INCREASING MOTIVATION AND ENGAGEMENT IN ELEMENTARY AND MIDDLE SCHOOL STUDENTS THROUGH TECHNOLOGY-SUPPORTED LEARNING ENVIRONMENTS

Linda Godzicki, B.A.
Nicole Godzicki, B.A.
Mary Krofel, B.A.
Rachel Michaels, B.A.

An Action Research Project Submitted to the Graduate Faculty of the School of Education in Partial Fulfillment of the Requirement for the Degree of Master of Arts

Saint Xavier University
Teaching and Leadership Program
Chicago, Illinois

May, 2013

Table of Contents

Abstract

This action research project report was conducted in order to increase motivation and engagement in elementary and middle school students through technology-supported learning environments. The study was conducted from August 27, 2012, through December 14, 2012 with 116 participating students in first-, fourth, fifth- and eighth-grade classes.

To define the problem of the lack of student motivation and engagement, behaviors that were targeted included disruptions, lack of participation, homework completion, coming to class unprepared, asking to leave the class, engagement in personal interests, asking off topic or inappropriate questions, sleeping or putting the head down in class, and showing up tardy to class. These observations led the teacher researchers to document evidence of the problem through a Student Survey, which assessed students' perceptions of technology usage in and out of the classroom. In analyzing data from the Student Survey, about one third of students felt class activities were not related to their interests nor did they incorporate technology in ways that motivated and engaged them to learn. A Teacher Survey was administered regarding their usage of technology at school and at home. The results depicted the amount of time their students used technology in classes during the day, student motivation when using technology, as well as the amount of time allotted by teachers for planning in and out of the classroom. Teacher researchers noted that students were more likely to engage in classroom activities when technology was used, however, 47% of teachers responded by asserting their students used technology for less than 80 minutes per day. Furthermore, 57% of teachers stated they spend more than one hour per day using technology for school-related purposes. In addition, there was a second Teacher Survey regarding adverse student behaviors as they relate to motivation and engagement. The teachers were asked to check the five most frequently observed adverse behaviors in class, with the highest frequency of observations being unpreparedness, 83%, followed closely by disruptiveness 80%.

In order to increase student motivation and engagement, teacher researchers implemented a technology-supported learning environment. Technology-supported lesson plans which featured technology tools such as computers, laptops, iPods, iPads, interactive whiteboards, student response systems, overhead projectors, document cameras, video and audio recording devices, computer software, etc. were created and implemented during the project action plan.

After analyzing the data, the most notable results concluded that students felt teachers provided activities related to their interests and students were more likely to engage in classroom activities when technology was used. Based on the results of the action research project, the teacher researchers concluded that students were more motivated and engaged in learning when using technology. The technology-supported learning environment improved student motivation and engagement by 9% after the intervention period.

Chapter 1

Problem Statement and Context

General Statement of the Problem

Four teacher researchers, from two different elementary schools, in two different districts, conducted this action research project. Three of the four teacher researchers were from Site A, a one-school elementary school district, and one teacher researcher was from Site B, the only middle school in an elementary district with four elementary schools.

Immediate Context of the Problem

Site A.

Site A was a public elementary school located in the northern suburbs of Chicago, an urban area of Illinois. Unless otherwise stated, the following information about Site A came from the school's 2011 Illinois School Report Card (Illinois State Board of Education, n. d. a.).

Site A was located one mile away from interstate 90. Site A was approximately five miles east of O'Hare Airport. The population of Site A enrolled 417 students. The student population included three-year-old preschool through eighth-grade, with 49% (n=136) being male students and 51% (n=366) being female students. The ethnicity of the student population, as seen in Table 1 below, was predominantly Caucasian, with a little over 5% of the students being Hispanic. Site A had a significantly higher percentage of Caucasians at 87.3% compared to the state average at 51.4% (CLRSearch, n. d., *Racial/Ethnic Background*).

Table 1

Racial/Ethnic Background of Student Population by Percentage

	Caucasian	African American	Hispanic	Asian	Two or more races
School/District	87.3	0.0	5.0	3.6	4.1
State	51.4	18.3	23.0	4.1	2.8

Students were categorized into two language areas, with 91.4% being proficient in English and 8.6% having Limited English Proficiency. Students with disabilities made up 8.6% of the school's population. The limited English proficiency rate was 8.6% in the elementary school, 8.6% in the district, and 8.8% in the state. The low-income rate was 27.8% in the elementary school, 27.8% in the district, and 48.1% in the state.

Table 2 shows the chronic truancy, mobility, and attendance rates by percentage. The school and the district were lower than the state in each of the three categories. Site A varies in percentage of mobility. The state mobility is 12.8% compared to the school/district, which is only at 4.0% (CLRSearch, n. d., *Chronic Truancy/Mobility*).

Table 2

Chronic Truancy, Mobility, and Attendance by Percentage

	Chronic Truancy	Mobility	Attendance
School/District	0.0	4.0	95.5
State	3.2	12.8	94.0

Site A had 28 teachers. Males accounted for 10.7% (n=3) of the teachers, and females accounted for 89.3% (n=25) of the teachers. School/District statistics remained the same due to it being a one-school district. All of the teachers in the school/district (100.0%) were Caucasian.

The average years of teaching experience were 15.3 years at Site A. This number was slightly higher than the state average of 13.2 years. The percentage of teachers with bachelor's degrees was 38.2%. These percentages were just about the same as the state's percentage, which was 39.5%. The percentage of teachers with master's degrees was 61.8% and 60.4% in the district. These percentages were similar in number. The average teacher salary at the elementary school was $64,089. This figure was similar to that of the state, which was $64,978. Site A ran on a timed schedule with eight to ten periods within the school day. Students were not differentiated by abilities. They were grouped by chronological age. Site A had two classes of each grade level, with the exception of pre-school. The pre-school program consisted of two sessions per day. The groups were one morning session of three-year olds, and one afternoon session of four-year olds. The average class size was 16.8 students in the elementary school/district and 18.8 students for the state.

The academic program of Site A consisted of core subjects including language arts, mathematics, social studies, and science. Other subjects taught were art, physical education, music, Italian, health, character education, and computers. Services offered at Site A included: speech, physical therapy, occupational therapy, special education, ESL, and guidance counseling.

According to the Illinois School Report Card, 2011, the total percentage (87.6%) of district revenue that came from local property taxes (79.4%, $3,349,378) and other local funding (8.2%, $334,603) was much higher than the state average of 63.3%. Only 12.5% of district revenue came from state or federal funding compared to the state average of 36.7%.

By subtracting the ISAT (Illinois State Achievement Test) school performance scores from the state performance scores, the data for Table 3 was derived. When analyzing these percentage differences, the teacher researchers noted that fifth and eighth-graders markedly

outperformed other students in the state, in reading (16.3%; 11.0%) and math (11.1%; 13.7%) respectively.

Table 3

ISAT Student Scores by Percentage of Difference Between School/District and State

	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8
Reading	0.89	3.7	16.3	11.1	6.9	11.0
Math	7.80	2.5	11.1	8.9	6.2	13.7
Science		3.1			8.6	

This elementary school received the Academic Excellence Award four years in a row and performed at the 75% or higher on the composite scores of the Illinois State Achievement Test. The school over all graduation rate was 100%, which was higher than the states graduation rate of 82% (School Superintendent, personal communication, December 9, 2011).

The administrative makeup of Site A included one superintendent, one principal, and one school social worker. There was one administrative assistant to the superintendent, one school secretary, and one bookkeeper. Site A had one full-time day custodian and two full-time afternoon/night custodians.

Site A had several school-sponsored activities for the students to participate in during and after school that were outside of the regular educational program. They sponsored several organizations such as Art Club, Band, Battle of the Books, Cheerleading, Chorus, Basketball, Soccer, Softball, and Junior Leaders in which the students could elect to participate.

Site A was a public school that began as a one-room schoolhouse built in the 1830s. Today, it has expanded to a two-story, brick building that is home to 19 classrooms, three special education rooms, one Title 1 room, one speech room, one social work room, one ESL room, one

gymnasium, a multi-purpose room, a kitchen, one library, two computer labs, and a faculty lounge. Site A also included a main office that housed the principal's office and a superintendent's office. Many of the classrooms had white boards and some technological device to use as an interactive white board with the students. The grounds included two playground areas for the students, as well as a grass field. This field provided the space for after-school activities like softball and soccer. In the field, there was a softball diamond for afterschool sports and gym classes to use.

Site B.

Site B was the only middle school in a public elementary school district located in the northern suburbs, about 35 miles north of Chicago, Illinois. Unless otherwise stated, the following information about Site B came from the school's 2011 Illinois School Report Card and the 2011 Illinois District Report Card (Illinois School Board of Education, n. d. b.).

Site B had a total enrollment of 965 students, with 50.9% (n=491) being male students, and 49.1% (n=474) being female students. The district had a total enrollment of 2,546 students. Table 4 shows the racial/ethnic background of the student population by percentage. The majority (83.5%; 84.2%) of the students in both the school and the district, respectively, were Caucasian. Hispanic students made up the second largest percentage (5.7%; 5.3%) of the student population in both the school and the district, respectively (CLRSearch, n. d., *Racial/Ethnic Background*).

Table 4

Racial/Ethnic Background of Student Population by Percentage

	Caucasian	African American	Hispanic	Asian	Two or More Races
School	83.5	1.6	5.7	4.7	3.9
District	84.2	1.1	5.3	5.3	3.7
State	51.4	18.3	23.0	4.1	2.8

The limited English proficiency was 0.2% in the school, 1.2% in the district, and 8.8% in the state. The low-income rate was 5.6% in the school, 5.0% in the district, and 48.1% in the state. Table 5 shows the chronic truancy, mobility, and attendance rates by percentage. The school and the district had slightly lower chronic truancy and mobility rates, but a slightly higher attendance rate (CLRSearch, n. d., *Chronic Truancy/Mobility*).

Table 5

Chronic Truancy, Mobility, and Attendance by Percentage

	Chronic Truancy	Mobility	Attendance
School	0.0	2.7	97.1
District	0.0	3.9	96.8
State	3.2	12.8	94.0

The majority (96.2%, n=152) of the district's 158 teachers were Caucasian, which was slightly higher than the percentage (84.2%, n=2,144) of the Caucasian students in the district. There were 4 Asian teachers in the district. The division of gender within the district (12.0% male, n=19; 88.0% female, n=139) showed less male teachers than the state average (23.1% male, 76.9% female). Site B had 13 male teachers (20.3%) and 51 female teachers (79.7%). The

average teacher in the district had 11.3 years of experience. The percentage (82.0%, n=129.6) of teachers in the district with Master's degrees was higher than the state average (60.4%). The average teacher salary is $62,884, which is slightly lower than the state average of $64,978. The average class size at Site B was 21.8 students while the state average was 21.7 students.

Site B consisted of 12 educational departments with 64 teachers. The departments included, with the number of teachers in parentheses: applied technology (n=2), art (n=1), consumer science (n=1), drama (n=1), international languages (n=6), language arts and literature (n=16), mathematics (n=8), music (n=5), physical education/health (n=6), science (n=6), social studies (n=6), special education (n=6). At Site B the class day was divided into 10 class periods, eight of which were academic, one lunch period, and one 9-minute block of time at the beginning of the day, dedicated to attendance and announcements. Each class period consisted of 40 minutes of instruction. Students at Site B attended four core classes, language arts/literature, (two class periods), math, science and social studies. In addition to the core subjects, students attended physical education, international languages and one arts class (applied technology, art, consumer education, drama, or music).

According to the Illinois School Report Card, 2011, the total percentage (86.3%) of district revenue that came from local property taxes (79.5%, $26,433,003) and other local funding (6.8%, $2,256,518) was much higher than the state average of 63.3%. Only 13.7% of district revenue came from state or federal funding compared of the state average of 36.7%.

The ISAT was the state's measure of Site B's educational performance. Reading and mathematics were tested in grades six through eight, while science was tested in grade seven. The students' scores were higher for each test than the state scores. The largest range of scores was in reading at the seventh-grade level, where students outperformed the state by 14.9%. The

smallest range of scores was in mathematics at the seventh-grade level, where students outperformed the state by 9.4%.

A recent independent district wide parent survey recognized that the majority of parents believed the quality of education their children received exceeded expectations. The overall performance of teachers, administrators, and support staff were well perceived among parents in the community. School climate in the district schools was one of the most positively perceived areas among parents and staff, and their perceptions of the safety and the quality of the learning environment were consistently positive across all schools. The district took pride in the consistently high level of academic achievement of its students. The children ranked significantly higher than state averages at all grade levels and in all subject areas. A majority of the schools had been honored at least once with the Blue Ribbon Schools Award for their excellence.

Site B's administrative structure consisted of one principal, one assistant principal, one dean of students, and three social workers. There were two main-office secretaries and one student services secretary. Site B had two full-time day custodians and five full-time night custodians. Site B also had one school psychologist, nine paraeducators, two occupational therapists, and one speech pathologist.

Site B was originally constructed in 1949 but has since undergone many changes. The physical layout of the building showed that form follows function at Site B and this was evident based on the redesigned 21st century classrooms. The building layout reflected the school's commitment to meeting the academic and social-emotional needs of the students. To foster the transition from elementary to middle school, the sixth grade academic teams were concentrated in a separate wing of the building. Consequently, the seventh and eighth-grade students attended

classes grouped by content areas and grade levels so that students and teachers were able to utilize interdisciplinary connections. Additionally, the 21st century classrooms created an environment that incorporated technology to facilitate learning, in conjunction with being arranged in such a way as to encourage student communication and team collaboration (Site B Elementary School District, n. d.).

Local Context of the Problem

Sites A and B were located in two different communities. Due to the difference in commonalities between the two communities, Sites A and B will be described in two separate sections.

Site A.

Site A was located in the northwest suburbs of Chicago, Illinois. This district serves the primary educational needs of Area 1 and Area 2.

In Site A, the population of this community was made up of 13,609 people from Area 1 and 8,010 people from Area 2. There were 6, 352 males and 7,257 females in Area 1 and 3,860 males and 4,150 females in Area 2. The majority of the people (84.9%), in these towns were Caucasian. The second largest race was Hispanic, with an average population of 10.2%.

The average median income from these two towns was $63,994. The average employment rate of people 16 and over was 5,445. The median resident age was 42.5 years, and the area had more homes owned by elderly citizens than any other district in the state. In addition, 77.7% of residents achieved a high school degree or higher, 16.7% achieved a bachelor's degree of higher, and 4.4% achieved a graduate or professional degree.

Site A's community, Area 1, consisted of 66.7% (n=4,040) family households and 33.3% (n=2,013) non-family households. Out of the community population of 15,133, the employment

potential was 12,944. Out of this potential, the employed males were 27.5% (n=3,563) and the employed females were 24.8% (n=3,204). The population not in the labor force community consisted of 17.5% (n=2,260) males and 25.7% (n=3,322) females. The unemployed consisted of 3.5% (n=458) males and 1.1% (n=137) females. The three most prominent occupations for this community were administration, waste management, and remediation services at 25.4% (n=1,595) and manufacturing at 17.9% (n=1,127), followed by retail trade at 17.4% (n=1,095) (CLRSearch, n. d., *Population*).

Site A's community, Area 2, consisted of 62.4% (n=2,164) family households and 37.6% (n=1,307) non-family households. Out of the community population of 8,253, the employment potential was 6,947. Out of this potential, the employed males were 30.8% (n=2,141) and the employed females were 28.4% (n=1,973). The population not in the labor force community consisted of 13.9% (n=963) males and 23.6% (n=1,642) females. The unemployed consisted of 1.9% (n=129) males and 1.4% (n=99) females. The three most prominent occupations for this community were administration, support, waste management and remediation services at 44.7% (n=822) and accommodation and food services at 16.1% (n=295), followed by retail trade at 12.8% (n=235) (CLRSearch, n. d., *Population*).

The crime rate for Area 1 was 215.4 per 100,000 people in 2010 (City-Data, n. d., *Crime in Area 1*). This was slightly lower than the crime rate of 244.8 in 2009. The greatest type of crime reported was theft with a rate of 479 per 100,000 people. The crime rate for Area 2 was per 100,000 people was 102.3, lower than the 2009 total of 163.6. Thefts were reported as the greatest type of crime in 2010 with 115 reported incidences in Area 2 (City-Data, n. d., *Crime in Area 2*).

The targeted community consisted of two towns. One town, Area 1, was 15 miles northwest of the Loop. That community shared 70% of its border with Chicago, but preferred not to be identified with the city that nearly annexed it in 1948. Its name was derived from the names of neighboring areas. Farmers who bought acreage in the area in the 1830s built their cabins on scattered sites. The area had once been called “Goat Village” because of a woman who had raised goats in the eastern portion of town. Many called it the “Swamp” because of the muddy conditions and unpaved streets. During the 1920s development was planned for an 80-acre subdivision. In 1948 the research area was about to be annexed to Chicago when a local improvement association moved to incorporate it as a village, stymieing Chicago's efforts at annexation. The 1950s ushered in an era of growth and development, encouraged by the construction of a waterworks system, the paving of sidewalks, streets, and curbs, and the installation of storm and sanitary sewers. The village grew from one-half square mile in 1949 to two square miles in 1958. Many new residents, predominately of Italian and Polish descent, came from Chicago neighborhoods (Citytowninfo, n. d.).

The neighboring community, Area 2, was also part of Cook County, 11 miles northwest of the Loop. This town had often been referred to as an “island” surrounded by the city of Chicago. It is often mistaken for part of the city instead of a suburb. Since Chicago rejected the suburb's bid for annexation in 1947, this town preferred to be on its own. Although it shared a library, a park district, and a high school with its neighboring town, the community steadfastly held to a separate identity (Encyclopedia of Chicago, 2004). Farms were predominant in 1938. Then homes were developed to make the community have its first subdivision on approximately six acres of land. Little more development came after WWII. Without police protection, sewers, paved streets, or streetlights, residents coped with muddy, rutted streets, and flooded basements.

Hopeful that annexation to Chicago would improve their area, property owners were disappointed when Chicago rejected their bid. In 1947 they incorporated an area of four blocks square as a village, with approximately 500 residents. The village began expanding in the early 1950s. This town had combined independent status with the convenience of the nearby city of Chicago. It also had forged an important alliance with its other neighbor, Area 1. Both towns worked together to combat street crime and noise abatement issues with nearby O'Hare Airport. The communities worked to better its surroundings with the residents in mind (Targeted Community Area Chamber of Commerce & Targeted Community Area Convention & Visitor Bureau, n. d.).

The public library had undergone a redevelopment in January of 2008. The library moved into a brand-new state of the art "green" building with over 43,000 square feet of space. It has a dedicated children's department called Kids World, a Quiet Room featuring comfortable chairs and a fireplace, study rooms, a computer lab, and more. Since its beginning, the library has been a member of the Metropolitan Library System, a group of libraries made up of public, academic, special, high school and grade school libraries in the near south and west Chicago-area suburbs (Area 1 & 2 Public Library District, n. d.). The community had continued to update and make improvements with additions of new residential sites and commercial buildings. Area 1 housed a community plaza. This was built on the site of a former livestock farm. The plaza opened in 1956 as a 337,000-square-foot strip mall featuring approximately 45 businesses. The plaza became a member of the International Council of Shopping Centers a year after its opening. Between 1975 and 1979, the former strip mall was enclosed, and a parking garage was added. A food court was added in 1996. The plaza underwent a thorough renovation in 2004, gaining 175,000 square-feet.

The community provided many recreational opportunities for residence. The targeted areas share a large recreational park. The park afforded activities such as swimming, biking, tennis, and picnicking. It held many extracurricular activities such as sporting events, music concerts, and festivals.

Site A's homepage states the district's mission statement as "We, the [targeted community] are dedicated to the development of our children academically, emotionally, and socially. We must prepare our students to become life-long learners, positive contributors of our community and responsible citizens of a global society."

Teacher researchers from Site A reported that all teachers in the school were given a lap top computer. The targeted school has two computer laboratories, each containing approximately 27 computers. Every classroom was equipped with one computer and whiteboard. There are approximately 10 projectors, which are located in specific classrooms. Site A had also been equipped with 38 iPod Touches, along with ten iPod's. There are also five interactive whiteboards available for the entire school.

Site B.

Site B was a middle school located in the northern suburbs, about 35 miles north of Chicago, Illinois and about 20 miles south of the Wisconsin border, (Area 3, n. d.). The community, Area 3, was 6 miles from Lake Michigan and was near the Chain of Lakes. The quality of living for residents of this village was high, with a warm neighborhood feel, and a strong heritage as a family-oriented community. Site B was nationally recognized as being an award winning school with 82% of teachers who possessed a master's degree and above. There were 19 parks and facilities over an area of approximately 500 acres in this community. There were swimming pools/lakes, baseball, hockey, golf, soccer, basketball, volleyball, football,

fishing, sledding, and fitness facilities in Area 3. The forest preserve within took up approximately 1,100 acres and held hiking, swimming, fishing and horseback riding facilities. In Area 3, there were approximately 80 restaurants, two small performance theaters and a movie theater. There were also numerous local shopping opportunities in close proximity.

Area 3 had an estimated total population of 22,261 inhabitants in 2010 (CLRSearch, n. d., *Population*). The median age of those living in the community was 42.8 years, with 48.4% (n=10,768) being male, and 51.6% (n=11,493) being female. According to the U.S. Census Bureau, Area 3's median family income in 2009 was $128,903, which was significantly higher than the median family income in the United States at that time, $62,363 (U.S. Census Bureau, n. d.). The per capita income was $47,763. Of all individuals, 4.0% were below the poverty level and of all families, 2.3% were below the poverty level.

Table 6 showed the diversity of the community based on racial/ethnic background. The vast majority of residents (88.6%, n=19,726) were Caucasian with 11.4% (n=2,535) being other races or ethnicities.

Table 6

Racial/Ethnic Background of Site B by Percentage

	Caucasian	Asian	Other	African American
Site B	88.6	6.9	3.5	1.0
Illinois	69.4	4.5	12.0	14.1

The highest level of education attained in Area 3 was for those who had completed a graduate degree, while there were some in the community who had not completed high school. The largest percentage of those living in Area 3 completed a bachelor's degree 32.1% (n=4,936).

Following closely were those in the community who had completed a graduate degree with 23.2% (n=3,568).

Area 3's community consisted of 75.8% (n=6,464) family households and 24.2% (n=2,060) non-family households. Out of the community population of 22,261, the employment potential was 17,117. Out of this potential, the employed males were 35.4% (n=6,064) and the employed females were 30.2% (n=5,161). The population not in the labor force community consisted of 10.7% (n=1,827) males and 21.0% (n=3,579) females. The unemployed consisted of 1.8% (n=310) males and 0.9% (n=156) females. The three most prominent occupations for this community were health care and social assistance at 15.9% (n=3,022) and management of companies and enterprises at 12.3% (n=2,336), followed by retail trade at 11.7% (n=2,221).

In 2010, the crime rate per 100,000 people in Area 3 was 377, slightly up from the 2009 total of 329. Thefts were reported as the greatest type of crime in 2010 with 312 incidences (City-Data, n. d., *Crime in Area 3*).

This community included four individual elementary schools in the area catering to students from kindergarten through fifth-grade. One middle school, Site B, housed students from sixth through eighth-grade. Site B's mission statement follows, "…to ensure that students experience learning that prepares them to live and work in the 21st Century" (Site B Elementary School District, n. d.).

Site B's district had one superintendent, one director of curriculum and instruction, one director of finance and operations, one human resources director, one director of special education, and one director of technology. Site B had two classroom technology labs, one computer lab in the learning center, six portable laptop labs with 10-14 laptops each, and four iPod carts with 30 iPods each.

National Context of the Problem

The teacher researchers found that the problem of student engagement and motivation in classroom activities was a predominant topic. Specifically, the researchers stated that students with low levels of engagement are at risk for a variety of long-term adverse consequences, including disruptive behavior in class, inattentiveness, lack of completion of assignments, and class participation. "The challenge of the learner is in attention (whether learners perceive the instruction as interesting and worthy of attention), relevance…, confidence…, and satisfaction (whether learners enjoy the learning experience or gain other intrinsic or extrinsic rewards from the instruction) (Gareau & Guo, 2009, p. 3). As soon as students are bored in the classroom, they lack the ability to be stimulated or excited about the material and thus are less likely to participate (Caldwell, Darling, Payne, & Dowdy, 1999, as cited in Aboudan, 2011). Individuals have a psychological need to feel competent, self-determined, and related to the work they complete (Shroff & Vogel, 2009). To promote motivation in the classroom, teachers must address these needs.

Reflection

The four teacher researchers, when looking at the problem of motivation and engagement, noted that in spite of high attendance rates, high ISAT student test scores, and higher socio-economic status, there was still a problem with student motivation and engagement. The teacher researchers realized that they had made assumptions that students with many resources and opportunities would exhibit engagement and the intrinsic motivation to promote academic success. However, inconsistencies were evident between the teacher researchers' assumptions, the demographic data, and the students' motivation and engagement within the

classroom. If teachers can identify the reason for lack of student motivation and engagement, teachers can take action to improve this problem.

Chapter 2

Problem Documentation

Evidence of the Problem

The purpose of the action research was to increase student motivation and engagement through the implementation of technology. In the research project, participating students (n=116) included first-, fourth-, fifth-, and eighth-grade students and a potential of 93 teachers of which only 66% (n=62) responded. Three tools utilized were a Student Survey, Teacher Survey-Technology, and Teacher Survey- Student Motivation and Engagement. Four teacher researchers, at two different sites, used these tools to document evidence of how technology impacts student motivation and engagement. Documentation was collected over a 15-week period from August 22, 2012 through December 14, 2012.

Student Survey.

The Student Survey was used to gain insight into the thoughts of the students participating in the research project. The researchers administered the Student Survey once to 116 students during the pre-documentation period with 100% participation. The anonymous survey, created on a Google form, was conducted in the computer lab and results were saved automatically on a Google spreadsheet. This survey included four questions with various choices for responses. The responses to the first question included *Very Likely, Most Likely, Somewhat Likely*, and the second question included responses such as *Not Likely, More Likely, Less Likely* and *Makes No Difference*. Students provided insight into the technology tools they were most likely to use at home and at school as well. They were also given space to make additional comments. See Appendix A.

Figure 1 shows student responses to the question, “How likely are teachers to provide class activities that are related to your interests?” According to Figure A, 33% of students (n=38) believe that their teachers do not relate class activities to their interests.

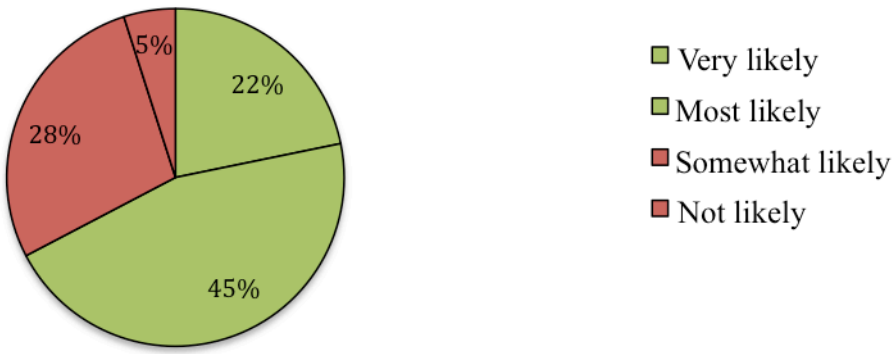


Figure 1: Activities Related to Interest (n=116)

Figure 2 shows student responses to the question, “How likely are you to engage in classroom activities when technology is used?” According to Figure 2, 16% of students (n=19) are less likely to engage in classroom activities when technology is used. Eighteen percent of students (n=21) asserted that technology makes no difference in their engagement in classroom activities.

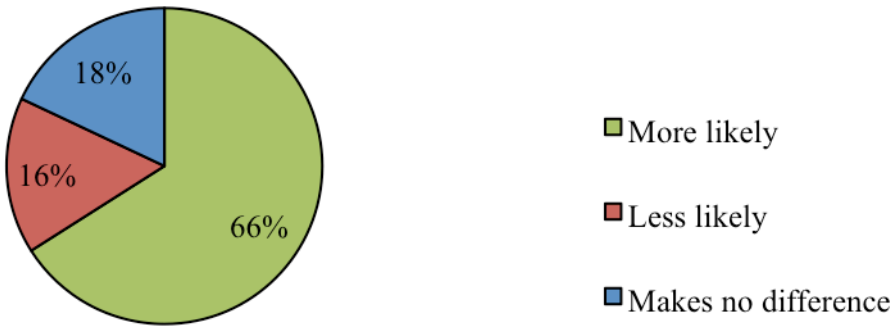


Figure 2: Engagement Using Technology (n=116)

Figure 3 shows student responses to the question, “What technology tools do you enjoy using in school?” Of 246 responses by 116 students, the tools most enjoyed in school were computers/laptops and the tools least enjoyed were interactive whiteboards.

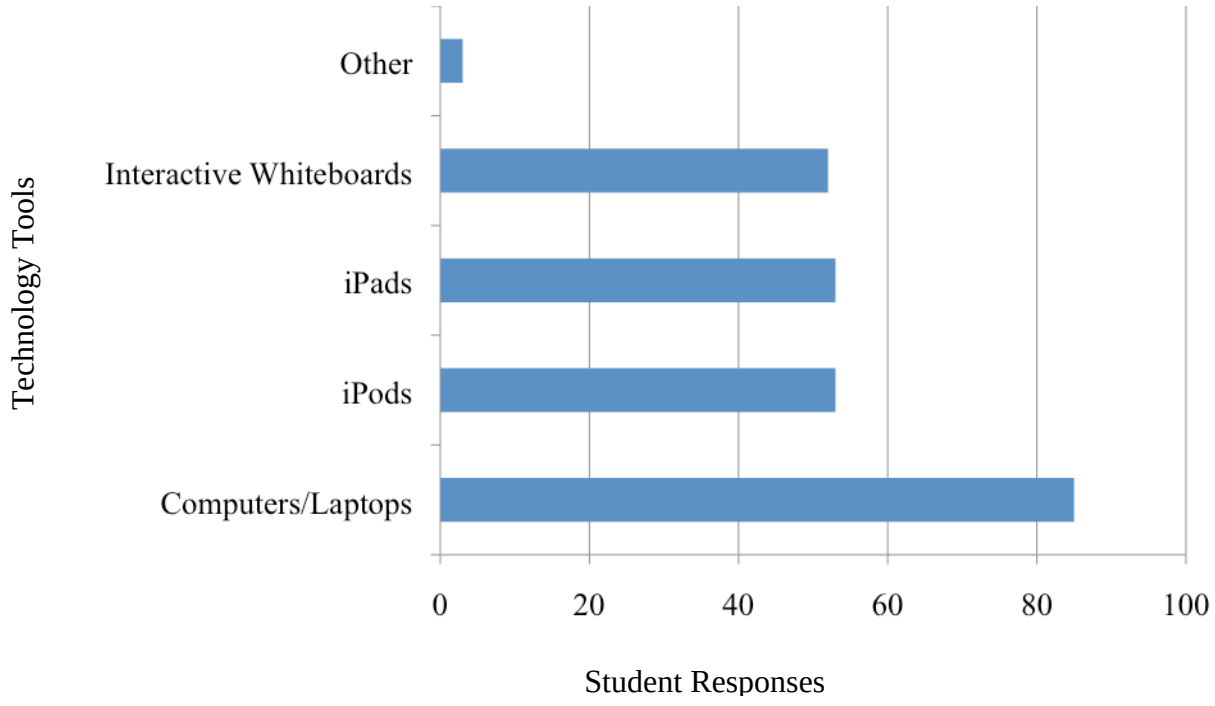


Figure 3: Technology Tools Students Enjoy in School (n=246)

Figure 4 shows student responses to the question, “What technology tools do you enjoy using at home?” Of 282 responses by 116 students, computers/laptops were also the tool the students most enjoyed using at home.

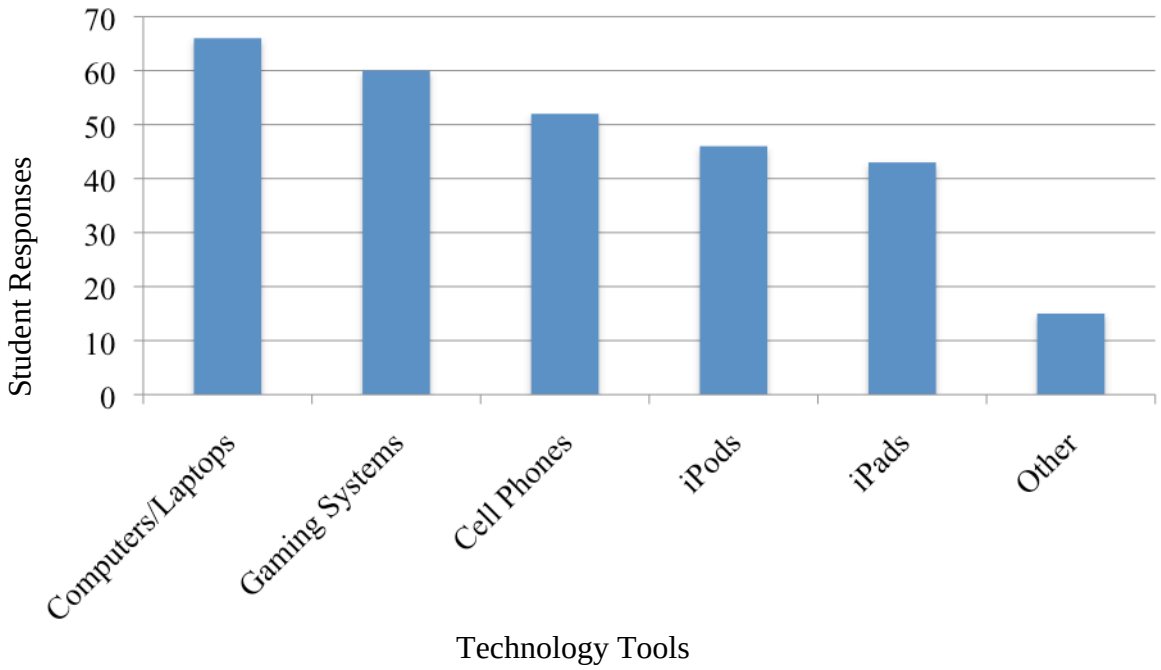


Figure 4: Technology Tools Students Enjoy at Home (n=282)

Teacher Survey-Technology.

The purpose of the Teacher Survey was to gauge teachers’ experience and usage of technology in and out of the classroom. Of the 93 teachers surveyed, 62 teachers returned results for a 67% return rate. Teachers were asked which specific tools were used within the classroom, for how many minutes these tools were used during the instructional day, and the differences technology can make with regard to engagement and motivation in students. See Appendix B.

Figure 5 shows teacher responses to the question, “Of the following, which of the teaching tools do you use?” Of the 380 responses by 62 teachers, the dry/erase board was the most used teaching tool and the overhead projector was the least used.

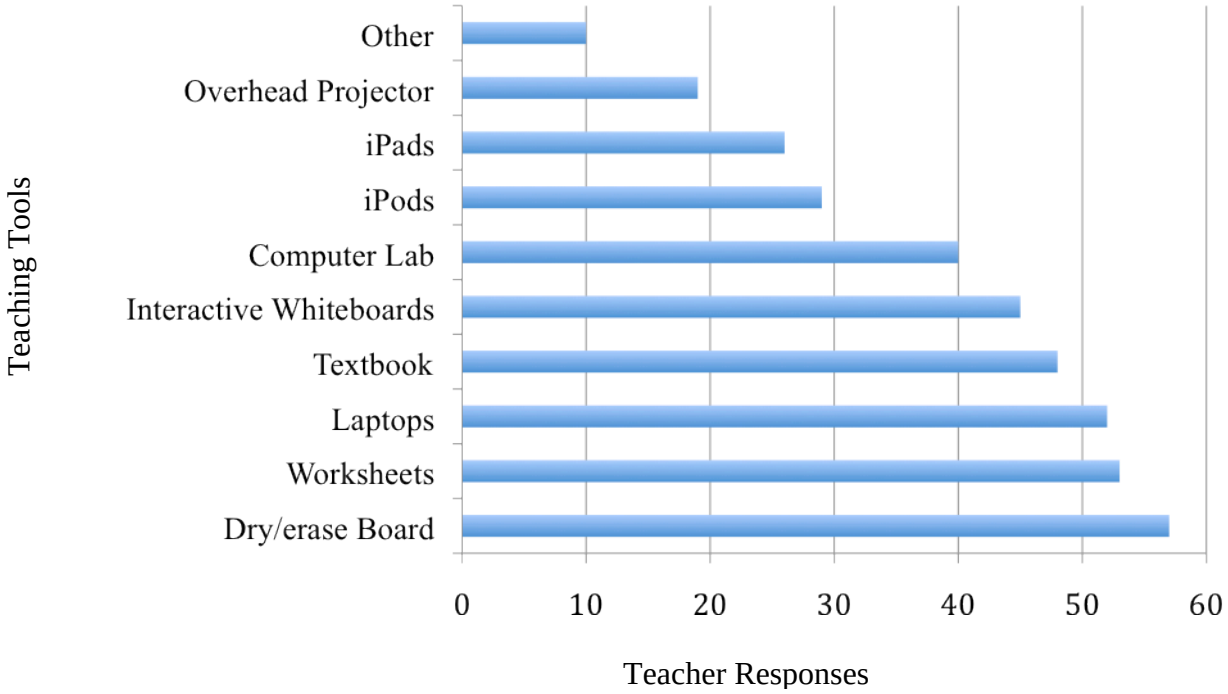


Figure 5: Teaching Tools Used (n=380)

Figure 6 shows teacher responses to the question, “On average, how many minutes each week do your students spend using technology during your classes?” Figure 6 notes that 47% of teachers (n=29) reported that their students use technology for less than 80 minutes (or less than 2 class periods) per day. It is also notable that 39% (n=24) of responses indicate that students are using technology during their classes between 80 and 160 minutes, (or between 2 to 4 class periods), per day.

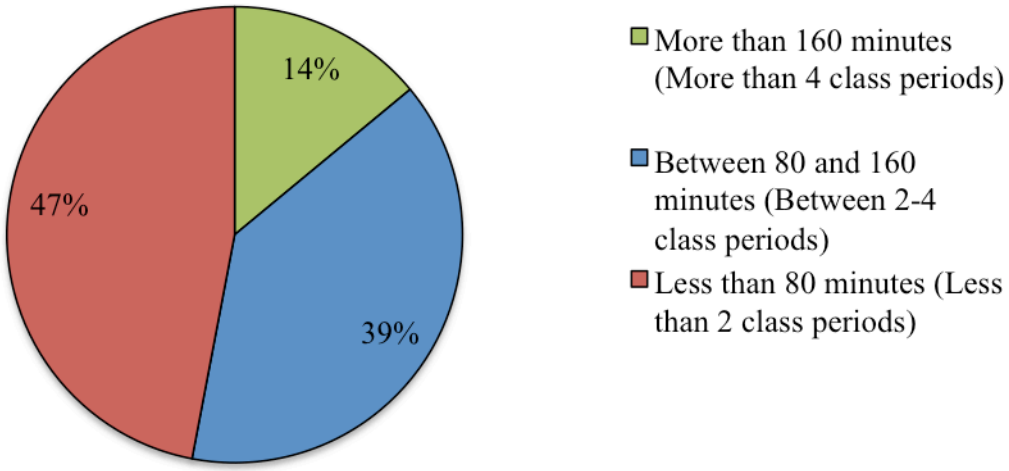


Figure 6: Minutes Students Spend Using Technology (n=62)

Figure 7 shows teacher responses to the question, “When using technology in the classroom, what differences do you notice in student motivation and engagement?” According to Figure 7, 2% of teachers (n=1) believe students are less engaged/motivated when using technology in the classroom and 27% of teachers (n=17) assert that they see no difference in student engagement and motivation when using technology in the classroom.

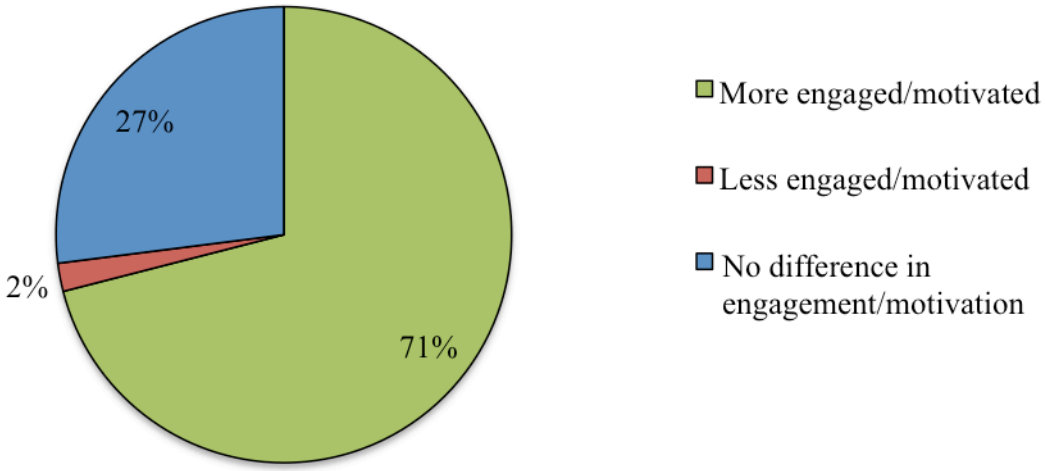


Figure 7: Motivation and Engagement Using Technology (n=62)

Figure 8 shows teacher responses to the question, “How many minutes outside of the teaching day do you use technology for school-related purposes?” This figure shows that 57% of teachers (n=35) spend more than 60 minutes outside of the teaching day using technology for school-related purposes. Furthermore, 32% of teachers (n=20) spend 30 to 60 minutes using technology on schoolwork outside of the teaching day.

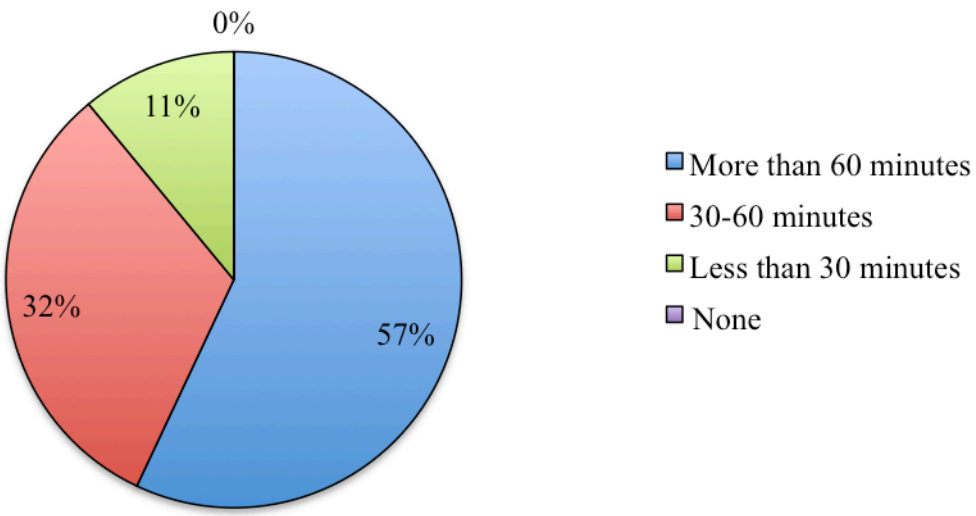


Figure 8: Technology Usage Outside Teaching Day for School Purposes (n=62)

Figure 9 shows teacher responses to the question, “How many minutes outside of the teaching day do you use technology for personal use?” According to data represented in Figure 9, 66% of teachers (n=41) use technology outside of the school day, for personal use, more than 60 minutes per day. Likewise, 28% of teachers (n=17) personally use technology daily for 30 to 60 minutes.

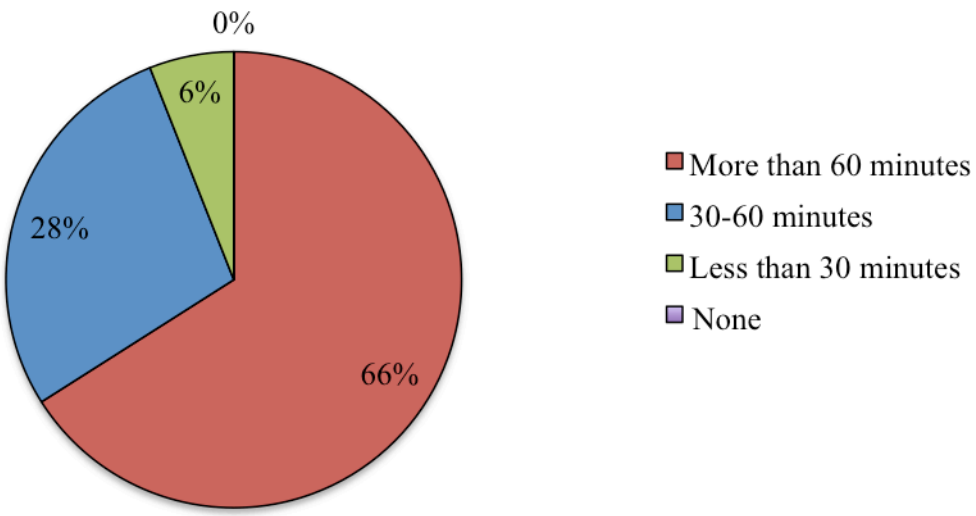


Figure 9: Technology Usage Outside Teaching Day for Personal Purposes (n=62)

Teacher Survey-Student Motivation and Engagement.

The third tool the researchers administered was a survey to identify adverse student behaviors that are commonly seen with lack of student motivation and engagement in the classroom. Out of the 93 teachers surveyed, 60 teachers returned results for a 62% return rate. Behaviors that were targeted for observation included the following: 1) Disruptive, 2) Lack of Participation, 3) Homework Completion, 4) Coming to Class Unprepared, 5) Asking to Leave the Class, 6) Engaged in Personal Interests, 7) Asking Off Topic or Inappropriate Questions, 8) Sleeping or Putting Head Down on Desk, and 9) Showing up Tardy to Class.

The total number of behaviors (n=276) observed were divided between behaviors that were most frequently to less frequently observed. Four of the nine behaviors observed (n=188) were seen markedly more than the remaining five behaviors.

Figure 10 shows teacher responses to the statement, "Please check the five adverse student behaviors that you most frequently observe in class." Out of the 93 teachers surveyed, only 60 teachers returned results for a 62% return rate. The most frequent student behaviors observed were coming to class unprepared or without materials, 83% (n=50), being disruptive, 80% (n=48), not turning in homework/turning in incomplete homework, 76% (n=46), and lack of participation 73% (n=44). See Appendix C.

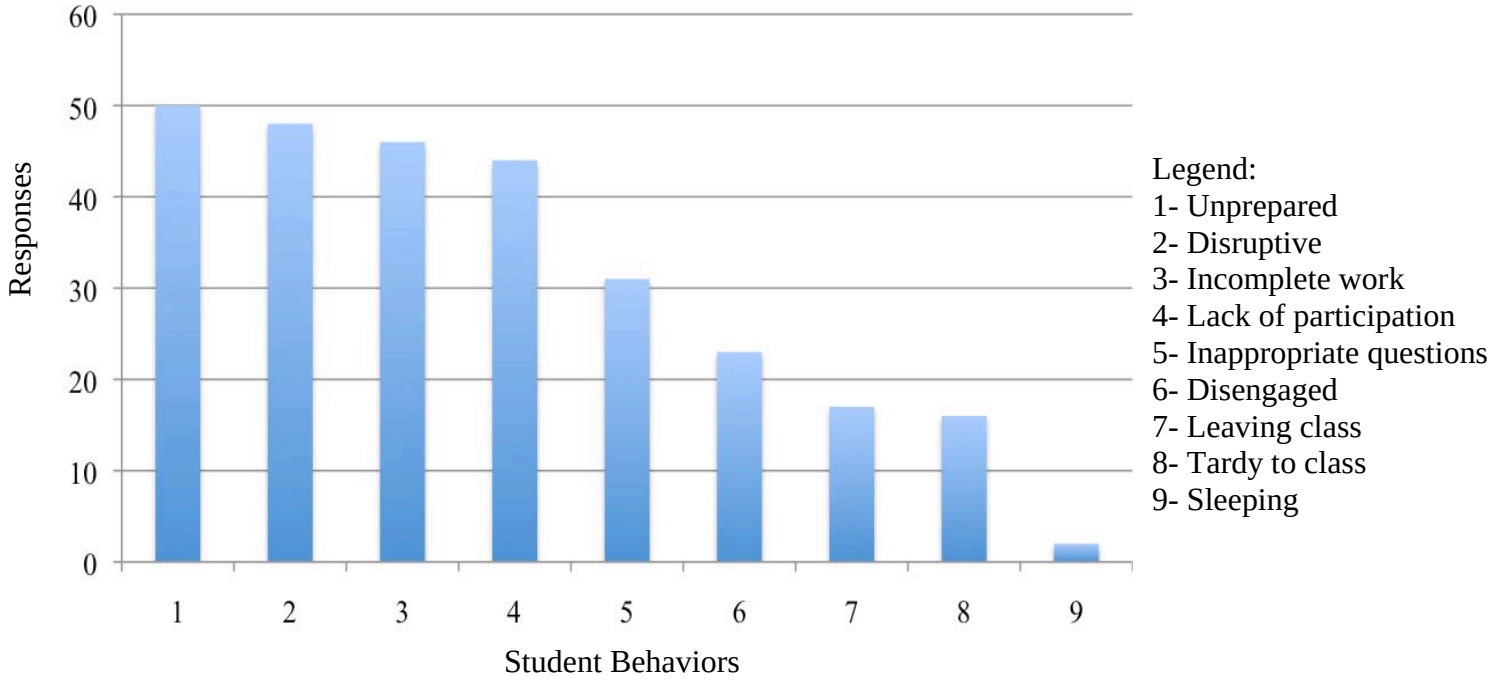


Figure 10: Teacher Survey-Student Motivation and Engagement (n=60)

Summary

Upon analyzing the data presented above, it is evident that about one third of students believe teachers do not relate class activities to their interests (Figure 1). Similarly, about one third of students also claimed that they are less likely to engage in class activities when technology is used, or using technology in class made no difference to their motivation and engagement (Figure 2). Based on the students' responses collected on the Student Survey, they used many technology tools overall, nevertheless, at home and at school their preferred tools are computers/laptops.

While teachers also claimed they use the computer lab and laptops, the most used teaching tool according to teachers was the dry/erase board (Figure 5). The Teacher Survey on Technology depicted the amount of time students used technology in classes during the day, however 29% of teachers claimed that students were either less motivated when using technology or that technology made no difference to motivation and engagement (Figure 7). Similarly, it seemed that teachers needed to allot time in and outside of the classroom using technology for school-related purposes as well as personal use (Figures 8 and 9). Finally, teachers recorded the most frequently observed adverse student behaviors, noting that students being unprepared and disruptive were some of the most frequently observed behaviors (Figure 10).

Reflection

Based on the data presented above, through our own personal experiences, and the review of literature, we believe that one reason for the lack of student engagement and motivation relates to a learning environment not rich enough or lacking in opportunity to integrate technology.

Furthermore, we believe that by increasing technology usage in the classroom, we could positively influence students' engagement and motivation. Through implementing various technological devices, we think teachers will be able to see an increase in their students' willingness and motivation to engage in classroom activities and learning.

Probable Causes

There are many factors that influence student motivation and engagement in the classroom. School districts have stressed the responsibility of the teachers to encourage the learning of their students by creating innovating ways of engaging and motivating them. One way in which to do so could be by investing in and integrating technology in the classroom since this is important to the 21st century learner. Various forms of media and technologies are used at home and at school alike, however the comfort level and ability of users may vary. Nevertheless, meeting the needs of all learners is essential to education, so teachers must address the lack of motivation and engagement in the classroom and transform learning.

School Vision.

One of the major challenges that the educational system, particularly educators, face is creating and implementing a vision of education that embraces both high standards and accountability for students' learning. Meanwhile the challenge is to develop nurturing and supportive schools that engage students and enable them to thrive cognitively, socially, emotionally, and civically (Yonezawa, Jones, & Joselowsky, 2009). In order to create an environment in which students can thrive, our educational system must evolve to meet the needs of today's students. Since young people are becoming increasingly dependent on technologies to communicate, gather information, and extend social experiences, it is essential that our educational system progress to meet these new demands (Spires, Lee, Turner, & Johnson, 2008).

Teachers and administrators have searched to find ways to increase student achievement in their schools (Using positive student engagement, 2007), but at the same time, districts by and large need to have control of the curricular content used in the classroom (Barker, 1990). Districts, administration, and teachers alike must come together to improve educational settings as this will help to improve student achievement. The relationship between educational settings and engagement is the major connection needed to benefit students (Yonezawa et al., 2009).

As stated previously, school districts ultimately control the content of curriculum used in the classroom, but some people hold unrealistic expectations for immediate turn-around regarding academic performances or for unreasonable progress to be reflected in test scores (Author, 1992, as cited in Montgomery, 2009). Furthermore, "some of the pressure for schools to increase academic success-without attending to curriculum and pedagogical innovations that improve students engagement-result from the frenzy of accountability that has focused educators' attention since the arrival of No Child Left Behind in 2001" (Yonezawa et al., 2009). This being said, the growing consensus among policy makers and educators suggests that our education system must be transformed to address the needs of a global society as well as the needs of the 21st century student (Spires et al., 2008). However, the disconnect comes when the academic focus driven by the current policy environment and our youth's needs and interests do not coincide (Yonezawa et al., 2009). Moreover, larger enrollments and the pressures of standardized testing may put a hold on efforts to establish meaningful communication between instructor and student, which means the increasing complexity of students' lives outside the classroom may discourage community efforts and student collaboration (Harper, 2009).

As the educational system attempts to transform to meet the needs of the 21st century student, difficulties arise in regard to the implementation of new teaching tools. Difficulties such

as cost may cause reluctance in students and or faculty to adopt these new technologies. In turn this resistance may hamper efforts to use technology as a means to promote teaching and learning (Harper, 2009). Money can be an issue when purchasing equipment, but it is important to note that local companies in the community, when asked to help, may be willing to purchase tools for schools (Peck, 2004). Similarly, the cost of particular software programs can hinder the use. Yearly subscription fees can become very costly to the district (Barker, 1990), and unfortunately, many districts cannot afford to purchase programs that can benefit low functioning students (Brunvand & Byrd, 2011). Research indicates that the availability of materials will play a determining factor in how engaged children are in reading (Arzubiaga, et al., 2002, Clark, et al., 2003, Flowerday, et al., 2004, Marinak & Gambrell, 2008, McGlinn & Parish, 2002, & Wigfield, et al., 2008, as cited in Jones & Brown, 2011). The reality of the situation is that cost may be large consideration for districts, as the use of technology may be an added expense per student or department (Sutherland & Badger, 2004, as cited in Filer, 2010).

If technological tools are to be implemented, professional development for educators must be a consideration as well. Fortunately, there has been a push for instruction to include the use of technology as well as a focus on providing professional development to help increase teachers' use of technology in the classroom (Frye & Dornisch, 2007-2008). Still, researchers have found "serious problems" with much of the professional development offered. Most professional development took the somewhat narrow view that teachers need only technical skills and a good attitude. Few programs pay attention to the pedagogical or curricular content necessary for integration (Zhao, Pugh, Sheldon, & Byers, 2000, as cited in Parr & Ward, 2011).

Technology in the Classroom.

Investing in and integrating technology is ever-present amongst young people in this day

and age, but integrating technology into the traditional school curriculum has been a slow process (McCormack & Ross, 2010). We invest in technology for education, yet it is not being put to use in a way that promotes effective learning (Donovan, Green, & Hansen, 2011). The integration of technology and learning experiences that engage students is not widely apparent (Shapley, Sheehan, Maloney, & Cranikas-Walker, 2010, as cited in Parr & Ward, 2011). Technology is expected to transform the classroom, however some teachers use it simply to sustain their existing practice or support a teacher-centered approach (Wu & Huang, 2007). Time seems to be an issue with incorporating technology into the classroom. Even with collaboration amongst teachers, the time commitment for students to create a video production, or other multimedia tool, adds pressure. There is also an initial time constraint for teachers to develop a familiarity with the technology as it is being adopted and implemented (McCormack & Ross, 2010). Several students noted the frustration of programs freezing, problems with recharging and not syncing, losing work, and in a few cases difficulties with the keyboard and the stylus (Swan, van 't Hooft, Kratcoski, & Unger, 2005). The question is raised as to whether learning in smart classrooms can contribute to the learning and development of 21st century skills, and if so, what is the role of the interactive white board? This question is brought up because of the great expense of these classrooms and the evidence that is needed to prove their effectiveness (Manny-Ikan, Dagan, Tikochinski, & Zorman, 2011). The iPad holds amazing potential for classroom use, unfortunately, it also can cost more than $500 when you factor in 3G access and a budget for apps (Bennett, 2011).

The availability of instructional technology alone does not guarantee improved comprehension of content (Conoley, Moore, Croom, & Flowers, 2006; Miller et al., Schackow et al., 2004, & Stein, Challman, & Brueckner, 2006, as cited in Filer, 2010), yet schools without

technology perform at a lower level compared to schools that have and use it (Solhaug, 2009). Press states, “The technology gap between schools and the rest of the world is real, and it is growing…If we plan carefully, if we bring teachers along with us and implement new technology wisely together with other needed reforms, learning could be dramatically better” (Press, 1995, as cited in McCormack & Ross, 2010, p. 45). Many schools around the world have adopted different computer-related technologies for learning and education, as well as increased use of media in the classroom (Schmid, 2008, as cited in Eskil & Balkar, 2010), although some researchers have defended that biases have been pointed out and studies within the educational system have not been solved by the use of technology (Plumm, 2008, as cited in Eskil & Balkar, 2010). Researchers state that teachers worry about the limited number of iPads, for instance, due to their cost, and how that would hinder the effectiveness of the lessons (Bennett, 2011).

Following this further, web-based learning using technology influences academic achievement of students (Hoskins & van Hooff, 2005). Students expressed a desire for having more technologies in school for learning purposes (Spires, Lee, Turner, & Johnson, 2008), and some educational games can be used to help make instructional technology learning experiences more interactive, engaging, and motivating (Gareau & Guo, 2009). On the contrary, limited attention has been given to students’ perceptions of the interactive whiteboard pedagogy, although their use is becoming more and more widespread (Xu & Moloney, 2011).

Media use at Home and School.

Generally speaking, technology is used everyday at home and at school. More than a decade ago, Mark Weiser stated that, “we live in a society in which technology is so pervasive that we do not notice it anymore when used for everyday tasks such as information retrieval, communication, and entertainment” (Weiser, 1991, as cited in Swan, van ‘t Hooft, Kratcoski, &

Unger, 2005, p. 99). Nowadays, K-12 students are growing up more technologically literate than children their age a decade ago, with access to more and more electronic devices, but they are learning to use these and doing so mostly outside of school (Swan, van ‘t Hooft, Kratcoski, & Unger, 2005).

Also, for learning, the implication is that the smaller and less disruptive the electronic device, the bigger the chance it has of becoming a life-long learning tool for anyone, anywhere, at any time (Swan, van ‘t Hooft, Kratcoski, & Unger, 2005). Furthermore, many computers are seen as a piece of equipment used for data collection and record keeping (Hurwitz, 1999), so for students, many of their physical spaces for exploration and play have been reduced to a small space that sometimes can be satisfied by an electronic screen (Barab, Thomas, Dodge, Carteaux, & Tuzun, 2005).

Parental views of media usage have also been noted as important. In recent years, wide user groups have used computers extensively for various reasons. School age children use computers for entertainment, communication, and education (Lauman, 2000, as cited in Delen & Bulut, 2011). Moreover, parents believe that using computers may increase their child’s academic achievement and future job opportunities; therefore, they buy computers with an Internet connection to help their children succeed in school (Ortiz et al., 2011, as cited in Delen & Bulut, 2011). Based on earlier research, it is known that the materials that parents decide to keep in their home (Arzubiaga, et al., 2002) or the materials that teachers select for the classroom (Flowerday, Shaw, & Stevens, 2004), are crucial in shaping the literacy development of children (Jones & Brown, 2011). Besides that, research found that students are more likely to use home computers for entertainment than for school-related purposes (Becker, 2000, as cited in Delen &

Bulut, 2011), but many parents consider computer games to be a waste of time (Hamlen, 2011, & Li, & Atkins, 2004, as cited in Delen & Bulut, 2011).

There are some potential issues integrating technology into the educational setting. Although technology use in schools has increased, it has remained limited in terms of students' school activities and experiences, both with respect to time and nature of use (Bakia, Yang, & Mitchell, 2008, & Becker, 2001, as cited in Parr & Ward, 2011). One of the challenges concerns how to best meet the needs of children living in a world of digital technologies (Spires, Lee, Turner, & Johnson, 2008). In general, television, and now the Internet, has changed the way people think and learn (Gareau & Guo, 2009). Students inform us that texting, blogging, instant messaging, and emailing are forms of communication that challenge our now old-fashioned notions of how time is used in-and-out of school (Yonezawa, Jones, & Joselowsky, 2009). Particularly, technical problems were found with the classrooms that used devices outside the classroom. Many of the technical issues were unable to be resolved once the students left the building or classroom. This is a concern that must be taken into consideration. Nevertheless, equipment failure was less of a problem in the laboratory classrooms or at schools where technical support was readily available (Swan, van 't Hooft, Kratcoski, & Unger, 2005). Despite the increase in the number of computers and related technologies, everyone does not have the same access to these technologies or the assistance some require. "Media availability varies depending on such things as child's age, gender, race/ethnicity, or family socioeconomic status (Roberts et al., 1999, as cited in Delen & Bulut, 2011). Particularly, students who come from lower economic families will use computers less for reflective activities than those who come from higher economic families (Solhaug, 2009).

Technology Ability and Comfort Level.

Technology abilities and comfort levels vary from person to person. In the first place, you need to consider the training and time teachers have in regards to technology. Researchers have argued that teachers need knowledge of technology, expanded pedagogy, extended planning time, an understanding of how students learn and classroom management, and an ability to make decisions about the appropriate technology-based learning experiences which must have specific connections to academic content (Ertmer & Ottenbreit-Leftwich, 2010, as cited in Donovan, Green, & Hansen, 2011). Using interactive whiteboards requires longer lesson preparation time and it is especially difficult for teachers who lack the confidence and knowledge to use the technology. The greatest success has been found in areas where teachers received training and guidance to use the technology in ways that support pedagogical principles (Manny-Ikan, Dagan, Tikochinski, & Zorman, 2011). Moreover, teachers identified time constraints for training of the software and use of the computer lab as the most challenging aspects of using technology-based instruction (Boon, Fore, & Spencer, 2006). Adding to time constraints, the majority of pre-service teachers reported low competence and even lower confidence in their ability to teach effectively through technology (Shriner, Clark, Nail, Schlee, & Libler, 2010). As it has been noted, teachers experience difficulties and challenges when new technologies are implemented and there becomes a sense of over-burdening. This happens when the pedagogical need to train the teachers does not occur (Manny-Ikan, Dagan, Tikochinski, & Zorman, 2011). Even in The Apple Classrooms of Tomorrow Project, teachers need approximately three years to reach the comfort state (Parr & Ward, 2011). As one can see, the development and creation of an interactive learning environment can be challenging (Harper, 2009).

Instruction using technology has been at the forefront for many in field of education. Creating effective learning environments with technology remains a challenge for teachers especially. Despite the push for educators to use technology in the classroom, many have yet to do so and struggle to find consistent success with technology-based instruction (Groff & Mouza, 2008, as cited in Eskil & Balkar, 2010). In the same way, while teachers are surrounded by technology and are able to use it in a variety of ways, our teacher candidates lack the instinctive ability to effectively integrate technology into their teaching practices (Donovan, Green, & Hansen, 2011). Finally, few teachers have the know how to promote student-centered uses of technology allowing students to create a piece of media to demonstrate understanding of a concept (Donovan, Green, & Hansen, 2011).

As teachers have faced many challenges with the usage of technology, students also face their own set of obstacles. First, technology devices pose the problem of usage if students are unfamiliar with how they work (Shriner, Clark, Nail, Schlee, & Libler, 2010). Another issue may occur if a microcomputer is to become an effective tool used, then the idea is to have that person sit down with the device or machine and actually try to use it. You need to use a device in order to learn how it works (Barker, 1990). Students admittedly found courses that are technology-enhanced are often beset by a range of challenges, including late night fatigue, rigorous, technical course content, stress caused by lack of prior knowledge or experience in the subject area, stress among students who lack access to course tools, and lack of intrinsic motivation in the subject (Gareau & Guo, 2009). Lastly, students miss lessons for a variety of reasons, including illness, vacations, and moving into the district midyear, which poses another whole set of issues that may or may not be amplified by the implementation of technology (Boles, 2011).

The Learning Process and Differentiating Instruction.

Pursuing this further, as we meet the diverse needs of students and enter the 21st century, a combination of economic and technological changes, along with advances in our understandings of how humans learn, has created unique challenges for educators (Spires, Lee, Turner, & Johnson, 2008). The problem in education today is meeting the needs of all learners (Capper & Frattura, 2009, & Levy, 2008, as cited in Brunvand & Byrd), and achieving high test scores sometimes gets in the way of learning. It is important to have a healthy balance in the classroom. Rote memorization alone is not the way to have students learn given information (Peck, 2004). Personalizing education to meet the needs and interests of all students is a very time consuming process (Cakir, Simsek, & Tezcan, 2009), so giving choice and control is essential to students' learning and well-being. That being said, the quality of students' performance deteriorates with increased number of options, so, too many options seem to lessen volunteer action and impair performance (Schwartz, 2009). When specific grade levels were examined, results showed a difference in learning styles in technology-enhanced environments. Students used the technology in different ways, depending on the preference of learning style (Swan, van 't Hooft, Kratcoski, & Unger, 2005). Education that is not personalized to individual students is not as beneficial to promoting learning. Students cannot go through the motions of school if they are to learn and retain information and be able to apply it critically in new contexts (Yonezawa, Jones, & Joselowsky, 2009). There is a relationship between student behavior, (or misbehavior), and concentration or classroom disturbance (Cakir, Simsek, & Tezcan, 2009). Growing evidence shows that youth are disengaged inside and outside school, an that school and community environments are failing to adequately support youth's social-emotional and academic development (McNeely & Falci, 2004, McNeeley, Nonnemaker, & Blum, 2002, &

National Research Council and Institute of Medicine, 2004, as cited in Yonezawa, Jones, & Joselowsky, 2009). Students today have less time to play than they have in the past because of the high demands that are put on them through education and other needs (Barab, Thomas, Dodge, Carteaux, & Tuzun, 2005).

Learning disabilities can cause major issues in education as well. Certain disabilities that students have can prevent them from completing tasks (Peck, 2004). Students with learning disabilities can find completing tasks in a classroom extremely difficult and challenging (Brunvand & Byrd, 2011). Students with attention deficit hyper-activity disorder (ADHD) or a learning disability (LD) often struggle with attending in class and completing assignments (Lerner & Johns, 2009, as cited in Brunvand & Byrd). These challenged learners find it difficult to communicate in written expression and oftentimes struggle in reading (Brunvand & Byrd, 2011). Reading levels of content-area textbooks often exceed those of students with disabilities (Mastropieri, Scruggs, Spencer, & Fontana, 2003, as cited in Boon, Fore, & Spencer, 2006). Reading comprehension is a major challenge for many students with learning disabilities (Mastropieri, Scruggs, & Graetz, 2003, as cited in Boon, Fore, & Spencer, 2006). Some students have become dependent upon relying on their teachers to help them complete their work (Lerner & Johns, 2009; Mercer & Mercer, 2005, as cited in Brunvand & Byrd).

Besides that, cooperative learning is a dynamic process of social practice both at internal and external levels (Gareau & Guo, 2009). Positive cooperative learning (interdependence) encourages and facilitates students' efforts to learn. Negative cooperation (competition) will typically end up discouraging efforts to achieve (Smith, Sheppard, Johnson, & Johnson, 2005). Effective language learning involves social collaboration with capable beings and technologies that provide assistance. Social interaction must be at the heart of communicative competence.

There must be willingness to communicate with one another, self-confidence, and risk-taking (Xu & Moloney, 2011). Cooperative learning is more than physically being near other students, discussing material in groups, helping one another, or sharing materials amongst a group of students.

Teaching Style and Pedagogy.

As we begin to examine the wide range of teaching styles and various pedagogies that exist amongst educators, we must note what motivates and engages students. It is not easy to define student engagement, but we know it when we see it. Unfortunately, the ability to maintain attention and motivation in the classroom can be a significant challenge for today's educator. It is important to note that it can be measured at all levels of instruction (Gareau & Guo, 2009). As we examine student motivation, self-determination deals with helping students feel like they have a choice to engage in activities. Options should be provided and pressure to engage in behaviors should be minimized so students can feel encouraged to engage in actions on their own (Shroff & Vogel, 2009). As noted, educators do not have a sufficient understanding of what motivates students to learn or what causes them to be bored with a learning activity (Aboudan, 2011). Furthermore, teachers need to convince inexperienced students of the advantages of multimedia tools such as interactive learning logs and concept maps as a tool for learning in order for them to be successful (Hurwitz, 1999). Above all, students look for direct answers to questions when unknown topics are introduced, but providing the proper questions can lead to inquiry by the student (Hurwitz, 1999). It is important to note the three key aspects of cooperative learning and problem-based learning, which are theory, research and practice. The most difficult aspect of cooperative learning and problem-based learning is the design and implementation in the classroom (Smith, Sheppard, Johnson, & Johnson, 2005). It is difficult

finding the right way to to link students to prior experience, develop a deeper understanding, and relevant opportunities to learn (Muire, Nazarian, & Gilmer, 1999), nevertheless, a well-developed plan is important to make the use of technology in the classroom effective with motivation for all students (Solhaug, 2009).

Clearly, there are many challenges found in technology usage today. To begin with, there is limited research on teachers' perceptions of the effectiveness of technology-based applications within the classroom (Anderson-Inman, Knox-Quinn, & Horney, 1996, as cited in Boon, Fore, & Spencer, 2006). Despite increased access to technology for students there appears to have been little change to the learning and teaching practices in many classrooms (Johnson, Kazakov, & Svehla, 2005, as cited in Parr & Ward, 2011). Lectures have been criticized as one-way methods of communication, but when combined with other methods of instruction, talented faculty, and the use of technology, lectures can serve as a highly stimulating means to encourage active student participation (Filer, 2010). It has also been noted that students report that individual caring relationships with adults in schools are vital to their education, but are infrequent or insufficient (Schultz & Cook-Sather, 2001as cited in Yonezawa, Jones, & Joselowsky, 2009). Unfortunately, negative reinforcement tends to make a learner concentrate on errors rather than on the correct procedure taught in a lesson (Backes, 1994). Along these lines, technology is expected to transform the way content is taught, yet in a technology-based classroom, a teacher-centered approach that emphasizes direct guidance, lectures, and demonstrations of teaching materials is sometimes more effective than a student-centered approach that allows students to do self-paced learning and to freely interact with technological tools (Cuban, Kirkpatrick, & Peck, 2001, as cited in Wu & Huang, 2007). It is important to remember that student-centered approach that provides small-group time or collaborative

opportunities, may not increase students' engagement if the learning tasks are not well designed (Wu & Huang, 2007). Coupled with these findings, over the last century, social science and education researchers have demonstrated that US secondary education, because of the structures and underlying cultural and political beliefs that support it, has been largely unsuccessful in engaging generations of youth in their learning, and hence in improving their changes for success in life (Tyack & Cuban, 1995, Achieve, 2004, 2005, & Blum & Libbey, 2004, as cited in Yonezawa, Jones, & Joselowsky, 2009). One might be left to ask, does the use of technology by teachers imply that they are perceived as a more competent teacher (Frye & Dornisch, 2007-2008)?

Student Growth and Success.

Student growth and success is important in their academic achievement and life-long learning. Group participation and success is measured by student achievement, motivation, satisfaction, thinking skills, online interaction, and technology skills and attitudes (Bekele, 2010). Opportunity needs to be given to students to interact with one another in order to increase motivation to learn. When learning about language, language pedagogy promotes the acquisition of language through social interaction (Xu & Moloney, 2011). Forums are clearly powerful learning tools, but only if students engage with them (Mason, 2011). Simply learning "about" things does not give students what it takes to obtain the skills needed to be successful in the twenty-first century. Pedagogies of engagement are necessary to create resourceful and engaged students who are the future citizens of the world (Smith, Sheppard, Johnson, & Johnson, 2005), consequently, studies investigated showed that different aspects of engagement are little known about students' engagement in the technology-enhanced classroom (Herrenkohl & Guerra, 1998, as cited in Wu & Huang, 2007). p. 749

Furthermore, there are many environmental factors that may contribute to student disengagement which include poverty, violence, and family problems. Students need to feel safe in the school environment to be able to concentrate in class and retain what they are learning (Using positive student engagement, 2007). In addition to environmental factors that hinder engagement, researchers observed that only one-third of students in the U.S. read at levels that are likely to assure them academic success and good jobs and that nearly the same number students cannot function at the most basic level of literacy (Carbo, 1996, as cited in (Montgomery, 2009). Similarly, reading RTI scores on the Northwest Evaluation Association Measures of Academic Performance taken in December 2008 show that seventy-four seventh and eighth-grade English language learners, averaged at least four years below grade-level, thus obstructing their ability to engage and learn (Carbo, 1996, as cited in Montgomery, 2009).

Students Attitudes and Perceptions towards Technology.

Motivation is a primary factor that impacts student achievement. Usually, "the challenge of the learner is in attention (whether learners perceive the instruction is interesting and worthy of attention), relevance (whether the instruction is perceived as being able to meet some personal or professional needs), confidence (whether learners gain increased confidence and expect to be able to succeed better), and satisfaction (whether learners enjoy the learning experience or gain other intrinsic or extrinsic rewards from the instruction)" (Gareau & Guo, 2009, p. 3). Individuals have a psychological need to feel competent, self-determined and related to work they complete. This is the Self-Determination Theory. To promote motivation in the classroom, teachers must address these needs (Shroff & Vogel, 2009). Intrinsic motivation is necessary for students to feel eager to learn. Within a technology-supported learning environment, individuals feel more intrinsic motivation (Shroff & Vogel, 2009). Likewise, extrinsic incentives in

education can threaten the well being of the educational process. It can take away meaning and engagement from educational activities as well as undermine satisfaction associated with learning (Schwartz, 2009). Nevertheless, intrinsic and extrinsic motivators work in similar ways. The differences in the underlying motivations, however, can be important. In using extrinsic incentives mainly, the purpose of the learning activities may change, the willingness to continue performing a task may change, and the actual quality of work may be altered as well (Schwartz, 2009). However, motivation and self-efficacy have the strongest impact, while cultural capital has a minor effect on critical thinking (Solhaug, 2009). Students must feel a relationship between themselves and an activity. Individual social experiences contribute to feeling interpersonally connected. Student motivation is increased when a sense of interest is involved (Shroff & Vogel, 2009). Specifically, differential engagement is the term given to the idea that some students in classrooms are overly engaged while others are simultaneously passively engaged or disengaged (Wu & Huang, 2007).

The potential of technology and computer tools to help intellectual performance relies on the students' will and attentive engagement (Wu & Huang, 2007). Whereas, if students perceive technologies as being easy or friendly, they may accept and use those more often, thus affecting their motivation and satisfaction levels. If students have dependable access to different technologies, the impact should be favorable (Bekele, 2010). In final consideration, does web-based learning have an affect on student motivation and achievement? (Hoskins & van Hooff, 2005).

Classroom environment has an impact on student motivation. Not being involved in whatever it is that is happening in the classroom stems from the indifference some students have towards learning and participation (Aboudan, 2011). It is easy to see that when students dislike

the material in a class or find it uninteresting or irrelevant, boredom materializes as a result (Csikszentmihalyi, 1990, as cited in Aboudan, 2011). As soon as students are bored in the classroom, they lack the ability to get stimulated or excited about the material and thus less likely to participate (Caldwell, Darling, Payne, & Dowdy, 1999, as cited in Aboudan, 2011). Ordinarily, students who do not learn well in the traditional frame of classrooms are unmotivated by the rigidity of being in the same learning atmosphere for long daily hours (Aboudan, 2011). Above all, sometimes motives create competition instead of adding to conditions, which means if too many choices are given and students are "choice overloaded," poor decisions and dissatisfaction may occur (Schwartz, 2009).

Disengagement, doubt, and lack of enthusiasm for learning are problems in the educational setting. Participation is often lacking in the classroom because students fear giving the wrong answer in front of peers or expressing unpopular opinions. If learning is to take place, students must feel that they can take risks and make mistakes without penalty (Filer, 2010). Accordingly, researchers noted that when students answered several questions incorrectly, they became less interested in receiving feedback. This made it difficult for the class to maintain an understanding of the material when the data clearly indicated that students did not understand (Sutherland & Badger, 2004, as cited in Filer, 2010), whereas, students with emotional or behavioral disorders (EBD) often demonstrate low levels of task engagement and show little motivation for learning (Lerner & Johns, 2009, as cited in Brunvand & Byrd). Moreover, students voiced a concern that sometimes it appeared that their teachers did not understand that technology is a big part of students' lives outside of school (Spires, Lee, Turner, & Johnson, 2008). Above all, it is important that students do not become bored in the classroom. Give clear expectations of choices students may make when work is completed (Backes, 1994). All in all,

by the time students reach high school, they have met so much school failure that they possess little motivation (Lerner & Johns, 2009, & Mercer & Mercer, 2005, as cited in Brunvand & Byrd), that is to say, students do not share the same intrinsic enthusiasm for the subject they have to learn or lessons that are taught in the classroom (Backes, 1994).

Summary

In today's educational system, it is noted that a problem exists with student engagement and motivation in the classroom. The teacher researchers have examined articles focusing on student motivation and engagement and factors that may affect these issues in education. The educational system, including school districts, teachers, support staff, and others face challenges to increase motivation and engagement of students. In order to transform the educational system into one that promotes student motivation and engagement, challenges may arise such as educators fearing the usage of technology, availability of technology, time invested in implementing it, and integration within the classroom. Amongst students and teachers alike, concerns may include academic achievement, abilities, learning styles, disabilities, motivation, and engagement. Finally, parent views and environmental issues need to be considered as well. As a result, these concerns suggest instructional practices tend to revert back or rely on traditional methods of teaching as opposed to moving forward by integrating technology into the classroom.

Chapter 3

The Solution Strategy

Review of the Literature

Addressing student motivation within the classroom is necessary and important to the overall achievement and successful development of well-rounded students. Motivation is integral to the learning process. It is the underlying force, which compels a student to perform, continue to learn, and move to the completion of tasks at hand. Intrinsic motivators, play a large part in motivating and engaging students within the classroom. Establishing intrinsic motivation within a student requires educators to see this as one of their primary goals.

Positive Effects of Using Technology.

Students take individual ownership of their learning when technology is utilized in the classroom. Data indicated that the students want to be engaged and stimulated in school. Students have clear perspectives about academic engagement through the use of technologies in project-based learning (Grant & Branch, 2005, as cited in Spires, et al., 2008). Furthermore, for these learners, listening to stories recorded at a slower-than-usual pace reduces much of the stress involved in reading and has been found to increase fluency and comprehension (Carbo, 1996, as cited in Montgomery, 2009). A student can make learning happen at a certain internal level, but he/she can do it better with external assistance and stimuli (Gareau & Guo, 2009). For instance, the evidence is relatively consistent in showing that efficacy beliefs contribute significantly to level of motivation and performance. These students perform better when there is a higher self-efficacy of the student (Solhaug, 2009). For example, students that use technology are more likely to maintain a focus on learning, show higher levels of class enjoyment, read carefully in preparation for class and participate more than those who do not use

technology (Dorow & Boyle, 1998, as cited in Harper, 2009). Furthermore, the use of technology allows students with disabilities in writing to express themselves without the frustration when using paper and pencil (Peck, 2004). Independent learning happens when students build on the constructed ideas and reflect on what has been learned (Mason, 2011). In particular, reading engagement is an important component of a child's ultimate literacy development. The level and amount of time that a child spends engaged in literacy activities is an accurate predictor of their motivation to read including gains in reading achievement (Wigfield, Guthrie, Perencevich, Taboada, Klauda, Mcrae, & Barbosa, 2008, as cited in Jones & Brown, 2011). Over time, as learning from listening to audio books and reading companion books is integrated by students, changes in academic performance and on standardized test scores can be expected (Montgomery, 2009). Besides, the usage of mobile devices has the potential to enhance learning processes, especially with respect to writing (Swan, van 't Hooft, Kratcoski, & Unger, 2005). Also, students can access Voice Thread in a classroom, computer lab, or at home which can facilitate motivation and engagement (Brunvand & Byrd, 2011).

Technology promotes cross-curricular usage. It can be used through the various grade levels and subject matter (Brunvand & Byrd, 2011). Likewise, computers provide unlimited access to information as well as interactive communication, which has proven to provide student empowerment over their own education (Solhaug, 2009). Meanwhile, computer access can lead to classroom discussions and critical reflection of information discussed in given lessons (Solhaug, 2009). Students working with computers were able to create new ideas that showed the information gathered with computers were useful with their abilities to prove valuable lessons learned (Solhaug, 2009). In the same way, Voice Thread provides students the opportunities to work in a collaborative environment around a variety of topics (Johnson, Levine,

Smith, & Smythe, 2009, as cited in Brunvand & Byrd, 2011). By the same token, students considered specific technological applications, including word processing and Web-based searching, as enhancing their academic productivity in all academic areas (Spires et al., 2008). Similarly, educational games are an example of external stimuli that allows and encourages student to interact with, and gain support from others (Gareau & Guo, 2009). In other words, web-based learning is certainly an option that offers instructors a range of advantages, such as, providing feedback with relative ease (Collis, De-Boer & Slotman, 2001, as cited in Hoskins, & van Hooff, 2005). Students see a clear link between the use of technologies in school and their academic engagement (Spires et al., 2008). Likewise, study findings reveal that games can be very useful in the classroom, helping to stimulate student active participation in the learning process (Gareau & Guo, 2009).

Technology benefits the students by allowing them to take learning home. Over the past few years, due to improvements in technology, computers and related technologies have become cheaper and more sophisticated. That is why households are both able and willing to buy computers for their children (Lauman, 2000, as cited in Delen & Bulut, 2011). Not only is the number of computers in education growing exponentially, but also the number of computers in the home is growing at a rapid rate (Lauman, 2000, as cited in Delen & Bulut, 2011). Subsequently, taking the mobile devices home resulted in students' homework always being done, and shortened the time frame for getting work done. Having the device also improved the writing for all students (Swan et al., 2005). In the meantime, the Internet addresses the important issue of access whereby students can work on course assignments at times that are convenient to them and have time to reflect on their learning before posting responses or assignments. (Muire et al., 1999). Teachers noted that when mobile computing homework was assigned, all students

completed it on time, something that almost never happened with paper and pencil assignments (Swan et al., 2005). Additionally, parents can view the students work and become involved with the learning process with their child by commenting on what they have accomplished (Peck, 2004). Also, in the homes an increasing number of student computers play an essential role in students' recreation and learning (Kumar, Rose, & D'Silva, 2008, as cited in Eskil & Balkar, 2010). Meanwhile, today's computer revolution provides cheaper and better home computers that allow students to practice what they have learned at school (Stock & Fishman, 2010, as cited in Delen, & Bulut, 2011). Audio models of fluent English in the home environment encourage more parent awareness of the student's progress and provide a way for parents who do not speak English to participate as a partner/learner in their child's home reading (Blue et al., 1995 as cited in Montgomery, 2009). Conversely, other research highlights the benefits of web-based learning for students, suggesting that it affords them greater anonymity (Howe, 1998, as cited in Hoskins, & van Hooff, 2005) and opportunities to practice a range of generic skills (e.g. management of self, others, task, information) (Oliver & McLoughlin, 2001, as cited in Hoskins, & van Hooff, 2005). Additionally, more than 75% of the students interviewed reported using their mobile devices outside of the classrooms in which they were explicitly assigned. The portability seemed a particularly important factor in their usage (Swan et al., 2005). In the same way, Voice Thread can be used in many educational settings with students in general education, at risk, and with students with disabilities (Brunvand & Byrd, 2011). Teachers can use this as an assessment tool. Questions can be embedded into the slide show. Other students can't comment or review other classmates' answers until everyone is finished (Brunvand & Byrd, 2011). On the whole, web based devices can provide the low functioning students the ability to learn through various

devices. These devices can provide the tools necessary for them to gather information that was not there before through paper and pencil (Brunvand & Byrd, 2011).

Group gains were accomplished when classrooms used technology. Most teachers interviewed agreed that the students' motivation to learn and engagement in learning activities was improved by the use of the mobile computing devices. This resulted in an increase in student productivity and improved work quality. The ability to take home the mobile device was another positive because it resulted in homework always being completed and a shortened time frame for doing so (Swan et al., 2005). Comparatively, working together to solve problems as a group and talking through problems together offer other benefits to learning such as critical thinking. Student participation, encouragement by teachers and student interactions, positively relate to critical thinking skills (Smith et al., 2005).

Above all, technology does challenge educators to make the best use of pedagogical practices (Filer, 2010). Moreover, online discussions allowed fostered active learning in students by providing opportunities to identify what they knew, wanted to know, and had learnt (Shroff & Vogel, 2009).

In addition, cooperative learning promotes higher individual achievement than do competitive approaches or individual ones (Smith et al., 2005). Similarly, Voice Thread enables teachers to capitalize on students learning strengths and preferred learning modalities by encouraging active participation in the learning process (Brunvand & Byrd, 2011).

Correspondingly, students state that their anticipation and enjoyment of interactive whiteboard activities and lessons enhance motivation to learn a subject. Because of students' increased attention to the tasks at hand, they attach more value to their learning this way (Xu & Moloney, 2011). Also, completing profiles on the e-forum would help with the socialization

aspect and the familiarity of the technology usage (Mason, 2011). Activities with multimedia produce a lively group discussion and allows student to challenge each other's explanations as they work together to complete an analytical task (Shrand, 2008). By the same token, extensive use of technology in classrooms has the potential to support students' exploration of ideas (Wu & Huang, 2007). Moreover, online resources provide instant access to reading materials at the point of need. Teachers can search for primary source documents and digitized books that support a variety of curriculum areas (Brown & Dotson, 2004, as cited in Jones & Brown, 2011). Meanwhile, to use technology in the classroom will provide feedback as a means to enhance the intrinsic motivation of students and improve their ability to write clearly (Dorow & Boyle, 1998, as cited in Harper, 2009). Research has concluded that computers might have a solid empowering potential that can be developed by teachers and students (Solhaug, 2009). Some experts predict that there will soon be publishing sites comparable to social networking sites such as YouTube.com, where writers can share their books with a community of writers (Sangani, 2009, as cited in Jones & Brown, 2011). On one hand, girls used word processing devices more, which supports the idea that most girls enjoy to write than their male counterparts (Swan et al., 2005). On the other hand, boys will perform more critical reflection than girls when given the usage of computers in the classroom (Solhaug, 2009). Hence, computer games may have positive effects on children's cognitive development. By spending time with the computers, children can learn how to read and use the information on computer screens (Subrahmanyam et al., 2011, as cited in Delen & Bulut, 2011).

Planning and Preparation for Lessons.

Teachers need to develop interactive and relevant lessons and activities to plan for student success. Accordingly, planning activities that will ensure student success is very

important in the beginning of a lesson or unit (Backes, 1994). Engagement and achievement in the classroom can be achieved when the instructional strategies meet the needs of all students. Furthermore, instruction must be personalized to meet the individual needs of each student.

Doing so, teachers can maintain a successful teaching model and correct student misbehavior. Personalization of lessons could draw the attention of students, which has considerable benefits to learning (Cakir et al., (2009). When teachers become conscious of the personal needs of each student they will be more successful at the task they plan on achieving (Backes, 1994). Also, teachers need to be prepared for the lesson to show students that they are vested and care about the material at hand (Backes, 1994). Besides, students learn what they practice or learn by doing. You can increase motivation by having the students' practice what is being introduced in a given lesson (Backes, 1994). Undoubtedly, students are not predestined to become self-motivated. The longer you take to grab their attention, the less likely it will be that you ever will. Asking questions is a great way to grab the attention of your students (Backes, 1994).

Instructors will need to continue to think creatively about what we can do now that was not previously possible and how that can be applied to help students learn in active and effective ways (Shrand, 2008). As a rule, the more freedom people have, the better off they are. Therefore, the more choice students are given, the more freedom they have and thus the better off they are (Schwartz, 2009). Group activities and assignments, long-term projects, hands-on activities, differentiated instruction, and lessons that draw from students' backgrounds all help student achievement and engagement. In particular, allowing independent study concerning topics of particular interest can motive students by including them in the planning process

(Backes, 1994). For example, leading the students to their own investigations and presentations can allow growth through group work and interaction in the classroom itself (Hurwitz, 1999).

Above all, this research encouraged us to avoid using new technologies as shovels and, instead, to use them to build structures for active forms of student learning that were not possible or practical with our previous technologies (Shrand, 2008). On the whole, the challenge is to create a vision of schools, especially middle and high schools, in which students' learning and growth is supported in the context of their lives and interests (Yonezawa et al., 2009). Similarly, problem-based learning (PBL) is learning which comes from the process of working toward the understanding or resolution of a problem. Using problem-based learning requires several core features– learning must be student-centered, learning must occur in small groups, teachers are facilitators, and problems are the focus and stimulus of learning (Smith et al., 2005). Besides that, the use of computer aided technology in the classroom will inspire teachers to approach their tasks with a greater sense of purpose and more importantly, a sense of play to make the learning process fun for students (Eskil & Balkar, 2010). As science has advanced through the use of technology, so can the classroom with its approach the learning is limitless. Using inquiry-based learning and constructivist approaches based on conceptual change theory allows students to advance at their own level of learning (Hurwitz, 1999). In the same way, more time was to be given to accomplishing the tasks that were given on the online e-forum (Mason, 2011).

Similarly, on a website there are all sorts of presentations of the same material being taught (Boles, 2011). Recent research on the use of Inspiration software, a computerized graphic organizing software program, has shown promising results to increase academic performance in content-area class for students with and without disabilities (Boon et al., 2006). Comparatively, audio models provide a form of scaffolding that makes it possible for students to read material

that is more difficult and to focus on meaning (Koskinen et al., 2000, as cited in Montgomery, 2009). One promising approach to improve reading comprehension in secondary content-area classes for students with disabilities is through the use of computerized graphic organizers (Kim, Vaughn, Wanzek, & Wei, 2004, as cited in Boon et al., 2006).

Success in using technology in the classroom involves professional development and advanced planning. Markedly, using technology as a teacher tool and as a tool to use in teaching is an advantage allowing us to draw on the expertise of the instructor who can seamlessly demonstrate effective technology use (Donovan et al., 2011). Researchers suggest that for an innovation to become institutionalized-in this case, for the use of technology to be a ubiquitous part of the teacher education program, the innovation first must go through initiation and implementation stages. This way, teachers can try out the innovation before adopting it (Fullan, 2007, as cited in Donovan et al., 2011). Clearly then, strategies to increase student achievement include data to drive instruction, employing qualified teachers, and improving school leadership. Whereas, high quality professional development is an essential element in determining whether students receive a 21st century education (Spires et al., 2008). In this situation, professional development and planning helped Social Studies teachers use technology successfully in the classroom (Shriner et al., 2010). For one thing, the use of pre and post surveys were used when facilitating knowledge to the teachers of Social Studies instruction through questionnaires completed by the given teachers partaking in the workshops or classes (Shriner et al., 2010).

Professional development that supports the acquisition of not only skills, but also knowledge and confidence, is therefore critical (Dawson, Cavanaugh, & Ritzhaupt, 2008, Donovan, Hartley, & Strudler, 2007, as cited in Parr & Ward, 2011). Additionally, teacher educators must model, use, and teach the use of technology in their classes in order to alter the

cycle of teaching the way one is taught (Monroe & Tolman, 2004, as cited in Donovan et al., 2011). Teachers also need to visibly use and model the equipment that is expected by the students to use to serve as a role model (Barker, 1990). In particular, teachers' technical expertise and professional experience in using technology is critical for students' successful learning experiences with technology. Teachers need to receive intensive training that focuses on demonstration the usage of technology integration strategies and application of those strategies in the curriculum (Shriner et al., 2010). For instance, teachers created their own virtual field trip of their neighborhood surrounding the school. It was extremely successful for them to use the equipment they will be asking their own students to use. They were able to see some of the issues that their students may face with the usage of technology in given assignments (Shriner et al., 2010). Of course, Faculty and Staff need to see their administration comfortable talking about and using technology that will be implemented in the classrooms by the trained staff and informed students (Barker, 1990).

Principals need to take on the role of the school's instructional leader in order to make a technical program a success in their building (Barker, 1990). Increasingly, educators and policy makers recognize that improving young people's academic achievement in high schools requires greater attention to the engagement of young people themselves (Pittman & Tolman, 2002 as cited in Yonezawa et al., 2009). Additionally, students can serve as the best source of information when it comes to computer use. Observing them while they use the software or device and explain the steps involved in making them work (Barker, 1990). All in all, reversing the historic trend means expanding the focus of school reform from solely improving academic achievement to improving the general engagement of young people in their schooling, in the

classroom, and in their overall development (Newmann, 1992; Pittmanm et al., 2003; Rose, 2004 as cited in Yonezawa et al., 2009).

Technology materials are needed to support it as a vital part of instruction. Recent policy reports have explained the systematic nature of providing and maintaining a well equipped and managed technology program, which include 21st century curriculum, instruction and assessment, appropriate hardware and software; connectivity and networks-the mechanism to create the interaction and access to information; and professional development for educators (as cited in Spires, et al., 2008). The interactive aspect of the iPad appeals to the kinesthetic learner because the apps motivate students to manipulate the content. The device also cuts down on disruptions that group learning with the whiteboard can create as students call out answers in chorus (Bennett, 2011). Besides, researchers suggested the time could be reduced to one-half or even one-third of this with access to portable devices (Parr & Ward, 2011). Undoubtedly, the availability of huge amounts of up to date information in the teaching and learning of different subjects are found on the World Wide Web. The Internet provides far more up to date information than textbooks (Eskil & Balkar, 2010). In the same way, the idea is that iPads are like personal electronic whiteboards. They can deliver content in an interactive way, but on a one-to-one level. They offer easy access to the web, just like a laptop, but the apps work as instructional modules, so you are getting access to the Internet, plus a multitude of activities (Bennett, 2011). Just a few or only one is enough to get results. Fewer iPads required innovative thinking in terms of instructional design and that resulted in excellent ways to differentiate instruction (Bennett, 2011). Having a class set promotes traditional, whole-class instruction, but few iPads facilitate individualized and tailored instruction (Bennett, 2011).

Comparatively, one such policy is the Laptops for Teachers (TELA) initiative in New Zealand. The government pays two-thirds of the cost of a laptop for every teacher. Either the school or the teachers themselves pay the balance. The authors state this was an initiative. The object was to increase confidence and competence of teachers in the use of digital technologies in all aspects of their professional lives, including learning and teaching, classroom management, and administration (New Zealand Ministry of Education, 2005, as cited in Parr & Ward, 2011). By the same token, for a small fee of around $60, a school can service around 100 students (Brunvand & Byrd, 2011). Additionally, writing grants can be one way to increase funds to be used for technology (Peck, 2004).

Techniques for Engaging and Motivating Students.

Giving students positive reinforcement encourages them and definitely helps them stay engaged in the learning process. In general, student engagement is positively correlated to teacher support. Teachers need to be encouraging and supportive to foster student engagement. Being sincere with your praise and making it meaningful to your students is very important to increase motivation (Backes, 1994). Furthermore, students are more engaged and less likely to be bored when they are challenged. The greater the student's involvement or engagement in class, the greater his or her level of acquisition and general cognitive development. Instructional and programming interventions can foster student's active engagement in learning as well as enhance knowledge acquisition (Smith et al., 2005).

Generally speaking, people need motivation to get them to act. Challenge, fantasy, and curiosity are the three most important elements to engagement of students (Gareau & Guo, 2009). When students are engaged in instruction, they are easy to get into gear during class; they go above and beyond what is required for an activity or assignment; they express satisfaction

with their learning experiences; and they demonstrate competence in the knowledge and skills being taught (Gareau & Guo, 2009). Giving students a motive to do something will increase their motivation to act (Schwartz, 2009). As a rule, students who are intrinsically motivated have interest, enthusiasm, and commitment to learning itself (Schwartz, 2009). Motivation to learn is one of the key principles for effective instruction (American Psychological Association, 1993, & Bransford, Brown, & Cocking, 2000, as cited in Kim & Frick, 2011). Innovative technological tools, programs, and software can be used to promote student engagement, motivation and ultimately enhance the quality of the learning experience for students (Goldberg, Russell, & Cook, 2003, Myers & Beach, 2004, Nicolaou, Nicolaou, Zacharia, & Constantinou, 2007, as cited in Brunvand, & Byrd, 2011). For example, one computer tool, called Voice Thread (http://voicethread.com), can be helpful at increasing student engagement and motivation while activating learning (Brunvand & Byrd, 2011). At the same time, Voice Thread enables teachers to utilize student learning strengths and preferred learning modalities by encouraging active participation in the learning process (Brunvand & Byrd, 2011). Teachers and students respond favorably to handheld devices and in using a portable, readily accessible tool, students are more motivated to spend more time using technology, collaborate and communicate more (Swan et al. 2005).

Students are more engaged and willing to participate when they see an authentic connection to materials learned. For instance, in relating school learning to real life situations (people, social situations, families, local history and geography, etc.), students are intrigued and excited to investigate. When engaging students while learning, this creates a positive connotation for the learning process. When students learn, they enjoy themselves and when they enjoy themselves, they engage (Aboudan, 2011). One strategy for evoking participation is to

share a course guideline with students. This may lesson anxieties and give students the opportunity to be more responsible learners who are involved in their learning (Aboudan, 2011). Hence, factors influencing engagement include motivation, home environment, independent reading, and gains in reading achievement (Arzubiaga, Rueda, & Monzo, 2002, as cited in Jones & Brown, 2011). Likewise, the "student voice movement" means finding out what students think about their experience of being learners, what gets in the way of learning and what helps them to learn (Rudduck & Flutter, 2004, as cited in Aboudan, 2011).

Moreover, students express themselves and their ideas when they feel motivated and are able to do so at their own pace. Taking time to think, edit discussions or dialogues, and explore ideas creates an autonomous environment for the student where learning is likely to flourish (Shroff & Vogel, 2009). Techniques for engaging students include collecting multiple sources of data such as video recordings, field notes, students' worksheets, computer activity recordings, achievement tests and self-report questionnaires (Wu & Huang, 2007). Keeping a sample of one piece of work a week, allows the students the opportunity to share their work and to take ownership for what they have accomplished (Peck, 2004). Likewise, effective feedback does not need to be long or complex, but should equip students with the means by which they may take responsibility for their learning (Dorow & Boyle, 1998, as cited in Harper, 2009). In the long run, allowing students to have their say or letting their voices be heard in regard to transforming classrooms into learning conducive environments is a strategy that is worth looking into because the effects may derive insight on how students learn and thrive (Aboudan, 2011). For this reason, a needed issue in education is the raising of critical youth voice in support of student engagement (Yonezawa et al., 2009).

Creating thoughtful educational settings will enhance student motivation and engagement. By loosening the "time-disciplined" activities dictated by the daily rhythms of a schedule or a highly structured classroom and trying a different learning style, students might be motivated to participate and one might see a positive effect on opportunities for active learning (Aboudan, 2011). Conversely, rewarding students when they do participate must be reasonable and justifiable so as to encourage the student to continue exhibiting that behavior (Aboudan, 2011). For example, in the research work with student co-research teams and district level student governments, it was found that creating thoughtful educational settings for the students is essential to engaging them in the work (Yonezawa et al., 2009).

Making Learning Fun.

Undoubtedly, incorporating technology in the classroom makes learning fun while increasing student participation and engagement. Unquestionably, web-based tools are very versatile. They can be used in the classroom, computer labs, or at home with any wireless Internet connection. This is a great way to help students work in many locations. Parents can also view the same information that was used in the lesson to help their child (Brunvand & Byrd, 2011). Besides, engaging students through the use of interactive games can increase motivation for all learners. It allows students to develop a sense of autonomy, as well as an awareness of consequentiality (Barab et al., 2005). Using computers can also improve children's visual attention because some applications require users to keep track of or control many activities at the same time (Durkin & Barber, 2002, as cited in Delen & Bulut, 2011). Obviously, promoting student use of familiar instructional tools as part of instruction can engage students in the learning process and motivate them; improve their self-efficacy, self-confidence, and self-worth; and lead to greater student achievement (Gareau & Guo, 2009). Academically, the students

became engaged while learning the new software program. Socially and emotionally, the students benefited by participating more during class instruction and working together with their peers. Increased learning of the content material, improved student motivation, increased student engagement, and provided the students with an innovative use of technology to learn information (Boon et al., 2006).

Besides that, students can incorporate technology to record and share information by using software programs that create graphics and other presentations of data (Boles, 2011). Teachers can create a slide presentation about the learned material for these students to view and hear as they watch the slide. Voice Thread is one of those tools. It allows teachers the ability to use an interactive, multimedia slide show to enable users to hold conversations around images, documents, and videos. They are then given time to answer questions, respond to the information and use it as a resource to replace what was once only read through books (Brunvand & Byrd, 2011). Voice Thread can be used in whole class situations, small groups, or independently (Brunvand & Byrd, 2011). As another example, using a Personalized Learning Material Generation System, lessons, exercises, and tests can be personalized to include parts from individual students' lives. This instructional method increases students' attitudes and motivation for learning (Cakir et al., 2009). Furthermore, using technology in the classroom can establish digitized oral feedback as a viable component in the assessment process (Dorow & Boyle, 1998, as cited in Harper, 2009). Having lessons on CD, DVD, or a digital video file is a great way to ensure that students who miss valuable information can fill in the gaps (Boles, 2011).

As a result, technology within the classroom does increase student interactivity and supports a safe environment in which learning can occur (Sutherland & Badger, 2004, as cited in

Filer, 2010). Students believe if teachers understood, they would bring more technology into the classrooms (Spires et al., 2008). Finally, when combined with other methods of instruction, the presence of talented faculty, and the use of technology, lectures serve as a highly stimulating tool and encourage the active participation of students (Sutherland & Badger, 2004 as cited in Filer, 2010).

Specific technological tools including the digital medium created a set of possibilities that did not exist before, facilitating a type of active student learning with public, visual and kinesthetic properties that crossed boundaries of multiple intelligences (Shrand, 2008). Interactive whiteboard technology enables teachers and students to access authentic materials and interactions. Regarding languages, one may facilitate participation in the language by giving students personalized learning opportunities to explore texts, music, videos, use games and even create their own tasks (Xu & Moloney, 2011). Comparatively, the advantages of the interactive whiteboards can be attributed to its varied digital resources such as text, images, audio, and video. This sort of presentation technology may increase motivation, visual engagement, interaction, and participation in class. These features may facilitate different learning styles and cater to deeper learning and more efficiency in learning and retention (Xu & Moloney, 2011). For instance, teachers found that working with interactive white boards made them more "up to date." While preparation time for lessons is longer, the resulting value is worthwhile. There is greater motivation and concentration as well as support for various learning styles (Manny-Ikan et al., 2011). Furthermore, it was found that interactive white boards positively influenced students' ability to understand complex concepts (such as math and science,) and teachers assert that the multi-faceted presentations aid students who have difficulty developing or understanding concepts (Manny-Ikan et al., 2011).

Another approach involved mobile devices that helped students organize their work, resulting in an increase in motivation (Swan et al., 2005). Likewise, handheld computers have the potential to support personalized and collaborative learning. To support collaboration, classroom response systems can be used for participatory simulation and data gathering (Swan et al., 2005).

In the same way, the Web offers an environment that enables students to communicate more comfortably with one another. It provides egalitarian environments, in which students have the opportunity to carry on extended exchanges of ideas, read, respond to or even initiate comments in a virtual meetings space (Shroff & Vogel, 2009). The World Wide Web provides a hands-on approach to learning information and knowledge (Muire et al., 1999).

Additionally, the Internet offers the perfect venue for students to share their research findings with the public and we share what we learn through the Internet and help people become more educated (Muire et al., 1999). Namely, Google Docs was used as a tool during a study to help teachers plan, develop, and guide their lessons and students. Project goals and expectations were made via Google Docs, students kept track of information on one document, teachers sent worksheets and rubrics, and all of the paperwork could be accessed immediately. This cut down on excuses for missing work or problems with absent students. Google Forms was used throughout the project to collect information from students about their progress, scheduling group meetings, and self-evaluations' ratings (McCormack & Ross, 2010).

In addition, there are many animations, videos, and podcasts available to educators on virtually any topic (McCormack & Ross, 2010). Multimedia animation is limited to creating simple graphic elements, but can be used as a learning field that could be projected onto a screen in the classroom in real time for everyone to see and use (Shrand, 2008). Incidentally, teachers

can engage in on-going formative assessment of the class's progress through the use of electronic learning logs (Hurwitz, 1999). Interactive collaborative learning logs are continuous scripts between the teacher and student groups to work together to solve questions posed to the group. Teachers can also use it as a tool for assessment (Hurwitz, 1999). Likewise, many students made considerable use of the Personal Information management system (PMI), Address Book, To Do List, as well as the calculator to organize and perform assignments given (Swan et al., 2005).

Additionally, lectures are more fun and the quality of the presentation improves with the use of technology. Using wireless technology known as an audience response system (ARS), or clicker, allows students to answer questions by entering a response on a keypad. This actively involves students in the classroom (Filer, 2010). The use of clickers during a presentation enhanced students' experience in the classroom by facilitating a sense of comfort, encouraging participation, and motivating students to answer questions correctly (Filer, 2010). Using the ARS or clicker system, students must commit to a response. This allows for immediate and anonymous feedback on the assessment and knowledge of students. Students can also compare their responses with those of the class as a whole, which can reinforce their knowledge or provide them with an opportunity for clarification (Filer, 2010). Furthermore, the immediate feedback and summary of data with wireless technology enable timely adjustments to content delivery and or methods of instruction. Assessments gain efficiency and meaning as faculty focuses on time and energy to areas of student need (Sutherland & Badger, 2004, as cited in Filer, 2010).

On the other hand, cooperative learning is the instructional use of small groups allowing students to work together to maximize their own and each other's learning. Cooperative learning involves working on a team to reach a common goal (Smith et al., 2005). Concept maps can be

good tools for students to identify weaknesses in their understanding of given topics and can be used as a way to adjust their process of gathering information about a given idea (Hurwitz, 1999).

There are many ways in which technology motivates students to learn. Teachers reported that the use of interactive white board technology enhances student motivation to learn, raises the level of concentration, and improves behavior. Students believe the interactive white boards enhance learning because they are fun and innovative (Manny-Ikan et al., 2011). Nevertheless, positive student engagement in the classroom is very important to enhancing student achievement. Whereby, the use of software increased learning of the materials and kept the students more on-task and engaged during instruction. Students appeared more motivated and active in the instructional lesson (Boon et al., 2006). Students showed a high level of engagement in the activities, and also communicated and shared knowledge in a more spontaneous and authentic way than they had in any other kind of active-learning exercise (Shrand, 2008). Assuredly, students who completed the activities through an online discussion perceived themselves to be more competent than when participating in face-to-face discussions. Participants in the online discussion seemed proficient and enthusiastic at the use of technology and interacted more in online discussions. Conversely, participants in face-to-face discussions were not as eager to participate and were resistant to initiation conversation (Shroff & Vogel, 2009).

In the same way, games can be used to teach new information, and/or to review previously instructed content (Gareau & Guo, 2009). Games also promote student use of technology in the classroom, which is another way in which student motivation and learning can be enhanced (Gareau & Guo, 2009). Unquestionably, games can help to attract and maintain

attention to instruction and can be relevant to the learner's needs and wants as long as games can promote the learning of relevant content (Gareau & Guo, 2009). In particular, games can be used for socialization purposes, helping students to get to know one another and build the foundations of a classroom community spirit (Gareau & Guo, 2009). Also, games can help to attract and maintain learners' attention and motivation to learn (Gareau & Guo, 2009).

On the contrary, extrinsic forms of incentives such as honors and awards, attention and approval from teachers, good and bad grades, special privileges and even material things seem to work quite well to get students to behave in the desired way (Schwartz, 2009). Positive reinforcement or support is by far the most useful tool in providing confidence in the learner (Backes, 1994). By living by a goal of expecting the best of every student and helping him or her find the joy in learning was how a teacher managed to achieve success in her classroom (Peck, 2004). In addition, hands on activities, like building aquariums out of plastic Pepsi containers, for instance, bring learning to life for most students (Peck, 2004).

Learning Environments.

Technology-centered classrooms are one type of learning environment to motivate and engage students. Technology supported learning environments enable students' higher order thinking, active learning and self-regulated learning. The use of technology supports intellectual development including motivational strategies involved in learning (Shroff & Vogel, 2009). In a technology learning environment, modern features include: 1) wireless connectivity and bright, inviting sitting areas that let students work wherever they are, and 2) open-plan areas and interior windows connecting administrators to students to emulate information-age work places (Spires et al., 2008). Of course, in Internet-supported learning environments, satisfaction was also identified as being driven by technology, engagement, course and support (Bekele, 2010). E-

learning has become an increasingly popular delivery method for education and training (Kim & Frick, 2011). Furthermore, e-learning is more motivating when it results in greater student attention (task engagement), includes content and learning activities that students perceive as being more relevant, increases student confidence, and results in greater student satisfaction with that they have learned (Keller, 1983, as cited in Kim & Frick, 2011). Consequently, providing opportunities to practice a broad range of generic skills, interact with an engaging and authentic environment, make sense of experiences, obtain more feedback, enhance computer literacy, and therefore career development are just some of the potential advantages for students that engage in online learning environments (Collis, De-Boer & Slotman, 2001, Hammond & Trapp, 2001, Heinssen, Glass & Knight, 1987, Krantz & Eagley, 1996, Miura, 1987, & Oliver & McLoughlin, 2001, as cited in Hoskins & van Hooff, 2005). Conversely, authorities attempted to address issues associated with the lack of successful integration into school settings by considering some of the contextual and personal features that research has shown, such as proficiency with technology, beliefs about its value and how it sits with support (e.g. Straub, 2009, & Windschitl & Sahl, 2002, as cited in Parr & Ward, 2011).

Blended learning environments are Internet-supported along with traditional learning techniques, but are very beneficial to student engagement and motivation since the environment differentiates for the different learning styles of the student. As well as a teacher-centered technology-based classroom, the style emphasized direct instruction, guidance and modeling. In using the student-centered approach, students are allowed to explore self-paced learning and to freely interact with educational tools (Wu & Huang, 2007). Unquestionably, students in a blended learning environment (Internet-supported learning environment and traditional learning environment) were better satisfied and more intrinsically motivated (Bekele, 2010).

Students have their own perspective on what makes schooling engaging and motivating. Creating a school environment where students feel comfortable asking questions and are expected to do their best is beneficial to the engagement of students. In the same way, adolescents have important knowledge about schooling from a student's perspective and that this knowledge can help people with power make important changes and improvements to schools and classrooms (Yonezawa et al., 2009). The students' visions for an ideal school were imaginative, expressing a desire for schools to be contemporary environments with aesthetically pleasing designs, colors, and amenities; they also envisioned using cell phones and laptops during class as a way to look up information "just in time" on the Internet and having smart boards in every classroom (Spires et al., 2008). Furthermore, students want their schools to look more like the world in which they live (Spires et al., 2008). In particular, construction of a collaborative learning community in which students construct knowledge as they engage in new experiences within a research context would be one approach to classroom improvement (Muire et al., 1999). Likewise, behavioral indicators such as task choice, effort, and persistence lead to higher achievement. These indicators explain motivation in education. Giving students free selection of a task indicates their motivation to perform the task. High effort indicates high motivation, so learning requires a lot of cognitive effort, especially on challenging task. Persistence refers to time spent "on task." Students who work longer in spite of obstacles, normally have higher motivation (Bekele, 2010). Granted, with regard to ability, existing research demonstrated that age is a powerful predictor of achievement, with mature students gaining better degrees on average than younger students, while gender is a weak predictor, with a trend for women to perform better than men (Hoskins, Newstead & Dennis, 1997, as cited in Hoskins & van Hooff, 2005).

Making Connections to Real-World Experiences.

The use of technology in the classroom prepares students for adulthood and future careers by immersing them in real-life situations. Researchers and practitioners increasingly believe that engagement in learning in all its aspects is related to productive adulthood (Blum & Libbey, 2004; & Gambone, Klem & Connell, 2002 as cited in Yonezawa et al., 2009). Moreover, students saw such technology in use in the professional world around them and understood the relevant importance of having technology skills (Spires et al., 2008). Additionally, providing students with the opportunity and reason to interface with computers on a regular basis will likely benefit their computer literacy, which can be considered a 'critical filter' for the employment market of the future (Heinssen, Glass & Knight, 1987, & Miura, 1987, as cited in Hoskins & van Hooff, 2005). Students expressed a vision for using what they deem as "everyday technologies" not only in the classroom for academic engagement, but for preparation for future jobs (Spires et al., 2008). Besides that, students desire for schools to relate to future careers that they may have and their ability to imagine new uses of technology, which were interactive and media-oriented (Spires et al., 2008). For instance, by introducing children to electronic books at an early age they will gain experience with all of the characteristics of such technology and become acclimated to twenty-first century devices for reading. The ability to use digital resources is a major factor in success of the future workforce (Law, 2007, as cited in Jones & Brown, 2011).

By using technology in the classroom, students develop critical thinking and collaboration skills, which are two needed skills for lifelong learning. By the same token, five major skills that are fostered by using smart classrooms include information skills (literacy), higher order thinking skills, communication and cooperation skills, skills to use technological

tools, and learning skills (Manny-Ikan et al., 2011). Students can draw on real, personal situations and experiences through critical and practical thinking (Mason, 2011). Moreover, students begin to understand the critical importance of collaboration related to understanding difficult issues (Muire et al., 1999).

As an illustration, after students in a study created a video to represent key aspects of the topic, they were able to demonstrate an even deeper understanding of the material and they were forced to think critically and create a representation of the matter for non-science audiences (McCormack & Ross, 2010). In addition, students can profit from an interactive and engaging environment with a range of learning scaffolds and supports (Krantz & Eagley, 1996, as cited in Hoskins & van Hooff, 2005), which may enable them to broaden and make sense of their experience (Hammond & Trapp, 2001, as cited in Hoskins, & van Hooff, 2005). By and large, collaboration between student researchers and the mutual respect they gain as they share information via class presentation or over electronic mail demonstrates the skills needed in real life situations (Muire et al., 1999).

A major advantage of using technology into specific content areas is it makes connections between content and pedagogy (Donovan et al., 2011). Student participation is activated by the content connect-ability of subject-matter to everyday life, using active-involvement opportunities, students' sharing responsibilities in learning, and a system of rewards for effort and engagement (Aboudan, 2011). Finally, authentic experiences help students identify with the tasks that scientists perform and give students a chance to be scientists (Boles, 2011).

Additional literature shows many benefits to using technology in the learning environment. A series of studies show that through responses to personal narratives in the Quest

Atlantis learning and teaching project, a multi-user virtual environment, and the students offered deeper and better supported pieces of writings than their counterparts (Barab et al., 2005). In addition, the presence of computer-based technology changes the way subjects such as science and mathematics are being taught (Eskil & Balkar, 2010). Besides, games can also promote student use of technology in the classroom, which is another way that both student motivation and learning can be enhanced (Gareau & Guo, 2009). Likewise, the computer motivates and caters to different learning abilities. Students, for the most part, enjoy using the computer, and with enjoyment comes motivation (Eskil & Balkar, 2010).

Summary

Our responsibility as teachers is to develop students academically and socially in the 21st century world. Technology pervades every aspect of our world, is always changing, and will forever be a part of students' lives, even after they finish their formal education. Lessons taught which incorporate technology within the content allow students to become self-directed learners, in turn taking ownership and responsibility for their learning experiences. In a technologically infused classroom, the teacher's role changes to that of a facilitator and guide. Through the interactive use of technology, students have increased access to information, learn to participate and collaborate with others, make connections to real-world situations, thus becoming more motivated and engaged in the learning process.

Project Objective and Processing Statements

As a result of implementing technology in the classroom during the period of Monday, August 27, 2012, through Friday, December 14, 2012, the students of the teacher researchers were to improve motivation and engagement in their learning.

The teacher researchers accomplished the following tasks prior to implementing the research project:

- Redesigned lessons to incorporate technology
- Gained parental /guardian consent for student participation
- Developed data collection tools regarding technology and student motivation and engagement

Project Action Plan

The following project action plan outlines the steps the teacher researchers took to collect data, implement the intervention, and complete the proposed action research project. Included in the project action plan are 2 weeks of pre-documentation, 12 weeks of intervention, and 1 week of post-documentation.

Pre-Documentation

Week 1: August 27-31, 2012

- Sent home parent / guardian consent forms
- Collected and analyzed parent / guardian consent forms
- Distributed two faculty questionnaires via email

Week 2: September 3-7, 2012

- Collected and analyzed data from two faculty questionnaires
- Prepared technology-based lesson plans
- Distributed online Student Survey
- Collected and analyzed Student Survey data

Intervention

Weeks 3-14: September 10-December 7, 2012

- Teacher researchers implemented technology-based lesson plans
    - Technology tools that were used: computers / laptops, iPods, iPads, interactive whiteboards, student response systems, overhead projectors, document cameras, video and audio recording devices, computer software, etc.
- Continued to administer student behavior checklist

Post-Documentation

Week 15: December 10-14, 2012

- Redistributed online Student Survey to determine if motivation and engagement improved with the use of technology-based lessons
- Completed analysis of second online Student Survey

Methods of Assessment

The Student Survey was given to participating first-, fourth-, and fifth-grade students at Site A, and the participating eighth-grade students at Site B (n=116) on Monday, August 27, 2012. The purpose of the Student Survey was to gather information about the problem of student engagement and motivation in classroom activities. The Student Survey was redistributed on Monday, December 10, 2012, after the 12 weeks of intervention strategies were used, to determine any changes in student perception regarding motivation and engagement in their learning. See Appendix D.

Chapter 4

Project Results

The purpose of this action research project was to increase student motivation and engagement in technology-supported learning environments. Student motivation and engagement was documented based on information obtained from Student Surveys and faculty surveys. The intervention, which was implemented to increase motivation and engagement, included integrating a technology-supported learning environment. The intervention was put in place for 116 participating first-, fourth-, fifth-, and eighth-grade students. Four teacher researchers, at two different sites, carried out the interventions and research in various learning environments including elementary Math, Science, Social Studies, Language Arts, and eighth-grade French. The research was conducted from August 27, 2012, through December 14, 2012. The results of intervention were documented using the Student Survey at the completion of the intervention.

Historical Description of the Intervention

Description.

During the two weeks of pre-documentation from August 27, 2012, through September 7, 2012, teacher researchers created emails to accompany the Student Survey, Teacher Survey-Technology, and Teacher Survey-Student Motivation and Engagement, which explained the process in which the surveys were to be completed via a Google form. Furthermore, we sent home consent forms to the parents and/or guardians of the students and had the eighth-grade students complete a child assent form. The teacher researchers began to prepare technology-based lesson plans. Finally, once the surveys were completed, we analyzed the data from the Student Survey and two faculty surveys. These two weeks of preparation were fairly simple

because the surveys were created online, so there was not a lot of administrative work or preparation necessary to begin the action research project.

Week one of intervention.

During the first week of intervention from September 10, 2012, through September 14, 2012, we began to implement technology-supported learning in our classrooms. Teacher Researcher 1 took students to the computer lab and assisted them as they entered their username and password to log onto Microsoft PowerPoint. Students accessed the program without difficulty. They followed the steps as shown on the projection screen to begin creating a PowerPoint presentation about their favorite animal. It was a long process to get them to the actual PowerPoint template, as the program was not set up on all the computers. Due to the delay, class had to be continued the following week. Although this was an issue, the students were excited to begin working on a PowerPoint presentation.

Teacher Researcher 2 used various technological tools to engage her students to complete tasks and check for understanding. The document camera displayed the daily homework on the whiteboard. Students took turns coming to the board and showing their work. Others used this opportunity to check their own answers and see how they were able to grasp the language concept covered that day. During reading, students watched a video clip, as it was projected on the interactive whiteboard, about animals interacting in their own habitat. Later that week, they went down to the computer lab to work on reports. All of the students were given their individual login information to use when working on a Google doc. We had some login issues in the beginning, but after helping students, they were able to begin their project. They used a Google doc to type their individual animal reports. Students were able to read and comment on each other's work as they viewed the projects, which were posted online. Parents also enjoyed

reading their child's work online. Parents also had the ability to see the projects of other students. At the end of that week, handheld Mimio Votes were used with the interactive whiteboard to discuss main idea and supporting details that were found in the weekly reading story. The fourth-grade students completed a five-sentence description about themselves using a Google doc. They shared the document with the rest of their classmates. As a culminating activity, the students reviewed for understanding by using the Mimio Votes to see how well they remembered the facts about their classmates. See Appendix D. Overall the students were able to learn how to use the Mimio Vote device because they resemble the handheld device most of them use with other gaming systems many had at home. Each student had a specific number they were assigned so that information could be gathered and used for assessment. A whole group discussion took place, which reviewed rules on how to select, use and put away the devices properly. Students needed to be reminded about playing with the question button, or waiting to answer, which wasted valuable instruction time.

Teacher Researcher 3 took students to the computer lab to make sure that they knew their username and password for their school Gmail account. They learned how to sign into their Gmail from the school website's homepage. We learned that technology does not always run smoothly and there were times that many students needed help logging in. Once logged into their Gmail account, the students in the class were told to request an invite from all the students in the class and the teacher, so we would be able to chat with each other at night if anyone needed homework help. This turned out to be very helpful because during this week, Teacher Researcher 3 had students email after school for homework help. In the classroom, Teacher Researcher 3 used Discovery Education to show a science video on the interactive whiteboard for the biome unit. Teacher Researcher 3's superintendent decided to have a workstation of six

computers installed into the Teacher Researcher 3's classroom. This would make it easier to have access to a computer almost instantaneously. Some glitches happened in the classroom at the workstation because we were all connected to one server and the students accidentally knocked each other off of the servers. So, our technology department separated the computers with different logins, so this problem would not occur again. The classes used the computer lab to begin research on the different biomes of the world. During reading class, Teacher Researcher 3 taught the students how to create a blog with Google blogger. They wrote their first blog this week. The students were so focused when they were blogging that you could hear a pin drop in the classroom because the students were so engaged. All math lessons were taught using the Promethean board. The teacher noticed that one class of students was more proficient in technology skills than the other class, but the other class became more comfortable by the end of the week. There were students in both classes that were quite proficient and became the right hand helpers of Teacher Researcher 3.

Teacher Researcher 4 used a Keynote presentation to present the notes and grammar points to students in an organized fashion. While this took some preparation time initially, it was worth the effort to be able to focus attention elsewhere during class instruction. A video presenting a conversation at a café in the target language was used to give students a sampling of the vocabulary as well as an example for a speaking task for which they would be responsible for completing. The interactive whiteboard was used to project photos of school supply and café item vocabulary for the students to use as visuals. It also was crucial for projecting homework assignments that were scanned and uploaded to the class website online. Finally, at the end of the week, the whiteboard projector was used to play music from the target language culture for students to hear and enjoy. Overall, Teacher Researcher 4 noticed that students intently watched

the video and made positive comments about it, as well as began interacting within the target language, a goal of the course.

Week two of intervention.

During the second week of intervention from September 17, 2012, through September 21, 2012, Teacher Researcher 1 had students continue creating their PowerPoint presentation on their laptops. They followed the instructions from last week and logged on with ease. Once they retrieved their templates, they began to type their information on their chosen animal. Students were able to insert clip art images. Teacher Researcher 1 assisted them so they could print their presentations. Students were able to share their presentations in small groups. They were pleased with their project as each commented on the pictures chosen.

Teacher Researcher 2 continued to use the document camera to review homework assignments by having the students make the corrections using the Mimio stylus on the board. Reading class was conducted on the interactive whiteboard by engaging the students to review specific vocabulary terms by matching set images to the given meanings. Finally, a word bank was used to have the students choose the correct word to fit the blank in each given sentence. See Appendix E. Social Studies class incorporated the usage of Mimio Votes to check for understanding throughout the United States lesson on government, landmarks and symbols used across the United States. As an ongoing assignment in reading, students were allowed to independently take Accelerated Reading tests to meet their 1st quarter reading requirement. Most of the students were responsible about reading independently and passing Accelerated Reading tests on the classroom computer. Not every student was expected to reach the set goal.

Teacher Researcher 3 continued blogging with her students with Google Blogger. The students blogged about what they had been working on in reading and science class. They

learned how to post comments on each other's blogs and for homework, they posted a comment on an assigned classmate's blog. The students used the computer lab to continue their research on the different biomes of the world. Teacher Researcher 3 used the interactive whiteboard with lessons created with ActivInspire for the students to use as part of an interactive math class. The students took a test on exponents in a Google form that Teacher Researcher 3 emailed to them during the math class period. The best aspect of using Google forms for tests and worksheets is the script, Flubaroo, which grades the assignment for you and emails the grades to the students. One aspect that Teacher Researcher 3 found out about only having access to six computers in the classroom, was that stations of work had to be set up rotating the students through different subjects in groups, so that all work could be accomplished. Teacher Researcher 3's next thought was to sign out more equipment such as the iPads, laptops, and Chromebooks, so all of the students could work at the same time. The students used the iPads to work on a math worksheet, which was created on Google forms. Again, they had to access this through their Gmail account. Finally, Teacher Researcher 3 instructed two students on how to create the homework board on Homework Central which is part of the classroom website. The teacher has seen how proficient the students have become in such a short time of working in a technology-supported classroom.

Teacher Researcher 4 used the ActivInspire technology this week to begin keeping a daily record of notes taken. This helped with guided instruction of proper note taking all while immersing the students in the target language. Then students listened to sound files of speakers in the target language to practice oral comprehension. With prompting questions projected on the board, and several opportunities to listen to the sound files, students were able to complete this activity, which was at a level higher than their expected comprehension. This being said,

students used the sound files to imitate the authentic speakers and noticed speaking is more than just the words, but also the intonation and gestures.

Week three of intervention.

During the third week of intervention from September 24, 2012, through September 28, 2012, Teacher Researcher1 used Chromebooks so that the students would be introduced to a program called Khan Academy. They learned how to log on with a username and password. The students experimented with Khan Academy Math. They practiced adding and subtracting one-digit numbers. The document camera was used to show the students the steps necessary to log on and begin the lesson. They found this to be fun as they enjoyed clicking on answers instead of using paper-pencil. They also enjoyed the fact that they were allowed to work at their own pace and if an answer was incorrect an explanation was provided through the use of a video.

Teacher Researcher 2 performed a pre-test about figurative language using the Mimio Votes to check to see what they already knew and to compare those results at the end of this unit. Teacher Researcher 2 used integrated clips from the Internet to have the students make inferences from photos that were related to various emotions. Students enjoyed the photos, which stimulated conversations about feelings experienced at that particular moment. They used their Wetpaint account to answer given questions about human emotions. See Appendix F. The results were stored through an online grading system that can be used by the teacher to record information to use in assessment and data collection. Chromebooks were introduced to the students for the usage of blog postings to given questions that were assigned regarding the new novel, A *Cricket in Times Square*, started in reading class that week. They used Wetpaint to post their blogs. Students learned how to log in and respond to the assignment at hand. They could also access this from home if the assignment was not completed in class or if the teacher

assigned something in the future that they will need to complete. It took awhile for some students to learn how to log in and use Wetpaint. They stored their login information in their assignment books. The document camera was used to display the textbook on the interactive whiteboard for the students to orally read the chapter for the day. It was a nice touch to see the text on the screen without needing all students to take out their textbook.

This week, Teacher Researcher 3 created three math worksheets on Google forms and the students used the iPads three days this week to work on these worksheets. Ten laptops and the six classroom computers were used for the students to blog about the events that were happening in their novel. Signing out all this technology at one time was very beneficial to the students. Each student was assigned a partner to whom they would comment about what they had blogged about from the chapter read. In science class, the students used the laptops and Chromebooks to continue researching their biomes for their journals. The students were also introduced to XtraMath, a website to use for math reinforcement at home. They were given passwords and logins and practiced using it on the iPads.

This week, Teacher Researcher 4 continued to use authentic sound files for student oral comprehension practice. Students listened to a phone call, a poetry reading, and samples of phonetic explanations. Students began their first project in which two days were spent in the computer lab researching three different animals from three different continents of the French-speaking world. Students completed their research in both French and English but they were given direction on how to properly lookup necessary words in the online French dictionary versus an online translator. Finally, students completed a progress check (quiz) on vocabulary, using a Google form as the assessment media. They used a classroom handout with animals on it and had to identify the body parts and type their responses into the Google form. Answers were

recorded and analyzed on a Google spreadsheet. Teacher Researcher 4 tried using the script, Flubaroo, to grade the assignment electronically but ended up grading by hand to have greater subjectivity in the grading task. All in all, Teacher Researcher 4's students seemed to be interested in using the Google technology and thought it was interesting that the results were aggregated within a spreadsheet once they clicked "submit" on their screens.

Week four of intervention.

During the fourth week of intervention from October 1, 2012, through October 5, 2012, Teacher Researcher 1 had students use the laptops and create a PowerPoint presentation on their favorite pet and what tricks their pet could do. See Appendix G. This was an activity that coincided with the weekly reading story. Students responded well as they had so much to say about their pet. This project ended up taking another day to complete.

Teacher Researcher 2 continued to use Wetpaint to respond to questions posted for their daily assignment in Reading Class. They also used a Google doc to complete and share spelling sentences they created through the usage of the 10 list words for the week. See Appendix H. Teacher Researcher 2 responded to them via this document and posted those grades for them to see. The only problem we found this week was that a few students were unable to access the assignment due to computer issues at home. The laptops were used to take a reading quiz through the Socrative Site. The results showed a problem with the student comprehension of passages assigned for the week. The teacher used these result to review and check for understanding before moving on. Another issue with the Socrative Quiz was that parents did not have a paper copy of the quiz to review with their child.

Teacher Researcher 3 had the students continue their research on the different biomes in science class by using the computer lab. Students blogged about their weekly activities and each

student had to comment on an assigned student's blog. Teacher Researcher 3 used Discovery Education's e-book for science class to learn about the desert habitat. To teach concepts about decimals in math class, the teacher used Promethean Planet's ActivInspire lessons for the whole class. After the lesson, the class used the iPads for practice on different websites that Teacher Researcher 3 found for decimal practice.

Teacher Researcher 4 used programs such as Google Drawing, Kidspiration, Pixie, etc. to have students draw and label animal body parts in French. Students continued research for their French animal projects by using the computer lab. One drawback was the ease of availability of online translators. Students had to be taught that these were not as reliable as they thought and furthermore, how to correctly search an online dictionary for words they needed. This week all students across the school were finally introduced to the Google applications if they had not had a chance to get started already. Teacher Researcher 4's students were already familiar with the Google form application, but now a calendar was shared with all students to keep track of all of their teachers' assessment plans. This week it was a pleasure to see students using technology with which they were already familiar, but it was also nice to have students try using the new application available, Google drawing. However, one downfall of technology in a World Language classroom is the readily accessible online translators. Students have to learn the downfalls of using these and the negative effect on their language learning.

Week five of intervention.

During the fifth week of intervention from October 8, 2012, through October 12, 2012, Teacher Researcher 1 had the students use Chromebooks. They logged on to the first-grade reading site and played games which involved the use of their spelling and vocabulary words. They viewed animations and sound effects using their headphones. Students then continued with

each group viewing a slideshow. They discussed the slide show with each other and also practiced their typing skills by playing an online game that implemented the proper hand and finger placement. The reactions from the students showed that they could work individually and stay on task.

Teacher Researcher 2 used the computer lab to have the students brainstorm scary story ideas on Kidspiration. After they had their graphic organizer completed, they wrote a rough draft on a Google doc. Each student had a partner who reviewed and edited his or her work. That night they were asked to have a parent review their stories. The next day, they used laptops in the classroom to write their final copy and submitted them to the Pioneer Press. Although there was not a winner amongst the fourth-grade class from Site A school, students were proud of the accomplishments and all of the hard work that went into this assignment.

This week, Teacher Researcher 3 created two more Google forms as the worksheets for math class. The students seemed to be more focused and engaged in class when they are working on Google forms for their assignments. The teacher created a Google doc with comprehension questions for the novel in reading class. See Appendix I. The students learned how to access it through their Gmail, copy, and rename it. They then learned how to type in their answers and electronically share it with the teacher, so it could be graded and shared back with them. Using Google docs for the comprehension questions was a motivator for the students to answer questions in reading. They were engaged during class and were excited to finish it at home.

Teacher Researcher 4 continued to work on French phonology with students through the use of authentic sound files in the target language. Also, a Google doc worksheet was distributed for the first time via email to students. Directions were listed in the email, and students learned

how to make a copy of the read-only document, rename it using the required naming scheme, and then complete the work on the online document. The ease of typing was helpful for many students and they also were able to practice using proper shortcuts for accents in the target language. This assignment was shared with Teacher Researcher 4 electronically and was done so successfully. See Appendix J.

Week six of intervention.

During the sixth week of intervention from October 15, 2012, through October 19, 2012 Teacher Researcher 1 set up the reading series website as a bookmark so that it would be easier for the students to access the reading program. Students used the laptops for practicing their spelling words as they typed each of their words five times. The students also used the laptops to research their vocabulary words via Google and find images that identified the words. The ELL students especially enjoyed this, as they were able to identify with the vocabulary words by viewing a picture.

Teacher Researcher 2 used the interactive whiteboard with a reading lesson about the usage of figurative language. The topics of onomatopoeia and alliteration were taught through and interactive lesson that used sliding boxes, popping balloons and other props to help memorize the rules associated with these forms of figurative language. Students loved the interaction and sound effects that were embedded in the lesson. Students used the Mimio tools to respond to given questions and submitted the correct answer as they came up. Images were used on the board to match Social Studies vocabulary terms to the correct image. Finally, they responded to two blog posts regarding the details found in the reading passages given. It was nice to be able to respond to the blog via the Internet. The students were able to get an instant

response from me as I graded them from home. It was a pleasant way to have a student-teacher interaction about given assignments.

Teacher Researcher 3 instructed the students in creating a Google Presentation and a Glogster. The students were to choose either form of presentational media to create a project about their favorite biome. The Chromebooks were checked out daily during science class for the students to work on and complete their project. They also learned how to access their projects at home, so that they could work on them after school. The students responded happily to their ability to work on this project at home. Some were so excited about it that their parents even emailed me about how this was such a great experience. In vocabulary class, the students continued taking their tests on a Google form.

This week, students in Teacher Researcher 4's class presented their "Carnival des Animaux" projects for the duration of three days. Technology was not a requirement, but rather an option as the final project was differentiated and students had choices in a method of presentation. Also, a Google doc was shared with students for extra practice for the test. This document was also a hub for students to ask questions and for the teacher to promptly respond. Having Google docs for collaboration has proven to be successful for students who want to take advantage of extra learning and studying opportunities. A great tool in Google docs is the "revision history" option in which one can see any changes that have been made to the document and by whom. This proved beneficial to Teacher Researcher 4 because she could see who was using the document for extra practice and who had written which questions specifically when they would be seemingly anonymous to others.

Week seven of intervention.

During the seventh week of intervention from October 22, 2012, through November 26, 2012, Teacher Researcher 1 had students view an interactive presentation on the whiteboard through the use of Promethean Planet. This presentation was used for their math class as students were working on patterns. Students viewed different slides that showed various shapes and colors used to create a pattern. Students were then able to come up to the whiteboard and with the use of the pen, choose pictures to slide to the correct locations. Students enjoyed this activity as they were rewarded with either clapping or cheering sound effects.

Teacher Researcher 2 used pre-made lessons found online for the interactive whiteboard to introduce a new unit on nouns. The students were able to interact with the board to move images in the proper categories to describe a word that is a noun. They loved the sound effects used to show a correct answer. The next day, the Mimio Votes were used to check for understanding via a multiple-choice quiz. Students liked the anonymity of their responses and the graph that came up after each question to see how they performed as a class. They could even click a button if they needed help or had an individual question. The class continued to use the document camera for homework review and to project samples of individual students to show their work for the others to see. They liked when the teacher chose their paper to share with the rest of the class. Chromebooks were used to respond to questions about the chapter they were reading about and to add blog postings. The teacher commented on their answers through this blog posting.

In science class, Teacher Researcher 3 had the students finish their Google presentations and Glogster posters about the biomes. In the computer lab, the students worked on the Gameaquarium website to reinforce their language arts skills. In reading class, Teacher

Researcher 3 taught the whole class how to use Inspiration to create a character web by projecting it onto the interactive whiteboard to show an example. The students then used the 6 classroom computers and 10 signed out laptops to create their character webs about a character from the novel *Sign of the Beaver*. See Appendix K.

Teacher Researcher 4 integrated iPads into the classroom for the first time this week as they were finally available for use as a World Language Department initiative. Students were excited to get the iPads in their hands for the first time, but before this could happen, basic procedures and expectations were discussed. Students practiced using various applications for productivity to become familiar with them for use in the future. They seemed to be very excited to finally be able to have the iPads in the classroom, since they heard this technology would be available at the start of October. Having the iPads in the classroom, however, caused a greater need for classroom management and attention to students' actions. All in all, the students seemed motivated to be able to use the technology and not have the privilege revoked for poor behavior.

Week eight of intervention.

During the eighth week of intervention from October 29, 2012, through November 2, 2012, Teacher Researcher 1 checked out iPads for each student to use during their reading block. The students played a game that reinforced first-grade sight words. The game also introduced the students to second-grade sight words. Students were able to take an online quiz, which recorded the number of words they recognized. All students received passing grades on their weekly spelling test.

Teacher Researcher 2 used the laptops in class to gather data about the five Great Lakes in the United States. They stored this information on a Google doc. Later that week they learned

how to pull this information up on half of the screen, and create a table in Excel on the other half, to make a table showing the data on the Great Lakes from largest to smallest in size. These were later printed and displayed in the classroom. It took some time to help all students learn how to use this split screen feature, however, this technique was sure to be helpful to them in the future. They were amazed at how the screen could be set up to use two different programs at one time.

Teacher Researcher 3 and the class taught their second-grade reading buddies how to create a Glogster. The classes got together and researched the second-grader's favorite animal and the fifth-graders taught the second-graders how to create their poster in Glogster. It was very comforting to observe how very proficient the students were becoming at creating multimedia projects. It was also very interesting to see the students step up and help each other when problems arose. The class wrote about their monthly activities in their blogs. Sometimes, it was difficult for the students to log onto their Gmail due to their own mistakes in their username or password. The math classes worked on two Google forms created from worksheets in the workbooks.

This week, Teacher Researcher 4 was out of the classroom for three days due to an Outdoor Education field trip. That being said, students used lessons planned out on Teacher Researcher 4's wiki in order to experience some cultural learning opportunities. See Appendix L. Students watched videos, explored various websites, read folklore in the target language, and responded to prompts included on a handout created ahead of time. The time spent preparing these lessons before her absence was well worth it when Teacher Researcher 4 returned to school and witnessed the progress students made. Also upon Teacher Researcher 4's return, students were introduced to QR (Quick Response) codes and their use for recording information related to them. In class, Teacher Researcher 4 had QR codes associated with her website, wiki pages, and

other web pages in which she wanted students to easily visit. The students used the QR code scanners on the iPads to scan the code and access the websites quickly and easily. This was helpful for students so they did not misspell the URL or inadvertently go to the wrong site. Students also expressed favorable feelings about the use of QR codes because there was an element of surprise associated with where the QR code would take one when it was scanned.

Week nine of intervention.

During the ninth week of intervention from November 5, 2012, through November 9, 2012, Teacher Researcher 1 presented students with a Venn diagram on the interactive whiteboard. The students were exposed to a Venn diagram and taught how this organizes text. The teacher and students completed the Venn diagram by comparing and contrasting the differences between a penguin and a bird. See Appendix M. The teacher used a template from Mimio to display the diagram. As a whole group, students provided facts about each and the teacher recorded the facts by typing on the computer for the students to see. The facts were displayed on the interactive whiteboard for the first-graders to view. The teacher was able to print the Venn diagram with the recorded information for each student to view and place in his or her portfolio. Students were pleased, as they were able to work as a group and have actual visual results to share.

Teacher Researcher 2 continued to build on the usage of using a Google doc to complete given assignments. Four stations were used at the same time, during a reading lesson. Chromebooks were used to take a short vocabulary quiz, iPads were used to access a game using figurative language, laptops were used to type sentences in a word document using the vocabulary list word of the week, and the interactive whiteboard had the students move character

traits under the correct person they described. Each station only lasted 10 minutes, but once the students were comfortable with the directions, activities went smoothly.

Teacher Researcher 3 used Inspiration again to show the students how to make a Venn diagram. The class used this to compare and contrast the movie and the novel, *The Sign of the Beaver*. Teacher Researcher 3 instructed the students in the use of Microsoft Publisher for the class to create survival brochures for their novel. See Appendix N. The students were very engaged while creating the brochures. Their brochures were very creative and looked professional. The classroom computers and the laptops were used for this project.

This week Teacher Researcher 4 had students complete activities on her wiki once again. Students reviewed authentic menus from various cafés and restaurants in France and responded to questions accordingly. Students completed listening activities in French, using the projector's speakers for all to hear well. Finally, Teacher Researcher 4 presented students with a self-created iMovie on her family in order to introduce the vocabulary as well as an authentic assessment option for the upcoming Module (chapter) project. See Appendix O. Another option for the project was presented to students using a Keynote presentation with weird or goofy family photographs to analyze and create stories about the families in French. See Appendix P. Again, students enjoyed seeing teacher-created samples of the upcoming project and were in a frenzy talking about what they wanted to do. The excitement was undeniable and was very pleasing for a teacher to witness.

Week ten of intervention.

During the 10th week of intervention from November 12, 2012, through November 16, 2012, Teacher Researcher 1 implemented four of the six technology centers within the first-grade classroom. The use of Chromebooks, iPads, laptops, and the interactive whiteboard were

incorporated. Students used the Chromebooks for spelling and vocabulary reinforcement. They used the iPads to type words with long vowel sounds, laptops to play a game with inflectional endings, and Promethean Planet to practice compound words. See Appendix Q. All four centers demonstrated full engagement, excitement, and enthusiasm as the equipment was fully charged and all programs were available to be used.

Teacher Researcher 2 showed a short clip from Discovery Education about the travel and life of the pioneers arriving in the Northeast United States during the early 1600s. Students took notes and wrote a short blog response about the hardships and difficulties early pioneers faced in their travels to the United States. They used a Google doc to write a time in their lives when they tried something new. They needed to list one positive and one negative event that occurred, reflect on whether it was worth it, and whether they were happy or unhappy about the outcome. When students made this self-connection, it made what they learned about the early settlers to the United States more meaningful.

This week, Teacher Researcher 3 had the students write blogs on the many aspects of their learning within the last month. The teacher had the students take a decimal multiplication test and a vocabulary test using Google forms. The script, Flubaroo, had become invaluable for correcting these assignments. Teacher Researcher 3's room undeniably began the transformation into a paperless classroom. Furthermore, the teacher scanned a divisibility math song to use on the interactive whiteboard for all the students to learn the rules of divisibility.

Teacher Researcher 4 used several Google forms this week, an iMovie with examples of describing family members, and the scan option on the printer to send worksheets to herself. The Google form was used as a survey to get students' immediate opinions about family members and physical descriptions as well as descriptions of character. Using the "show summary of

responses" option on the Google forms, Teacher Researcher 4 was able to show a graph of students' responses immediately. Moreover, students enacted scenes from a café in front of their peers, while those in the audience responded to predetermined questions on another Google form. Teacher Researcher 4 was able to monitor written progress on the Google spreadsheet, where responses were recorded, and gave immediate feedback and answered questions. This proved to be beneficial for any questions students had right away.

Week eleven of intervention.

During the 11th week of intervention from November 26, 2012, through November 30, 2012, Teacher Researcher 1 had students view various websites, which showed how to make a handmade musical instrument. The students viewed these sites within the classroom and made notes on any instruments that captured their attention. They were able to visually see other children creating a homemade musical instrument and the steps that were necessary to do so. They demonstrated much excitement, as each one would be presenting his or her instrument to the class while they mentioned certain facts about it. All presentations were recorded with the use of an iPad and posted on the school's website.

Teacher Researcher 2 started having the students create their essays about the person they chose to read and write about in their biography reports. Students created a five-paragraph essay in a Google doc to describe the person they read about and researched for the second quarter reading requirement. They also created a cover for their report by inserting an image that would represent something important about their person. These reports were shared in class and printed out for a display in the hallway. For social studies class, groups were made to have students create a PowerPoint presentation to teach the class about the part of the chapter they were given regarding the Northeast region of the United States. The students did a good job describing the

key points. They liked being able to teach others about what they learned. It was helpful to work as a team to find out what were the main ideas of their assigned passage and how to summarize what they read.

This week, Teacher Researcher 3 had the students dissect owl pellets and then they wrote up their lab report with the process and findings in a Google doc. The students shared their documents with each other. The students worked on their Google docs with such ease. They were becoming experts at using this tool. Another Google doc that the students worked on was the comprehension questions for their novel, *From the Mixed-up Files of Mrs. Basil E. Frankweiler.* They had to finish the document for homework and share it with the teacher. Sometimes, this was a problem because some students had computer problems at home, but most went to the library to complete their assignments. The students took a vocabulary test this week on Google forms.

In Teacher Researcher 4's class this week, students used QR codes with the iPads to look up given clues. Teacher Researcher 4 created the clues ahead of time, and generated QR codes associated with each clue to provide students with descriptions of potential suspects. Students were trying to use the clues and the iMovie created with the suspects to see who stole Teacher Researcher 4's Eiffel Tower. See Appendix R. Students enjoyed hearing the "James Bond" music playing while they were solving the mystery associated with the Eiffel Tower and they continued to have success listening to audio clips of the target language. Also, the interactive whiteboard was used to project pictures of actions taken in a typical day, so students were able to associate these pictures with pronominal verbs to describe one's daily routine. More sound files were used for students to listen to different actions, and they wrote sentences in French describing what these people were doing. For Teacher Researcher 4, compiling the audio files

and creating presentations and videos took a lot of time outside of class, but the effort paid off based on the motivation of the students to participate in class activities.

Week twelve of intervention.

During the 12th week of intervention from December 3, 2012, through December 7, 2012, Teacher Researcher 1 began to incorporate a weekly written response reflection in the classroom. The teacher pulled up a picture from Google and copied and pasted it in Microsoft Word. The teacher enlarged the photo and displayed it on the whiteboard using a projector. The students were required to view the picture prompt and decide whether or not it reminded them of anything. They practiced using different skills as well as proper sentence structure. After the assignment was completed, the picture prompt was printed for each student. They glued the picture on their reflection sheet. Students gathered on the carpet and shared their responses with one another. Most students were shy when sharing their project with one another, as they were not very confident about their writing ability.

Teacher Researcher 2 used a story in the weekly reading class about Benjamin Franklin, and had the students research interventions that made life easier for Americans during the 20th Century. They wrote a brief description about their chosen invention on a Google doc. They inserted an image to show this invention and printed this project out to use in a classroom display. Then each student inserted his or her invention into the document chronologically according to the year it was made. To wrap up the assignment, they were asked to create an invention that would make their lives easier. It was interesting to read what they created and why it would help them.

This week, Teacher 3 introduced a project through PowerPoint about Egypt from a previous visit to the Metropolitan Museum in New York City. This coordinated with the novel,

From the Mixed-up Files of Mrs. Basil E. Frankweiler. The students used online websites that were given to them by the teacher to research suggested topics about Egypt. After they chose a topic and did the research, they were to make a Google presentation or Glogster including pictures and videos, citing the websites used. See Appendix S. The students used iPads, Chromebooks, laptops and computers for their research. They seemed very motivated and engaged while they were working on the research. The students looked at videos on the websites of mummification and even called each other over to view what they were watching. The superintendent was in the classroom and was very impressed to see the students so engaged and excited. They did not want to stop at the end of the class period. To create their projects, they used computers and Chromebooks. The class worked on Google forms for three math worksheets this week and also took their vocabulary test on a Google form. See Appendix T. Teacher 3 used Discovery Education to show a video on matter and use the lab sheets to answer questions about the video. Also, the students worked on a virtual lab in science on the Chromebooks for the properties of matter.

Teacher Researcher 4 used an iMovie to present the vocabulary for introducing and describing family members. Students completed a Google form to respond to questions asked based on what they heard in the iMovie. It was remarkable to see the number of accurate responses as their answers were aggregated in a Google spreadsheet. Students also learned prepositions for situating objects in space. They looked at pictures of various types of French cheese in relation to a table to learn the prepositions of location. Then, QR codes were used again with photos for students to use, and clues with prepositions, to decipher where the Eiffel Tower was found. This was an extension upon the “Who stole the Eiffel Tower” QR code activity and students seemed happy to revisit the assignment.

Week one post-documentation.

During the post-documentation week from December 10, 2012, through December 14, 2012, the teacher researchers re-distributed the Student Survey to students via a Google form. Student results were compiled within a Google spreadsheet and there were no issues with administering the survey or collecting the results. After gathering the results of the survey, the teacher researchers analyzed the data received from the tool and noticed that students were more motivated and engaged in class when technology tools were implemented.

Overall, we felt that our action research project went well based on the implementation of our intervention strategy. The students appeared to be interested and excited when technology was integrated into the classroom learning environment. We were pleased with the general ease of implementing the technology-supported learning environments and the availability of various educational technologies in our classrooms and buildings.

Interventions.

The intervention strategy implemented by the teacher researchers was to integrate a technology-supported learning environment. The teacher researchers made the conscious effort to create technology-based lesson plans for use throughout their curriculum. In the past, the teacher researchers felt they already used technology in the classroom a fair amount, but the frequency and duration was not as prevalent as during the intervention process. The teacher researchers thought when using technology, the result would increase student attention (task engagement). Also, this meant students would perceive learning activities as being more relevant, which would increased student confidence, and result in greater student satisfaction with that they have learned (Kim & Frick, 2011). The teacher researchers determined it was important to plan for the use of technology in the classroom and anticipate the learning outcomes

of what students would be expected to accomplish with the implementation. The use of various innovative technological tools, programs, and software can be used to promote student engagement, motivation, and ultimately enhance the quality of the learning experience for students (Brunvand & Byrd, 2011).

Reflection.

Technology offers many different learning opportunities. I, Teacher Researcher 1, now have the confidence to say I can use technology in any subject area at any grade level, and it can create a new learning experience as it assists teachers and students to further their thinking and discussion. It allows for students to become engaged and active by collaborating with one another and expressing themselves. As a teacher researcher, I learned that my students are very much visual learners. So, using visual technology such as videos, DVDs, Internet sites, journals, graphing charts, and even picture prompts will assist my students in understanding and comprehension in all subject areas. I know that my students learn best when they can actually see a picture, word, shape, or example right in front of them. Students are learning that by seeing the main idea, they listen better, read and comprehend better, and participate more. I have learned that having an instructional plan featuring technology should include flexibility, enable new relationships and communities, provide access to resources, colleagues, and experts, spread professional development activities over time and integrate them directly with classroom practice. Through this process, technology has enhanced the students' learning through motivation and enthusiasm.

As I have advanced through this master's program, I, Teacher Researcher 2, was pleasantly surprised in my ability to embrace change and to incorporate new ideas into my daily role as a fourth-grade elementary school teacher. I have gained insight into how technology can

be implemented into daily activities. Through the use of laptops, Chromebooks, iPads, iPods, the interactive whiteboard, Mimio tools, and other devices, my classroom has transformed into a technology-based learning environment. Students' enthusiasm and excitement was evident whenever technology was implemented and used to present new concepts and practice new skills that were introduced for the first time. As time goes on, technology evolves so quickly, and integrating it into education allows students the ability to take control of their own educational destiny and successful path towards the future. Technology provides the tools for students to find answers to whatever they desired. They can access so much information at the touch of a button. Learning how to navigate and use the tools available will make the possibilities endless as to what they will be able to learn in the future. Rules, guidance, and basic framework of curriculum are still very important, however. Teachers need to be the facilitator and person who watches the stages of growth of each individual student and provide feedback and assistance when needed. My goal is to help students see technology as a tool to help them advance into the 21st century. I have been blessed with a supportive family, dedicated and cooperative peers, and top-notch professors throughout this program and accommodating administration to help me reach my goal. Having a Master's degree has been a lifelong goal that I am close to achieving. I hope to use all that I have gained to make a difference for my students by being the catalyst in their educational path that allows them to become the best they can be.

I, Teacher Researcher 3, have discovered that my students have been more motivated and engaged daily by my implementation of a technology-supported learning environment. When I began this project, I had a strong desire to see every student excited and motivated to participate in all the class activities presented to him or her, and as a teacher, I already had a commitment to use technology. With the support from the administration at my school and their view of the

importance technology has for the 21st century learner, we have acquired a plethora of technology over the last three years. I was very fortunate to have a six-computer workstation installed into my classroom, which helped greatly with the ideas that I wanted to utilize to engage the students. So, during this action research project, I infused technology into all of the subject areas that I teach daily. I have transformed my classroom into a technology-rich environment. The students have become proficient using many different technological devices and applications. I feel that I am on the way to transforming my classroom into a paperless environment and that all of my students seem to be more excited and willing to do their assignments through this technology-supported learning environment. My vision for the students was to have them engaged, motivated, and to become self-directed learners. Through this project, I have seen a transformation in my class and their attitude towards their learning.

Through implementing a technology-supported learning environment, I, Teacher Researcher 4, noted that Internet-based technology and other educational technologies could be a useful resource for second language acquisition. Innovative resources such as iPad applications, computer software, and Web tools have assisted and revolutionized approaches to teaching foreign languages for me. As a teacher researcher, I have seen my students become increasingly autonomous in learning another language, and I myself have been able to learn collaboratively with my students. Over the course of the intervention period, I have been able to analyze the relationship between technology and foreign language learning, and I have noted several key improvements including motivation, research, and reading and writing in the target language. In regard to foreign language pedagogy, I have been able to foster task-based instruction (a smaller facet of project-based learning), the natural/communicative approach to language learning, and

even language immersion. The results I have seen are positive and hopeful for the future of language instruction in conjunction with educational technology.

Presentation and Analysis of Results

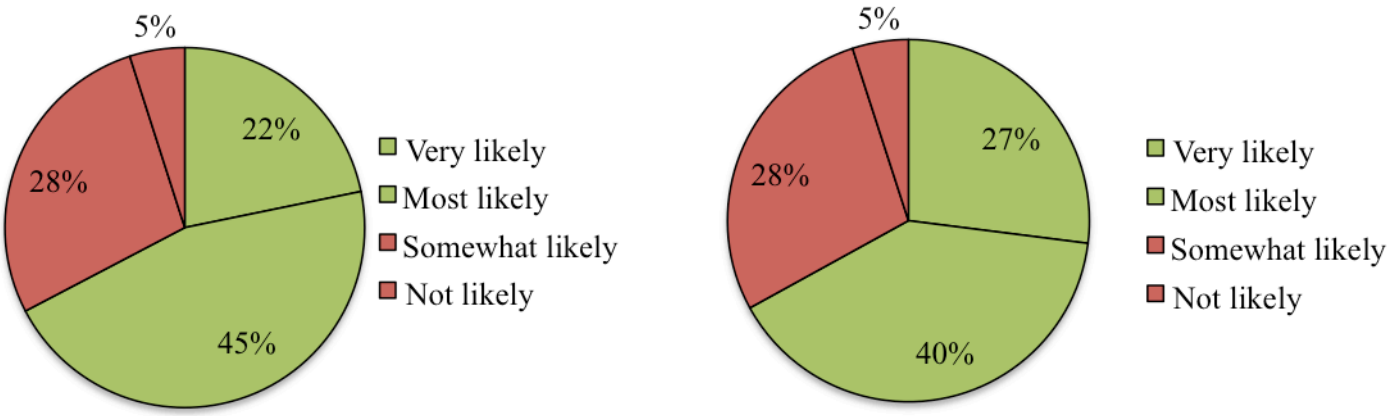
The purpose of this project was to increase student motivation and engagement by implementing technology-supported learning environments. The student research participants included 116 students in first-, fourth-, fifth-, and eighth-grade elementary and middle school. The teacher researchers administered one Student Survey to gauge their motivation and engagement in the classroom. This tool was administered during the pre-documentation weeks from August 27, 2012, through September 7, 2012 and the same tool as used during post-documentation from December 10, 2012, through December 14, 2012. The graphs shown below present the data for both pre-documentation and post-documentation.

Student Survey.

The Student Survey was used to gain insight into the thoughts of the students regarding their motivation and engagement in the classroom after participating in the research project. The survey was administered one time during the post-documentation week from December 10, 2012, through December 14, 2012 via an online Google form. Of the 116 students who participated in the pre-documentation survey, 114 completed the post-documentation survey for 98% participation. For all teacher researchers, the survey was administered during regular class time and students completed the survey using the computer lab, Google Chromebooks, and iPads. Results were automatically registered in a Google spreadsheet and all responses were anonymous. Two of the four questions elicited Likert style responses. Question one included responses such as *Very likely, Most likely, Somewhat likely,* and *Not likely* and question two included Likert scale responses such as *More likely, Less likely,* and *Makes no Difference*. The

remaining two questions provided a checklist of technology tools from which students could choose. In addition, students were provided space to include additional comments if so desired. See Appendix A for the Student Survey.

In Figure 11, the students responded to the question, "How likely are teachers to provide class activities that are related to your interests?" Of the 114 students surveyed, 67% of students (n=77) believe their teachers relate class activities to their interests.



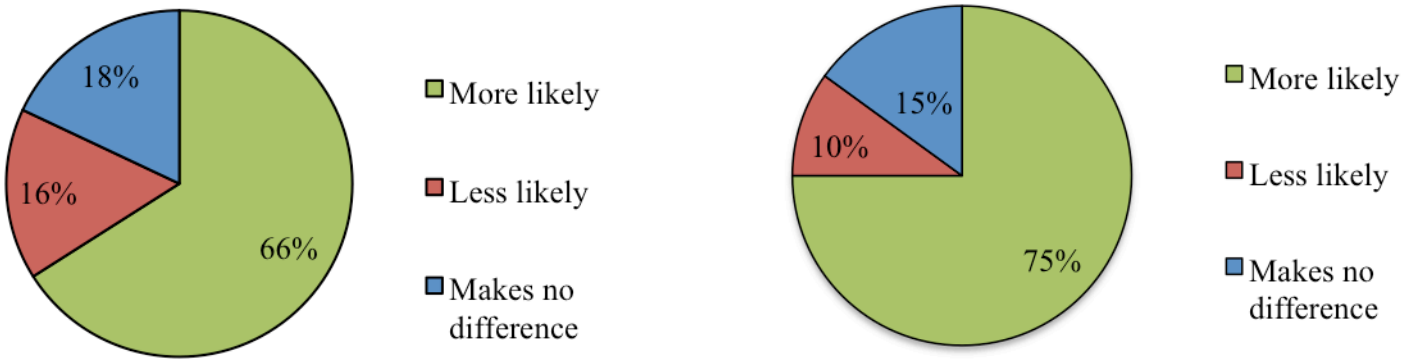
Pre-documentation (n=116)

Post-documentation (n=114)

Figure 11: Activities Related to Interest

Figure 11 shows that overall, students responded more positively to the question about teachers providing class activities that relate to their interest. The number of students who thought teachers were likely to provide class activities related to student interest remained the same from 67% (n=78) pre-documentation to 67% (n=77) post-documentation. The percentage of students who felt class activities did not relate to their interests also remained the same from 33% (n=38) pre-documentation to 33% (n=37).

Figure 12 shows student responses to the question, “How likely are you to engage in classroom activities when technology is used?” Of the 114 students surveyed, 75% (n=85) students are more likely to engage in classroom activities when technology is used.



Pre-documentation (n=116) Post-documentation (n=114)

Figure 12: Engagement Using Technology

Figure 12 shows an increase of 9% (n=26) of students who are more likely to engage in class activities when technology is used. A decrease of 6% (n=8) of students are less likely to engage in class activities when technology is used and furthermore, a decrease by 3% (n=4) of students say using technology makes no difference to their engagement in class activities after the intervention.

Figure 13 shows student responses to the question, “What technology tools do you enjoy using in school?” Of 328 responses by 114 students, the tools most enjoyed in school were computers/laptops (n=100, 28%) and the tools least enjoyed were iPods (n=58, 18%) post-documentation.

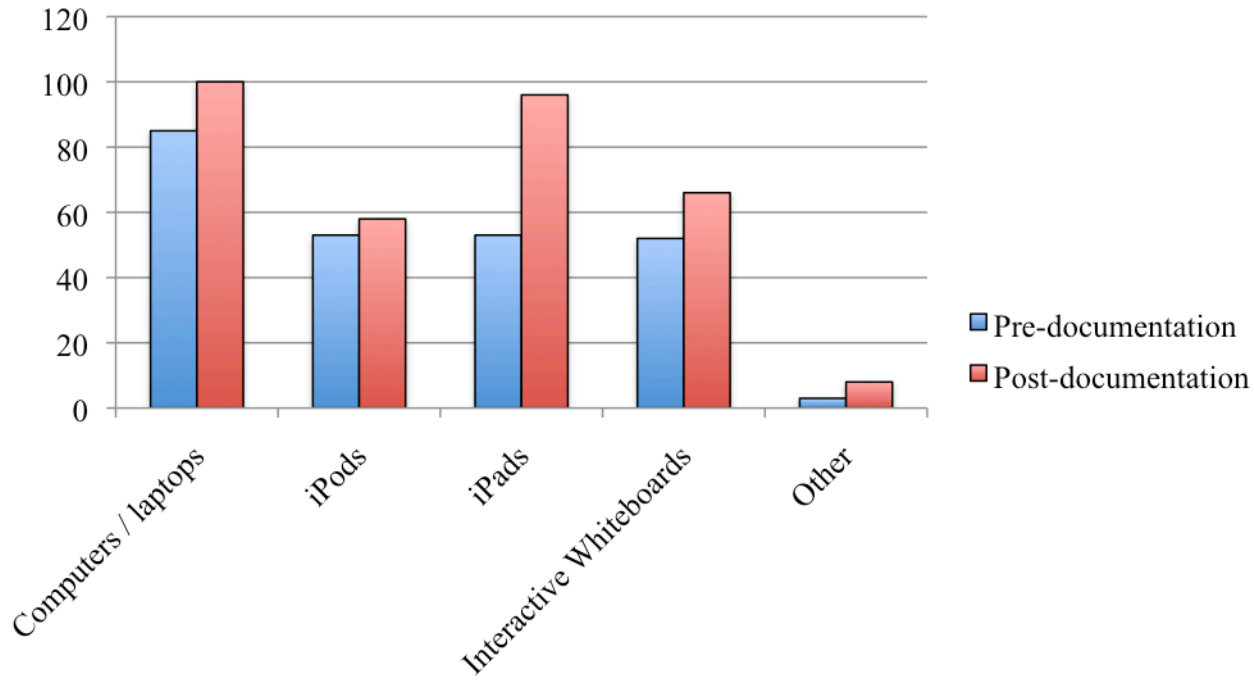


Figure 3: Technology Tools Students Enjoy in School (n=708)

Figure 13 shows that of the 116 respondents before the intervention, and the 114 student responses after the intervention, the tools most enjoyed in school were computers/laptops (pre n=85, 22%; post n=100, 28%). However, pre-documentation indicated that the interactive whiteboard was the least enjoyable technology tool according to student respondents, but after the intervention, the least enjoyed technology tool were the iPods (pre n=53, 14%; post n=58, 18%).

Figure 14 shows student responses to the question, “What technology tools do you enjoy using at home?” Of 328 responses by 114 students, computers/laptops (n=64, 20%) were also the tool the students most enjoyed using at home and the tools least enjoyed were the iPads (n=54, 16%), according to post-documentation.

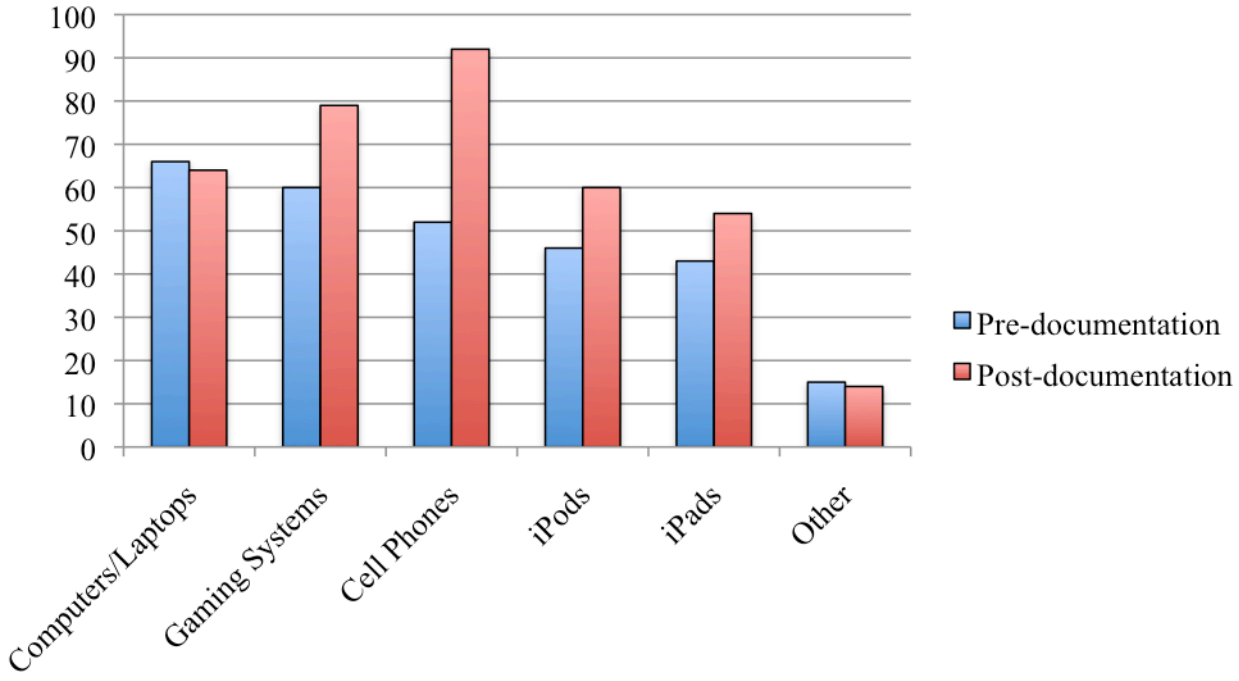


Figure 14: Technology Tools Students Enjoy at Home (n=708)

Figure 14 depicts of the 116 respondents before the intervention, and the 114 student responses after the intervention, the tools most enjoyed at home were computers/laptops (pre n=66, 17%; post n=64, 20%) and the tools least enjoyed were iPads (pre n=43, 11%; post n= 54, 16%).

Summary

After presenting the data from the Student Survey post-documentation, students overall felt teachers provided class activities related to their interests (Figure 11). Moreover, it was evident that students were more likely to engage in classroom activities when technology was

used (Figure 12). When comparing pre- and post-documentation surveys, the students' preferred technological tools, computers/laptops, remained the same at home and at school. (Figures 13 and 14).

Conclusions and Recommendations

Conclusions.

Based upon the results of the action research project, the teacher researchers concluded that students were more motivated and actively engaged in learning when using technology. Overall, the students' behavior was more animated towards the learning objectives when technology was used. The technology-supported learning environment improved student motivation and engagement by 9% after the intervention period.

Recommendations.

After implementing the intervention, the teacher researchers plan to continue incorporating technology into the classroom learning environment. With the results of our study in mind, students' animated feelings towards using technology in the classroom, and the practicality of implementing a technology-supported learning environment, we have already begun to look at our classroom instruction differently. We are committed to using technology in the classroom, being aware of opportunities to use technology within instruction, the educational technology available as web-based tools, as well as the accessibility of technology in our schools. It is our opinion that technology should support instruction, not supplant it. Technology should be infused as part of the instructional program as it allows for better access to instruction.

For teachers looking to enhance student engagement and motivation in their classrooms, we recommend implementing technology as much as possible to support instruction.

Technology is such a large part of students' lives in the 21st century, so it is another way to reach students of various abilities and interests. We believe our research project supports the benefits of using technology for motivating and engaging students, and teachers should implement a technology-supported learning environment in order to connect with learners of all types.

References

Aboudan, R. (2011). Engage them, don't enrage them – student voices and what it takes to participate. *English Language Teaching, 4*(1), 128-134. Retrieved from http://www.ccsenet.org/elt

Area 1 & 2 Public Library District (n. d.) *History*. http://area1&2library.org/

Area 3 (n. d.) *Community Information*. Retrieved from http://www.Area3.com/index.aspx?NID=134

Backes, C. (1994). Motivating students. *The Technology Teacher, 54*(9), 9-12. Retrieved from http://www.iteea.org/

Barab, S., Thomas, M., Dodge, T., Carteaux, R., & Tuzun, H. (2005). Making learning fun: Quest atlantis, a game without guns. *Educational Technology Research and Development, 53*(1), 86-107. Retrieved from http://www.aect.org/intranet/publications/index.asp

Barker, B. (1990). Planning, using the new technology in classrooms. *NASSP Bulletin, 74*(31), 31-37. doi: 10.1177/019263659007452907

Bekele, T. (2010). Motivation and satisfaction in Internet-supported learning environments: A review. *Educational Technology and Society, 13*(2), 116-127. Retrieved from http://www.ifets.info/

Bennett, K. R. (2011). Less than a class set. *Learning & Leading with Technology*, 22-25. Retrieved from http://www.iste.org/welcome.aspx

Boles, S. R. (2011). Using technology in the classroom. *Science Scope, 34*(9), 39-43. Retrieved from http://www.nsta.org/

Boon, R. T., Fore, III, C., & Spencer, V. (2006). Teachers' attitudes and perceptions toward the use of inspiration 6 software in inclusive world history classes at the secondary level. *Journal of Instructional Psychology, 34*(3), 167-171. Retrieved from http://www.projectinnovation.biz/jip.html

Brunvand, S., & Byrd, S. (2011). Using voice thread to promote learning engagement and success for all students. *Teaching Exceptional Children, 43*(4), 28-37. Retrieved from http://voicethread.com/media/misc/support/JTECVoiceThread.pdf

Cakir, O., Simsek, N., & Tezcan, N. (2009). A web based generation system for personalization of e-learning materials. *International Journal of Social Sciences, 4*(4), 283-286. Retrieved from http://www.sobiad.org/ejournals/journal_ijss/index.html

City-Data (n. d.) *Crime in Area 1*. Retrieved from http://www.city-data.com/crime/crime-Area3-Illinois.html

City-Data (n. d.) *Crime in Area 2*. Retrieved from http://www.city-data.com/crime/crime-Area3-Illinois.html

City-Data (n. d.) *Crime in Area 3*. Retrieved from http://www.city-data.com/crime/crime-Area3-Illinois.html

Citytowninfo (n. d.) *Overview Area 2.* Retrieved from http://www.citytowninfo.com

CLRSearch (n. d.) *Population growth and statistics*. Retrieved from http://www.clrsearch.com

CLRSearch (n. d.) *Racial/Ethnic Background*. Retrieved from http://www.clrsearch.com

CLRSearch (n. d.) *Chronic Truancy*. Retrieved from http://www.clrsearch.com

CLRSearch (n. d.) *Mobility*. Retrieved from http://www.clrsearch.com

Delen, E., & Bulut, O. (2011). The relationship between student's exposure to technology and their achievement in science and math. *The Turkish Online Journal of Educational Technology*, *10*(3), 311-317. Retrieved from http://www.tojet.net/

Donovan, L., Green, T., & Hansen, L. E. (2011). One-to-one laptop teacher education: Does involvement affect candidate technology skills and dispositions? *Journal of Research on Technology in Education*, *44*(2), 121-139. Retrieved from http://www.iste.org/learn/publications/journals/jrte.aspx

Encyclopedia of Chicago (2004). Retrieved from www.encyclopedia.chicagohistory.org

Eskil, H. B., & Balkar, B. (2010). Students' opinions on using classroom technology in science and technology lessons. *Journal of Educational Technology*, *9*(1), 165-175. Retrieved from http://www.tojet.net/articles/v9i1/9119.pdf

Filer, D. (2010). Everyone's answering: Using technology to increase classroom participation. *Nursing Education Perspectives*, *31*(4), 247-250. Retrieved from http://www.nlnjournal.org/

Frye, N. E., & Dornisch, M. M. (2007-2008). Teacher technology use and student evaluations: The moderating role of content area. *Journal of Educational Technology Systems*, *36*(3), 305-317. Retrieved from http://baywood.metapress.com/link.asp?target=contribution&id=444OW50087777510

Gareau, S., & Guo, R. (2009). “All work and no play” reconsidered: The use of games to promote motivation and engagement in instruction. *International Journal for the Scholarship of Teaching and Learning*, *3*(2), 1-11. Retrieved from http://dspaceprod.georgiasouthern.edu:8080/xmlui/handle/10518/3638

Harper, H. E. (2009). I've never seen or heard it this way: Increasing student engagement through the use of technology-enhanced feedback. *Teaching Educational Psychology*, *3*(3), 1-8. Retrieved from http://www.teachingeducpsych.org/

Hoskins, S. L., & van Hooff, J. C. (2005). Motivation and ability: Which students use online learning and what influence does it have on their achievement. *British Journal of Educational Technology*, *36*(2), 177-192. doi: 10.1111/j1467-8535.2005.00451.x

Hurwitz, C. (1999). A teacher’s perspective on technology in the classroom: Computer visualization, concept maps and learning logs. *Journal of Education*, *181*(2), 123-130. Retrieved from http://www.eric.ed.gov/ERICWebPortal/detail?accno=EJ617275

Illinois State Board of Education (n. d. a.) *Illinois Interactive Report Card*. Retrieved from http://iirc.niu.edu/School.aspx?schoolid=##

Illinois State Board of Education (n. d. b.) *Illinois Interactive Report Card*. Retrieved from http://iirc.niu.edu/School.aspx?schoolID=##

Jones, T., & Brown, C. (2011). Reading engagement: A comparison between e-books and traditional print books in an elementary classroom. *International Journal of Instruction*, *4*(2), 5-22. Retrieved from http://www.e-iji.net/

Kim, K., & Frick, T. (2011). Changes in student motivation during online learning. *Educational Computing Research*, *44*(1), 1-23. doi:10.2190/EC.44.1.a

Manny-Ikan, E., Dagan, O., Tikochinski, T., & Zorman, R. (2011). Using the interactive white board in teaching and learning: An evaluation of the Smart Classroom Pilot Project. *Interdisciplinary Journal of E-Learning and Learning Objects*, *7*(1), 249-273. Retrieved from http://www.informingscience.us/icarus/journals/ijello

Mason, R. B. (2011). Student engagement with, and participation in, an e-forum. *Educational Technology & Society*, *14*(2), 258-268. Retrieved from http://www.ifets.info/journals/14_2/22.pdf

McCormack, S., & Ross, D. (2010). Teaching with technology. *The Science Teacher, 77*(7), 40-45. Retrieved from http://learningcenter.nsta.org/browse_journals.aspx?journal=tst

Montgomery, J. (2009). Using audio books to improve reading and academic performance. 1-13. Retrieved from http://www.eric.ed.gov/PDFS/ED505947.pdf

Muire, C., Nazarian, M. J., & Gilmer, P. J. (1999). Web-based technology in a constructivist community of learners. *British Journal of Educational Technology, 30*(1), 65-68. doi: 10.11.11/1467-8535.00092

Parr, J., & Ward, L. (2011). The teacher's laptop as a hub for learning in the classroom. *International Society for Technology in Education*, *44*(1), 53-73. Retrieved from http://www.editlib.org/p/37354

Peck, A. (2004). CEC's Clarissa Hug teacher of the year. *Teaching Exceptional Children, 37*(9), 78-79. Retrieved from http://journals.cec.sped.org/cgi/viewcontent.cgi?article=1670&context=tecplus

Schwartz, B. (2009). Incentives, choice, education and well-being. *Oxford Review of Education, 35*(3), 391-403. doi: 10.1080/03054980902934993

Shrand, T. (2008). Tapping into active learning and multiple intelligences with interactive multimedia: A low-threshold classroom approach. *College Teaching, (56)*2, p78-84. doi: 10.3200/CTCH.56.2.78-84

Shriner, M., Clark, D., Nail, M., Schlee, B., & Libler, R. (2010). Social studies instruction: Changing teacher confidence in classrooms enhanced by technology. *The Social Studies, 101*(1), 37-45. doi: 10.1080/00377990903283999

Shroff, R., & Vogel, D. (2009). Assessing the factors deemed to support individual student intrinsic motivation in technology supported online and face-to-face discussions. *Journal of Information Technology Education, 8*(1), 59-85. Retrieved from http://www.jite.org/documents/Dol8/Jitev8p059

Site A Elementary School (n. d.) *Home*. Retrieved from http://www.SiteAschool.org/default.aspx

Site B Elementary School District (n. d.). *Site B Middle School*. Retrieved from http://www.SiteB.k12.il.us/

Smith, K., Sheppard, S., Johnson, D., & Johnson, R. (2005). Pedagogies of engagement: Classroom-based Practices. *Journal of Engineering Education, 94*(1), 87-101. Retrieved from http://www.jee.org/

Solhaug, T. (2009). Two configurations for accessing classroom computers: Differential impact on students' critical reflections and their empowerment. *Journal of Computer Assisted Learning*, *25*(1), 411-422. doi: 10.1111/j.1365-2729.2009.00318.x

Spires, H., Lee, J., Turner, K., & Johnson, J. (2008). Having our say: Middle grade student perspectives on school, technologies, and academic engagement. *Journal of Research on Technology in Education, 40(*4), 497-515. Retrieved from http://www.unc.edu/world/

Swan, K., van ‘t Hooft, M., Kratcoski, A, & Unger, D. (2005). Uses and effects of mobile computing devices in K-8 classrooms. *Journal of Research on Technology in Education, 38*(1), 99-112. Retrieved from http://www.iste.org/

Targeted Community Area of Commerce & Targeted Community Area Convention & Visitors Bureau (n. d.) *A brief history*. Retrieved from http://www.targetedcommunity.com

U.S. Census Bureau (n. d.) *Fact sheet: Area 3*. Retrieved from http://www.factfinder.census.gov

Using positive student engagement to increase student achievement. (2007, April) *The Center for Comprehensive School Reform and Improvement.* 1-3. Retrieved from www.centerforcsri.org/

Wu, H., & Huang, Y. (2007). Ninth-grade student engagement in teacher-centered and student centered technology-enhanced learning environments. *Science Education, 91*(5), 727-749. doi: 10.1002/sce.20216

Xu, H., & Moloney, R. (2011). “It makes the whole learning experience better”: Student feedback on the use of interactive whiteboard in learning Chinese at tertiary level. *Asian Social Science*, *7*(11), 20-34. doi: 10.5539/ass.v7n11p20

Yonezawa, S., Jones, M., & Joselowsky, F. (2009) Youth engagement in high schools: Developing a multidimensional, critical approach to improving engagement for all students. doi: 10.1007/s10833-009-9106-1

APPENDICES

Appendix A

Student Survey

Please check your response to the following statements. Write any additional comments in the notes section. This survey is anonymous. Please do not put your name on it.

1. How likely are teachers to provide class activities that are related to your interests?

☐ Very likely ☐ Most likely ☐ Somewhat likely ☐ Not likely

2. How likely are you to engage in classroom activities when technology is used?

☐ More likely ☐ Less likely ☐ Makes no difference

3. What technology tools do you enjoy using in school? Check all that apply.

☐ Computers / Laptops ☐ iPods ☐ iPads ☐ Interactive whiteboards

☐ Other (please list):

4. What technology tools do you enjoy using at home? Check all that apply.

☐ Cell phones ☐ Gaming systems ☐ Computers / Laptop ☐ iPods ☐ iPads

☐ Other (please list):

Notes:

Appendix B

Teacher Survey- Technology

Check the choice that best answers the following questions for you. This survey is anonymous.

1. Of the following, which teaching tools do you use? Check all that apply.

- ☐ **Textbook**
- ☐ **Laptops**
- ☐ **Computer lab**
- ☐ **iPods**
- ☐ **iPads**
- ☐ **Worksheets**
- ☐ **Interactive whiteboards**
- ☐ **Dry/Erase board**
- ☐ **Overhead projector**
- ☐ **Other (please list):**

2. On average, how many minutes each week do your students spend using technology during your classes?

- ☐ **More than 160 minutes (More than 4 class periods)**
- ☐ **Between 80 and 160 minutes (Between 2-4 class periods)**
- ☐ **Less than 80 minutes (Less than 2 class periods)**

3. When using technology in the classroom, what differences do you notice in student motivation and engagement?

- ☐ **More engaged / motivated**
- ☐ **Less engaged / motivated**
- ☐ **No difference in engagement / motivation**

4. How many minutes outside of the teaching day do you use technology for school-related

purposes? (Lesson planning, gradebook, etc.)

☐ **More than 60 minutes**

☐ **30-60 minutes**

☐ **Less than 30 minutes**

☐ **None**

5. How many minutes outside of the teaching day do you use technology for personal use?

☐ **More than 60 minutes**

☐ **30-60 minutes**

☐ **Less than 30 minutes**

☐ **None**

Additional comments:

Appendix C

Teacher Survey- Motivation and Engagement

Check the five adverse student behaviors that you most frequently observe. Write any additional comments you may have in the notes section. This survey is anonymous.

- ☐ Disruptive
- ☐ Lack of participation
- ☐ Does not turn in homework / Turns in incomplete work
- ☐ Coming to class unprepared or without materials
- ☐ Asking to leave class frequently
- ☐ Engaged in personal interests (reading unrelated books, writing/passing notes, etc.)
- ☐ Asking off topic or inappropriate questions
- ☐ Sleeping in class or head down in class on a regular basis
- ☐ Showing up tardy to class

Notes:

Appendix D

Who's Who?

Who said, "The way I spend my free time is playing soccer?"

A Angela

B Tyler

C Nick

D Michelle

Who said, "All it takes to make me happy is an A+?"

A Nick

B Kristina

C Ana

D PJ

Appendix E

Vocabulary Review Lesson 2

01 vocab.ink

1. Maria sneezed because she has _____.

2. Andre wrote down his _____ at school so he could remember them.

3. I didn't want to _____ him of taking my lunch.

4. I made up my mind to _____ all of the popcorn at once.

5. I left my _____ at home so I couldn't get a sunshine gram for the week.

6. I became _____ when I saw that my dog had crumbs on his face.

7. I thought he had eaten my lunch, but I didn't have any _____ to prove it.

8. I gave her idea careful _____ before I decided I liked it.

9. The detective put the _____ in a plastic bag for further investigation.

10. We have to be careful not to jump to conclusions and _____ someone of wrongdoing.

11. None of the suspects looked _____ because they all seemed to be telling the truth.

allergies | assignments | suspicious | accuse

consideration | consume | evidence

Appendix F

Making Inferences from Pictures

Making Inferences from Snapshots

Directions: View the following snapshot and answer the journal questions through your "Wetpaint Account" online. Submit your entry.

Appendix G

Favorite Animal

My Favorite Animal

By:

I have a wonderful pig named Lily. She is a smart pig. My pig Lily looks like a little, purple, chubby, grape. Lily is my one of my nicest friends. Lily lives at the barn.

Appendix H

Create Unique Spelling Words

Spelling Words - Lesson 4

1.There was a tear in my eye when I saw someone tear a picture of my grandfather.

2.I want you to get me a present and present it to me on a silver tray.

3.I'm contest that I lost the contest.

4.I object for you to get me a purple object.

5.My mom refuses for you to throw refuse on her lawn.

6.We need to separate our desks so that we can work separately.

7.

8. Run down to the produce shop and get me some produce.

9.I am content that I live in this content.

10. I am going to write a contract for you 'to contract the air from each balloon.

Appendix I

Novel Questions Google Doc

Basil Frankweiler - End of Book Questions

1. Angel represented more than just a mysterious statue to Claudia. What other importance did Angel hold for Claudia? The other importance was that Angel reminded her of someone she met.

2. How could the statue of the angel be "An answer to running away, and also to going home again," as it is described on page 95? It was the answer to running away, and also coming home because her goal was to be different when she returned.

3. Why did Claudia decide to go to Farmington rather than home? She went there because she wanted to learn more about Angel, and she needed Mrs. Basil E. Frankweiler's help.

4. How did James give away the secret to Mrs. Frankweiler? He slipped when he was talking to Mrs Basil E. Frankweiler.

5. What did Claudia say was the most fun of running away? She said " First it was hiding. And after hiding became easy , there was Angel."

6. What challenge did Mrs. Frankweiler give the children? She told them if they could find the Angel paper in her filing cabinets within 1 hour.

7. What expression of Jamie's helped them find the answer about Angel? His expression was " Oh Bologna."

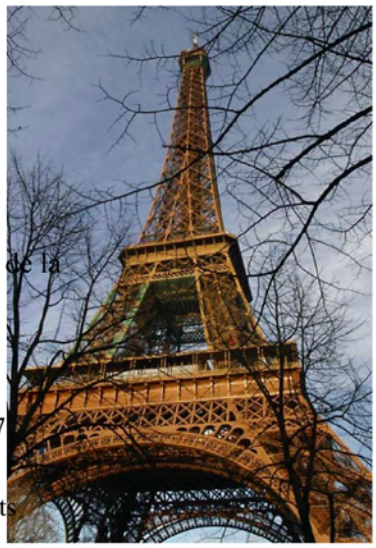
8. How did Mrs. Frankweiler get the sketch? She got it by winning it from a bad poker player.

9. What kind of bribery deal did Mrs. Frankweiler make? The deal was that if they told her the details of them running away she would give them the Angel file.

Appendix J

La Tour Eiffel Google Doc

Je m'appelle [redacted] .
La date: 10-12-12
L'heure: 9



La Tour Eiffel, symbole de Paris

La Tour Eiffel est le symbole de Paris. Elle a été édifiée en 1889 à l'occasion de l'Exposition Universelle qui devait célébrer le centenaire de la Révolution Française.

- **Peinture:** Tous les 7 ans on fait sa toilette.Des peintres (qui n'ont pas le vertige!) utilisent also 60 tonnes de peinture.
- **Déformation:** Sous l'action du vent, le sommet se déplace de 6 à 7 centimètres.
- **Base:** Les piliers sont orientés aux quatre points cardinaux et inscrits dans un carré de 125 mètres de côté.
- **Les ascenseurs:** Les ascenseurs de la tour sont infatigables. Si on multiplie la hauteur de la tour par le nombre de voyages, on obtient une distance de plus de 103 000 kilomètres par an, c'est à dire l'équivalent de deux fois et demie le tour de la Terre!

Réponds en phrases complètes selon l'information donnée sur la Tour Eiffel.

1. Calcule l'âge de la tour Eiffel.
Elle a 123 ans.

2. Quelle est l'année de la Révolution Française?
L'année de la Révolution Française est 1789.

3. De toutes ces données, qu'est-ce qui t'a surpris(e) le plus?
La tour Eiffel utilise 60 tonnes de peinture.

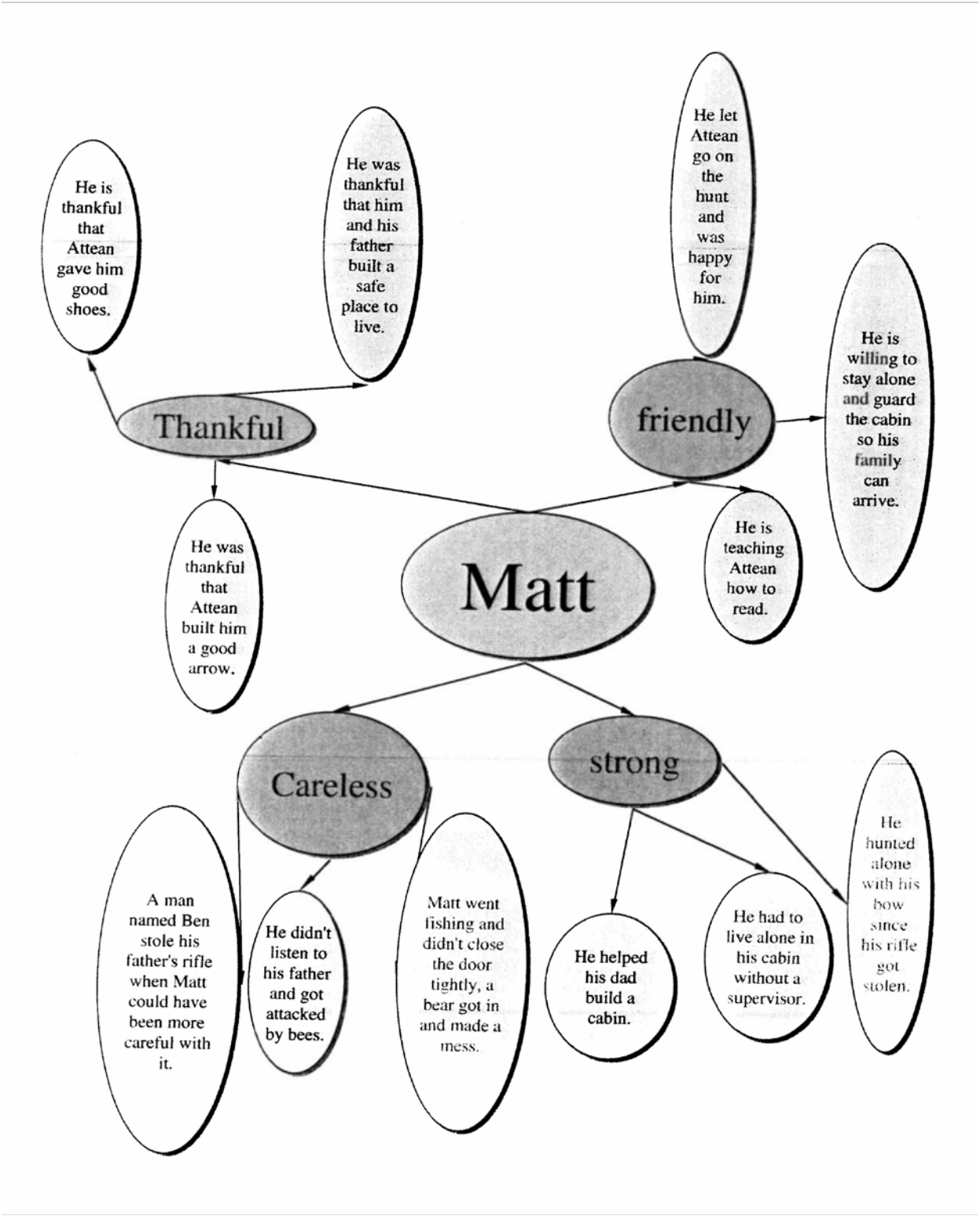
4. Est-ce que tu connais d'autres données sur la tour Eiffel?
Elle est marron et grande.

5. Est-ce que tu connais d'autres tours en Europe?
Notre-Dame et palais de Buckingham sont d'autres tours en Europe.

6. Quel monument est la plus symbolique de ta ville? Pourquoi? Explique. **Inclus un photo ici.**
La Sears Tower est la plus symbolique de Chicago. Elle est très haut.

Appendix K

Sign of the Beaver Character Web



Appendix L

La Toussaint Wiki Assignment

Je m'appelle _____
La date _____
L'heure _____
Assignment 2

La Toussaint et l'Halloween: Ghosts, Goblins and Gourds en France!
Read all directions on the wiki and this handout before beginning the assignment. Then, respond in thorough, thoughtful, and complete sentences.

Tâche 1: Click on link provided for the website about culture in Bretagne, France. Then, view the powerpoint on L'Ankou. Use this information to respond to the questions below.

1. From what part of France is l'Ankou mostly known? _____

_____

2. What is l'Ankou? _____

3. What usually accompanies l'Ankou? _____

4. Briefly retell the l'Ankou legend. _____

_____

5. What kind of luck do you think l'Ankou brings to people who cross him? Why? _____

_____

Tâche 2: Click on link provided to the Discovery News article regarding royal blood hidden inside a decorative gourd. Read and respond to the questions below.

6. Whose blood is reportedly in the gourd and how long has the gourd existed? _____

_____

7. How did the blood get in the gourd? _____

_____

8. How was the blood first tested? _____

_____

9. How will the results be crosschecked? _____

_____

10. Why was the gourd chosen to keep the handkerchief? _____

_____

Tâche 3: Use this painting, *La Toussaint (All Saint's Day),* by Emile Friant (1863-1932), to respond to the following questions.

11. Who are the women in the painting and what are they doing? _____

_____

12. Why are they carrying flowers? _____

13. Who are they going to visit? _____

14. Who is the man seated in the painting? _____

Tâche 4: Click on the link provided to watch the brief video on La Toussaint, (All Saint's Day) and respond to the questions below.

15. What is the significance of the chrysanthemum? _____

_____

16. When is *La Toussaint?* _____

Tâche 5: Click on the link provided which takes you on a virtual tour through the Catacombs *(les Catacombes)* in Paris. Use this site and the Internet to respond to the questions below.

17. What is the meaning of the inscription, «*Arrêt! C'est ici l'empire de la Morte»!* seen above the entrance?

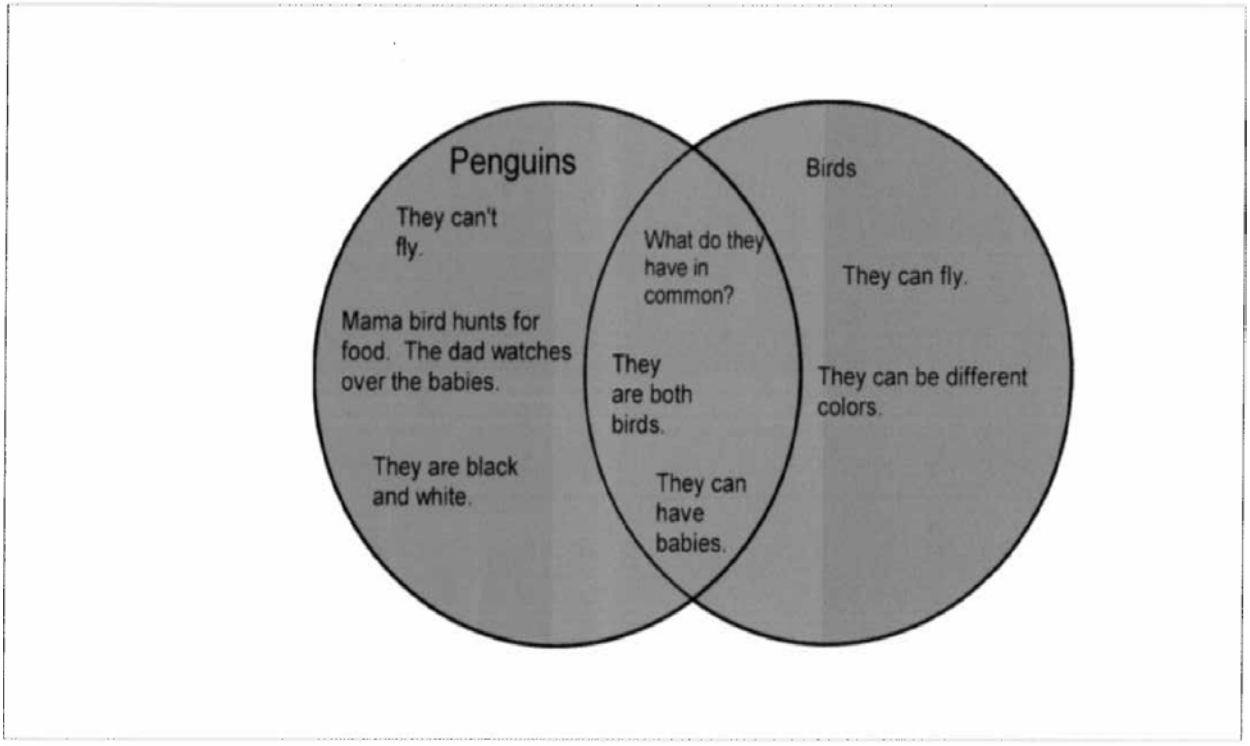
_____

18. After viewing the photos and reading the captions, use the Internet to discover three more interesting bits of information regarding *Les Catacombes* in Paris.

Appendix M

Penguin and Bird Venn diagram

venn diagram.ink



Appendix N

Sign of the Beaver Survival Guide

- You can hunt for food/ fish for food
- Make a fire out of wood to stay warm
- Make weapons example: bow and arrow, traps
- Cook food using the fire
- Find a lake for water/ clean yourself in the lake
- Hunt Coyotes, wolves, foxes to get fur to be warm.

Survival guide

Matt is now all on his own. Matt's dad needed to go back and get his family to bring them to the new settlement. On the way, Matt meets some Indians that help him survive. His dad said he will come back in 7 weeks and it is already past 7 weeks and Matt is worried. Will Matt survive all alone? Will he make it through the winter? Is he strong enough? You will find out by reading the "Sign of the Beaver".

Sign of the Beaver (Survival Guide)

The Sign Of The Beaver

Appendix O

La Famille iMovie comprehension

Je m'appelle_____
La date _____
L'heure _____

La famille

I. Listen as I describe my family. Decide whether or not the statement listed below is true (vrai) or false (faux).

_____ Her mother is brunette. _____ Her brothers are older.
_____ Her father is serious. _____ Her sister is blond.

Compare your answers with those of a partner. Do you match?

II. You have now figured out, for the most part, what my family is like, but you want to make sure. Fill in the blank with the correct adjective you hear as I re-describe the family.

Ma mère est _____ Mes frères sont _____
Mon père est _____ Mes frères sont _____

Check your answers with a partner. Do you have the same spelling? Correct any errors.

III. Now, listen to others as they describe their families. Ask the following questions and verify if they are true or false. Have your classmate sign the line if the statement is true for them.
Est-ce que…

1. ta mère est blonde? _____
2. ton frère est plus âgé? _____
3. ton père est court? _____
4. ta grand-mère est grande? _____

IV. Now prepare yourself by making a list of the adjectives you know to describe people and write them in the space below. Look in the dictionary for words you don't know and would like to use. Check with me if you are unsure of which word is accurate.

V. Write down a few sentences with the adjectives list that you created to describe your family. (Attention! Watch your *mon, ma, mes* and your adjective agreement!)

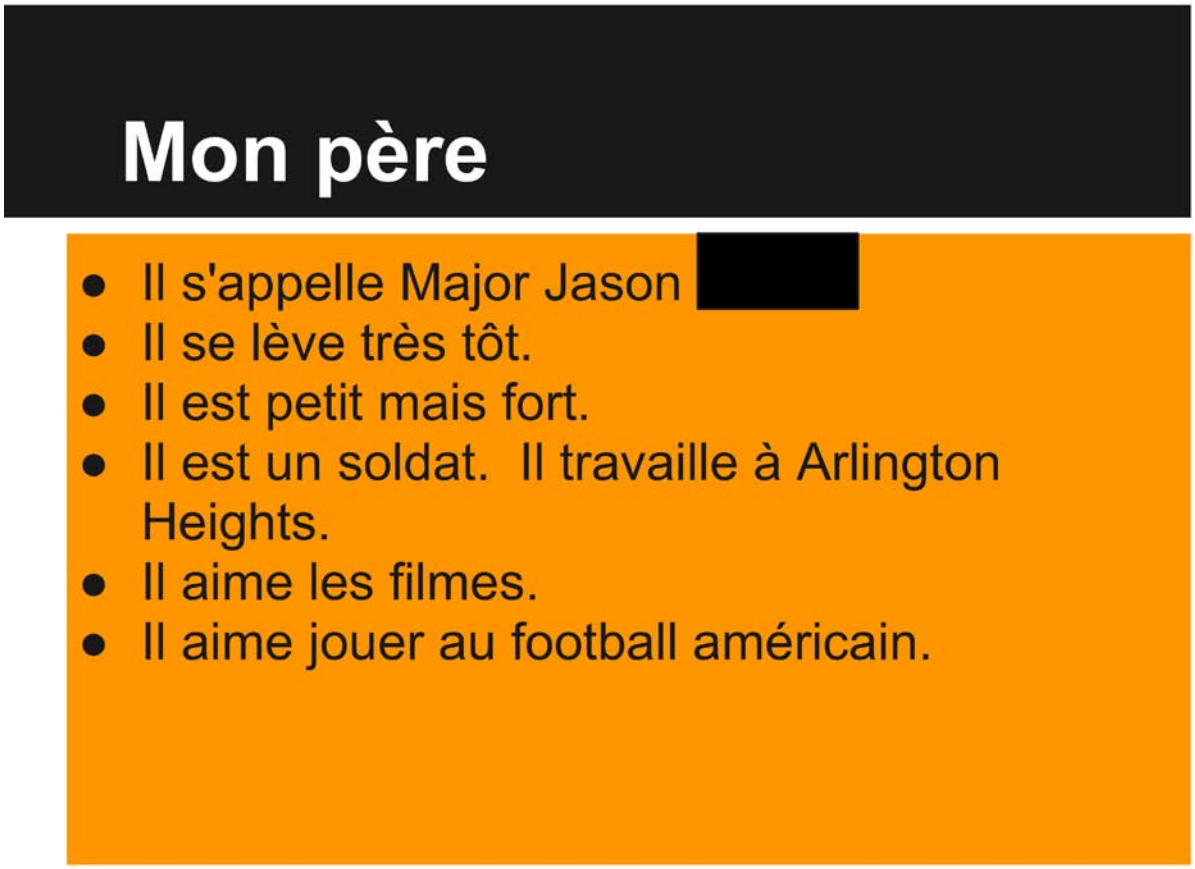
1. _____
2. _____
3. _____
4. _____

Don't share your answers!

VI. Listen now as your partner describes his or her family. Using their descriptions, draw a picture of each family member as they describe to show you understand what they mean.

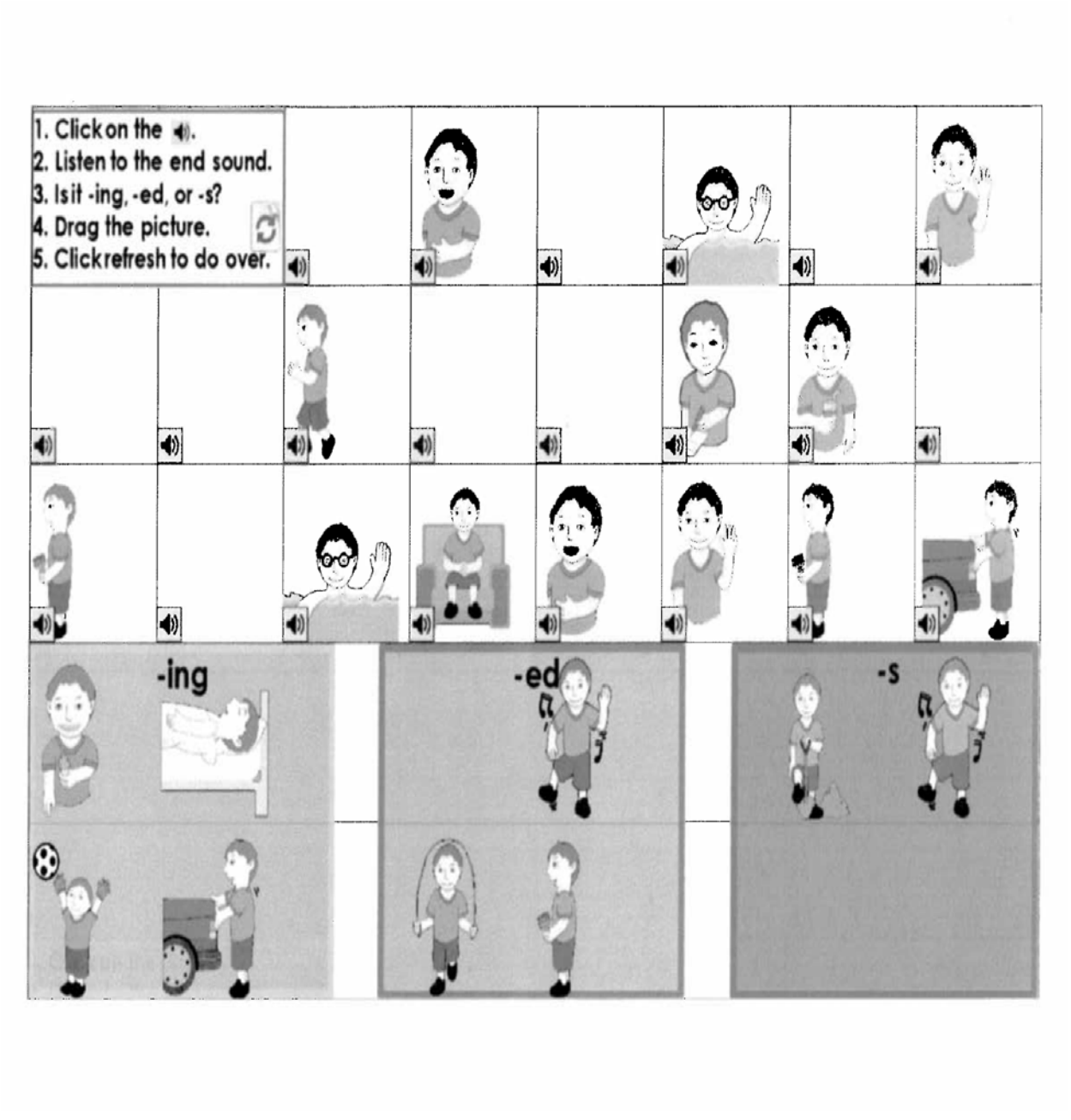
Appendix P

Album de Famille Sample Project Slide



Appendix Q

Inflectional Endings



Appendix R

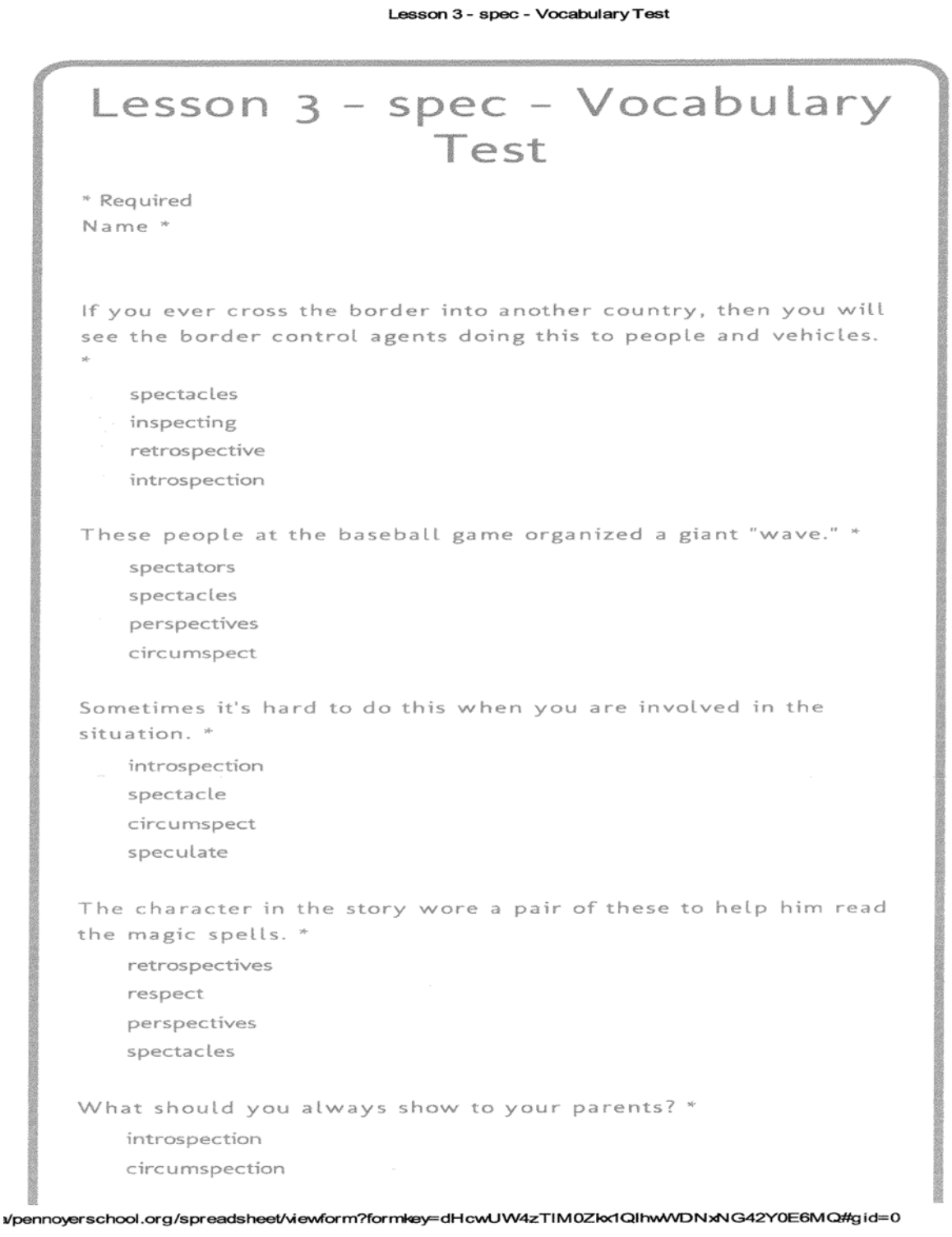
Les Indices-QR Code Clues Who Stole the Eiffel Tower?

Appendix S

Egypt Google Presentation

Appendix T

Vocabulary Test Google form



Lesson 3 - spec - Vocabulary Test

Lesson 3 – spec – Vocabulary Test

* Required
Name *

If you ever cross the border into another country, then you will see the border control agents doing this to people and vehicles. *

- spectacles
- inspecting
- retrospective
- introspection

These people at the baseball game organized a giant "wave." *

- spectators
- spectacles
- perspectives
- circumspect

Sometimes it's hard to do this when you are involved in the situation. *

- introspection
- spectacle
- circumspect
- speculate

The character in the story wore a pair of these to help him read the magic spells. *

- retrospectives
- respect
- perspectives
- spectacles

What should you always show to your parents? *

- introspection
- circumspection

s/pennoyerschool.org/spreadsheet/viewform?formkey=dHcwUW4zTlM0Zkx1QlhwWDNxNG42Y0E6MQ#gid=0

inspections
respect

Your opinion on a decision without listening to others will probably only reflect your what? *

circumspect
inspection
perspective
spectacles

What are you practicing when you think hard about why you are sad or happy? *

introspection
circumspection
inspection
spectacles

In the courtroom, the jury thinks before acting. How do we describe this? *

circumspect
introspect
retrospect
inspect

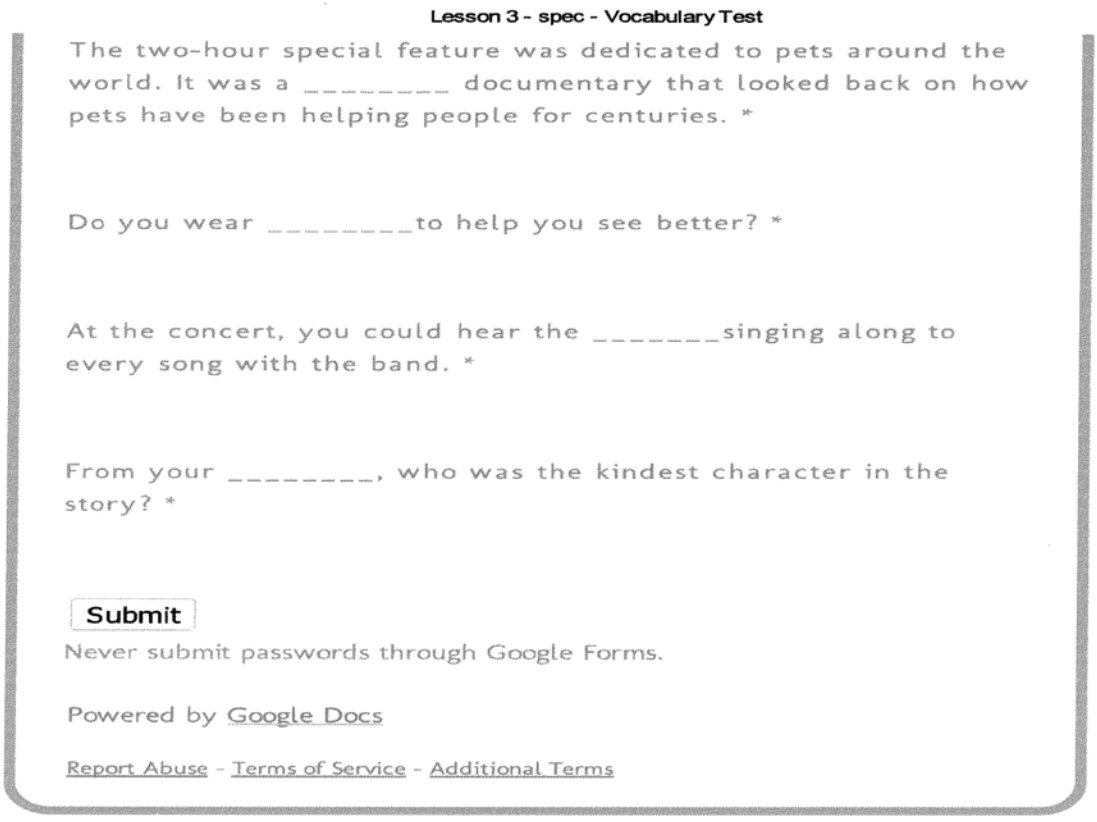
This is also sometimes described by adults, as "making a scene." *

spectacle
introspection
spectacles
spectators

Sometimes when a famous actor dies, there is this type of tribute on television that takes a look back at all of the actor's movies. *

retrospective
introspection
circumspection
spectacle

The baby didn't mean to, but he made a _____of himself when he threw his rattle across the quiet fancy restaurant. *



Lesson 3 - spec - Vocabulary Test

The two-hour special feature was dedicated to pets around the world. It was a _____ documentary that looked back on how pets have been helping people for centuries. *

Do you wear _____to help you see better? *

At the concert, you could hear the _____singing along to every song with the band. *

From your _____, who was the kindest character in the story? *

Submit

Never submit passwords through Google Forms.

Powered by Google Docs

Report Abuse - Terms of Service - Additional Terms