Captivating Kindergarteners at Computers:
Integrating Computers at Language Arts Stations to Increase Student Engagement

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Kindergarten

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Description of the Teaching Context

As a Professional Development Intern through Penn State University, I am working in a kindergarten self-contained classroom at Gray’s Woods Elementary School in State College during the 2009-2010 school year. The twenty students in my kindergarten class are each unique and each brings something special to the class dynamic. There are an even number of boys and girls, ten of each. At the start of the school year my class only had one six year old student and the rest of the students were five and began to turn six starting in late December with birthdays that spread through the middle of July. This translates to a very young group. However, my students are, for the most part, well behaved and except for a few students, they all follow directions and aim to please the adults in the room most of the time. They do struggle to attend during Language Arts stations.

There is not a lot of physical diversity in our classroom. All of my students, but one, are Caucasian and one student is half African American. All but one comes from two parent families, and to my knowledge, live with both parents. However, the behavior, academic and maturity level of my students vary greatly.

Several of my students have individual education programs (IEP). Two boys receive services for autism and two boys receive support from the speech pathologist. One of these boys meets with the instructional support teacher once a week. The two boys with autism are very different. One of the boys is high functioning with a Therapeutic Staff Support aide who redirects his behaviors when needed. The second boy needs much more support with his behavior and academics. He is not as mature as the rest of the class, resulting in frequent meltdowns and fits. His behavior is often off task and he needs constant redirection and support. He also needs a great deal of extra support with his academic skills in both reading and math and
is in the lowest reading group. He spends part of the day in the learning support classroom for reading and math stations.

Like most kindergarten classes we have a great spread of ability levels. Five students go to the Response to Intervention program for reading. We differentiate lessons to try to meet their needs. In reading, four of our students, three girls and one boy, are reading on a first grade level and they are learning how to decode words and read for comprehension and fluency. Half the class is divided into two reading groups that are on the same reading level but one group is progressing through skill development at a faster pace than the other one. The faster pace group has five students, two girls and three boys. The other like group has six students, three of each gender. Both of these middle level groups have trouble staying on task while working independently, and it appears they tend to socialize to avoid their work. The fourth reading group in my classroom is still learning their letter sounds. This group includes four students who leave the classroom for Response to Intervention, and one boy when he is not at his learning support classroom.

The children in my class are at varying levels in terms of social skill development. There are a handful of well-liked students, consisting of both males and females, who are viewed as leaders and other students look to this group and emulate their behavior. For the most part, all the students get along, but they are still learning how to resolve conflicts for themselves and use “I messages.” Some of the more social students with many friends ignore some of our quieter students, but we are working on community building and encouraging the leaders to assist those who are quieter and may need a little assistance. There are two girls in our class who spend morning and aftercare together and until recently, have been in the same reading group. As a result of spending so much time together, they seem to be in constant conflict. As a teacher, I
have spoken to them about friendship and being nice to our classmates, as well as separating
them when possible.

The twenty children of room 28 are all learning how to be good friends to each other
while growing and learning throughout the kindergarten year. I am striving to engage my
students more at stations time by integrating computers.

(See Appendix A for full Inquiry Brief)
Wonderings and Questions

Main Wondering

*What effect does the introduction of computers at stations time have on student engagement?*

Sub-Wonderings

- How can I engage the students more during stations time at all stations including the computer?
- What systems have to be in place for the kindergarten students to functionally use the computers and rotate between them independently?
- What effect does using computers over time have on student engagement?
Data Collection and Analysis

I collected many different types of data to fully explore the effects of integrating computers into language arts stations in my kindergarten classroom. Data collection was conducted before, during and after the implementation of the computers.

After coming up with a main wondering of my inquiry, I was aware my students needed to become familiar with the computer if I was going to integrate it into our classroom and expect them to use it independently. To set the students up to be successful once I started to integrate the computer station, I made sure to bring my students to the computer lab to instruct them on basic skills. At the computer lab we completed the kindergarten technology competency lessons written by State College Area School District. I ensured the students were able to use Kid Pix, the program that would be used for parallel activities during language arts centers. From January 25th to February 12th, our class visited the computer lab seven times to become familiar with Kid Pix and using the computer.

Systematic Observation Data Collection

Prior to implementing my inquiry, I measured student engagement at stations time through a systematic observation. In this systematic observation I wrote down student seating arrangements at each station switch. I looked around the room every two minutes and wrote down the initials of students who were off task in that time frame. I did this for three full days of language arts stations time. The recorded seating arrangement I did during the student’s rotation (can be seen in appendix B) and the observations together enabled me to know the student’s location and assignment when they were off task.

As mentioned above, I recorded seating charts of where the students sat during the four stations and the four rotations of language arts. This helped me keep track of who was at the
computer when I went back to analyze the data so I was not selective or judgmental when 
writing down the students off task. Although I was interested to see how the engagement at the 
computer compared, I just wrote down their initials and then later based on these charts and their 
groups I went back and put the colors in. (See Appendix B for Systematic Observation seating 
charts) I did three more days of systematic observation by observing the room every two 
minutes, recording student seating, and seeing which students were off task. During this round of 
systematic observations I included the computers to measure student engagement and off task 
behavior when it was their computer turn. By doing three rounds of systematic observation, 
every student in my class was on the computer at least once during my observations.

Systematic Observation Data Analysis

I waited to analyze my systematic observation from “before computers” until I did the 
systematic observation “after implementing computers” to see what trends would emerge. I put 
the color group below every student’s initials when I tallied them down for being off task as you can see in the example of systematic observation in Appendix C. I also put the color of the 
two groups at the independent table next to that rotation. I counted the number of students that 
were off task when at teacher tables vs. independent tables before implementing the computers, 
and after. I used the first two pages of charts in Appendix C to help me keep track of the 
students who were off task when at a teacher’s station. I also counted the whole number of 
students off task at each rotation, each day, and overall before and after the computer 
introduction. I used those numbers to get an average number of students who were off task in 
the whole room during one station rotation, and that average number decreased after the 
implementation of computers.
Anecdotal Notes Data Collection

In addition to my systematic observation, I also took anecdotal notes on what was happening while the students were off task or at the independent or computer station in my systematic observation. Through this observation seen in Appendix C, it became very clear to me that many students at the two independent centers were off task a great deal of the time. I also took notes of how the two other kindergarten teachers in my building implemented computers during their language arts station time. I continued to take anecdotal notes while I was doing my systematic observation, and other days when something of significance occurred, such as student quotes, unusual action, or abnormal student work and behavior. The anecdotal notes during systematic observation were very helpful because I knew the date, time, and context of when the comments occurred. (Example anecdotal notes from systematic observation can be found in Appendix C)

Anecdotal Notes Data Analysis

I reviewed all of my anecdotal notes for patterns that emerged in student behavior or reactions to the computer station and activities. These anecdotal notes, as well as notes taken during video, and student interviews served as an informative source for this inquiry. Through anecdotal notes I was able to record information and patterns of behavior or feelings for which no hard data existed. The information taken from my anecdotal notes backed up and provided support to the factual hard numbers information from the parent survey, video codes, and systematic observation. During Day three of my “after” systematic observation I had to stop five times to help the students with technological troubles such as saving, or when they clicked on the wrong program and they could not get back. In my anecdotal notes I also witness the same
pattern many other days regarding the assistance the students required. Another pattern I observed was their enjoyment and comments they made about how the students were having fun but could not do exactly what was asked of them because of lack of technology skills such as typing and fine motor skills. Through the anecdotal notes, I was able to discern clear trends such as student assistance, enjoyment, and technological struggles.

**Video Data Collection**

I also set up a flip video camera behind the computers for two days to measure student engagement through video. The students saw the video camera but were not very alert to the fact they were being filmed.

**Video Data Analysis**

I utilized StudioCode to code the video for student off task behavior at the computer. I coded each student for on and off task behavior. For on task behavior I was looking for students to be focused on the computer with consistent eye contact and using the Kid Pix tools. Some of the off task behavior I saw was student discussion not based on the assignment, loud voices, students getting out of seats, and silliness of students not doing the assignment on the computer screen. I recorded the number of minutes each of the 16 students was on or off task out of the fifteen-minute station. (*Appendix D shows graphs of studio code percentages of on task and off task behavior.*) Only 16 students are represented on the graph because in the 2 days of rotations that is how many students were able to use the computer. I also took notes during the video when a child said anything relevant to their engagement on the computer. (*Appendix D shows graphs of studio code percentages of on task and off task behavior.*)

**Student Work Data Collection**
One of the understandings I was seeking to discover was how their work and engagement on the computer would compare to their work and engagement at the independent table when assigned parallel activities. I collected student work completed on paper from the independent table, and attempted to have students save their work at the computer station. For example, if there was a worksheet at the independent table that asked them to draw the setting of a read aloud book we had just read, the computer task would be the same. Through two different but parallel activities I collected work from both the computer through saving student Kid Pix work, and the station independent table by collecting their seatwork. I also collected two activities from the students that they did at the table, a picture of the setting of *Strega Nona* by Tomie Depaola, and an activity working with the “ug” word family. Examples of a student’s drawing of Strega Nona characters and setting and a story about the book are scanned in Appendix E. It is obvious there is significantly more detail and the student was able to write the story. There are also pictures of student “ug” worksheets which they completed at the table in Appendix E. In those two worksheets you can see the students had the space to think of more words in the “ug” family and the detail in their pictures was much greater. I reinforced the need for the students to save their work on the computer by having a Kid Pix file already saved with their name for them to click on, but many students erased their work midway through their computer time or at the end so this was not an accurate picture of what they completed. I took many pictures and screenshots of their work on the computer to obtain a more complete view of their progress.

**Student Work Data Analysis**

To examine the student’s work I spread out all of the paper copies of one activity. For the “ug” word family activity the majority of the students completed the entire worksheet at the independent table and 8 students went on to create more words on the back. There were only
three students who did not finish the worksheet. I looked at the “ug” Kid Pix files on the computer to seek a comparison. I found that for many students their computer work was not as detailed as the work they did at the table, possibly because the technology was holding them back, or because they did not properly save their work. Using the screen shots and pictures of student work, I tried to put together the most complete depiction of their work as possible. (I have included examples of student independent table work in the Appendix E and pictures of student computer work in Appendix F).

**Parent Survey Data Collection**

After I had implemented the computers for more than a month in my classroom I sent home a parent survey asking about each child’s mention of the computer use in the classroom and any feelings their child shared towards our computer stations. I also asked parents about their child’s previous use with computers, specifically experience using computers for academic purposes.

**Parent Survey Data Analysis**

Fifteen of the twenty parent surveys sent home had been returned after a two week deadline. After studying the completed surveys a number of themes emerged. Although it was interesting to get parent insights and find out the experience children had with using computers in preschool and at home, I only graphed the responses to the questions I felt to be most relevant to my wonderings. I ended up only using the first section of the parent survey. (A blank parent survey and samples of parent survey responses can be found in Appendix G.)

**Student Interview Data Collection**

Once I had directly compared the student work and looked over my notes about the usage of computer stations in our classroom, I decided it would be interesting to see the reaction
students had to using games on the computer to support some of the skills we were learning in language arts. I interviewed several students who I believed would have varying opinions on computer use. I decided to implement these games instead of parallel activities for two weeks and then interview students to find out their opinions about using the games on the computer verses Kid Pix for parallel activities. *(The student interview questions can be found in Appendix I.)*

**Student Interview Data Analysis**

Upon reviewing my student interview notes, I found the students were often frustrated with the technology, but also liked the addition of computer rotation into our language arts station time. The interviews provided a good vehicle way for my students to express their feelings on the computer station process after it had been in place for a while and changes had been made. I typed up the student answers in three different colors and read them over several times in search for patterns. I found that all the students said they enjoyed the computers for different reasons. *(The student interview questions and results can be found at the end of Appendix I.)*
**Explanation of Findings**

After completing my data analysis through the methods outlined above I was able to see three emerging patterns and trends. I found data, which enables me to support three strong claims in relation to the integration of computers to language arts stations in my kindergarten classroom.

**Claim #1: Reducing group size at the independent table by utilizing computers for a portion of the group, increased engagement at both settings.**

*Evidence 1:* The systematic observation showed that out of all the off task behavior recorded 94% the students who were off task were seated at the independent tables, and 6% of the time students not at the independent table were the ones off task. During the baseline systematic observation before implementing the computers I recorded an average of eighteen instances of off task behavior at some point when I scanned the room during one station rotation. After implementing the computers I recorded an average of ten instances of off task behavior when I scanned the room during one fifteen-minute station rotation.

*Evidence 2:* After analyzing the video footage of students working at computers, I was able to see the small amount of time students were off task at the computer as compared to time off task at the independent station. As you can see in Appendix H the students were on task for a majority of time during their turn at the computer station. There were two students who stayed on task for fourteen out of fifteen minutes after sitting down and engaging with the activity. There were five other students who were only off task for one or two minutes throughout the fifteen-minute station. In comparison, I found from my systematic observations before computers that several students were sometimes off task 50% of the time I looked at their
independent center. Only one student out of the 16 coded for, was off task more than 50% of the time after computers. I also found that on average, students at the computer station were engaged in the computer station and average of 80% of the time I was videoing. For kindergarten this appears to be a high percentage of on task behavior and proves their true engagement in the computer activities.

*(Refer to graph in Appendix H for individual student minutes off task vs. minutes on task from Studio Code)*

**Claim #2: The majority of students appeared to enjoy the addition of the computer station to our language arts center time.**

*Evidence 1:* I received fifteen parent survey responses out of the twenty students in my class. Out of those fifteen students, thirteen mentioned the use of computers in the classroom to their parents and were very excited about the activity. Some parents wrote comments their child had said about computers such as: “very fun,” “He likes having computer time in the classroom,” “He wishes he could do it more,” “wishes she could use the computers everyday.” This made me realize that every student who mentioned the use of the computer at home only had positive things to say. *(The results of the survey can be seen in graph form at the end of Appendix G.)*

*Evidence 2:* I interviewed three students and found out that all of them enjoyed using the computers. They looked forward to their turn on the computer and liked how the activities changed every time they had a turn. They had many positive things to say about the computer such as “I wish I could do computers everyday” and “It is my favorite part of stations.” The three students I interviewed provided a cross section of students with different personalities and
students who I believed would have different opinions about the computers. *(Student interview questions and results can be found in Appendix I.)*

*Evidence 3:* Anecdotal notes were very helpful in observing the students’ positive attitudes towards the computer. These anecdotal notes were a true reflection of their feelings because their comments and actions were unprompted responses to using computers.

Additional anecdotal notes from my PDA and mentor allowed me to observe the pleasure students took in using the computers by their change in attitude when the subject of computers was brought up. My PDA made the following observation on April 7, 2010: “Interesting reaction by J~ he was whining about a foot hurting and not displaying interest at the table but was set and eager with a change in voice to use the computer.” My mentor made the following observation on March 30, 2010: “the students were all attentively listening when you were giving directions on what the computer activity for the day would be.”

*Claim #3: Technological Competency for most of the children was not developed well enough to work independently at the computer on parallel Language Arts activities using Kid Pix.*

*Evidence 1:* While watching and coding two days of computer usage at stations time my assistance appeared to be necessary to transition smoothly from group to group and in the success of the student accomplishing the task. The students needed my support for one of three reasons, the first two being the most common: not remembering how to save their work after we had gone over it and there were picture directions posted for their help, or not knowing how to do something they wanted on Kid Pix, or accidently clicking another program and having to get
back to Kid Pix. I coded the following two days of stations that I videotaped. I found that I had to go over and help the students seven times one day during the four station rotations and six times the day before. Although, the situations were all fixed in under 45 seconds this took a lot of instructional time away from the other language arts station I was assigned to be teaching (reading or word work).

Another piece of evidence I found in the videos were instances of students becoming frustrated by not being able to do what they wanted because of the technology. During the first day I introduced a word family activity on the computer that consisted of students sounding out words from the “at” family and writing them accompanied by pictures, I noticed students were spending most of the time trying to find letters on the keyboard when typing the words rather then coming up with multiple words. I later changed the activity so that whenever the students wrote on the computer they used the pencil tool and wrote freehand. This was difficult for a lot of them because of developing fine motor skills. On the first day of videoing, one girl expressed her frustration after sounding out the word “red” she wanted to write the word on the computer and said “urgh I cannot get the ‘r’ to face the right way.” Another boy’s frustration using the pencil tool writing the word families on the computer brought him to tears because he could not get the letters to be perfect “like we had practiced them in printing,” he said. They told me they wanted to type the words because using the “T for text” was exciting, thing to do, but when reviewing and coding, I realized it was not efficient for these students and the types of activities.

_Evidence 2:_ The students’ work was compared directly because the tasks were parallel. I had the student work and pictures of student work from the computer and the paper copy of an activity parallel to the work that students worked on at the table. It was easy for me to see that students
could go into greater detail in their work at the table with a paper and pencil rather than computer. On the “ug” worksheet students had room to create more ug words in an organized fashion as seen in Appendix E; however, on the computer students did not want to erase everything they just worked with for a word family to make more words. The space on Kid Pix limited their work and progress, as you can see in picture 1 in Appendix F; this student squished all the words together and did not have room for more. In picture 4 the student on the left decided to use the format of lines- similar to the worksheet on the table, but she only had room to write three words in the Kid Pix space. The students’ inability to efficiently type was solved by using the pencil, but the pencil tool takes up a lot of space and limits the amount a student can work. Also as you can see in pictures 2 and 3 in Appendix F, students were asked to draw and write about the setting of Strega Nona on the computer and at the table. On Kid Pix they were unable to write because again of space limitations. Also the detail that was in the same students drawing of the setting from the table (Appendix E) was not in their picture from the computer as seen in Appendix F. Some students failed to even complete computer assignments because of their limited technology skills such as the student on the right hand computer in Picture 4 in Appendix F.
**Reflections and Implications for Future Practice**

In completing this inquiry project, I have concluded continuing computer stations in my kindergarten classroom would be effective for the students if I used games and parallel activities. I have discovered the routines, strategies and prior training which needs to be in place for student to rotate through the computer routine and understand directions. Knowing students in elementary school now will need to use computers to gain the twenty-first century skills they need to be successful life long learners, I will work to integrate the necessary technology into my classroom for them to gain these skills. However, I am not sure that parallel activities are the appropriate tactic to accomplish this goal. In the future I will use the computers as an enhancement through games and other activities for language arts skills but using the Kid Pix program at this age was not as successful as I would have hoped for most students. I will continue to integrate technology in my classroom as it strategy to enhance the objective of each lesson.

When thinking about how to incorporate my findings into my future classroom, I learned a lot in the claims I previously expressed but I found myself wondering further questions to keep in mind in the future:

- How can I further engage students at the other independent stations without reducing group size?
- How will the effectiveness of the computer for parallel activities differ at an older age level?
- How will the uses of other technology such as projectors or SMART board’s effect student engagement in large group lessons?
While watching the video of the students work I was intrigued by their conversations and how different my kindergarteners were without adults around. Although, the students knew they were being filmed and the video camera was in plain sight, they seemed to forget about it and just acted normally. I witnessed an entirely different side of students working together, collaborating, and having different types of conversations with each other. This led me to further wonderings focused on student attitude and relationships that were very big but I could inquire about in smaller chunks in the future.

- How differently do students act around one another when an adult is not in their close vicinity?

- How do different activities such as community building, partner tasks, and cooperative learning, effect student conversations and relationships?

This inquiry process has been through provoking leading me to begin to implement inquiry strategies into my daily routine. It is not uncommon for me to now find myself asking questions and wondering about other factors in the classroom. While it may not be practical to formally write up my findings on every wondering I discover, knowing the steps to collect and analyze data will become core to my teaching practice. Since I first obtained the idea of implementing computer usage in language arts stations from several other primary grade classrooms, I consulted with them to determine how they utilized used the computers in the classroom and will continue to use other teachers and members of the community as resources through my professional inquiring. As a teacher, I will take the implications I learned from this inquiry and apply them to my own unique group of students to support their needs. My goal is to continue to inquire about the effects of integrating technology in the classroom varying its use to the students and lesson objectives. As an educator, my desire is to provide students with the
skills they need to be lifelong learners and I will continue to look for ways to effectively incorporate technology into my classroom to engage and educate each individual learner.
Appendix A- Inquiry Brief

Maria White

Inquiry Brief

Description of the Teaching Context

As a Professional Development Intern through Penn State University, I am working in a kindergarten self-contained classroom at Gray’s Woods Elementary School in State College during the 2009-2010 school year. The twenty students in my kindergarten class are each unique and each brings something special to the class dynamic. There are an even number of boys and girls, ten of each. My class has one six year old and the rest of the students are five and will be turning six starting in late December with birthdays that spread through the middle of July. This translates to a very young group. However, my students are, for the most part, well behaved and except for a few students, they all follow directions and aim to please the adults in the room most of the time. They do struggle to attend during Language Arts stations.

There is not a lot of physical diversity in our classroom. All of my students, but one, are Caucasian and one student is half African American. All but one come from two parent families, to my knowledge, and live with both parents. However, the behavior, academic and maturity level of my students vary greatly.

Several of my students have individual education programs (IEP). Two boys receive services for autism and two boys receive support from the speech pathologist. One of these boys meets with the instructional support teacher once a week. The two boys with autism are very different. One of the boys is high functioning with a Therapeutic Staff Support aide who redirects his behaviors when needed. The second boy needs much more support with his behavior and academics. He is not as mature as the rest of the class because of his frequent meltdowns and fits. His behavior is often off task and he needs constant redirection and support. He also needs a great deal of extra support with his academic skills in both reading and math and is in the lowest reading group. He is spending part of the day in the learning support classroom for reading and math stations.

Like most kindergarten classes we have a great spread of ability levels. Five students go to the Response to Intervention program for reading. We differentiate lessons to try to meet their needs. In reading, four of our students, three girls and one boy, are reading on a first grade level and they are learning how to decode words and read for comprehension and fluency. Half the class is divided into two reading groups that are on the same reading level but one group is progressing through skill development at a faster pace than the other one. The faster pace group has five students, two girls and three boys. The other like group has six students, three of each gender. Both of these middle level groups have trouble staying on task while working independently, and it appears they tend to socialize to avoid their work. The fourth reading group in my classroom is still learning their letter sounds. This group includes four students who leave the classroom for Response to Intervention, and one boy when he is not at his learning support classroom.

The children in my class are at varying levels in terms of social skill development. There are a handful of well-liked students, consisting of both males and females, who are viewed as leaders and other students look to this group and emulate their behavior. For the most part, all the students get along, but they are still learning how to resolve conflicts for themselves and use “I messages.” Some of the more social students with many friends ignore some of our quieter
students, but we are working on community building and encouraging the leaders to assist those who are quieter and may need a little assistance. There are two girls in our class who spend morning and aftercare together and until recently, have been in the same reading group. As a result of spending so much time together, they seem to be in constant conflict. As a teacher, I have spoken to them about friendship and being nice to our classmates, as well as separating them when possible.

The twenty children of room 28 are all learning how to be good friends to each other while growing and learning throughout the kindergarten year. I hope I can help engage my students more at stations time by integrating computers.

**Rationale:**

Through studying the integration of technology in the classroom and taking several educational technology courses throughout my college career, I have developed a passion for using technology in the classroom. I had the experience to do a smart board lesson with my students and they absolutely loved it. This experience made me wonder how I could incorporate technology into our daily schedule. There are two computers in my classroom which are only utilized at recess time, and I wanted to find a way to use them more regularly at stations time. During language arts stations, my students are constantly off task at the independent stations and do not finish the independent task at hand. I believe introducing computers as instructional tools for language arts development at stations time will increase student engagement and completion of tasks. I am curious to see how this can work in my classroom and if it will be a successful addition to our daily language arts time instructional plan.

**Main Wondering:** What effect does the introduction of computers at stations time have on student engagement?

**Sub Questions:**

- How can I engage the students more during stations time at all stations including the computer?

- What systems have to be in place for the kindergarten students to functionally use the computers and rotate between them independently?

- What effect will the integration of computers have on the students academic skills?

- What effect on using computers over time have on attentiveness?

**Timeline:**

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<th>Week of</th>
<th>Tasks:</th>
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<tr>
<td>Feb 8th</td>
<td>▪ 4 days of Systematic Observation at Stations time (pre-computers)</td>
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| Feb 15th | ▪ Systematic Observation  
<p>|          | ▪ Setup for use of computers next week  |
| Feb 22   | ▪ Start integrating Computers at Stations midweek |
| March 1st| ▪ Send home Parent Survey |</p>
<table>
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<tr>
<td>March 8th</td>
<td>Interview Students</td>
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<td>Video students at computers</td>
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<tr>
<td>March 15th</td>
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<td>4 days of Systematic Observation at Stations with computers</td>
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</table>

**Data Collection:**

- Systematic observation of engagement during stations time before and after computer implementation (4 days of each). I will be observing how many students are off task during the station rotation and at which station they were off task. I expect to find that students will be less likely to be off task at the computers after they are introduced into the classroom.
- Student interviews about computer usage in the classroom
- Parent survey’s about student’s computer usage and experience at home
- Possible video taping and studio code of students at computers
Appendix B- Student Seating Charts from Systematic Observation
## Appendix C - Systematic Observation Notes

During first three minutes of the round, graph the students at the table and make initials.
After the first three minutes, record the students who are off task.

<table>
<thead>
<tr>
<th>Time</th>
<th>Round</th>
<th>Student’s Off task</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1:50</td>
<td>1</td>
<td>SH, OS, NL, OF</td>
<td></td>
</tr>
<tr>
<td>2:50</td>
<td></td>
<td>KO, OS</td>
<td></td>
</tr>
<tr>
<td>3:50</td>
<td></td>
<td>IM, OS, NL</td>
<td>Ben and Alyx write words</td>
</tr>
<tr>
<td>4:50</td>
<td></td>
<td>NL, OS</td>
<td>read the map</td>
</tr>
<tr>
<td>5:50</td>
<td></td>
<td>JL, CT</td>
<td>playing with manipulatives</td>
</tr>
<tr>
<td>6:00</td>
<td></td>
<td>AE, RO, JL</td>
<td>fixed 10’s</td>
</tr>
<tr>
<td>7:00</td>
<td>2</td>
<td>JO, JR, JL</td>
<td>was 2 away from task</td>
</tr>
<tr>
<td>8:00</td>
<td></td>
<td>JL</td>
<td>AE asked about headphones</td>
</tr>
<tr>
<td>9:00</td>
<td></td>
<td>NL</td>
<td>girls able to read sounds</td>
</tr>
<tr>
<td>10:00</td>
<td></td>
<td>OS, BR, JR</td>
<td>Went to Music</td>
</tr>
<tr>
<td>11:00</td>
<td></td>
<td>JR, NL</td>
<td></td>
</tr>
<tr>
<td>12:00</td>
<td></td>
<td>AF</td>
<td></td>
</tr>
<tr>
<td>13:00</td>
<td></td>
<td>NL, SH, BP, JL</td>
<td>Everyone very quiet</td>
</tr>
<tr>
<td>14:00</td>
<td></td>
<td>JR</td>
<td></td>
</tr>
<tr>
<td>15:00</td>
<td></td>
<td>5:50, 5:50</td>
<td>Rachel found stickers</td>
</tr>
<tr>
<td>16:00</td>
<td></td>
<td>JL</td>
<td>Jon completely engaged</td>
</tr>
<tr>
<td>17:00</td>
<td></td>
<td>RO</td>
<td>Jon not getting the word</td>
</tr>
<tr>
<td>18:00</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

5:4

*Maybe headphones help.
Talk less.*
During first three minutes of the round, graph the students at the table and make initials.
After the first three minutes, record the students who are off task.

<table>
<thead>
<tr>
<th>Time</th>
<th>Round</th>
<th>Student's Off task</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>4</td>
<td>OS</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>IM</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>OS IO CK</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>CK NL</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>IO NL</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>GF NL</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Gracey kept erasing</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Samuel — so proud of his work</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Gracey had time getting started, did 3 and after</td>
<td></td>
</tr>
</tbody>
</table>
Appendix D-

Graphs of Student Engagement from Studio Code videos

### Studio Code Results of Students Computer Engagement

<table>
<thead>
<tr>
<th>Student</th>
<th>Minutes Off Task</th>
<th>Minutes On Task</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student 1</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>Student 2</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Student 3</td>
<td>1</td>
<td>11</td>
</tr>
<tr>
<td>Student 4</td>
<td>2</td>
<td>14</td>
</tr>
<tr>
<td>Student 5</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>Student 6</td>
<td>4</td>
<td>9</td>
</tr>
<tr>
<td>Student 7</td>
<td>3</td>
<td>12</td>
</tr>
<tr>
<td>Student 8</td>
<td>4</td>
<td>11</td>
</tr>
<tr>
<td>Student 9</td>
<td>8</td>
<td>7</td>
</tr>
<tr>
<td>Student 10</td>
<td>2</td>
<td>13</td>
</tr>
<tr>
<td>Student 11</td>
<td>3</td>
<td>15</td>
</tr>
<tr>
<td>Student 12</td>
<td>5</td>
<td>12</td>
</tr>
<tr>
<td>Student 13</td>
<td>2</td>
<td>10</td>
</tr>
<tr>
<td>Student 14</td>
<td>1</td>
<td>15</td>
</tr>
<tr>
<td>Student 15</td>
<td>2</td>
<td>14</td>
</tr>
<tr>
<td>Student 16</td>
<td>1</td>
<td>13</td>
</tr>
</tbody>
</table>
Appendix E- Examples of Student Work from Independent Table

<table>
<thead>
<tr>
<th>Name: Rachel</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pug</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>chug</th>
<th>bug</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rug</td>
<td>tug</td>
</tr>
<tr>
<td>Juga</td>
<td></td>
</tr>
</tbody>
</table>

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Name: Abby</td>
<td></td>
</tr>
<tr>
<td>-----------</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ug</th>
</tr>
</thead>
<tbody>
<tr>
<td>mug</td>
</tr>
<tr>
<td>Chug</td>
</tr>
<tr>
<td>Rug</td>
</tr>
<tr>
<td>Lug</td>
</tr>
<tr>
<td>Jug</td>
</tr>
</tbody>
</table>
Carson the Setting

for the story, Granmo

Circheta Hecht Nona

“A hab” Ho to Be
Appendix F-

Pictures of Student computer work

Picture 1

Picture 2
Picture 3

Picture 4
Picture 6
Appendix G- Parent Survey

Your Child’s Name ___________________________

1. Has your child mentioned our use of the computers at school?
   __________________________________________
   Were they excited about using computers at school?
   __________________________________________
   What did they say about our computer use at school?
   __________________________________________

2. Are you aware if your child used a computer in their preschool or Pre-K setting?
   __________________________________________

3. Does your child use a computer at home or outside school?
   __________________________________________
   Approximately how many times a week? _________
   Approximately how many total minutes each week? _________
   Approximately how long has your child been exposed to the computer at home?
   __________________________________________

(If you answered no to number two then please skip the remaining questions)

4. If your child does use the computer at home does your child enjoy using the computer?
   __________________________________________
   Is your child’s computer usage an independent activity or does someone assist them? If yes, please indicate if this is assistance to get them started or assistance throughout their computer session?
   __________________________________________

5. What does your child use the computer for? (Circle all that apply)
   Educational websites                           Educational Software (CD or program)
   Game software (CD or program)                  Game websites
   Other: ____________________________________________________________________
   If your child uses the computer at all for educational purposes have you seen any effect on their comprehension of the activities or academic skills (if so please elaborate)
   __________________________________________

6. Can you provide specific examples of games, websites or software that your child enjoys?
   __________________________________________

If there is any additional information you wish to let me know about your child and their desire to use computer, or their experience with computers please feel free to write it in the space below.

Please return by Tuesday, March 30, 2010
Thank you for your help and support in my inquiry study
1. Has your child mentioned our use of the computers at school?
   
   
   Yes

   Were they excited about using computers at school?

   Yes

   What did they say about our computer use at school? She was very excited about her house picture that she brought home. She also mentioned making 3 letter words and coloring.

2. Are you aware if your child used a computer in their preschool or Pre-K setting? Yes

3. Does your child use a computer at home or outside school?

   Yes

   Approximately how many times a week? 1

   Approximately how many total minutes each week? 15-30 min

   Approximately how long has your child been exposed to the computer at home? 3 yrs.

(If you answered no to number two then please skip the remaining questions)

4. If your child does use the computer at home does your child enjoy using the computer? Yes

   Is your child’s computer usage an independent activity or does someone assist them? If yes, please indicate if this is assistance to get them started or assistance throughout their computer session?

   Someone assists to get her started she will ask for help occasionally during her session

Continued on Reverse Side
Parent Survey Results

- **86.67%**: Students who mentioned computers at home and were excited about using them
- **13.33%**: Students who did not mention computers at home
Appendix H- Graph of Student Engagement from Studio code videos

Studio Code Results of Students Computer Engagement

- Student 1: 10 minutes on task, 5 minutes off task
- Student 2: 13 minutes on task, 2 minutes off task
- Student 3: 12 minutes on task, 3 minutes off task
- Student 4: 14 minutes on task, 1 minute off task
- Student 5: 9 minutes on task, 6 minutes off task
- Student 6: 11 minutes on task, 4 minutes off task
- Student 7: 12 minutes on task, 3 minutes off task
- Student 8: 11 minutes on task, 4 minutes off task
- Student 9: 7 minutes on task, 8 minutes off task
- Student 10: 13 minutes on task, 2 minutes off task
- Student 11: 12 minutes on task, 15 minutes off task
- Student 12: 10 minutes on task, 5 minutes off task
- Student 13: 14 minutes on task, 1 minute off task
- Student 14: 15 minutes on task, 1 minute off task
- Student 15: 13 minutes on task, 2 minutes off task

Minutes on or off task

Analyzed by Studio Code
Appendix I – Student Interviews

I used three different colors to record the three different people I interviewed

Student Interview Questions:

1. Did you like using computers at Language Arts Station Time?
   Student 1- Yes I wish I could use computers everyday!
   Student 2- It is my favorite part of stations
   Student 3- Yes

2. Why did you like using the computers?
   Student 1- They were so fun!
   Student 2- I got to do what I wanted
   Student 3- Only when I could do what I wanted

3. What was your favorite thing to do at the computers?
   Student 1- Games, fuzzy lion ears
   Student 2- Kid Pix!
   Student 3- Everything like games and drawing

4. What would you change about using the computers at stations time?
   Student 1- I wish we could do it everyday
   Student 2- I don’t know
   Student 3- if I could do more games and just draw

5. Did you like playing games or an activity on Kid Pix better?
   Student 1- games are fun when I can do whichever games I want
   Student 2- drawing is really fun on Kid Pix
   Student 3- I liked both

6. Do you think you learned things from playing on the computer at Language Arts Stations?
   Student 1- I practiced words, and got to learn how to type things
   Student 2- Yeah I really liked drawing and writing on Kid Pix
   Student 3- yes
Appendix J- Annotated Bibliography


This movie has many facts and statistics in it focused on students using technology. It provides a profile of the average student and how learning with technology may be more engaging to them based on the tools they have available to them in the 21st century. The second part of this video focuses more on using technology in the high school setting but it still all relates to the technology I am integrating in my kindergarten classroom.


This article presents thirteen core understandings on how to teach children to learn to read. Two of these core understandings stood out to me as being directly related to my inquiry: Social Interaction is essential in learning to read, and engagement in the reading task for the student is a key in learning to read. Since my question is focused on fixing the lack of engagement at language arts centers where my students are acquiring the skills to learn how to read, these core understandings presented in the article may give me further insight into my wondering. The article states students will be more engaged in activities that fit their interests because it builds motivation and reinforce the enjoyment found in reading. I will take this into consideration when putting together my computer stations and activities.


The last chapter of Best Ideas For Teaching With Technology provides teachers strategies for classroom management relating specifically to technology. In this chapter there is free teacher resource websites to use in the classroom as well as
recommended professional development resources. There is a section titled “Teaching Strategies for Computing Environments” which provides tips I can use in setting up my computing environment for stations time. This will enhance the learning experience for my students by engaging them in creative activities. Although most of the book is geared towards upper elementary and older graders, I will tailor the information to fit my needs. The reason I will only use the last chapter of this book is because the first ten chapters are very specific to curriculum and applications for the computer that do not apply to my classroom.


The video titled “Engagement,” suggested multiple methods teachers could use to engage their students in learning while captivating their attention. The video features several teachers sharing strategies such as “think, pair, share,” talking to one another, working in small groups, and being responsible for their own learning. The video models lessons where all students are actively participating and being involved in the lesson. This video provides me insight on the design principal of engagement and how to be mindful of this when designing and implementing lessons in the classroom.


This chapter helps educators understand how they can further motivate the students in their classroom. I believe if the students in my class were motivated then this would also heighten their engagement at stations time. The chapter gives advice on how to boost the morale of students such as catering tasks for right brain kinesthetic learners. Also, the author suggests requesting frequent student feedback, which I will do after implementing the computers in the classroom. I will have conversations with students and interviews to request their feedback. It also suggested reaching out to parents and guardians, which is another mechanism I will use in my inquiry. While this book is geared towards older students, the techniques can be adjusted and applied to younger students. The chapter ends with a section titled “Tap into children’s love affair with computers,” even though this book is not geared towards technology it is clear that computers are a catalyst for motivating student learning.

This study provides a counter argument for my inquiry and brings up many good points. The article evaluates computer software programs, which are intended and designed to teach young learners the English language. The computer programs are evaluated in a handful of different defined areas: pointless, nonstandard, robotic, glib, stasis, disneyfied, flashy and empty. I believe this article is useful because it bring up the points that I want to stay away from while integrating the computers into my classroom. I want to make sure the learning experiences I am providing for my students are meaningful and academically driven. The article closes with a list of questions, which I will use to ask myself as I move forward and plan the lessons for the computer stations to make sure they are academically worthwhile and not just flashy and fun.


This book is geared toward leaders in the teaching field and administrators explaining how to effectively integrate technology into schools. It provides useful tactics to utilize technology in the classroom and resources I can utilize on the computer in my inquiry project. It also gives research-based answers for administrators to support this practice and strategies on how to gain the support of their teachers.


This article studies the relationship between the role of peers and academic engagement in elementary school. Through the start of my data collection I have found that many of my students are off task because of their peers so the connection and research from this article could be very interesting in relation to my intervention and reasons behind the off task behavior. The article studies peer relationships in third grade students to predict their level of academic engagement in fifth grade. Although my students are in kindergarten the predictors and research could help explain the reasons behind my data collection results,


This textbook provides an overview of the history of integrating technology into education and delivers very specific examples of how to integrate technology into
the classroom. Included in the text are many examples that I can use in my integration of computers in my classroom such as interactive online storybooks (p.168).


_A Function Based Intervention to decrease disruptive behavior and increase academic engagement_ was a study done with a kindergarten student in Tennessee because he caused “frequent disruptions throughout the school day that resulted in exclusionary time out and impeded the teacher’s ability to instruct the class.” Although the engagement problems in my room are not nearly as severe, the intervention that was implemented for this student had several parts that I could apply to my inquiry. The teacher was instructed to ignore disruptive behavior and give attention to positive on task behavior. The student was taught to self-monitor his behavior with a chart of happy and sad faces. I could implement this with my two computer stations or just keep it in mind as I develop my lessons. The third component was positive scanning which consisted of the teacher writing notes with one positive thing the student did that day. Although this may not be something I do on a daily basis, I could implement this component verbally to increase engagement at stations time. The intervention proved to be more successful in increasing the student’s academic engagement time then it is in decreasing the time of his total disruptive behavior and in my inquiry my goal is parallel to the first part of these results.


This article describes a model the author believes is ideal for elementary schools which highly integrates technology. Dr. Ronald Todd of The College of New Jersey, presents several reasons for why he believes design and technology is so important for all grades and subjects in schools. The most interesting reason because of the relatedness to my inquiry was the section on “Engagement in Learning.” He discusses the ways technology has increased the attention students give to learning by: improving student attendance, shifting students from passive to active learning, providing minds-on as well as hands-on learning opportunities, and disproving the myth that young children have short attention spans. This reasoning will be important as I try to better engage my students with the use of technology in the classroom. It also supports my biggest assumption that the technology will engage my students more at stations time.