs about students' involvement in the classroom when sign language was being used.

> Journal, 1/22/05:
>
> "After a spontaneous start to using sign language in the classroom, during a spelling lesson where the students were asked to respond with a yes or no, I began to see a change in students' behavior. Throughout the week, five of the lessons that I taught incorporated a component of sign language. As noticed during this first week of introducing sign language in the classroom, I really feel that the students enjoyed the lessons that used sign language. I also believe that students were more participatory and attentive during these lessons."
>
> "On Wednesday, January 19th, I also used sign in the classroom. During the morning letter about wizards, I taught children the sign for magic. When reading the letter, each time the word magic or magical was said, students were allowed to make the sign for magic simultaneously. When reading the letter through the first time, I noticed that almost all of the students had their eyes glued to the chart/letter, following along and looking for the word magic/magical. After the reading, I asked students questions. To all of the questions I asked, many many children raised their hands to answer, even children who do not normally participate without being called on. Of the children who do not normally raise their hands to participate, these children raised their hands numerous times during this short lesson. Furthermore, when asking questions, the students knew the answers right away. Normally in our room, students will raise their hand to participate and then try to determine the answer after they have been called on. Here however, students knew the

answers right away, judged by the numerous hands in the air and their quick responses, and all of the questions were answered correctly on the first attempt by students. I feel these results came from the fact that students were engaged in the reading of the letter since they had a job (to make the sign for magic) or a kinesthetic response to keep them focused."

Journal, 2/12/05:

"During each of the morning letters, I taught students a sign. For the Post Office, I taught students the sign for "mail". For the Abraham Lincoln lesson, I taught students the sign for "president". Whenever these words occurred in the letters, students could sign them. From observing the signing, I could tell when students were paying attention and following along in the letter. Students were very participatory. I feel that the signs gave students a reason to participate and be focused or engaged in the letter. When asking students questions about the letters, many students raised their hands and students had the correct answers. These correct responses let me know that students were paying attention."

"Using sign during the calendar continues to involve/engage more than one student when it is used."

Journal, 3/26/05:

"Students loved making the sign for ice cream during the morning letter. They were all engaged, while I was signing as I read the letter aloud. Students also new the answers to my questions right away, and there were high levels of participation among the students. Four students who do not regularly participate all raised their hands to participate and were attentive."

As it can be seen, my beliefs again correlated to those held by students on the survey. Finally, as previously stated, using every pupil response systems in the classroom provide the teacher with a form of assessment, given all students' answers can be observed by glancing around the room. The following lesson observation perfectly highlights how using every pupil response systems can be an excellent form of informal assessment.

Journal, 1/29/05

"I then had four sentences on an overhead; students read the sentences and told me which word needed to be placed in the blank. The overhead looked like this:

A. where B. wear C. were D. we're

I am going to _____ my favorite shirt today.
_____ going to the store.
What _____ you doing yesterday?
_____ are you going on your trip?

After teaching the students the signs for A, B, C, and D, the sentences were read to the students. After each sentence was read, students made a sign (one of the letters), corresponding to the word that should go in the blank. This served as a great assessment, seeing if students grasped the idea of the words' different meanings. I was able to tell the students who definitely knew the answer, along with those who did not yet develop a solid understanding of the words' meanings."

This array of evidence gathered from intern journals, students' surveys, mentor and PDA observations has presented that students' levels of participation and attention did increase as sign language was employed in the classroom. Moreover, students expressed positive emotions,

showing interest in the lessons and enjoying them. Students were emotionally, intellectually, and mentally involved in these lessons, which are all characteristics of engagement found in Brian Cambourne's Conditions for Natural Learning. Finally, as a teacher, I was able to better assess student progress during the course of a lesson, knowing when to progress on or pause to further explain concepts.

Claim III: Using technology in a lesson is a motivational tool, broadening students' understanding by exploring content in a visually appealing and more authentic or realistic manner.

Supporting Research and Classroom Evidence:

> "Using technology to learn is the difference between looking at a picture of a heart in a textbook, and looking at a beating heart and being able to slow it down and analyze it to see exactly how it works, step by step" (Riley, 1998).

As the quote presents, using technology in the classroom provides students with the opportunity to view objects and places that would not be possible without its use. Elementary teacher, Anne Wall, has also found that, "technology-related activities have helped her students progress in their research, letter writing, and word processing skills. Furthermore, the students have come to regard computers as tools that not only can assist them in their learning objectives, but also in sharing information through e-mail and Web sites" (International Reading Association, 2001). She has expressed additional positive feelings in regards to technology, noting: "even more valuable than the skills students develop and the resources they can access through technology is the enthusiasm with which students approach computer activities" (International Reading Association, 2001). With Wall's reactions of student enthusiasm, technology can be seen as a motivational tool to help students engage in lessons. Further studies have also found that "technology has led directly to significant gains in math, reading, and language arts skills." (Crossing the Digital Divide, 2000).

From classroom observations, "when the virtual tour was implemented for the Statue of Liberty and the Empire State Building, "students were amazed and shocked when viewing these extraordinary symbols and structures. Giving students the opportunity to see every characteristic of the structures, and not just telling them the history and background of them, taught a lot on its own, broadening their views that different parts of the world look different than what State College looks like" (Intern Journal # 6, 2/19/05). Observations of students during the virtual tours detailed students making comments, such as "ohhhh," "ahhhh," and "wow." Students were engaged at their computers. They were so excited that I had to remind students that we were inside, and I had to tell them to lower their voices numerous times. These comments and behaviors demonstrate that students were engaged and focused at working on their computer, while possessing high motivation to participate in the tour.

Furthermore, the day after a science lesson using the light probes in the computer lab, many students were still able to recall information learned the previous day when adding what was learned and the evidence corresponding to how it was learned to the class KLEW chart. During the lesson, students were repeatedly raising their hands to ask questions, make predictions, and volunteer. These specific examples of student behavior demonstrate that students were attentive during the lesson, since information could be recalled, and that they were also participatory from all of the questioning and volunteering.

Both research and classroom observations document the benefits of using technology in the classroom. With the use of technology, students are able to view subject matter in a realistic manner, while increasing students' enthusiasm to participate in learning events. Students also come to view technology as a pertinent resource, developing stronger math and language arts skills.

Claim IV: The use of original songs and chants facilitates student engagement and participation, while helping students to remember content.

Supporting Research and Classroom Evidence:

Another strategy Barbara Fulk, advocated to "maintain student interest, maximize student engagement, and optimize the memory of content information over time," in the article *Make Instruction More Memorable*, was to "keep the action going," and to "employ a variety of methods for actively involving students in practicing their new skills" (Fulk, 2000). Songs and chants, especially those with accompanying motions, perfectly fit this classification. The songs and chants reinforce content from recent studies, while allowing students the opportunity for movement, or an active role in the lesson. As corresponding with most of my claims, Gardner's Theory of Multiple Intelligences upholds the idea of learning through music. Students who possess Musical Intelligence benefit from having content presented in the way they "prefer to make and represent meaning" (Bertrand, 2002, p.13).

When videotaping a lesson on the history of Uncle Sam, where both a song and a chant were used, upon viewing the tape, most all students were chanting and making the corresponding motions in the song. A photograph from the lesson details students participating and smiling, representing an emotional response with the learning process, a characteristic of engagement as noted by Brian Cambourne. As seen from the smiles on students' faces and the high levels of participation in the pictures and video clips, the children "show generally positive emotions during ongoing action, including enthusiasm," another characteristic of engagement, as noted in the article Motivation in the Classroom, from the *Journal of Educational Psychology* (Skinner, 1993). (See Appendix A3 for pictures and all of the songs/chants used in lessons.)

Furthermore, on the student survey, sixteen of twenty students answered YES to, "Do you like singing and chanting songs?" On the next question, "Do you think the songs helped you to pay attention and remember the information better?" sixteen students answered YES, one student answered NO, and three students wrote in the answer "kind of." This shows that most students do like songs and chants, and that students are more engaged when they were used in a lesson. Even those students who responded that they do no like songs and chants believed that the songs/chants helped them pay attention and remember the information better.

The feelings students expressed on the survey, noting that songs and chants helped them to remember content held true; information students learned from the songs and chants transferred over to independent work samples. A passage from an intern journal written on February 26, 2005 details that information from songs and chants did transfer over to students' independent work. Having information carry over to work at a later date further demonstrates that students were attentive and focused during the lesson.

> "On a fact versus opinion worksheet, where students wrote three of their own facts or opinions when they finished the sheet, many students wrote facts about Washington that had been taught during the letter two days before. Examples of students' facts included that George Washington had teeth carved from hippo tusk, and that he fought during the Revolutionary War. These facts were both mentioned during the song in the lesson."

Adding to this, students' journal writings, as found in Appendix D2, show how information learned during the Uncle Sam, George Washington, Great Seal, and Mount Rushmore lessons carried over to independent work or journaling time. Specific information learned during these lessons, where songs and chants were used, was observed in students' writing, which was done at a later point in time.

A further source of evidence demonstrating student engagement and participation from the use or songs/chants came from PDA observations and student quotes on January 22, 2005. During a song teaching students information about Washington, PDA comments detailed that "students responded very positively to the song—they did the marching and motions—lots of smiles." From the same song about George Washington, a student quoted: "Can we do that again? I like that song!" Later in the American Album unit, on Friday March 18, 2005, two different songs and chants were done to engage students in a lesson about Uncle Sam, while also hoping to increase the retention of information. PDA observations again captured students' behaviors. As the one quote details, it was informative to see that some students were more engaged when there were motions with the songs. Evidence detailing this engagement includes the following observations from my PDA:

> "Students responded very well to the chant—they loved saying, 'It's Uncle Sam!'"

> "Interesting to note that students seemed more engaged when they had motions to go along with the song—some students clearly wanted to move with the last two verses."

As presented by the evidence in the form of student journals, PDA observations, and reflective intern journals, songs and chants not only engaged students, but also facilitated greater retention of information. While these were all informal assessment measures, formal assessment measures, such as spelling tests, also show similar findings of greater information retention.

For instance, when a difficult word or phonics rule was being taught in spelling, I usually created a song or chant to provide a supplemental way to reinforce the concept being studied. These songs used during spelling, also typically utilized kinesthetic and sign language responses. The following intern journal, written on January 22, 2005, provides great evidence in the realm of increased retention of information and student participation during and after the *-ING Chant* was implemented in the classroom. This song taught students that before adding *ing* to a word with silent *e*, the *e* is dropped. This rule was tested on the skill section of a spelling test.

> "When observing students chanting and signing, almost all of the students (if not all) were again participating, focused, and attentive. Evidence that the students were focused and engaged came from observation during the lesson and responses on their spelling tests. In the skills section of the test, students were required to add suffixes onto words. Two of the words called for students to drop the silent "e" and add "ing." Of all the students (20 of 21; one student was absent) who took the test on Friday, January 21st, only one child did not follow this rule and got the words incorrect. I think that having 19 out of 20 students remember this rule and correctly change the words shows that students were really participating in the lesson prior to the test. One wondering I have is whether or not students already knew these spellings (make → making, live→ living) with their "ing" endings even before the test. Either way, 19 of 20 students answered the questions with the correct spellings. From observing students behavior throughout the week, I feel that implementing signs into lessons, where appropriate, has increased students attention, participation, focus, and engagement in lessons thus far."

Similar evidence was found when using the *OUGH Chant*, to reinforce the spelling of the tricky word *through*. Observations of this chant from an intern journal, written on February 12, 2005, are as follows:

> "Students had the spelling word "through" in spelling this week. On Wednesday to reinforce the "ough" spelling pattern, given it is difficult (sounding like "ew") and makes different sounds in different words, I created a chant. After a quick lesson discussing the different sounds "ough" can make, the following chant was sung. Students were taught how to sign O-U-G-H, and did so whenever the letter combination was seen in the chant."

OUGH CHANT

O-U-G-H says many sounds.
It can say /ew/ like in through: T-H-R-O-U-G-H
It can say /aw/ like in brought: B-R-O-U-G-H-T
It can say /o/ like in though: T-H-O-U-G-H
But don't forget…it says /ew/ in through: T-H-R-O-U-G-H.

> "I thought the lesson went well. Most students were signing and chanting. One student was not always signing, but from observation he was chanting; another was not very participatory, seldom signing or chanting. On the test, each child was required to spell the word twice. Of the 44 times the word "through" was on the tests, it was misspelled 11 times. Five of these misspellings were on the review sheet, in the context of the story, and six of these misspellings were on the sentence dictation section of the test, in the context of a sentence. Four of these misspellings were from two students with an IEP. Given this was one of students' most difficult spelling words thus far, and few spelled it correctly prior to the study of the word, I feel the chant did help students retain the spelling of the word."

Again, anecdotal notes about each students' performance on Unit 12's spelling test, provides evidence of student retention about how to spell the word "very" after the *V-E-R-Y Chant* was sung in class. Of the forty times the word "very" was required to be spelled correctly by the twenty students in the class, it was only misspelled five times. One misspelling was on the story section of the test, and the other four misspellings were during the dictated sentence section of the test. On Unit 13's spelling test, anecdotal notes confirm that information was remembered by students, after the *Silent Letter Chant* was sung in class. On the skills section of the test, students were required to identify the silent letters in ten words. With twenty students taking the spelling test, there were 200 total answers. Out of these answers there were only twenty-five mistakes in all, with students circling the wrong silent letters in the words *will, would, people, who,* and *two.* These words contained silent letters that the chant did not primarily focus on. The only word with silent letters that were inaccurately identified and incorporated into the chant was the word *will*. The silent letter in this word (the double *l*) was only incorrectly identified three times.

Claim V: The use of motivational, interesting, authentic materials increases students' ability to stay focused and complete assignments.

Supporting Research and Classroom Evidence:

"Grab their attention. Employ a variety of introductory activities or "attention grabbers" to stimulate student interest in the learning task," are other techniques Professor Barbara Fulk suggested to "maintain student interest, maximize student engagement, and optimize the memory of content information over time" (Fulk, 2000). As I have found, using motivating materials that grab students' attention has successfully maintained student interest and engagement during independent learning tasks or station-like activities.

When the visually appealing spelling papers (found in Appendix A4), requiring students to write their spelling words five-times each were used, students always finished their work on time. When introducing the papers to students, remarks such as "ohh" and "neat" could be heard from the students. Also, when using hands-on activities, such as the suffix activity described earlier, and the Word Detective page (see Appendix A4) during stations in the classroom, students were working hard and needed seldom reminders to get to work or to work quietly. Upon viewing their work, students had numerous columns and words written on their papers for each activity; some students had over thirty words written in the fifteen minutes allotted to these station activities. This definitely displays students focusing on and engaging in their work.

Writing was another time in the classroom when students would often disengage themselves, becoming "stuck" on what to write about. Yet, when using props, such as a "quill pencil" and old-looking paper to compose a letter when studying the early days of the Post Office, students wrote long letters and stayed engaged throughout the writing process. (See Appendix A5 for these props.) Also, introducing an organizer sheet in writing aided students in staying focused on their work, helping them to find crucial information for their president report. Numerous intern journals describe students' reactions and behaviors when using the organizer sheets, called the President Fact Finder. (See Appendix E1 for the President Fact Finder and examples of student reports.)

Journal #7; February 26, 2005

> "On Wednesday (2/23/05), in writing, students began their president reports. First, to organize their information, I created a "President Fact Finder" for students to use. I feel that this visual motivated and assisted students in finding information, since they had specific pieces of information to look for, such as their president's name, birthday, dates in office, interesting facts…etc."

Journal #8; March 19, 2005

> "President Fact Finders helped students organize their information and write their reports. Students are doing a great job so far with their reports. They are working hard and seem to be motivated to write them. When writing lessons were started in the past week, I could hear students saying that they were excited to work on their reports and that they "liked doing their president report". Children who are normally slow to write are off to a great start! Our oppositional-defiant student, who does not always like to complete assignments, was also working hard on his report."

Journal #9; March 26, 2005

> "Students finished sharing their president reports with the class on March 24th. Most all students enjoyed writing their president reports. As part of the assignment, students had to write a good ending sentence, a sentence that tells how they felt about their president. While students were sharing their reports with the class, many students ended their reports with quotes such as, "It was fun," and "It was very fun writing about presidents." Additionally, their reports were all wonderful! I really think that students were engaged throughout the entire process. I feel that the visual coloring sheet of each student's president and their President Fact Finder (an organizer sheet) really helped to motivate students to work on their reports. An additional piece of evidence, verifying that students were very engaged in their work comes from the fact that while editing students' reports with them, there were very few corrections that students had to make. Students who are also normally reluctant to write had a great deal of information in their report."

As previously mentioned, *Choice Time* during math was a difficult time in my classroom, with students confused as to what activities needed to be completed, as well as the directions they needed to follow to complete those activities. However, Choice Time Folders made a great difference in improving the amount of time students were engaged and on task during *Choice Time* in math. Evidence in the form of observations and student quotes are detailed below:

Journal #8; March 19, 2005

> "I noticed a HUGE difference in students' behavior with the Choice Time Folders. The visual representation with the directions and the checklist held students accountable for their work, while keeping them on-task. Instructional time was clearly increased. The room was just less chaotic and much quieter than past lessons involving Choice Time. All students were working. At the end of a lesson, a student came up to me and said, "I got two choices done today," which is evidence that students were responsible and actively engaged in their work."

On March 15, 2005, my PDA made remarks on an observation form about the Choice Time Folders:

> "Wonderful designs, visually appealing, an excellent tool to help students stay organized."

(See Appendix A6 for Choice Time Folder papers.)

As suggested by Fulk and supported in my classroom, grabbing students' attention with motivational materials that sustain student engagement has definitely been beneficial at increasing students' ability to stay focused and complete assignments, as seen with the Choice Time Folders, props, and organizer sheets.

Claim VI: The use of acting, drama, or role-playing increases the participation of students who are kinesthetic learners.

Supporting Research and Classroom Evidence:

Research supporting kinesthetic learning methods, such as drama and role-playing come from classroom studies were learning was done through these methods. In an article titled, *Creative Movement: A Language for Learning*, teacher Susan Griss, found that lessons stressing kinesthetic learning, like dance and movement, offer several student benefits. "Increased comprehension of subject matter," as well as the development of whole language skills, "multicultural insights," and "affective education and social skills" have all resulted (Griss, 1994, p. 79-80). Griss also found that "disruptive energy was made creative," noting that "providing an opportunity for students to express pent-up physical energy often produces surprising amounts of concentration and focus" (Griss, 1994, p. 80). Another teacher, Marcus Zumwalt, introduced a charades-like activity into his classroom to facilitate greater comprehension of vocabulary words. When doing so, he found that the technique created enthusiasm for reading, and "provided visual, kinesthetic, and aural connections" to vocabulary words, all while enabling students to "connect personally with the topic they are learning" (Zumwalt, 2003).

Similar to these studies, when using a charades-like activity in my classroom, I found that students greatly enjoyed the lesson, while also maintaining high levels of attention and participation. Intern Journal #2, written on January 22, 2005, recounts my observations of increased participation during a lesson, which was based on acting out and identifying goods and services with both signs and charades.

> "Later the same day, I taught a social studies lesson about goods and services. During this lesson, I taught the children signs for workers who provide services, such as firefighter, police officer, librarian, teacher, doctor, and mechanic. When asking questions, instead of saying, "What service does a firefighter provide us with?" I would substitute the sign for the word. When I asked the question "What service does a ____ provide us with?" students were forced to look at me to understand the question. Since students had to pay attention to the teacher in order to understand the question, I feel that the class as a whole was definitely more attentive. During this same lesson, students participated in a charades activity, where students, in groups of two, acted out either a good or a service. Since this was an engaging lesson for students to begin with, they were very involved. All students were involved in the lesson, coming to the front of the room and acting out a situation with their small group. Students seemed excited, given the smiling faces seen and the laughter heard. The lesson also emphasized understanding of the vocabulary and the correct use of the vocabulary."

Using drama, role-playing, and charades provided students with an opportunity for movement, while reinforcing the concepts of the lesson. As the paragraph details, increased comprehension of subject matter and vocabulary resulted, with students being more attentive and participatory in the lesson.

Claim VII: Cooperative-learning environments, which utilize strategies such as pair-shares and every-pupil response techniques, increases student participation by giving children motivation and a purpose to participate. Providing students with the opportunity to share ideas before presenting thus increases their confidence and willingness to participate.

Supporting Research and Classroom Evidence:

Related to the cooperative learning methods employed in my classroom, the article *Make Instruction More Memorable*, advocated the following to keep students engaged in a lesson:

> "Try teams. Utilize the social needs of your students for added motivation. Many students will work harder for the success of a peer group than they would when working alone. Use learning teams whose members are rotated regularly. Students can practice the interpersonal skills required to work effectively with different individuals as they achieve essential learning outcomes" (Fulk, 2000).

> "Practice, practice, practice. Provide lots of opportunities for students to practice a new skill. These can take the form of coaching activities (e.g., "Tell your buddy." "Show the person on the left." "Read to your partner.") or other relevant practice methods" (Fulk, 2003).

As described above, coaching activities or pair-shares, such as "tell your buddy" started to be used more frequently in the classroom during *Today's Number* in math. During *Today's Number*, students determine number sentences, following different rules for how to get a number that corresponds to the number of days they have been in school. The journal selections below provide evidence of increased participation and confidence to participate.

Intern Journal #6; February 19, 2005:

> "Students worked in partners to think of a way to make the day's number: 102. I cut strips of paper for students to write their number sentences on. I only required students to do one number sentences, but many pairs did 2, 3, and even over 4 different number sentences. All students were engaged, seeing that they all wrote or helped to write a way to make 102. When sharing, all students were able to share responses, since they already had a way to make the number prepared. The strips of paper were taped to the Today's Number chart paper. The next day (2/16), instead of having students write number sentences on paper in partners, students just worked with a partner, on the rug, to think of a way to get to 103. Again, all students were participating, and not just sitting on the rug while other students shared number sentences; all students worked to come up with a solution. Each group then shared their solutions as well."

Intern Journal #7; February 26, 2005:

> "Students worked in groups of two or three to determine a number combination to get to the day's number: 110. As I walked around the room, students were discussing different strategies to get to the number 110. Therefore, since all students were involved, I feel that more students were engaged using this manner than when students work alone to determine a number sentence. Additionally, since the numbers are getting more challenging, being over 100, regardless of their academic level, students were participating when working with a partner. When Today's Number is done on the carpet, only a handful of students raise their hands to share number sentences. Now, all students were involved."

Intern Journal #8; March 19, 2005:

"Students who do not normally share during Today's Number were able to share a number sentence to get to 118, whether they raised their hand or I called on them to share. The pair share, where students determined an answer with a partner first, allowed them to be successful (and more confident) during sharing with the whole group."

While the above journals detail greater student participation during math, pair-shares and partner work were also used during spelling lessons, showing similar results. The following spelling lessons, noted in Intern Journal #9 (written on 3/26/05) provide evidence of student behavior, detailing how students were engaged in the spelling lessons when working with a partner.

"On Monday 3/21, instead of just asking students to make "ing" words during spelling, I gave each student group a word. When students received their words on an piece of oak tag, they had to differentiate as to what rule to follow when adding the "ing": drop the "e" before adding "ing," just add "ing" or double to final consonant before adding "ing." After students decided what rule to follow, they were told to turn their piece of oak tag over and write the new word on the other side. As I observed students, they were all working hard to determine how the new "ing" word would be spelled. This made all students apply their knowledge, not just the children who would raise their hands to participate. I generally feel as though participation was increased with this partner/pair share activity."

"On Tuesday 3/22, the spelling lesson consisted of students determining words that have the same spelling patterns. These spelling patterns consisted of "_ook," "_ike," "_ake," etc. To involved students more in the lesson, each group of students/pairs got 5 index card-sized pieces of paper and were instructed to make 5 new words following the spelling pattern: one word for each spelling pattern. Students were very engaged in the lesson, accurately choosing, spelling, and writing words that followed the noted spelling patterns. On their spelling test, the skills test section required students to find words in the story section of the test that had the same spelling pattern as a given picture (bee, book, fan, etc). After correcting the tests, all except for one student found words with the same spelling pattern. The student who made a few mistakes found words that contained the spelling pattern, but words that did not end with that pattern."

Lastly, student feelings expressed on the survey confirm my opinions that students enjoyed working with a partner, were more participatory, as well as confident to participate, after working with a partner or using pair-shares. To the question, "Do you like working with a partner?" posed on the student survey, sixteen students answered YES, two students answered NO, and two students did not answer. With the majority answering positively, most students had an emotional connection to the lesson, a necessity for students to be engaged.

After determining students' responses to the question, "Do you like sharing ideas with a partner before sharing ideas with the class?" eighteen students answered YES and only two students answered NO. This highlights that most students enjoyed working with partners and sharing ideas with a neighbor using a pair-share technique before expressing ideas with the class. When being asked why students enjoyed this strategy, the following was how students responded (spelling has been corrected):

- "It is fun"/"It's fun to hear other people's ideas."(4 students gave these answers)
- "It's fun and because you know what to say."
- "It's funny."
- "It helps me pay better attention."
- "I like sharing with a partner first than the whole class, because it makes me feel better."
- "I can change my ideas with my partner before I share it wit the class."

- "Because it's fun and you know what the answer is."
- "I like it a lot." (Two students gave this answer)
- "To see what other people think."
- "To make sure that it is a good idea."
- "I like to see if they like it first, before I share it with the class." (Two students replied with this answer.)

After reading these responses, it is clear that some students felt more confident in their answers or ideas after checking them with a partner. Responses also detailed student enjoyment when working with a partner; some students even felt that working with a partner increases their attention. Below are reasons for why students did not like to share ideas with a partner before sharing them with the class.

- "They might steal your ideas."
- "Because it's harder the second time."

As these quotes represent, not wanting to share with a partner had nothing to do with disliking the idea of working with a partner. Students thought that it was harder to talk about an idea a second time, and that someone may steal their idea if it was a good idea. Generally, however, cooperative-learning environments facilitated participation and engagement in lessons, while boosting student confidence to share answers.

IV. Conclusions and Future Directions

A. Conclusions

After examining the evidence, it is clear that student engagement, participation, focus, and attention were all successfully increased by the seven different strategies utilized throughout the duration of the inquiry project. Visual representations of information, sign language or every pupil response systems, technology, songs and chants, motivational materials, drama or role playing, and cooperative learning strategies were enjoyed by most all students. Students were attentive, engaged, and participating in the lessons, as shown by the retention of information over time. Even if students did not like a particular strategy, such as singing or chanting, they did believe that the songs or chants helped them pay attention or to remember the information better. Given the positive results, these techniques (with slight modifications) will be put into practice in my future classroom.

B. Implications for Future Practice

While the strategies used during my inquiry did increase student engagement and participation, I believe that students could be even more involved with the learning process using some these same seven strategies. The ideas proposed below still serve the same purpose of keeping students engaged and attentive during lessons, but provide supplementary ideas that could also be employed to facilitate an even greater amount of student attention and participation.

For instance, pair-shares could be used more frequently when discussing any challenging topic, in any academic subject. When using songs and chants, after learning about a topic and then singing a teacher created song/chant, students could work in small groups to create their own songs/chants. Each group would then present their work to the class.

In the realm of sign language, I would begin teaching students signs at the beginning of the year. This would provide more time for signs to be learned and then incorporated into future lessons. Teaching signs, such as the manual alphabet, from the beginning of the year would eventually allow students to manually spell and practice their spelling words, a powerful form of kinesthetic learning for some students.

I would also like to involve children more in the construction of visuals during the progression of the lesson. To do so, when using cut-outs, I would not display facts on the cut-outs prior to the lesson. I would have students add the facts to the visual, which would be written on index cards or paper, as they are talked about. To make the lesson even more engaging, students could be broken into groups; each group would receive several index cards. It would then be the job of the group to read the facts and determine which facts are true and those that are false. The true facts could then be pasted onto the visual display.

C. New Wonderings

While many claims have been made about what I learned from my inquiry project, I still have numerous wonderings, in regards to using sign language in the classroom in more ways than what was employed for the duration of my inquiry project. These additional wonderings will be addressed in my future classroom by increasing the use of sign language, to determine even more ideas in the realm of increasing student engagement and overall instructional time.

- If sign is implemented during transition times, will transitions run more smoothly? How will transition times change?
- If sign is added as a component to classroom management, will overall instructional time increase? In what areas will instructional time increase the most? How will the number of disruptions in the classroom change if students are taught signs such as bathroom, pencil sharpener, and water fountain?
- If students are taught the manual alphabet, will this kinesthetic learning technique facilitate greater achievement on spelling tests from students who are kinesthetic learners?

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