Technology Use in Elementary Education and the Resources to Improve Teachers' Attitudes Towards Twenty-First Century Learning

By

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December 2013

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

Fulfillment of the requirements for the degree of

Master of Science in Education

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Introduction

Technology use in education has been emphasized throughout the nation since the mid 1980's (Franklin, 2007). The nation has spent billions of dollars for schools to have technology and access to the internet since then (Franklin, 2007). Students are currently living and growing older in a technology rich environment (Wetzel, Foulger, Rathkey, & Mitchell, 2009). Because of these technology learning environments, teachers have the opportunity to scaffold learning in more ways than ever before (Seyit, 2011).

Students are now "Digital Natives", and with technology changing each day, teachers of all ages and experiences must keep up with them (Kelsey, Mata-Claflin, Holland, & Castillo, 2011). Based on a report in 2009, only twenty percent of the population of the nation believes that teacher preparation for the use of technology is necessary, yet students are supposed to grow up in this digital world (Kelsey, Mata-Claflin, Holland, & Castillo, 2011). There are now state mandatory requirements for teachers to have the necessary skills to teach children using these technologies and be proficient with them (Kelsey, Mata-Claflin, Holland, & Castillo, 2011). According to Ertmer & Ottenbreit-Leftwich, (2013) a recent survey has indicated that over 400 United States employees have stated that recent high school graduates are just not efficient enough with 21st century skills as they enter the workforce. This 21st century learning starts in the early childhood and elementary classrooms. Also, based on the National Center Education Statistics, computers are primarily not being used for instructional and educational purposes for the students (Franklin, 2007). As a nation, we are investing in these technologies, but are they being used properly (Howley, Wood, & Hough, 2011)? Are there factors influencing teachers' use of technology, and if so, are these factors affecting our students positively or are technologies a waste of money and time?

In the literature review of this paper, different types of data and research will be looked at regarding technology and whether or not the investments made are progressing for students in the digital age. There are quantitative studies, collecting data through surveys, observations, and experimental

designs, to analyze different types of technology use in the classroom, and factors that may influence teachers' use of technology in the classroom, positively or negatively.

Part I

Quantitative studies were used more than any other study in this synthesis because of the variety of data being offered from the studies. Qualitative studies were used in this synthesis of literature mainly through the use of interviews, surveys, samples, instruments, and observations, including call logs and communication memos. These studies focused on a variety of technologies being used in the classroom and how they affected students academically and whether or not students were engaged using them. A mixed methods explanatory design was used to investigate factors that may influence technology use in the classroom, while an actions research design focused on the use of technology being used for English as foreign language learners. Many articles were used to create a synopsis of technology use in education as a broad subject area.

In this synthesis of research, three different themes will be discussed. First, this paper will look at search studies analyzing and collecting data about the factors that influence teachers' use of technology. Then, this paper will look at various research designs collecting data on the engagement and motivation of students while using technology in the classroom. Finally, based on quantitative and qualitative data, this paper will review technology being used in the classroom and the results of the technology on students academically. These three themes will be discussed in my synthesis of the literature, as well as looking at methodological issues and suggesting any needs for future research.

Factors Influencing Teacher Use of Technology

The factors that influence teacher use of technology can provide a correlation for whether or not technology positively affects students. These factors may be reasons why teachers use technology in the classroom, or why they do not use technology in the classroom. The results of technology cannot be assessed if technology is not being used to its fullest potential for students to learn (Franklin, 2007;

Howley, Wood, & Hough, 2011; Lu & Overbaugh, 2009). It has been indicated in many studies that teacher preparation is the largest factor that influences technology use in the classroom (Franklin, 2007; Howley, Wood, & Hough, 2011; Lu & Overbaugh, 2009). Research has found that teachers have a fear of using certain technology in the classroom because they do not completely understand how to use all of the tools available for students to benefit in the best way from the use of it (Allsopp et al., 2012). According to Allsopp et al., (2012) the use of the Interactive White Board (IWB) in the classroom is affected by teachers not having enough time for Professional Development. Teachers in the study by Allsopp et al., (2012) were interviewed and many responded that they cannot handle learning everything about the IWB in a short period of time because there are so many tools and functions that the IWB can do.

Using Professional Development to provide teachers with training on the use of various types of technology can be very effective, like in Benson, Brack, & Samarwickrema's 2012 study involving the use of Wiki's in the classroom. Teachers were used in an action research study to learn more about the use of Wiki's in the classroom and many teachers felt satisfied after the workshop. Teachers did feel like they needed more time to learn about the use of the Wiki's, but the sessions that they had were very useful (Benson, Brack, & Samarwickrema, 2012).

Lu and Overbaugh (2009) reported a particularly strong study indicating that school environment was a major factor affecting technology use, and providing both quantitative and qualitative data. Based on their variety of methodology, the research provided by Lu and Overbaugh (2009) was peculiarly important.

A positive factor of technology use would be that more technology is becoming useful and higher-end. In a study about Google Apps, it was stated that by 2015, 80% of people will actually be accessing the internet through their mobile phones other than computers (Hsu, Rice, & Dawley, 2012). With this type of technology available at our fingertips, teachers can use it to their advantage to benefit their teaching. A study was conducted about a workshop that was held for six weeks over a summer to allow teacher educators to create their own apps (Hsu, Rice, & Dawley, 2012). This is an influential

piece of Professional Development because these participants were able to learn how to create apps to serve the needs of their students. The participants created apps reviewing stories, geography, and more (Hsu, Rice, & Dawley, 2012). The fact that these workshops are available to individual the needs of our own learners are useful and beneficial to all educators. Also, the fact that technology is becoming more easily accessible is a factor that seems to sssbe improving and allowing educators to see the potential in technology, like apps, in the teaching and learning settings (Hsu, Rice, & Dawley, 2012).

All of the studies reported that different variables affect the way teachers use technology in the classroom (Franklin, 2007; Howley, Wood, & Hough, 2011; Lu & Overbaugh, 2009). These variables impact whether or not teachers are using technology, and because of this, we will hopefully be able to see a correlation with student achievement and engagement based on technology use. As of now, there are no studies correlating technology use, and whether or not students are positively affected by technology in many aspects.

Based on these studies, teachers who did feel that they were well-prepared for the use of technology, and who were frequently using computers in their classrooms, were recent graduates who received technology preparation at their School of Education, indicating that preparation is a major factor related to technology use (Franklin, 2007). Several studies also supported time and teacher attitudes were factors that influenced teachers' technology use in the classroom (Howley, Wood, & Hough, 2011; Lu & Overbaugh, 2009). These two variables correlate with preparation. Many teachers responded to surveys and interviews indicating that the time it takes to prepare lessons using technology, and the time it takes to be involved in professional development to learn how to use it, affects their technology use (Howley, Wood, & Hough, 2011). Also, because of the amount of time of preparation, teachers' attitudes towards technology have impacted their technology use. If teachers did not feel prepared, their attitudes were poor towards technology use (Howley, Wood, & Hough, 2011; Lu & Overbaugh, 2009).

A study on teacher professional development using technology took qualitative data from instruction and interactions as well as interviews with teachers involved, and looked at how teachers can

benefit from professional development directed towards the use of technology (Liu, 2013). Teachers want to be able to track their students learning due to the effectiveness of technology and also modify their learning environments (Liu, 2013). The study included 35 different teachers and the main focus was to have those teachers work together to design lessons, as well as observe and analyze each other regarding the use of technology in their classrooms (Liu, 2013). The theory that was tested was whether or not being observed and working together would contribute to the effectiveness of teachers using technology (Liu, 2013). The researchers believed that sharing and collaborating were very important factors in order to succeed and develop with technology (Liu, 2013). The researchers analyzed results and stated that professional development for teachers is never ending (Liu, 2013). Also, the principal involved in the study acknowledged that the school environment is a key factor in professional development in the use of technology because you must have a supportive staff in order for teachers to be motivated to succeed (Liu, 2013). One teacher involved in the study spoke about how the problem of time that many teachers seem to face when it comes to the integration of technology in their classrooms, can be solved by simply practicing (Liu, 2013).

According to Allsopp et al., (2012) teachers using the IWB stated that the board affected their teaching after training because of its "ease of use". The study followed six teachers and used field notes, observations, and most importantly, teacher interviews to collect its data. These teachers stated in their interviews that the IWB is easy to use with so many different functions and tools (Allsopp et al., 2012). The IWB also positively influenced their teaching and their use of the technology because of how it could collect data about the students' learning easily for them (Allsopp et al., 2012).

A study about assistive technology use for the subject of literacy saw some of the same results, involving parents and students and consisting of interviews with the parents and observations of students using the assistive technology (Jeffs, Behrmann, & Bannan-Ritland, 2006). The study looked at students in grades 4-6 that were at least 2 grades below their reading level (Jeffs, Behrmann, & Bannan-Ritland, 2006). Parents described their experience with the assistive technology wonderfully because of its "ease of use" (Jeffs, Behrmann, & Bannan-Ritland, 2006). Parents did exclaim that they tended to lean towards

using the assistive technology software that needed minimal training to be able to use sufficiently (Jeffs, Behrmann, & Bannan-Ritland, 2006). Parent did comment negatively saying that assistive technology has never been available to their students because the schools tend to only provide assistive technology to students with physical disabilities or multiple disabilities, even though their children have all made great gains in literacy using the assistive technology (Jeffs, Behrmann, & Bannan-Ritland, 2006).

Teachers' attitudes about the use of technology can positively or negatively affect students' learning (Ertmer & Ottenbreit-Leftwich, 2013). A study conducted by Ertmer & Ottenbreit-Leftwich indicated that teachers are very resistant to change and that negatively affects technology use in schools. The researchers suggested that schools align their culture and vision for learning and create a school environment that includes the use of technology (Ertmer & Ottenbreit-Leftwich, 2013). For example, the principal providing the motivation to use technology could create a pedagogical movement of teachers using technology more in their classrooms (Ertmer & Ottenbreit-Leftwich, 2013). School environment and teacher attitudes' concerning technology are both factors that affect student learning.

The area of the school also affected technology use, although there was a discrepancy in this data. Howley, Wood, and Hough (2011), indicated that rural schools felt positive attitudes towards technology, but Lu and Overbaugh (2009), reported that suburban schools felt better prepared using technology, and rural districts faced difficulties using technology. These differences may be the result of different locations in the country used for the studies, as well as different methodologies. Lu and Overbaugh (2009) used an explanatory mixed methods design including a four section survey instrument that the researchers constructed as well as interviews. The research was conducted at suburban, rural, and urban schools.

Howley, Wood, and Hough (2011) used surveys to collect data quantitatively, yet only indicated their research involved rural and non-rural schools. This is where we see the discrepancy, as to what defines a rural and a non-rural area, and where do suburban areas fit into that data? Howley, Wood, and Hough (2011) also only analyzed data from third grade teachers, while Lu and Overbaugh (2009) collected data in various ways from teachers in grades kindergarten through grade 12. The discrepancy

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between the research studies may indicate the need for better data relating to location, but all studies have shown that preparation is in some way a factor affecting teacher use of technology classroom (Franklin, 2007; Howley, Wood, & Hough, 2011; Lu & Overbaugh, 2009).

<center>**Academic Achievement of Students**</center>

Technology has impacted students' academic achievement in various ways (Kelsey, Mata-Claflin, Holland, & Castillo, 2011; McGrail & Davis, 2011; Seyit, 2011; Wetzel, Folger, Rathkey, & Mitchell, 2009). Looking solely at the academic achievement of students reported in the research, we can report that academic achievement improved while using technology in the classroom (Kelsey, Mata-Claflin, Holland, & Castillo, 2011; McGrail & Davis, 2011; Seyit, 2011; Wetzel, Folger, Rathkey, & Mitchell, 2009).

Seyit (2011) reported that students using interactive storybooks with animation showed significantly higher scores on a reading recall test that used content validity than students without animation or students using traditional print books. This study deems as important because the researcher used quantitative empirical data from a multiple choice test that students took to collect data and conduct a specific and systematic investigation (Seyit, 2011). The study also used students in various schools from culturally and economically diverse schools around the country, instead of using just one classroom and making a suggestion towards all students around the country (Seyit, 2011).

Interactive storybooks, also known as e-books to many people, can also be made by teachers in order to benefit their individual learners in the best way (Rhodes & Milby, 2007). Research was done involving a second grade teacher who created e-books to benefit her inclusive classroom (Rhodes & Milby, 2007). E-books have been researched as being very beneficial to students learning because repeating reading is very important in literacy especially for students with disabilities (Rhodes & Milby, 2007). E-books are able to add sound to literature, animation, and interactive activities that normal text is just not able to do(Rhodes & Milby, 2007). Some e-books can even capture student responses while

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reading the text (Rhodes & Milby, 2007). When students are able to retell a story it improves their text comprehension and also allows them to better answer questions about a text (Rhodes & Milby, 2007). A teacher created e-book can help students achieve a better understanding of a text because the teacher creates the e-book in a way that is supportive of her individual learners (Rhodes & Milby, 2007). E-books can model text and support vocabulary and comprehension in a way that sometimes normal text cannot do (Rhodes & Milby, 2007). The e-books are also fairly easy to make because they can be made simply by using the Powerpoint software that so many educators are already familiar with (Rhodes & Milby, 2007).

Using various forms and features of technology and a variety of ages and levels, research has shown that technology can improve students' writing, help students recall text, enhance students' learning of various concepts, and help Hispanic students learn English and comprehend learning (Kelsey, Mata-Claflin, Holland, & Castillo, 2011; McGrail & Davis, 2011; Seyit, 2011; Wetzel, Folger, Rathkey, & Mitchell, 2009). Each study selected a different feature or form of technology to use in the classroom to analyze the results of students based on these technologies. Surveys, observations, interviews, and independent measure through a multiple choice test were all used to demonstrate academic achievement among students.

A program called "Voicethread" was identified as a way to reach all learners, including Students with Disabilities (Brunvand & Byrd, 2011). The program allows students to be able to collaborate through images, video, text, voice recordings, and videos. Teachers can set up a classroom account, and students can create Voicethreads and comment on one another's creations (Brunvand & Byrd, 2011). Students can also respond to teacher created Voicethreads, for teachers to assess what students have learned (Brunvand & Byrd, 2011). The program reaches students of all levels because students can type their responses or use a microphone to voice record responses (Brunvand & Byrd, 2011). The program offers great accessibility and can be used for a variety of subjects, affecting students' academic achievement positively (Brunvand & Byrd, 2011). The program can be a positive academic activity for students of all levels to collaborate (Brunvand & Byrd, 2011).

Besides Voicethread, there are a variety of technology devices that can be used to support Students with Disabilities. Students with Disabilities can benefit academically from a balanced literacy approach, including reading, writing, speaking, listening, and critical thinking (Carnahan, Williamson, Hollingshead, & Israel, 2012). A classroom that used an IWB, projector, iPod touches, and computers found that using a variety of technology in a balanced literacy approach can benefit Students with Disabilities (Carnahan, Williamson, Hollingshead, & Israel, 2012). The technology needs to be used in a way that benefits each individual student in their own way, making sure that the use of the technology aligns with each student's own needs (Carnahan, Williamson, Hollingshead, & Israel, 2012). For example, a student who has trouble actually writing can use a program that changes oral speech into text (Carnahan, Williamson, Hollingshead, & Israel, 2012). Technology needs to be used differentiated in classrooms in order to be highly effective.

Focusing on literacy, students with physical disabilities often have a tough time being able to succeed in the elementary classroom because of the challenges that they face. A study focused on students with physical disabilities, particularly students with cerebral palsy, and focused on if repeated reading using technology could enhance the students' fluency, accuracy, and comprehension while reading (Coleman & Heller, 2010). The study used a program called Kurzweil 3000, which is a program with many different uses, but this study focused on using the text to speech function in the program. The program would highlight text as it is spoken (Coleman & Heller, 2010). Researchers wanted to see if repeated reading using computer modeling could improve students' reading rate, accuracy, and comprehension between the first and final trial (Coleman & Heller, 2010). According to Coleman and Heller (2010), the book was read five different times to students between the ages of nine and twelve who had a reading level below the 40th percentile before this study. Using pre-assessments, and data from the different trials using the computer modeling, students involved in the repeating reading using computer modeling process made great gains in reading fluency, accuracy, and comprehension (Coleman & Heller, 2010).

More research was reviewed on text-to –speech and speech-to-text technology to benefit students

with disabilities (Forgrave, 2002). The technology available through various assistive technology programs allows students to have complete comprehension of a text. This is especially helpful for students in the content areas where vocabulary can become difficult because of its unfamiliarity (Forgrave, 2002). A students' speed of reading and ability to comprehend text dramatically improves using assistive technology (Forgrave, 2002). The technology available to Students with Disabilities can dramatically impact their ability to learn especially in the area of literacy.

Many studies focus on students who lack the skills they need in the area of literacy, including a study by Jeffs, Behrmann, & Bannan-Ritland (2006). This study looked at students who were 2 levels below their reading level, and were introduced to assistive technology in order to make gains in literacy. These students all had similar characteristics when it came to literacy, including having difficulties identifying basic sight words and reading text, as well as spelling, organization of writing, and simply using pencil and paper to write (Jeffs, Behrmann, & Bannan-Ritland, 2006). These students never had the opportunity to use assistive technology before and had minimal computer skills (Jeffs, Behrmann, & Bannan-Ritland, 2006). Through interviews with parents and observations, the assistive technology was amazing because it adapted to the needs of each learners, and children can choose the assistive technology that works for their needs in the best way (Jeffs, Behrmann, & Bannan-Ritland, 2006). It also allowed students to gain independence in their literacy skills, (Jeffs, Behrmann, & Bannan-Ritland, 2006).

Another study focused on students with learning disabilities, including students Autism Spectrum Disorder, in a kindergarten through third grade resource room classroom (Narkon, Wells, & Segal, 2011). The study included very diverse learners who had trouble being attentive to their learning in the classroom, as well as being engaged in the learning process (Narkon, Wells, & Segal, 2011). These students all required repeated exposure to new vocabulary terms in order to be able to learn and understand them (Narkon, Wells, & Segal, 2011). The teacher in the study focused on using an e-word wall to help students grow in their vocabulary language (Narkon, Wells, & Segal, 2011). According to Narkon, Wells, & Segal (2011), students with learning disabilities, in particularly Autism Spectrum

Disorder are more engaged when using a computer to learn. They actually can maintain new vocabulary words better when computer instruction is used (Narkon, Wells, & Segal, 2011). An e-word wall is similar to an actual word wall in a classroom that is very popular today. Word walls usually provide vocabulary terms on a bulletin board in the classroom and provide students with ongoing display of those terms. An e-word wall is on the computer and can be created simply using Powerpoint or other software programs available. The e-word wall can be individualized to meet a certain students vocabulary needs as well as the fact that the e-word wall is portable, can be opened on any computer, and also can be made multi0sensory with pictures and sounds (Narkon, Wells, & Segal, 2011). Students can view, listen, read, and write with their e-word walls (Narkon, Wells, & Segal, 2011). It can be helpful for students with learning disabilities because they can actually choose the picture they want to put on their word wall to associate with the vocabulary term (Narkon, Wells, & Segal, 2011). This technology boosts student learning while allowing for that repetition that students with learning disabilities need in order to maintain and learn new vocabulary terms academically (Narkon, Wells, & Segal, 2011).

Gaps in the literature include the results of state tests relating to technology use in the classroom. It is mentioned in McGrail and Davis' (2011) research on classroom blogging to improve writing that teachers struggle with the findings about blogging because standardized testing changes the way we teach. Although standardized tests were mentioned in the article, the research does not show, in any of the studies, that standardized test scores improve based on technology use (McGrail & Davis, 2011).

Early childhood learners usually have a lack of technology in many of their classrooms (Aronin & Floyd, 2013). A study by Aronin & Floyd (2013) observed two teachers in the preschool classroom who were able to have an iPad in the classroom. This study identified that student achievement of these young learners can be dramatically improved through the use of technology in the Preschool classroom (Aronin & Floyd, 2013). The "apps" expanded the learning of these students in the classroom. The teachers used the iPads mainly in teacher-led small groups so that they could ask high order questions while students used the iPads. Also, while using a math app that taught students about tangrams, one

student had the iPad while the other students in the group used actual tangram manipulative, which the teachers stated gave them a connection between abstract concepts and more of a concrete understanding of the concept (Aronin & Floyd, 2013).

When using the iPad in the classroom, teachers need to be able to evaluate the certain applications or "apps" that are right for the educational value of their students (More & Travers, 2013). Apps need to be able to improve instruction and access for children, along with their teacher's instruction, as well as help students' development and growth (More & Travers, 2013). Teachers may download any app that is educational and think that it will academically help their students improve, but technology and software creators cannot be trusted so easily (More & Travers, 2013). According to More & Travers (2013), teachers need to evaluate apps for learning and pick apps that are universal for all learners. Apps are proven to be effective in enhancing the independence of students, whether used on an iPad, Kindle, or other tablet, as well as smart phones (More & Travers, 2013). The researchers have found that integrating technology like apps into a child's education, results in a great success for students in later years of their lives (More & Travers, 2013).

Academic achievement is improved by using technology in the classroom (Kelsey, Mata-Claflin, Holland, & Castillo, 2011; McGrail & Davis, 2011; Seyit, 2011); Wetzel, Folger, Rathkey, & Mitchell, 2009). Classroom blogging has impacted students' writing in a fifth grade classroom by improving their voice in their writing and helped them to concentrate on their audience when writing (McGrail & Davis, 2011). Researchers used a coding system qualitatively based off of observations, interviews with both students and teachers, and writing samples from before and after blogging was conducted in the classroom (McGrail & Davis, 2011).

A study similar to McGrail and Davis' (2011), researched teachers who were using Wiki sites in grades Kindergarten through sixth grade (Lee, 2012). Wiki's are similar to blogging where students can go on the site and write their ideas and thoughts, comment on peers writing in their classroom, and sometimes even peers from other classrooms around the world (Lee, 2012). Teachers and classrooms who

participated in this study were from all over the United States and were interviewed about the use of Wiki sites in their classroom environment. The researchers in the study found that students using the Wiki's were really learning from each other, and learning from one another's ideas (Lee, 2012). Students were able to go through the writing process in one classroom on a Wiki, and receive peer comments which allowed them to revise and edit their work more consciously (Lee, 2012). The fact that the Wiki allows for peers to see students writing, as well as peers from other classrooms may be able to see it, students really take pride and ownership in their learning (Lee, 2012). The Wiki sites definitely contribute to the academic success of students because the site contributes to their peer collaboration and ownership of their learning (Lee, 2012). The teachers responded to the interviews stating that their teaching. Learning, communicating, and assessing of students has improved dramatically through the use of Wiki's (Lee, 2012).

A program called Inspiration has also been used to benefit the writing of students (Forgrave, 2002). The program allows students to be able to organize their thoughts into a concept map and they have the ability to use visuals and images to organize their thoughts and ideas before writing (Forgrave, 2002).

Story mapping is proven as one of the most effective ways to improve the reading comprehension abilities of students with learning disabilities (Wade, Boon, & Spencer, 2010). Along with story mapping, computer-based instruction has also been proven to be very successful in providing students with learning disabilities the ability to improve in the literacy classroom (Wade, Boon, & Spencer, 2010). When looking at Inspiration, or Kidspiration for students in grades kindergarten through fifth grade, merging these two concepts together has been extremely successful for the reading comprehension success of students (Wade, Boon, & Spencer, 2010). Kidspiration is a way for students to story map on the computer. A research study was done on the program using students in grades three and four who are in a self-contained classroom for their literacy instruction every day (Wade, Boon, & Spencer, 2010). The study involved students reading three books at their reading independent level, one story a day for four

days (Wade, Boon, & Spencer, 2010). Students had to answer comprehension questions after completing a story map on the books (Wade, Boon, & Spencer, 2010). Students were first able to read a book and use pencil and paper to create a story map to identify the nine story grammar components (Wade, Boon, & Spencer, 2010). They were then able to use Kidspiration which proved to be beneficial for students with learning disabilities (Wade, Boon, & Spencer, 2010). According to Wade, Boon, & Spencer (2010), students' comprehension greatly improved through the use of the Kidspiration software. The software gave students visual and auditory support therefore enabling them to succeed on comprehension questions that were given after completing the computer-based story map (Wade, Boon, & Spencer, 2010).

Kelsey, Mata-Claflin, Holland, and Castillo (2011) reported that a majority of teachers who had 99.7% Hispanic students in their classrooms responded to a survey indicating that technology does improve the academic performance of Hispanic students. The mission of No Child Left Behind indicates to close the achievement gap between students of color, low income, Special Education, and Limited English Proficient (LEP) from their peers, and technology has been shown to do that according to 24 Hispanic students' teachers (Kelsey, Mata-Claflin, Holland, & Castillo, 2011).

Interactive storybooks with animation have impacted students' ability to recall from a text (Seyit, 2011). Quantitative methods were used analyze how students recalled the same text given in different forms, an interactive storybook with animation on the computer, an interactive storybook with no animation on the computer, and a traditional print book (Seyit, 2011). The results showed significant differences in the ability of students' to recall using the interactive storybooks with animation, and the text without animation, showing academic success for students using the technology (Seyit, 2011).

When looking at the subject area of mathematics, a quantitative study was done using second grade classrooms and game technology. Different students learn in different ways and game technology enables students to learn in a way that works best for them (Shin, Sutherland, Norris, & Soloway, 2012). There are multiple multimedia representations that are used in game technology (Shin, Sutherland, Norris, & Soloway, 2012). Some students prefer audio more than video or animation more than text, and game

technology can incorporate many of those representations (Shin, Sutherland, Norris, & Soloway, 2012).

Game technology is a unique technology used in classrooms yet research had not been done before this

research article identifying whether or not game technology enhanced students' arithmetic skills in the

classroom (Shin, Sutherland, Norris, & Soloway, 2012). The study consisted of a classroom using game

technology and also a classroom using paper based games in order to practice arithmetic skills (Shin,

Sutherland, Norris, & Soloway, 2012). Games have specific learning goals and students know what the

goal of the game usually is, as well as what the rules of the game are (Shin, Sutherland, Norris, &

Soloway, 2012). Students who use game technology use their cognitive skills as well as abstract thinking

in many games because of what they have to do and how they do it (Shin, Sutherland, Norris, & Soloway,

2012). Learners are able to control their activity in game technology, but before Shin, Sutherland, Norris,

& Soloway's (2012) study, it was unknown whether technology influenced students' arithmetic skills in a

positive way or not. After using the game technology in the classroom, the research found that students

who used the game technology performed better than students using the flash card game, as well as

students who used the game technology more frequently performed better than students who used it less

(Shin, Sutherland, Norris, & Soloway, 2012). Game technology improved students' arithmetic skills

according to Shin, Sutherland, Norris, & Soloway's (2012) study.

Another study researched the use of the IWB in classrooms and teachers were interviewed stating

that the use of the IWB allows for better differentiation by the teachers because it can reach students with

lesser abilities by highlighting text on the board while reading (Allsopp et al., 2012). The IWB also

improves fine motor skills of students, which is particularly important to early childhood students

(Allsopp et al., 2012). Technology was also used to show that project-based learning can be used in early

childhood to improve the students' knowledge of content-area learning (Wetzel, Foulger, Rathkey, &

Mitchell, 2009). Three of the studies used computers in their everyday classroom or computer lab in order

to enhance academic learning (McGrail & Davis, 2011; Seyit, 2011; Wetzel, Folger, Rathkey, & Mitchell,

2009). Technology was also used to interact with others outside of the classroom in order to improve

classroom learning, whether to communicate with peers or parents (McGrail & Davis, 2011; Wetzel,

Folger, Rathkey, & Mitchell, 2009). It was also shown that the majority of teachers using technology acknowledged that it positively affected their students academically (Kelsey, Mata-Claflin, Holland, & Castillo, 2011; McGrail & Davis, 2011; Seyit, 2011; Wetzel, Folger, Rathkey, & Mitchell, 2009).

<div align="center">**Engagement and Motivation of Students**</div>

Technology has been shown to enhance students' engagement while learning and motivation towards learning (Emerson & Bishop, 2012; Lee, 2012; Tsung-Ho Liang, Yueh-Min Huang, & Chin-Chung Tsai, 2012). The primary reason students do not succeed in school is due to the lack of appropriate methodology and materials being used to help motivate student interest, thus indicating the need for technology to be used in classrooms (Lee, 2012). Technology can assist teachers in capturing learners' attention in a variety of ways that cannot be done without technology use (Lee, 2012).

Lee (2012) has demonstrated a particularly strong study using English as Foreign Language (EFL) learners. The study used students who were defined "at-risk" in grades two through six to be pulled out of their classrooms to listen to stories told with the enhancement of PowerPoint and Voice thread, a visual and auditory aid in storytelling (Lee, 2012). This study was strong because it used students' perceptions in surveys, as well as teachers' observations through interviews and the storytellers' observation notes (Lee, 2012). The students are the only ones who can speak their own voice and through the surveys we could understand from the students' point of views whether or not they were more engaged (Lee, 2012).

Voicethreads allow students to be able to use text and/or their own voice recordings in order to fulfill assignments or respond to peers (Brunvand & Byrd, 2011). This allows students who may not have the academic ability to use text on the computer, to be able to respond using their own voice, allowing for students to become more engaged in the collaborative environment of school (Brunvand & Byrd, 2011). Students can also work at their own pace using the program Voicethread, instead of feeling pressured in a classroom full of hands going up in order to respond (Brunvand & Byrd, 2011).

Students can also benefit from text to speech programs which reduce frustration for students

while reading (Forgrave, 2002). Based on Forgrave's (2002) research of literature, Students with Disabilities become more prosperous and independent readers through the use of this assistive technology (Forgrave, 2002). Speech-synthesis programs give students the self esteem that they need to not worry about decoding words and be able to counteract their weaknesses and build on the students' strengths (Forgrave, 2002).

The studies contribute to the development of the theme because they all showed results of the students' engagement and/or motivation being increased through the use of the different technologies (Emerson & Bishop, 2012; Lee, 2012; Tsung-Ho Liang, Yueh-Min Huang, & Chin-Chung Tsai, 2012). Qualitative, Quantitative, and Action Research methods were all used in order to evaluate student motivation and engagement through the use of technology (Emerson & Bishop, 2012; Lee, 2012; Tsung-Ho Liang, Yueh-Min Huang, & Chin-Chung Tsai, 2012). Both Lee (2012) and Emerson and Bishop (2012), showed in their findings that the motivation of students with disadvantaged learning abilities can improve through the use of technology. The instructional presentation of learning was improved through the use of Interactive White Boards (IWB), PowerPoint and Voice thread, which support visual and auditory learners, increasing their engagement (Lee, 2012; Tsung-Ho Liang, Yueh-Min Huang, & Chin-Chung Tsai, 2012).

The use of technology can also motivate students in the Early Childhood Classrooms which tend to lack technology use (Aronin & Floyd, 2013). Twp Preschool classrooms that used iPads indicated that play based apps gave young learners tons of motivation and built their confidence for learning (Aronin & Floyd, 2013). The use of the iPad can also differentiate based on students' interest because there are so many educational apps out there, students can choose what appeals to them to learn (Aronin & Floyd, 2013). Jeffs, Behrmann, & Bannan-Ritland (2006) used different kinds of assistived technology in their study and also exclaimed that the use of it caused students to become more independent and build confidence. The study also stated, based on parent interviews that the use of the assistive technology helped students with a sense of encouragement while learning to read and write (Jeffs, Behrmann, & Bannan-Ritland, 2006). The students were able to learn fast which gave them confidence (Jeffs,

Behrmann, & Bannan-Ritland, 2006).

Students that used Wiki sites to learn in a variety of subject areas were researched in order to see the benefits of using Wiki's (Lee, 2012). The findings from teacher interviews indicated that students were highly motivated to contribute to the Wiki for the classroom because of the fact that peers would see it (Lee, 2012). The students were motivated because they wanted to take pride in their work because of the fact that others, besides their teachers would see it (Lee, 2012). They were highly excited to be able to use the technology as well (Lee, 2012). Teachers responded to the researcher that students were interested and motivated in the Wiki's "beyond the bell", as stated by a teacher, because students were contributing to the Wiki's at home a great amount (Lee, 2012). It also helped the school and home connection for many teachers and families because parents could go on and see what their students were learning in the school environment (Lee, 2012).

Tsung-Ho Liang,Yueh-Min Huang, and Chin-Chung Tsai (2012) indicated that the IWB was used in a classroom where interactive student learning and supported student learning were not enhanced through the use of the IWB. The case study took place in one classroom and the researchers stated that the results do not prove to be correct until further research is conducted in other classrooms with different teachers and students (Tsung-Ho Liang,Yueh-Min Huang, & Chin-Chung Tsai 2012). Also, teacher preparation and pedagogy needs to be thoroughly looked at before choosing a teacher to conduct a case study with (Tsung-Ho Liang,Yueh-Min Huang, & Chin-Chung Tsai 2012).

This research differs from the statements of teachers in Allsopp et al.'s (2012) study because teachers interviewed about the use of the IWB in their classrooms indicated that students were more engaged each day through the use of clickers and also being able to get out of their seats and interact with the IWB instead of always using paper and pencil. Based on other research, teacher preparation is a factor that can negatively impact how technology is used, and we cannot receive positive results without the best instructional strategies being used (Franklin, 2007; Howley, Wood, & Hough, 2011; Lu & Overbaugh, 2009).

Different forms of technology can improve student engagement and motivation towards learning for a variety of learners (Emerson & Bishop, 2012; Lee, 2012; Tsung-Ho Liang, Yueh-Min Huang, & Chin-Chung Tsai, 2012). Students with deaf-blindness and EFL learners were both analyzed in studies collecting data on their motivation towards learning through the use of technology (Emerson & Bishop, 2012; Lee 2012). Lee used interactive storytelling through the use of visual aids on PowerPoint and auditory aids using Voice thread technology for one year to improve EFL learners' motivation and engagement towards reading and interacting in the English classroom (Lee, 2012).

Video-phone technology was used in Emerson and Bishop's (2012) research through qualitative methods of a call log, communication memos, and interviews to verify that the students' levels of interest and enjoyment was sustained during the use of the video-phone technology, as well as students interactions with peers (Emerson & Bishop, 2012). The Interactive White Board was shown to only demonstrate increased instructional presentation, although the pedagogy used in the classroom was theorized not to be effective (Tsung-Ho Liang, Yueh-Min Huang, & Chin-Chung Tsai, 2012). Both Emerson and Bishop (2012) and Lee's (2012) findings indicated an improvement in the engagement and motivation of students who were at a disadvantage from lack of language or auditory/visual impairments through the use of technology.

Methodological Issues

There were many strengths and weaknesses in these studies relating to the use of technology in the classroom. Both Seyit (2011) and Emerson and Bishop (2012) used a variety of locations around the country to collect data from, not just one location. This made the results strong because further research was not needed to look at various locations and socioeconomic statuses.

When researchers used a variety of data collection methods, their methodological results were strong. Lee (2012), Lu and Overbaugh (2009), and McGrail and Davis (2011) all used a variety of methods to collect their data and analyze it demonstrating strengths in their results. Some researchers only used surveys to collect data, and at times, surveys from one school or area. Franklin (2007), Howley, Wood, and Hough (2011), and Kelsey, Mata-Claflin, Holland, and Castillo (2011) all used surveys as

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their only way of collecting data. Also, all of their data was collected in one state or from one school in order to find their results, resulting in a less reliable study. Tsung-Ho Liang, Yueh-Min Huang, and Chin-Chung Tsai's (2012) research also left us with the need for more research because of their choice of using one classroom in their study. The study concluded with negative results because of the method that they used, in only one classroom.

There needs to be further research conducted with the use of the Interactive White Board based on the negative results found with Tsung-Ho Liang, Yueh-Min Huang, and Chin-Chung Tsai's (2012) study. Interactive White Board's are used across the nation daily and further research needs to be done to prove they are worth the money spent on them. Also, more research needs to be conducted on students' perceptions of technology. Both McGrail and Davis (2011) and Lee (2012) used students' perceptions in their methodology, and it showed positive results. More researchers need to look at how students feel about technology, because they are the ones it is being used for. Far too many researchers focus on teachers' perceptions, when a handful of teachers do not enjoy the use of it, which does not lead to valid arguments for the use of technology. None of the articles addressed whether standardized test scores were affected by technology use, which also needs further research.

<div align="center">**Conclusions for the Research of the Literature**</div>

Factors that influence teacher use of technology, academic achievement of students using technology, and motivation and engagement of students using technology all combine to address the use of technology in education and whether or not it is being used effectively in schools. Factors that influence teacher use of technology include teacher preparation, time, school environment, and teacher attitudes (Franklin, 2007; Howley, Wood, & Hough, 2011; Lu & Overbaugh, 2009). Academic achievement of students is improved through the use of technology using computers in general, interactive storybooks with animation, classroom blogging, and project-based learning using PowerPoint. (Kelsey, Mata-Claflin, Holland, & Castillo, 2011; McGrail & Davis, 2011; Seyit, 2011; Wetzel, Folger, Rathkey, & Mitchell, 2009). The engagement and motivation of students improved through the use of Power point and Voice thread, Video-phone technology, and an Interactive White Board, enhancing

instructional presentation (Emerson & Bishop, 2012; Lee, 2012; Tsung-Ho Liang, Yueh-Min Huang, & Chin-Chung Tsai, 2012).

The factors, academic achievement, and engagement and motivation themes all combine together to show that technology can be used in a variety of ways in the classroom, and can positively affect students if used in the correct pedagogy. Teachers need the correct Professional Development and attitudes in order to improve the academic achievement of students, as well as their motivation and engagement. All of the factors that influence teachers' use of technology correlate with whether or not students will succeed in the classroom. Teachers who have better education in regards to technology and more Professional Development will be able to overcome barriers that technology may provide and teachers will be able to increase their students' achievement (Franklin, 2007).

The research described in this synthesis has suggested that better teacher preparation can result in greater achievement from students through the use of technology (Franklin, 2007; Howley, Wood, & Hough, 2011; Lu & Overbaugh, 2009). Teachers also need to increase interaction with the students through the use of technology in order to achieve results (Tsung-Ho Liang, Yueh-Min Huang, & Chin-Chung Tsai, 2012). The research suggests that using technology in various ways in the classroom can improve students' academically in all content areas including writing, science, and language arts (McGrail & Davis, 2011; Seyit, 2011; Wetzel,Foulger, Rathkey, & Mitchell, 2009). Also, students who are language or hearing impaired can also benefit greatly from these technologies, whether increasing their achievement or their engagement and motivation (Emerson & Bishop, 2012; Lee, 2012; Kelsey, Mata-Claflin, Holland, & Castillo, 2011).

These findings are relevant in the field of education today because the nation has spent billions of dollars for schools to have technology and access to the internet (Franklin, 2007). Much research has shown that the use of these technologies can in fact improve student achievement (Kelsey, Mata-Claflin, Holland, & Castillo, 2011; McGrail & Davis, 2011; Seyit, 2011; Wetzel, Folger, Rathkey, & Mitchell,

2009). It is the goal of teachers and administrators to improve student achievement and through the use of technology in classrooms; student learning can increase for the better. Educational leaders and policy makers have claimed that using a variety of technologies in the classroom can create high-levels of student engagement and achievement, which is what needs to occur in education today (Howley, Wood, & Hough, 2011).

Introduction

Technology use is important in the elementary classrooms of today because the students we are teaching today need to be proficient with 21st century skills them (Kelsey, Mata-Claflin, Holland, & Castillo, 2011). Based on a report in 2009, only twenty percent of the population of the nation believes that teacher preparation for the use of technology is necessary, yet students are growing up in this digital world and are supposed to be ready for careers involving 21st century skills (Kelsey, Mata-Claflin, Holland, & Castillo, 2011). Undergraduate programs and graduate programs for teacher candidates should involve some type of training for the use of technology for students, yet many do not, or offer very little training. I will be looking at data and analyzing data from Undergraduate and Graduate programs across the Rochester region, retrieving data from their websites about their teacher preparation programs. Looking at Undergraduate programs, I will be researching what is required of students in order to successfully complete their degree, finding if any course is related to the use of technology. Also, I will be looking at websites for University's Graduate programs and if technology is prominent in them. There are some schools with Master's programs directed to the use of technology and providing teachers with the knowledge and certification of becoming a Technology Specialist. Other schools offer little to no technology training in their Graduate programs. I will also look at area school district websites, and analyzing what those districts release on their websites to the public about their technology use, training, money spent on technology, and resources for teachers using technology. What I have found on each school district is only what they have made available on their websites. If information was on their websites and it was easily not accessible or searchable, I did not report on that information. I will also interview a few teachers who have been teaching in elementary classrooms for multiple years. I will interview an inclusive classroom teacher, general education classroom teacher, and special education teacher who is a consultant teacher and resource room teacher. I will ask them about their technology use, their undergraduate or graduate program technology training, the training that they are able to participate

in through their district, and how students use technology in their classrooms. Data will also be derived from a video based on research by Karl Fisch on the progression of information and the impact it will have on the world. The data from this video is important for the students of today and what their futures will consist of. Based on all of the data, from college Undergraduate and Graduate programs, school district websites, teacher interviews, and research about technology now and in the future, I will be able to see a collection of data allowing me to analyze technology in numerous ways. I will be able to analyze data about technology use in schools by students and teachers, training of teacher candidates in undergraduate programs, and professional development of teachers in graduate programs and in school districts.

Undergraduate Programs

There are numerous Undergraduate programs in the Western New York region that provide students with great training and field experiences in the elementary schools of the area. Looking solely at early childhood and childhood education programs, I have found that many undergraduate programs provide technology training in some way to students. I was only able to find information on technology training in the undergraduate programs at various schools based on their school websites. Some schools had provided course catalogs or outlines of the classes required in order to graduate from the program and only some had technology courses in their required core classes for students becoming teachers. I would assume that if a class is not provided for technology use, students may learn in hands on experiences in the schools that they participate in for their hours of field experience and student teaching placements. This means that students simply have to learn from their school-based teacher educators or teach themselves how to use the technology that is provided in classrooms. St. John Fisher College has a teacher preparation School of Education in which students have the choice between being in the Inclusive Adolescent education program and the Inclusive Childhood education program (St John Fisher College, 2013). Looking directly at the Childhood area students come out of the program with the knowledge and training to become teachers for grades 1 through 6. Looking at what is required of students in the

program, a technology class is required in order for students to graduate. Looking at the course catalog, the course description includes: "The use of technology to improve instructional practice is an essential skill for all teachers. This course is designed to support teacher candidates in developing a knowledge and skill base in educational and assistive technology. The long term goal is to ensure future teachers can make effective use of available technologies to enhance differentiated instruction and planning, to improve personal productivity, and to support all students, including students with ELN, fully in the classroom. This course teaches students to locate, use and adapt a variety of assistive technology devices and software tools and to apply these technologies in a wide range of integrated educational settings. The use of assistive technology as it relates to education, communication, vocation, recreation, and mobility for individuals with disabilities will be explored." (St. John Fisher, 2013). The course is a semester long three credit course required for students to graduate. The Ralph C. Wilson School of Education requires that technology be a part of the curriculum to train teacher candidates for the children of the future. All of this data is found from the St. John Fisher website in the fall of 2013.

Nazareth College provides teacher educators with a unique program designed to ensure students graduating from the program have the opportunity to gain four teacher certifications in Early Childhood, Teaching Students with Disabilities at the Early Childhood Level, Childhood Education, and Teaching Students with Disabilities at the Childhood Level (Nazareth College, 2013). The program offers all of these great things, except the program does not offer a course in technology use in education. It is not a required course nor is it an optional course. The only piece of the program at Nazareth that provides students with some kind of technology training is a course designed to introduce students to the use of an electronic portfolio throughout their college semesters at Nazareth College. Besides the use of an electronic portfolio, technology training is not offered through the course work of Nazareth College. The classrooms may have technology and students may have some training in other classes on using technology, yet there is no class designed specifically for technology training. Students also have field experiences in which I am sure many classrooms have technology, and through students' field

experiences, knowledge of technology may be gained by teacher candidates at the college level. All of this data is taken from Nazareth College's website in the fall of 2013.

Canisius College is outside of the Rochester region, and it is actually in the Buffalo, NY area, but I believe that they have a great teacher education program and I wanted to include their data in my findings. Canisius College offers undergraduate students a variety of options to choose from when becoming a teacher educator. Students can be involved in coursework preparing them for certifications in either Childhood; Early Childhood/Childhood; or Students with Disabilities/Childhood. With numerous choices, students at Canisius are really able to concentrate on the age and level of students that they are willing to work with. Being able to become dual certified in Childhood and Early Childhood, or Childhood and Special Education is also a great opportunity for students because many teacher preparation programs do not offer this option. Canisius College does in fact offer a technology course in their undergraduate curriculum of core classes. The course "Explores applications of technology in education. Emphasizes evaluation and selection of software, high and low-tech devices, distance learning and state of the art technologies that impact teaching." (Canisius College, 2013). Through the course, teacher candidates are able to benefit from an introduction to the technology use for education, and the success of their students. All of this data is taken from Canisius College's website in the fall of 2013.

The College at Brockport has a great educational program providing future teacher educators with the knowledge to teach all levels of students and to improve student learning today and in the future. The Undergraduate program at The College at Brockport has only one option and that is to become Dual certified in Special Education and in Childhood Education. (The College at Brockport, 2013). I attended The College at Brockport for both my Undergraduate and Graduate years. I can tell you that the college does not offer a course on technology, and that is something that I do think they need to change. I can tell you though, going through their coursework that there are professors who offer the opportunity to learn about technology in their pedagogy courses. In one Special Education methods course that I had taken, a professor named Dr. Moira Fallon had introduced many forms of technology and assistive technology to

us in the course. We researched Kidspiration and Inspiration, programs that offer assistance with writing for students. Dr. Fallon had also shown us many educational programs on her iPad. We used the Interactive White Board (Smart board) in class and she had shown us a few things using that as well. Although there is no course directly teaching students about technology in the college's undergraduate program, there are technology pedagogies taught in some of the courses. I can only say that I know that because of having gone through the program. I cannot state the same data for college's that I have not attended. All of this data was taken from the College at Brockport's website in the fall of 2013 and from my own knowledge and experience of being a student in the program at Brockport in the fall of 2010 through the spring of 2013.

Geneseo, a State University of New York is ranked 2nd among top undergraduate teaching programs in Regional universities in the North east region. This indicates that in the area of Rochester/Buffalo, Geneseo is the best college to attend for the undergraduate teaching program. (Geneseo, 2013). Teacher education is the largest academic major for the college that has its own school of education, the Ella Cline Shear School of Education. The college offers three different tracks for elementary teacher candidates, including an Early Childhood and Childhood Education program, Childhood Education, and Childhood with Special Education. Although the college is ranked amongst the greatest for Undergraduate teaching programs, the program does not offer a core class in technology. Although the college does not provide coursework in technology, teacher candidates probably gain some knowledge throughout their field experiences in actual classrooms. All of this data is taken from Geneseo, the State University of New York's website in the fall of 2013.

Based on the data found, in the Western New York region, undergraduate programs are not very concerned about pre-service teachers gaining the knowledge that they need in order to use technology to best support students. Only two of the colleges researched require one class devoted to learning about technology for education. Three colleges do not require any class devoted to training teacher candidates on using technology in the classroom. iPads, Interactive White Boards, Computer programs and resources

are all important technologies in classrooms today that can be used in a way to benefit students and teachers greatly. The colleges that do offer a class devoted to technology only offer the one three credit class. This data is based on the college websites, specifically their course catalogs. Teacher candidates at the undergraduate level are not receiving any training or information on the benefits of using certain technologies in the classroom. For this reason, teachers may struggle with using technology to benefit their planning and instruction, as well as using technology to benefit students learning.

Graduate Programs

New York State requires a Master's Degree within five years of gaining teacher certification in order to receive Professional certification. The Master's programs at the area's colleges are very vital and important to a teacher's Professional Development. Master's programs at these colleges can also lead to more certifications for a teacher giving more flexibility for potential job openings. Looking at the same area colleges, I have collected data on the Graduate programs offered at each school, and whether or not they offer a master's program devoted to technology. Teachers who do feel that they are well-prepared for the use of technology are usually recent graduates who received technology preparation at their School of Education, indicating that preparation and training is a major factor related to technology use for students (Franklin, 2007). Based on this information, having a Master's program devoted to technology will best prepare teachers to use technology in the best way in classrooms today.

St. John Fisher offers a four master's programs for people who do not have initial certification, and four different programs for current teachers. They offer a master's program for math/science/technology education (St. John Fisher, 2013). The college sees math, science, and technology as subjects that are easily integrated and share many commonalities. The curriculum of the program offers classes directly aimed at integrating technology into the classroom, as well as being a program that is offered to teachers of certification from kindergarten through grade 12. The program contains 36 credits that need to be completed in order to earn the Master of Science. The program lists the

learning outcomes that they feel students coming out of the math/science/technology program will be able to do and one of them is that teachers will be able to integrate technologies in the learning environment. St. John Fisher offers this program realizing the importance of math, science, and technology today and what it means for the future of our students in schools today. This data is taken from the St. John Fisher College website in the fall of 2013.

Nazareth College has its very own language, literacy, and technology department which seeks to qualify teachers in these areas to become specialists and in turn, be highly-sought after in these particular fields (Nazareth College, 2013). Language, literacy, and technology are fields today in which educators need to understand and prosper in, in order to reach all of its students and prepare them to be college and career ready. The department offers four different program options, for these areas, including allowing teachers and teacher candidates to receive an Educational Technology Master's degree. The program realizes the digital natives that students are today and how students from kindergarten through twelfth grade are using technology each and every day. The college describes that school districts want teacher who can use technology and easily integrate it into instruction, as well as be able to teach their colleagues how to use technology and help students benefit from it in the best way. The program offers the students pursuing the degree the chance to have hands on experience with the latest technologies in classrooms today, which is important in ensuring teachers and teacher candidates, are gaining the experience and training that they need with the technologies. Students also learn how to create real web pages giving them real world experience. Students in the program do not just learn how to use computer programs, but learn about multi-media, robotics, and web design. The degree also leads to the students in the program being able to gain an extra certification as an educational technology specialist for kindergarten through twelfth grade. The program offers flexibility as well for those who are pursuing the degree, allowing students to go to class traditionally or to be able to learn hybrid through coursework. For those who are teachers in a classroom already and who do not have a lot of time to commute to the campus, the hybrid option is exceptional. The program contains 39 credits and allows you the flexibility of being able to

complete the program in two years. Nazareth College offers this program in hopes to help the teachers of today to be highly qualified, and be able to teach the students of today who immerse themselves in technology day to day. All of this data is taken from the Nazareth College website in the fall of 2013.

Canisius College offers a numerous amount of Master's programs related to the field of education, including a master's in differentiated instruction, literacy, educational leadership and supervision, deaf education, and even offers students the chance to receive a Canadian teaching certification (Canisius College, 2013). Because of the college's plethora of choices, it is no surprise that the college offers an Educational Technologies and Emerging Media program. The program is extremely versatile as well, offering students the opportunity to have the program lead them to a certificate as an educational technology specialist in kindergarten through grade twelve, or for students to have the option of not gaining a certificate, if they choose. This option is great for people outside of the world of education, to gain that knowledge of educational technology for careers other than teachers. The program also offers students to be able to complete their master's completely online, which means that students in other cities can earn this master's degree from a distance because they do not have to go to the campus in Buffalo. The program is only 33 credits and amazingly, allows for students to be able to earn the degree in as little as fifteen months. Earning a degree fast, and being able to earn it from your very own home on a computer, makes this program stand out. All of this data is taken from the Canisius College website in the fall of 2013.

The College at Brockport offers many Master's programs, but most of them are for teachers of the Adolescent age group (The College at Brockport, 2013). The only program offered for students interested in childhood education is a literacy education program for birth through grade 12. Other than that, students who are interested in staying in the early childhood and/or childhood tracks, have no options for Master's degrees. The college did have a Childhood Curriculum Specialist program for years but the college recently got rid of the program in 2013. That program had an elective called "Technology in the Classroom", which allowed graduate students a chance to learn about different technologies,

software, and programs. The current literacy education program offers no class on technologies to students. All of this data is from the College at Brockport's website in the fall of 2013.

Geneseo, a State University of New York, offers a few masters' programs for students seeking a master's degree and who wish to teach early childhood or childhood education. They have three programs, Early Childhood Education, Childhood Multicultural Education, and Reading and Literacy Birth-12 (Geneseo, 2013). The only program that offers a class that includes technology as a part of its core classes is the Childhood Multicultural Education program. This program offers a course called Mathematics, Science, and Technology Methods in the Elementary classroom. The class focuses on constructivism and describes that the course will integrate instructional technologies and hands on learning. Although it is great that they do offer coursework using technologies, the coursework on technology is still not enough for future and current teachers. All of this data is taken from Geneseo's website in the fall of 2013.

Based on the data from Western New York's region of graduate programs and the training these future and current teachers pursuing a master's degree undergo, only 60% of these schools offer great training for the use of technology in education. Only three of the five schools researched in the area offer a Master's program devoted to helping future and current teachers gain the knowledge that they need to teach the students that are immersed in technology each and every day. Two of the schools researched either only offer one class in technology or none at all, depending on the program chosen. People are being hired and placed into schools, only to not properly know how to effectively plan for their students, and use technology to benefit themselves and their students learning. Also, people are being hired in school districts based on the fact that they are highly qualified and trained to use instructional technologies in their classrooms, and be able to train and teach others on how to effectively use technologies in schools. A program that allows students to earn an extra certification in becoming an Educational Technology Specialist is beneficial to teachers looking to be hired, as well as school districts

looking for current, qualified teachers for their districts. Choosing the right master's program is beneficial to the success of you, your students, and the district that you are hired in.

School Districts

School districts around Monroe County in New York use a variety of resources for the use of technology in their schools, as well as spend numerous amounts of money on technology within their budget each year. Through the use of the surrounding districts websites, data has been found relating to the amount schools spend on technology, the resources they use, including software and websites, the professional development that they receive surrounding technology use, the specialists available to assist with technology issues, and more. Some of this data was easily accessible through district websites, where as some sites had little to no information on technology use in their district at all. Lu and Overbaugh (2009) reported a particularly strong study indicating that school environment was a major factor affecting technology use, and providing both quantitative and qualitative data. Based on these findings, it is important for districts to have resources and information on technology easily accessible to teachers on the district website. Also, having the information on technology quickly and easily available to teachers affects teachers' technology use. According to Howley, Wood, and Hough (2011), many teachers have indicated that the time it takes to prepare lessons using technology, and the time it takes to be involved in professional development to learn how to use it, affects their technology. If resources are easily accessible and easily found in one place, like a district technology page, technology use will improve. Also, Liu (2013) found that sharing and collaborating were very important factors in order to succeed and develop with technology. Having a place where teachers can quickly share resources for technology and important websites helps all involved in a district to use technology efficiently. It is also great to have all of the information about technology in one place because parents of students are able to view the information to either help their students, or learn about their district. Also, people who are seeking to live in a specific school district may look at a school district's website and be interested in their technology use and training. Being able to quickly find information on technology for school district's is

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extremely important and I have researched many districts in order to gain knowledge about what is out there.

The Greece Central School District serves more than 11,000 students and has 17 schools in the district. With all of those students, technology is an important aspect of the district. Easily found, an assistive technology tab, an office of technology tab, as well as an integrated technology teacher's page, are all available on the districts website (Greece Central School District, 2013). Being able to find these pages easily is important because otherwise, I may not have been able to see the data and information in order to report on it. Under the assistive technology tab, different technologies are shown that help a student with a disability to reach their fullest potential. The page also links to related pages, including a software tools page describing three different technologies that the district uses, Board maker, Classroom Suite, and Read and Write Gold. Boardmaker is used by staff to create various materials using visuals and Picture Communication Symbols. Classroom Suite is used to target pre-kindergarten through grade five students in the subjects of math, and English language arts and is able to allow staff to target students' needs. Read and Write Gold is a tool used to support students in all areas of literacy. These software tools are all described on the website. The Office of Technology page is also easily accessible, and includes information about internet security, help and online service requests, integrated technology teachers, software and app requests, forms for technology usage, hardware acquisition services, and home software. All of this information is available and is a huge resource for teachers in order to succeed in the classroom through the use of technology. The integrated technology teachers' page is in particularly a great tool for teachers. The page offers a help link giving teachers the opportunity to get assistance if they encounter issues using technology. There is an "apps" portion of the page, which is astonishing. This is helpful for teachers and for parents, in my opinion. There is a list of various subjects and if you go to each subject, there are apps suggested for various grade levels and areas within the subject. Apps are becoming more widespread throughout education with the availability of iPads growing in districts and in homes. Teachers or parents can target students' needs with various apps suggested for different subjects and

levels. On the integrated technology for teachers' page, there is also a link for virtual field trips, lesson

and filing sharing page, and training page. These are all excellent pages for teachers to receive assistance

from each other and be able to collaborate and share ideas and documents. The Greece Central School

District definitely offers teachers, staff, and parents an amazing amount of resources, tools, and assistance

to succeed and benefit students directly. On the districts website, there is also a link to the 21st century

standards. The districts 2013-2014 budget is also easily accessible. On the board of education's website,

you can search and view various documents. If you search technology, information can be found on the

technology plan for the year, the technology budget, and various presentations throughout the year by the

board. According to the 2013-2014 budget of the Greece Central School District, there is a total of over

$5 million dollars being spent on technology for the school year. On the technology budget presentation,

the people of the community can see what exactly that money is being spent on for the district. The

Greece Central School District offers a great amount of information about technology from their budget,

to help with technology, to devices and software used, to resources for teachers and parents. All of this

data was found on the Greece Central School District website in the fall of 2013.

The Fairport Central School District currently serves about 6,200 students in kindergarten

through twelfth grade (Fairport Central School District, 2013). The district has a specific building for

buildings and grounds and technology. Easily accessible, the district has a technology services page found

within the departments menu of the website. When directed to the technology services page, you will

quickly see a help desk email address and a photo of the director of technology services for the district.

The page has two different features, the "District Technology Standards, Policies & Procedures" section

and the "Instructional Resources" section. Under each subheading, there are numerous links. Beginning

with the policies and procedures, there are different topics addressed including an acceptable use policy,

technology standards, BOCES imaging center services, software, student data dashboard, and district

announcements. The acceptable use policy is a great way to publicize the expectations of computer use in

schools. The technology standards link provides visitors with current district standards for different

technologies and equipment like laptops, printers, smart boards, assistive technology, audio and visual equipment, camera equipment and more. This is just a great way to make sure these standards are easily accessible to everybody. The software link lets you request new software; visit a wiki where you can view where your request is in the approval process, and a software portal where you can view current software available in the district. There are hundreds of different software's available. The BOCES imaging center services page is just an easily accessible place for teachers to put in mass print requests. The student data dashboard shows student test and academic results. The instructional resources section of the page is most impressive to me on the district's site. Under the resources section is where you will find a variety of significant tools, especially for teachers. There is a how to link which leads you to a variety of tutorials for different types of technologies and softwares. Next is the Fairport apps page showing users how to use Google mail and calendar, and the school tool page which unfortunately requires a password. The web tools page has tons and tons of resources for teaching, which is an amazing collaborative tool that teachers can look at and learn about the resources available via technology. The web publishing manager pages helps teachers create and use their very own sites. The iPad blog shows various apps and tutorials for use of the iPad in classrooms, which are available in the district. There is also a technology vision team who helps others to learn about technology and they have a link under the instructional resources section as well, giving tips to other teachers about using technology in the classroom to enhance learning. Teachers will definitely be better trained and able to use technology if using this page and the resources shown. There is also a new teacher information page giving them the tools and information new teachers may need about technology when first beginning in the district. Looking at the district's budget for this school year, they allocated a budget of about 2.5 million on library media and computer instruction. The Fairport Central School District had a technology services page that was easily found on the homepage with a great amount of information as well as an easily found budget page allowing visitors to see what the district's money is being spent on. All of this data was found on the Fairport Central School District's website in the fall of 2013.

Victor Central School District is home to over 4,000 students and is ranked as the second fastest growing district in the state, with the population of students growing tremendously each year (Victor Central School District, 2013). The district has plans to expand schools to accommodate the growth of the district. The district is also a high performing district recognized by the state of New York. With so much that this district has to offer, technology is a huge importance to benefit student achievement. On the district's home page there is a direct link to the computer services department. Under this page, the director of technology welcomes visitors and introduces himself as well as the page exhibiting many subheadings to view. The various pages include inventory solution, Macintosh Os X deployment, important links, technology forms, integrating Macs, Did you know…, Windows 7 deployment, tech how to videos, and remote access. Inventory solution is a password protected page. The important links page only has about 4 useful links for the staff to use. The links are for staff use. The technology forms page includes the acceptable use policy form for students and for staff. The integrating Macs page has a link to a presentation created by the director of technology, providing information about using Macs in the classroom. The "did you know…" page just states a fun fact about computer use that users may not have known. The technology how to page is one of the most useful pages on the site, with various videos on different technologies and softwares that are available in the district. The remote access page is a helpful link because it allows staff to connect any computer or tablet and connect it to a school district computer, allowing staff to access shared files and more. Searching the district's website for information on their budget, I could not find any information about how much money is spent on technology for the district. The budget presentations available focused on staffing numbers and the total budget. All of this information was found on the Victor Central School District's website in the fall of 2013.

The Penfield Central School District serving about 4,600 students had one of the most enlightening websites including a technology services department page for their district as well as a very informational district technology plan (Penfield Central School District, 2013). The technology services page had several different sections for visitors to go to depending on what they were looking for including

the technology support team, technology policies and regulations, district technology plan, alerts, policy committee, and complex passwords. If visitors need to find who is on the technology support team or how to reach them, the support team page includes all of that information. The technology policies and regulations page was actually a blank page, with nothing on it. The alerts page identifies a phishing attack warning and lets staff know of what to do if they receive certain emails that may be spam. The policy committee I a password protected page, most likely only accessible to those on the committee because of important documents and information available on the page. The complex password page indicates that the district was audited by the New York State Comptroller's Office, indicating the need for more complex passwords to log on. The page gives hints and tips for creating and remembering complex passwords. The most beneficial page on the technology services department page is about the district technology plan. On this page there are numerous links, including the National standards for technology and the district's very own technology plan that is in effect until 2015. The document is twenty five pages long including technology goals for students, teachers, administrators, and the district as a whole. The district also has a technology vision statement quoted "As a learning community, Penfield Central School District strives to evaluate and utilize the most educationally appropriate technologies. We envision an environment in which the tools of technology support teaching and learning and serve as a catalyst for instructional excellence. All members of the community will acquire the technical knowledge, skills and attitudes to enhance lifelong learning and growth as productive citizens." They then begin to list the goals and objectives for students, teachers, administrators, and the district. They continue on to different sections of the plan, indicating how they are going to implement the plan. First, they indicate that the technology plan will focus on curriculum. There are multiple elements that they list to support the topic of curriculum including integration, student achievement, technology delivery, and parental and community relations. Under each element, the district provides a clear goal for the element and multiple actions to achieve the goal, who is responsible for the action, when the action needs to be completed, and indicators that let us know that the action has been achieved. All of the actions being achieved means that the goal has been met. The next section of the plan includes Professional Development. There is one element of

professional development which is simply professional development itself, with an action plan of providing teacher support. The next section of the technology plan includes infrastructure, hardware, technical support, and software. This part of the plan has three elements including infrastructure needs and technical specification design, inventory, and increase access. I enjoyed seeing the inventory element indicating what their district has of each piece of technology and where the technologies are located. The last section of the plan contained monitoring and evaluation. This section included two elements, evaluation and acceptable use policy. The district technology plan clearly lists the goals and actions being taken by the district to prepare students for the 21st century. This document has been the most beneficial piece of information to look at when trying to understand a district's available technology and what they are striving for in the future in regards to technology use. All of this information was found on the Penfield Central School District's website in the fall of 2013.

The Spencerport Central School District has over four thousand students enrolled in Kindergarten through grade 12. The mission of the Spencerport Central School District is to "educate and inspire each student to love learning, pursue excellence and use knowledge, skills and attitudes to contribute respectfully and confidently to an ever-changing global community." (Spencerport Central School District, 2013). The district provides technology learning opportunities for students and staff to contribute to this ever-changing global community. The district has an abundance of information available on the website related to their technology use. The district has a twenty-first century technology team, and technology advisory committee. The website has an easily accessible technology tab under the departments section on the main homepage. This leads to the technology department page containing information about what the department supports and numerous staff members and their contact information in the department. The Spencerport Central School District's technology department listed two links for visitors to view more information related to the technology department and what the district offers. The two links took you to the technology advisory committee page and the 21st century pilot program page. The technology advisory committee provides leadership, direction, and support to

academic programs of Spencerport as well as support services. The various roles of the committee include reviewing new technology as well as applications for future technology implementations to keep up with the ever-changing global opportunity, assessing and evaluating the needs and priorities of the district as a whole, and providing input about professional development opportunities that coincide with the district's technology and software. The committee has a variety of members to work together and to view all aspects of the district. The technology advisory committee is made up of community members, teachers of various age levels, an administrator, a student, a member of the Board of Education, and a computer services staff member. The 21st century pilot team or the technology team, focuses on meeting the Common Core Learning Standards of publishing writing using technology. The team looks at the standards and creates and/or modifies the English Language Arts modules that all schools must complete in order to have consistency at each elementary building. The 21st century team supports teachers as well as students in providing instruction on technology use to publish writing. The team will travel to each of the four elementary schools, and focus on teaching a specific grade level about the certain software that they will be using to publish writing. For example, in the month of October the team met with the fourth and fifth grade teachers at each school, as well as a select group of students from each grade level to teach them a program called "Blabberize". The students are considered to be "expert groups" chosen by their classroom teachers to provide their teacher with additional support with the program while teaching the entire class about the program. The team is also going to create training videos in order to assist teachers and students. The page also has many videos to use as resources about different programs, software's, and strategies used in actual classrooms of the schools. While browsing the Spencerport Central School District website, I could easily locate information about their budget for the 2013-2014 school year. Their presentation of the budget for the year broke up the district's budget into sections including a section for instructional media and computer assisted instruction. The district had a budget of almost 2 million dollars dedicated to those services. The district also has established a capital reserve fund for technology and classroom equipment. The district supplies great information about their use of technology as well as

their budget for technology. All of this data was taken from the Spencerport Central School District website in the fall of 2013.

There were a few districts that I researched that did not have much information about technology in their districts available. The West Irondequoit Central School District had no information available on their website about technology use in their schools (West Irondequoit Central School District, 2013). They have a teaching learning center with a few links of resources for teachers, but that is all. The Gates-Chili Central School District also did not have a lot of information available related to their use of technology in the district (Gates-Chili Central School District, 2013). The only information provided by the district was on their page "Our District" giving visitors information about what their district offers. The district page states on it "Along with rigorous curriculum and highly qualified staff, Gates Chili offers instructional technology to assist with educating the 21st century student. Computers in every classroom, computer labs, mobile wireless computer labs, Palm Pilot technology, teacher web sites, and online learning opportunities are some of the technology resources available to students and staff." (Gates-Chili Central School District, 2013). Although that statement was communicated on the website, the district did not give any other opportunities to learn more about technology in the district. I found all of this data from the various school districts' websites in the fall of 2013.

Altogether, I looked at seven different districts websites in order to find information on technology. The information that I had found is available to any visitor on the districts' websites. This is important because community members, and potential community members, need to be able to view information on technology uses in the schools in order to help their children, or the community as a whole to succeed. Five out of the seven districts had a technology department page with contact information available to one or more staff members, including phone numbers, email addresses, or both. This is an important feature if anybody, community member, parent, or staff member need information on technology. Four of the seven districts researched have a technology team for their district with a page including information about the team. Many of the districts with a technology team page included tons of

information about the technology use in the district or resources that they use. Budget information, related to technology use, was found within three of the districts websites. The budget information was easily found and had a section of the budget related to technology in some way, with a specific amount of money going towards technology. Five of the districts had links, resources, or videos available on their pages for staff, student, or parent use. The links that were on websites were for various websites that staff or students use or links for information about different technologies or programs used in the district. The resources found on various district websites included different apps recommended for use on iPads or iPods, various software's or programs recommended or that they use. District's who had videos available were mainly for training purposes, giving teachers tutorials on how to use certain software's or programs, or videos that were taken in the classroom showing how beneficial these programs can be for students. Two of the district's had technology standards that they were trying to reach available, including a district that had an entire technology plan available to view. The technology plan tells visitors of various goals and actions being taken by the district within the next few years relating to technology. All of the data that I had found on the websites was extremely informational and allows visitors to see the professional development, as well as the student success that is happening in schools today. Looking at what is being offered at districts and schools today, and at how many districts various aspects of technology are being offered, gives me the opportunity to understand what is still needed.

Did You Know

An online video resource is available to the entire world when it is on Youtube. Youtube is a website that allows users to upload videos for anybody to be able to view, search, and share. A video is available that was created in 2012. The video is titled "Did You Know" and discusses the component of technology for a majority of the time in the video(Did you know, 2012). The video tells us that the top ten in demand jobs in the year 2010 did not even exist six years before in the year 2004. Right now, in schools and colleges we prepare our students for jobs that do not even exist, using different technologies that are not even invented yet. Although this is true, students still need to understand the technologies of

today, to even be able to learn about technologies of the future. Succeeding in this ever changing world means learning to change and understand change. Every year new technologies are introduced and by teaching students to use them, they can hopefully learn how to use future technologies. The world is changing, and according to the video the average number of jobs today's learner will have is 10-14 jobs by the time they are 38 years old. This may be due to the fact that many jobs year to year, change, and new jobs become available based on new technologies arising each year. The video also reported that one out of every eight couples married in the United States last year met online. Technology is changing lives by creating jobs but also creating relationships and families. Facebook is also a piece of technology that is evolving and transforming this world. There are currently 845 million monthly active users on facebook today and the website is available in 70 different languages. Twitter is another network taking the world by storm, with 50 million people "tweeting" per day, which means writing small messages online. Google is a search engine that has risen to over 31 billion searches being made per month. People are relying on technology more than ever today, and every year, that number will only rise. Students need to be prepared to exist in this technology driven world. The number of text messages sent and received everyday exceeds the amount of people in total are living on this earth right now. The video tells us that the amount of new technical information is now doubling every 2 years, giving the next generation a technology driven world that they need to be ready to succeed in. The students of today need to be able to adapt to change and learn new technologies quickly in order to be ready for this 21st century world. The data reported in this video was collected and updated for the year 2012.

Analysis of the Data

The data that has been found has come from a variety of resources. I have searched College websites to find information on undergraduate and graduate programs and what each college has to offer according to the technology training that they offer in upstate New York. I have researched several suburban school districts in the Rochester, New York area, and what each district offers in relation to technology according to their websites. Many of the districts researched provided an abundant amount of

information related to their technology department, technology teams, contact information, resources, technology plans, and budget information. I also received data from a video entitled "Did You Know", a Youtube video talking about technology and how it impacts the world's lives today, and how it may affect the lives of us all in the future. The data found has told me that many, but not all of districts today are using technology daily, and reporting how they use it, how much money they are spending on technology, and deriving plans or goals according to the national and state standards related o technology use in schools today. Without teaching our "Digital Natives" of today about technology, and giving our teachers the professional development and training that they need to use technology n a way that benefits student learning, children of today will not succeed in years to come, The undergraduate programs of today are not preparing students to use technology, giving them only one class related to technology use or no class at all relating to technology. Many states do not require teachers to receive masters' degrees, so the teachers entering the work force have no technology training related to the field of teaching. There are numerous graduate programs that are directly related to teachers becoming technology specialists and that is an amazing training experience that many college students and teachers can endure to benefit their career, their students, their classrooms, and districts.

Part III

Technology Website

Based on the research that I have found, and the data from district and university websites, technology is beneficial to the classroom but teachers are not always receiving the most beneficial training for technology use. After reviewing literature, many teachers and professionals say that lack of training and the time needed for training stands in the way of their use of technology in the classroom. With that being said, those who have received training and felt well prepared to use technology, and who were frequently using computers in their classrooms, were recent graduates who received technology preparation at their School of Education, indicating that preparation is a major factor related to technology use (Franklin, 2007). As indicated by my research, the data has shown that many Schools of Education in Upstate New York do not include technology training in their studies. There are some colleges that have Master's Programs dedicated to the learning of using technology in the classroom, which will help those in the program feel well-prepared to use technology in the classroom. Besides training, teachers also feel that they do not have enough time for technology. Many teachers responded to surveys and interviews indicating that the time it takes to prepare lessons using technology, and the time it takes to be involved in professional development to learn how to use it, affects their technology use (Howley, Wood, & Hough, 2011). Because of these factors affecting technology use, and based on the data that I have found, I wanted to create a website that will help train teachers how to use different aspects of technology in the classroom, as well as save teachers time with planning lessons using technology.

I created a website that includes different websites and resources available for use in a classroom. The website is directed mainly towards use in the elementary classrooms, but some resources may also be modified to use at the adolescent grade levels. I wanted to include resources and websites so that teachers can save time, by not having to search for resources themselves, and also to offer them a bit of training, by giving a description of many of the resources, as well as examples of how they could be used in the

classroom. I also gave a bit of a tutorial on the Interactive White Board, because one study that I researched by Allsopp et al., (2012) indicated that after interviewing teachers, they learned that many responded that they cannot handle learning everything about the Interactive White Board in a short period of time because there are so many tools and functions that the Interactive White Board can do. Also, many of the district websites did not include information about the Interactive White Board on their websites, which I feel is not benefiting teachers in those districts. Teachers in districts may feel more comfortable with the Interactive White Board, or be able to use it more beneficially for students if they had more training with it, or had resources to use with the Interactive White Board. In my website, I included information about the Interactive White Board, also known as the Smart Board, and resources and websites for the subject areas of literacy, math, social studies, science, as well as resources for all subjects, and a page about different resources and website available for use with iPads and iPods. With this website, I hope to send this website as a resource for training use to different districts and universities because based on my research and data that I had found; I felt that the website would be amazingly beneficial for all. This is also a website that I can use if I wanted to host training event for teachers or students myself. Being able to share my love and dedication for the use of technology in the classroom with other professionals or pre-service teachers would be a gift for myself as well as others. The site could also be shared with parents or students themselves. Making the site available for students' lives at home would benefit them greatly. Parents are always looking for ways to increase student learning at home, and students will enjoy many of the websites and resources available on the site because many of them include games. Educational games are a great way to entertain students without them necessarily thinking that they are doing "work" or "learning". I hope to bring joy to students and teachers using the resources that I have provided for use on the website, as well as offer better learning opportunities for all.

      I have named my website "Teach.LOVE.Tech". The link to my website is https://sites.google.com/a/u.brockport.edu/appetite4tech/ . I wanted to create a website with a name that would be unique and different, to catch the attention of teachers and students. I used Google Sites to

create my website, because of its ease of use. Hopefully, after creating a Google site, I could also train others on how to use the site creator. It was honestly so easy that anybody could use it. I also used an html image creator with my site. I wanted to have images on the site with an awesome font to catch users attention. I used Cooltext.com, a graphics generator to create logos. On the homepage of my website, it states, "Welcome to a site that will help you and your students love technology and learn together using it. I have searched and found some of the most efficient and fun websites and resources to use in the classroom in many different ways. Whole group, small group, or individually, all of these resources are beneficial to the learning of each student. I hope you find the website to be useful and I hope you learn to become a teacher techie!" I wanted to create a homepage that included a message that would invite users in. I did not want to include a ton of information on the homepage because that can be overwhelming for those learning to use technology. On the sidebar of my page, each of the different pages that are on my page is included. I have a page for websites or resources that can be used for all subject areas, literacy, math, social studies, science, Smart Board, and iPads/iPods. I will take you through each of these pages.

I created a page for each subject area, because that makes the site have easy navigation for both students and teachers. On the subject page of literacy, there are numerous websites that I have listed for use in the elementary classroom. The first website that I included for the literacy sites page was Raz-Kids. On my website, I include information about the website for users. "Raz-Kids is an amazing site where students can login and read books at their own reading levels. Teachers will have a username and when students log on, the entire class is visible. Each student can choose their name and begin reading at books at their own reading levels. Teachers are able to see what students have read and what level they are at. Raz-Kids is a part of the Learning A-Z company. Students read books in their leveled book rooms, and then take quizzes for comprehension." I also included pictures for each site. Pictures are easily uploaded on Google sites, as long as you save the images first. For Raz-Kids, I included a screenshot of the leveled book library for students. After every site that is mentioned, I include a link for students or teachers to click on to make the site easily accessible.

    The next site included in the literacy page is Starfall. Starfall is a website directed more towards

the early childhood age group, anywhere from Pre-Kindergarten to grade 2 students. The website

description on my site includes "Starfall is the perfect resource for students who are beginning readers.

Geared towards students in preschool through second grade, Starfall focuses on the phonics of reading

and is beneficial to students especially when beginning to read. Students can simply practice learning the

alphabet, read books that have specific phonemes and letter sounds, as well as play games about specific

phonemes and letter sounds, and read higher level books on their own. While reading, students can listen

to the book, and the words being read are highlighted. The site is great for beginning readers." I included

an image of the site's homepage, where it lists all of the different activities available for student use, as

well as a screenshot of one of the books as it is being read. The site has books that can be read aloud to

students and as each word is read, it highlights the word. The site is amazing for beginning readers.

Another fantastic literacy website included on my site is Tumblebooks. Tumblebooks is a site featuring thousands of books available for students. "Tumblebooks is a great resource for interactive books. These books can be read whole group on an Interactive White Board or read by students on their own. The books are searchable by subject or topic. Many of these books are well known published books that students enjoy and can enjoy even more as interactive books on the computer. Many books have text highlighting and audio narration." I have seen students use Tumblebooks in the classroom during independent reading time. It was used as a reward for students to be able to conduct their independent

reading on the website. Students really enjoy being able to read on the computer with the interactive

books. I included a screenshot of some of the Tumblebooks library on the website.

Storyline Online is another resource accessible on my website. Storyline Online is very similar to

Tumblebooks, yet both can definitely be used in the classroom. "Storyline Online is presented by the

SAG Foundation. Like Tumblebooks, there are thousands of books available on the website. Storyline

Online does not require a payment though. You can simply search a book by the title, author, or reader, or

simply just choose a book on their page, and be able to read it. The stories are actually read by somebody,

and are very interactive. The books also come with activity guides." The stories on Storyline Online are

different from Tumble books because it includes activity guides as well as narration by some famous

people. Students will love how interactive the books are. I included an image of the homepage, showing

that books can be searched by title, author, or "reader". The reader is who narrates the book, or reads it to

you.

Scholastic Story Starters is great website that I included and described for users. The entire Scholastic website is a great resource for teachers, but this is an activity that I feel is very unique and different, and that teachers may not easily find on the website. On my website, I describe the resource for others. "Now I know that we have many resources to improve students reading abilities, but what about writing? Students will love these Scholastic Story Starters. The Scholastic website overall is a great resource for students and teachers, but I wanted to focus on this part of the site because of how creative and fun it is! You can choose a story starter for the entire class or simply for students to do individually. This is great for creative writing, or even for students who simply finish other writing early and need some creative and fun writing to do while others finish. You can choose from adventure, fantasy, sci-fi or the scrambler story start machine." Story Starters is a great way to make students get creative with their writing as well as for teachers to come up with unique ideas for students writing. I included two screenshots of the website, to help users see the potential of Story Starters. One is where users select a Story Starters theme, choosing from adventure, fantasy, sci-fi, or scrambler, which chooses a theme at random. I also included the wheel where you spin for a story starter. I included instructions on the website as well, including "After choosing a theme, you must enter a name and grade level. The site picks topics from Kindergarten through sixth grade, with the higher grades having more advanced prompts. Then you simply are redirected to a page where you spin the wheel to receive your story starter prompt. After spinning the wheel, a story starter is provided at random. For example, I chose a fantasy story starter for

grade 2 and got "Make up a funny story about a curious hunter who makes friends with an elf...". If students do not like the character or the subject of the story they can simply spin that one wheel again to choose something different. It is a great way to get those creative minds thinking and to come up with some very silly stories. The students will love how random and creative the story starters can be!

The next literacy site that I have included is Read Write Think. Read Write Think is an essential resource for teachers to utilize. The site includes tons of lesson plans, and is easily searchable for teachers. "Readwritethink.org has tons of information and resources available on the website for classrooms, professional development, and after school or parent resources. They have everything from

lesson plans, interactives, apps, printouts, calendar activities, and more. They are sorted by grade level or searchable by keyword. Here is an example of what I found after searching for "Pilgrims" in grade 2." After that, I included a screenshot of what was shown after searching for Pilgrims in grade 2. I also included a screenshot of one of the lessons that I found when searching Pilgrims for grade 2. "Each lesson includes a preview of the lesson, the standards aligned with it, resources and preparation needed, instructional plan, related resources, and comments. The lesson gives an estimated time that it may take in a classroom as well." The website is a terrific resource for teachers, especially since it includes an entire lesson plan. Teachers may indicate that technology takes up too much of their time to use when planning, but I feel that resources like this save teachers tons of time.

Packing the Pilgrim's Trunk: Personalizing History in the Elementary Classroom

E-mail / Share / Print This Page / Print All Materials (Note: Handouts must be printed separately)

Grades	K - 2	
Lesson Plan Type	Unit	
Estimated Time	Nine 50-minute sessions	
Lesson Author		Devon Hamner Grand Island, Nebraska
Publisher		NCTE National Council of Teachers of English

Preview	Standards	Resources & Preparation	Instructional Plan	Related Resources	Comments

Overview ▸
Featured Resources ▸
From Theory to Practice ▸

The final literacy website that I comprised was ABCya. There are numerous literacy websites available, and I think I included the most resources for the subject of literacy on my website, because of that. ABC Ya is a website that could easily be used at home and at school. Parents will love to be aware of this one. The site basically has tons of games available for students to use. Educational game websites like this one can be used at home because students tend to forget that their "learning" by playing them because they are so fun. **"ABC Ya has tons of games available on the website for users. The site is sorted by grade level on the main homepage. This makes it easy to navigate for us teachers, as well as students. After choosing a grade level there are games for literacy, math, and miscellaneous games. The literacy games are relevant for grade level and even allow students or teachers to make games like word searches or puzzles."** On the website, I included a screenshot of the main homepage, indicating how easy it is to navigate, as well as a screenshot of some of the literacy games available on the website.

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The literacy websites that I made accessible on my site are important because of how different

they all are, and how they can be used in the classroom by the teacher, student, or for use at home. Many

of the resources that I found I simply searched for, as well as others I have known about through my substitute teaching and student teaching experiences at various districts, but especially the Spencerport School District.

Mathematics is also important in the education world today, because of the Common Core Learning Standards. Because of this, the math page on my website includes numerous resources and website available for the use of teachers, students, and even parents. Many students feel that they are not good at math, and indicate that it is difficult to learn, as well as many teachers indicating that it is a difficult subject to teach for those who do not understand it. I hope to help create a classroom learning environment where math is interactive and engaging, and not considered as a difficult subject for students.

The first website included in the math portion of my website is Arcademic Skill Builders. "Arcademic Skill Builders has a variety of subjects available on the website, but focusing on the math component of the site, there really is so many amazing math games for users. For the subject of math, users can browse by topic, addition, subtraction, shapes, etc." The site has tons of activities for different subject, but I feel as though math is a strong point of the website. The site is also an amazing tool to use at home because students are playing games and not concentrating on the fact that they are doing math. With this site, I included two screenshots, one of the games that show when you search addition games, as well as a screenshot of why games work, included on the website's page. I thought this was interesting because it can show teachers and parents why games work, indicating that 91% of students play video games, which makes educational games a reason why they help students to learn, because they love to play them.
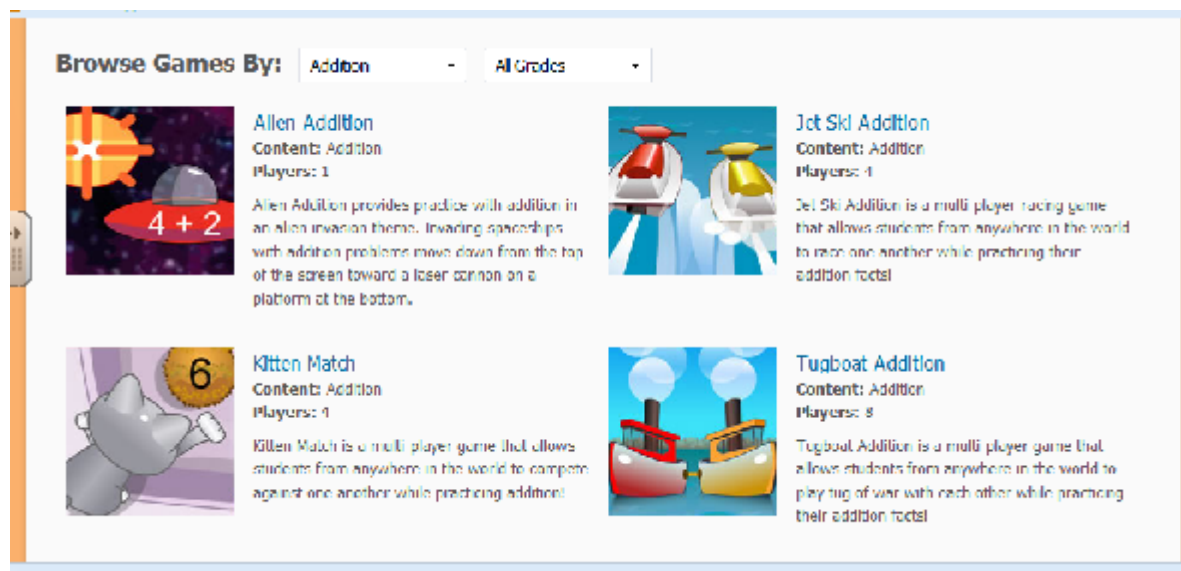
Why Games Work

Of the 53 million K–12 students in the U.S., 51 million of them (or 93%) play video games. Arcademic Skill Builders tap into the excitement of video games to engage today's students and help develop their 21st Century Skills. Our games help improve student performance through:

- Increased time on task
- Increased student motivation and engagement
- Increased corrective feedback

The Arcademic games challenge students to respond quickly over a series of short, timed trials. The aim is to increase rate of correct responses and decrease error rate until responses become automatic.

Also, a website incorporated on my math resources page is Math Playground. The name of it even makes it sound fun for students. This website is particularly awesome and teachers will love it because it is aligned with Common Core Learning Standards. "Math Playground is an amazing site with games, activities, manipulatives, worksheets, puzzlers, apps, and flashcards. The site includes activities directed towards students using real world math as well as activities that are aligned to the Common Core Learning Standards. There are video lessons as well. Here is an example of using the activities aligned with the Common Core Learning Standards for grade 3. Many different topics are covered, but here are the activities for fractions." On the website, I included a screenshot of the activities listed for fractions for

grade 3. The activities are listed as well as the Common Core Learning Standards covered by the activities. Teachers say that technology is time consuming, but this website can help you save time by easily connecting the standards to your teaching.

Cool Math 4 Kids is a website for use by students up until age 13. This website can also be used for older students though, as the link for Coolmath.com is easily accessible from this site, and is directed towards adolescent students. "Cool Math 4 kids is a great website for students up until age 13. For more advanced math, there is also coolmath.com. The site has a variety of resources available from games to puzzles to apps to lessons. There are also lots of cool things to do with geometry and art. The site is a great resource for individual work or whole group. The resources are also great to tell parents about so students can practice their math at home. The great thing about the site is that it is absolutely free with no membership involved." This is a great site for teachers to give as independent work, or to even give as a resource for parents. Parents are always asking for website to use with their children at home and this is a great one to use because it does not require a login or membership. I included a screenshot of the homepage and all of the activities easily clickable from it.
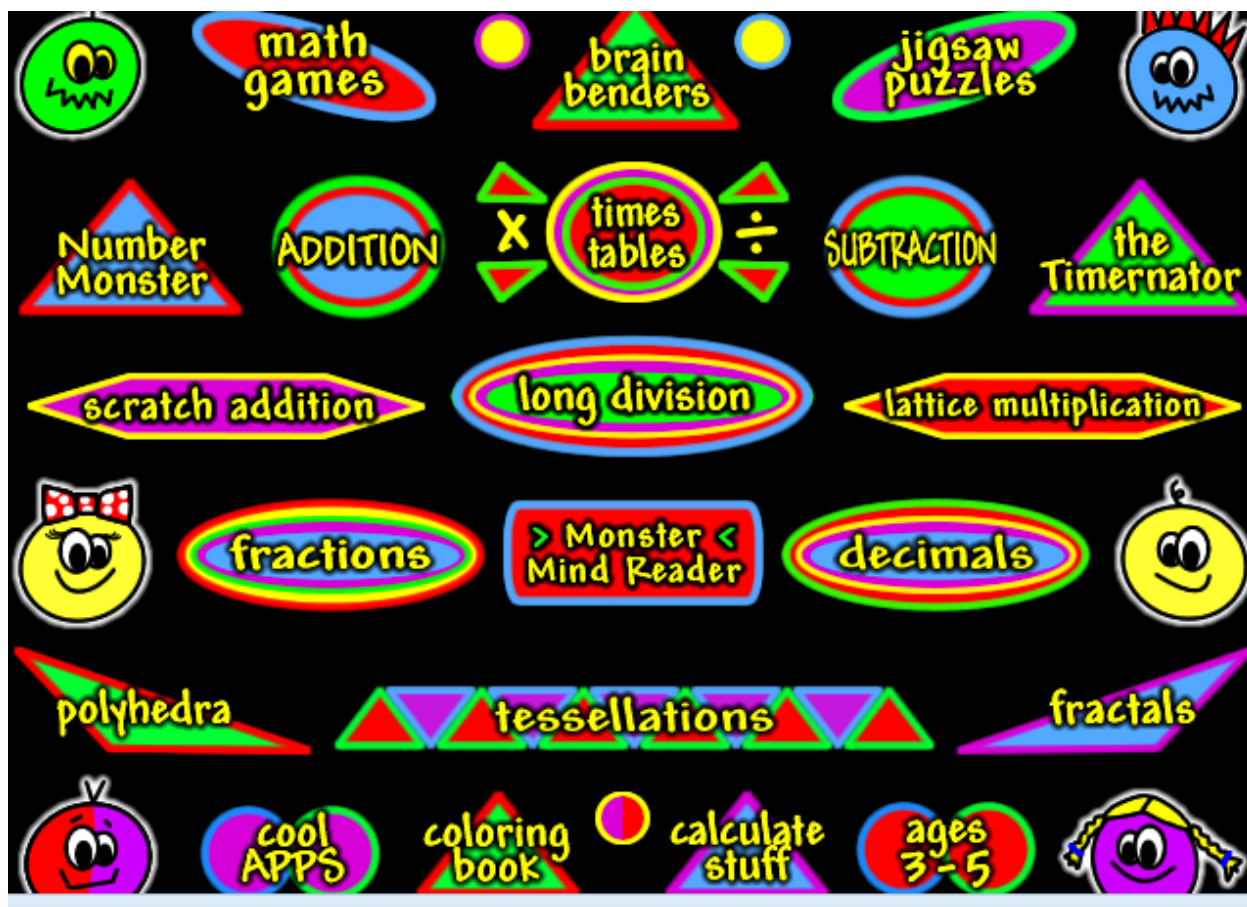
The National Library of Virtual Manipulatives is an internet site that I learned about in one of my Master's classes at The College at Brockport. Even though I was not involved in a technology related masters program, I did learn some things about technology from certain professors. I had to take a mathematics course and the professor had us explore this site as a homework assignment, and write about it. The site was so helpful I decided to include it on my website. "This is a fantastic site that is aligned with standards and offers more to students than just games. The site is literally online manipulatives that engage students because of their ability to give immediate feedback. The site is used for a variety of grade levels and topics for mathematics." The homepage is functional for both teachers and students. The topics are sorted by grade level and subject in math like numbers and operations, algebra, geometry, measurement, and data analysis and probability. I have included a screen shot of the homepage, as well as

where the site takes you after searching a topic, for example I searched for geometry in grades Pre-Kindergarten through grade 2 and found many resources available.

Index	Pre-K — 2	3 — 5	6 — 8	9 — 12
Number & Operations				
Algebra				
Geometry				
Measurement				
Data Analysis & Probability				

Virtual manipulatives for *Geometry*, grades *Pre-K - 2*.

Attribute Blocks – Learn color and shape concepts by sorting blocks.

Attribute Trains – Learn about shape and color patterns of by completing trains of blocks.

Congruent Triangles – Build similar triangles by combining sides and angles.

Geoboard – Use geoboards to illustrate area, perimeter, and rational number concepts.

Geoboard - Isometric – Use geoboard to illustrate three-dimensional shapes.
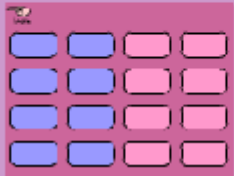
Covered in my website, was also a website made from somebody working in a school district. Oswego Resources is a website with games available for you to use in your classroom, as well as a

resource to create your own games and make them customizable for what you are teaching your students. "You can create a matching game, terms, graphic math, drag match, drag term, or quiz time game. For each of these create your own games, there are directions for you. Basically, you get to create the game, whichever it may be, with whatever terms or materials your students need to practice. Games can be differentiated for your students as well. For example, the matching game allows you to list terms or even math equations and have students complete the game by matching correctly. The site gives you directions and the creator is actually very simple." If you think you cannot handle creating your own games, there are tons and tons of pre made games available for you to use. On my website, I used two images from the website, one of the top of the homepage, and one of the creator of the matching game. Hopefully, teachers will be able to see the simple set up of the game creator and be excited to use the site as a resource.

The final mathematics website that I utilized is one that I have seen used in the Spencerport School District, where I mainly substitute teach, a lot. Teachers use this website in the district for use in the classroom as well as give students homework from the website. "IXL is a site that can be used for a variety of subjects, but I especially love how it can be used for mathematics. IXL Math is great for teachers and students to use. You can create a class login where you can see each student's work they complete on the site. Students simply log in and choose a math grade and topic. Teachers can assign this for work in the classroom or even homework. IXL Math allows teachers to see how many questions students get right and wrong, how much time students spend on the site, and more. This is an example of the entire class and what the overall trouble spots are for the class. They are listed by standards." On my site, I included a screenshot of this. I also included a screenshot of what students see when they are on the site, completing a problem. The screenshot that I included is from a third grade problem on multi-step word problems. The page shows the student the number of problems attempted, the time that has elapsed (great for giving 20 minutes of IXL math for homework), and their smart score out of 100.

Biggest trouble spots
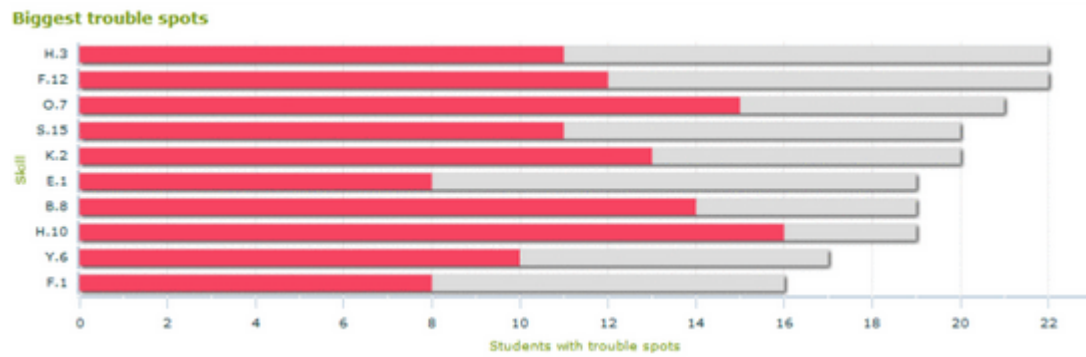
Third grade > I.6 Multi-step word problems

Michelle and Preston already had 12 shells in their shell collection. Then they went to the beach to collect even more. Michelle found 2 limpet shells, 8 sand dollars, and 4 conch shells. Preston found 16 more shells than Michelle did. How many shells do the pair have all together?

☐ shells

Submit

The math websites and resources that I have arranged on my website are great for students, teachers, and parents. Administrators will also love to see some of the great resources available on here, and make them widely known for teachers in their schools. Some of the websites, like IXL math for example, have administrator function abilities. The administrator can literally see how students in each grade level are doing, what areas they are missing questions in, and more. Math is an essential part of students learning in elementary schools and also very important because of the state tests given on math each year a student is in school from third grade to high school. Some of these resources will help teachers teach in a way to benefit their students learning, and they will help keep students engaged in learning math.

Social Studies can easily integrate into other subject areas and can interest students from its variety of topics from the past, and present. Although many schools do not give the subject of social studies enough time in the school day for rigorous learning, social studies is being more and more

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incorporated into literacy, including students reading and writing each day. Using great social studies resources can really make a classroom more engaging and interesting, capturing student's attention and making them think about social studies even after their school day ends.

The first social studies resource that I found to be extremely beneficial and informative is Kids.gov. The site itself is run by the United States Government, which is a neat thing in itself. "This site is geared towards kids only and really offers some fantastic learning opportunities for students and teachers. The site is the official U.S. Government's web portal for kids. With that being said, there are a ton of resources available. There are videos, games, and links to important social studies related sites. They even have their own YouTube channel with tons of videos. There are also worksheets and lesson plans available for teachers." The fact that they have thousands of videos, I am sure that there is at least one video you could show for every social studies lesson or unit that would interest students and keep them wanting to learn more about the topic. There are tons of games that I can show in a screenshot of the website, as well as resources just for teachers which are nice for nice who think that technology can waste our time, but no, it really can save us time.
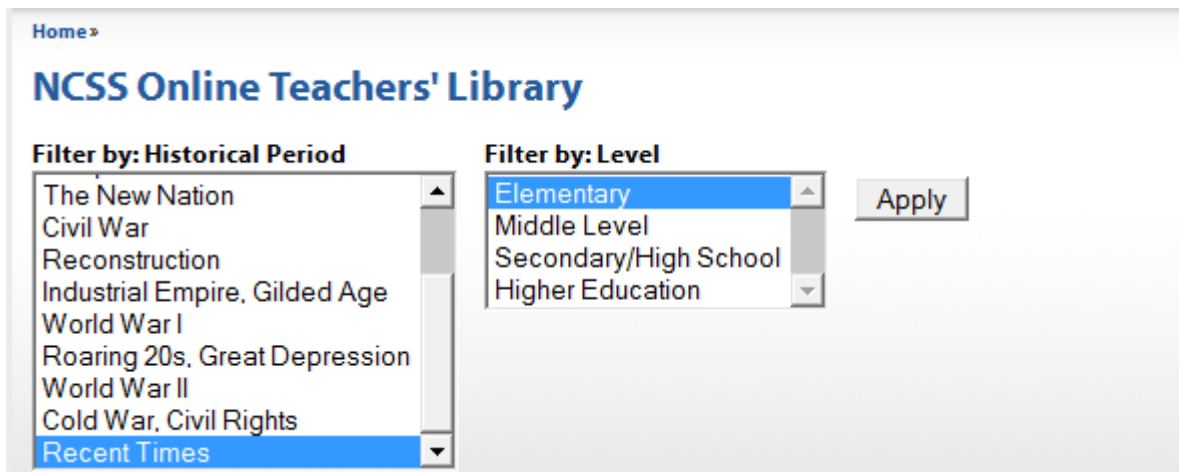
Best Education Sites is a website that has outstanding social studies resources available on the website. The site has tons of different topics related to the subject area of social studies all on its main page. If you need to teach a lesson about all of the presidents, or about early civilization, you can simply click on that topic and find tons of information on that topic. When clicking on a certain topic, you quickly are redirected to another website related to that topic. For example, when choosing the topic of the fifty states, you are redirected to the site http://www.50states.com where you can simply choose each state and learn information about it. This would be great for a research project for students.
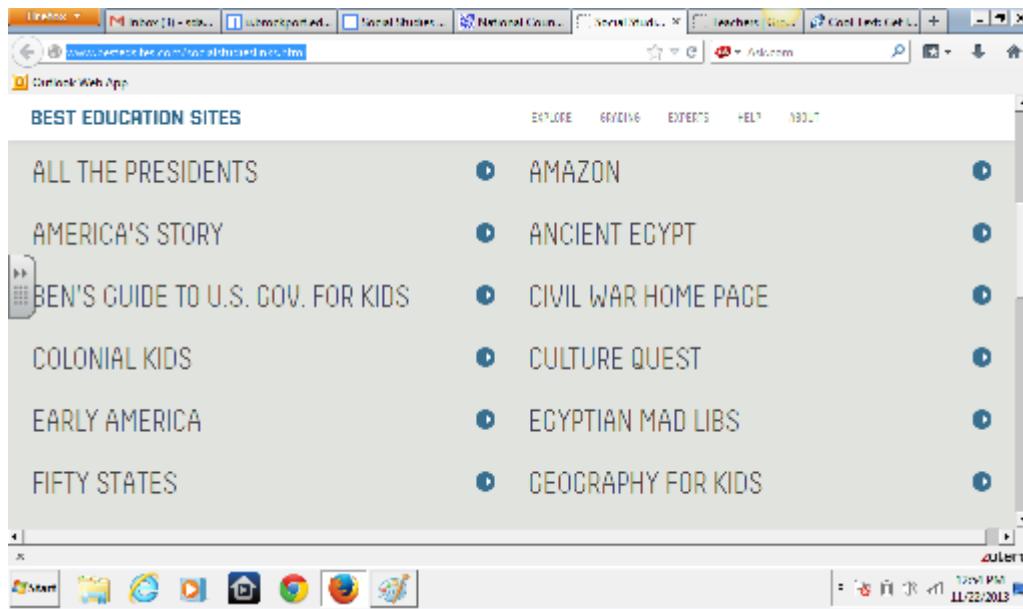
The last website that I have found which has great information and resources for classroom use on the subject of social studies is the National Council for Social Studies. It has resources for all age levels which is great to show teachers of all ages for great social studies learning. "The National Council for the Social Studies has tons of resources for all age levels. They have quick links on their main page for elementary and beyond. I wanted to focus on the teachers' library portion of the website. This is an amazing resource that can be used all of the time in the social studies classroom. Here is where you can search by age level and then by topic, and receive a plethora of results related to that topic. This includes lesson plans, virtual field trips, articles, and more." It is so simple to choose a topic and grade level and be shown a variety of tools that you can use in the classroom for a specific lesson or unit.

Home »

NCSS Online Teachers' Library

Filter by: Historical Period

The New Nation
Civil War
Reconstruction
Industrial Empire, Gilded Age
World War I
Roaring 20s, Great Depression
World War II
Cold War, Civil Rights
Recent Times

Filter by: Level

Elementary
Middle Level
Secondary/High School
Higher Education

Apply

The Social Studies websites included in this piece are time saving for professionals and include beneficial materials for students learning. Teachers believe that time is a factor that influences their use of technology in the classroom, because they do not have enough of it to learn about technology, but it is so very simple to find websites with millions of resources available to actually help you save time, and to assist teachers with engaging students with 21st century learning, instead of lecturing or reading textbooks. Social studies will never end because students will always need to learn about where they came from, and how we got to where we are today.

Science is a subject that many students tend to enjoy because it is interactive, hands on, and unpredictable. So many teachers may say, why do we need technology for science? It is interactive and engaging enough to entertain and benefit students, technology is not needed. But that is not true. The science block in many classrooms is being cut short in many districts around the country, and science needs to become more integrated into the literacy and mathematics block, to allow for more learning of science each day. Technology can benefit the integration of science into other subject areas. Teachers can offer students amazing learning opportunities with these resources and websites.

The BBC is a news broadcasting website but what is great about it, is that they include a science and nature portion of the site that is very educational for all students. Teachers can use this website to teach students but students can also explore the website for their own learning. It is so amazing because it

is real with real life examples and videos. "BBC is a great site to get resources like videos or photographs for students to view. Also, it is very up to date so getting all of the latest information on what is going on today in the world of science is valuable to the classroom. Teachers can share real life science with students."
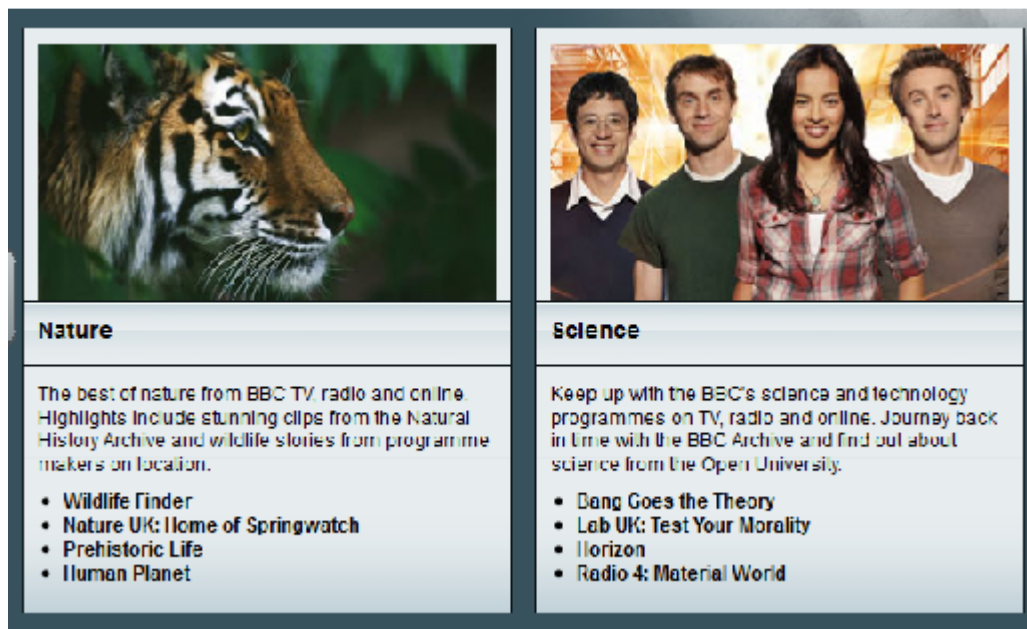
Discovery Kids is a different kind of resource for students than BBC, but it is fun and enjoyable for students as well as educational. "Discovery Kids is a great site for students to just explore, teachers to show students as part of a whole group lesson, or teachers can assign certain activities or games individually. The site has games, puzzles, activities, quizzes, and a "tell me" section. Tell me is a part of the website that includes various random science related questions and it tells you the answer. For example, are bats really blind?, What are the messiest jobs?, or What made the Titanic sink?. All of these are crazy questions that are answered in the "tell me" part of the site. The site includes so many interesting facts, activities, and games. The site has "experiments" as well, telling you how to do certain science experiments. It really is a great site to explore or to include as a fun part of a lesson." This is the main page of the website where there are tons of different topics and options to explore. Students will be entertained for hours.
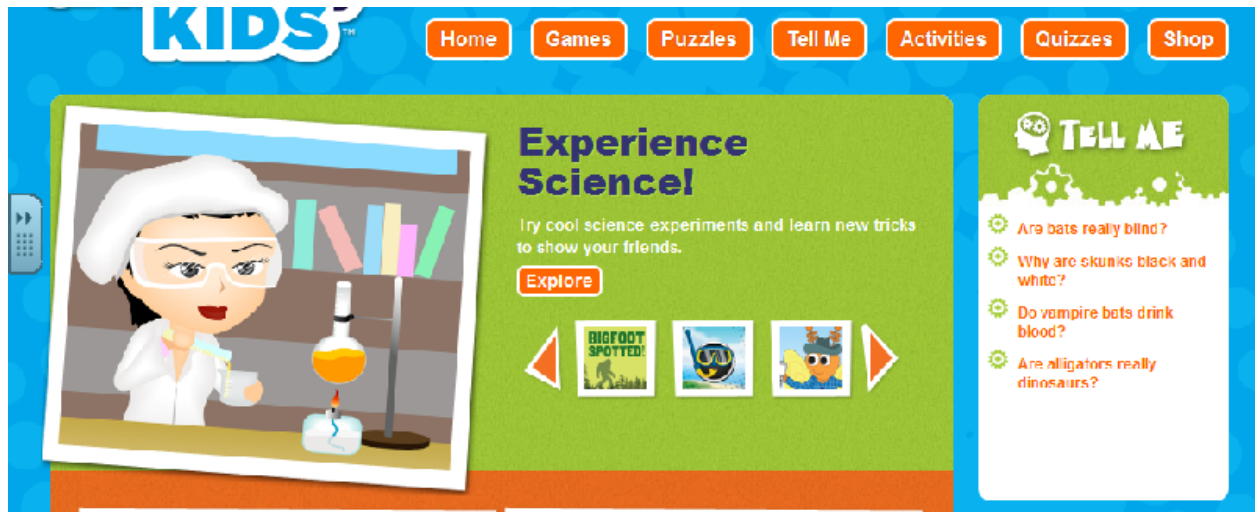
National Geographic Kids is kid friendly but informative, giving students the opportunity to explore the website on their own, as well as have teachers be able to share information with the entire class. "National Geographic Kids offers numerous activities and learning opportunities for students. The site features games, videos, photos, news, crafts, recipes, cartoons and more. Students can conduct research projects on animals with the animals and pets page, or study various countries in the countries section of the website. Teachers can create questions based on different aspects of the site and have students do a scavenger hunt to find the information. There are awesome opportunities for learning on the National Geographic Kids website. Here is an example of students being able to research an animal and find fun facts about them."

The Lawrence Hall of Science is very interactive with experiments available at students' fingertips. "The Lawrence Hall of Science website has tons of features and endless amounts of activities for teachers for find activities and interactive features for use in the classroom, as well as for students to use independently. When looking at the collections, the website states "How fast does the wind blow? What makes things sticky? Where do insects live and plants grow? What is the best way to clean up the environment? How do humans measure up in the animal kingdom? So many questions—and so many ways to find answers! In these interactive resources, use your hands, feet, eyes, ears, brain, imagination and cool tools to experiment, design, test and discover amazing things about the world around you. It's science and it's fun!" This site will really get students excited about learning and about science!" On the site, I show an example of the experiments available on the website that will turn students into mini Einstein's.
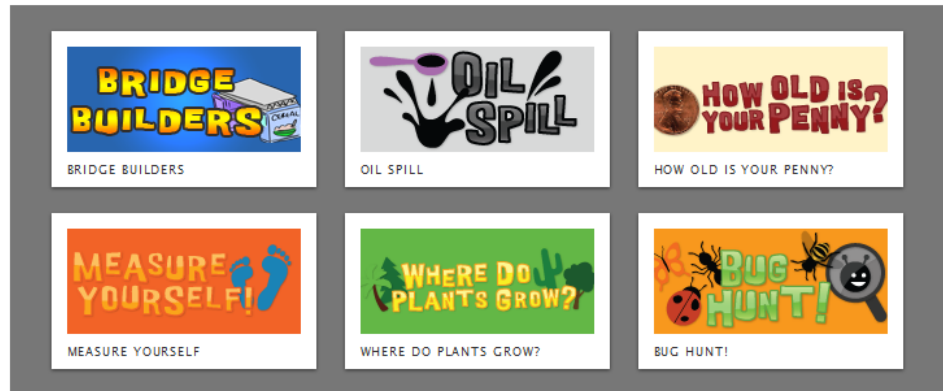
Finally, a science website available for teachers to use in their classrooms and to take advantage of the learning opportunities available on them is a specific resource on the Science Net Links website. The Solar system and learning of the planets is an important unit for students in many grade levels and this resource will make students jump for joy over learning. "This is a link that features a really awesome interactive tool. The site allows you to see the size comparison between two different planets. This would be really cool for students to use or for any teacher to use whole group. It is amazing to see the size comparison of Earth to the other planets and students will be fascinated by it as well. Here is an example of the size comparison of Earth and Mercury."

PLANET SIZE COMPARISON

Earth ▼ ——— COMPARE ——— Mercury ▼

ABOUT

DIAMETER   12756 km   4880 km   UNITS ▶ (mi)
RATIO   2.54   :   1
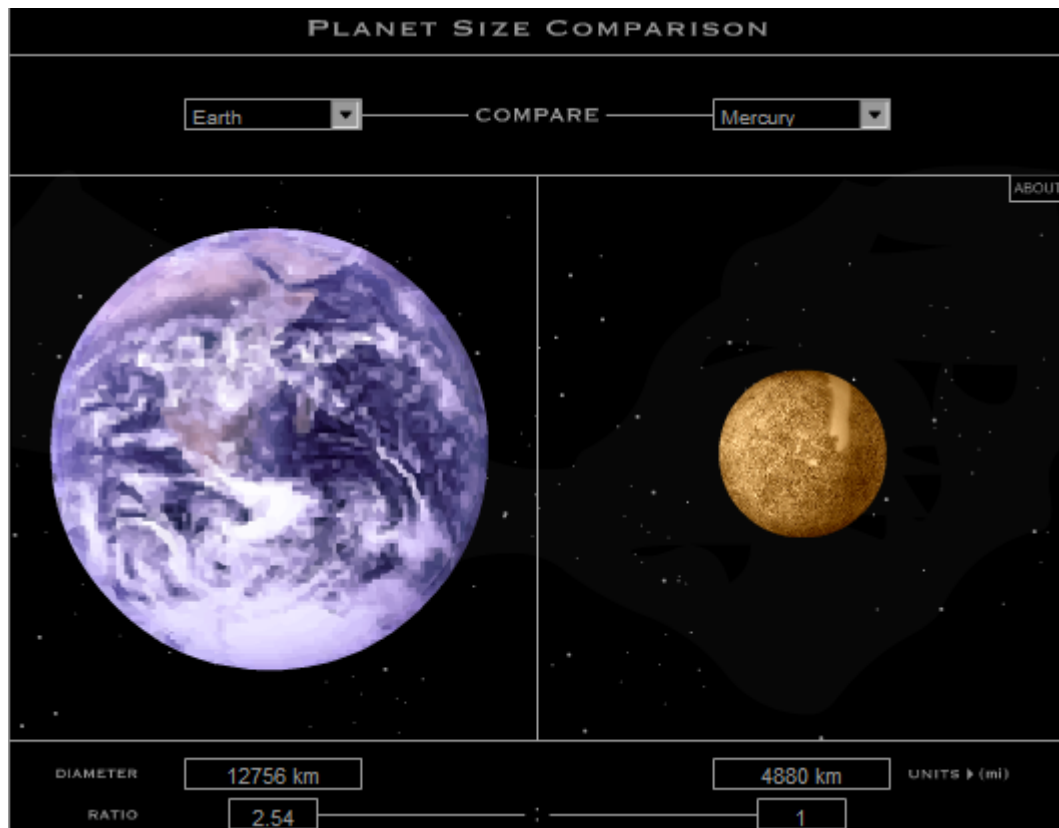
The subject of science in elementary school is fun, exciting, and interactive. It is the one subject that most of the time; students are able to dig their hands into and get raw with. Science is real life, what is going on in the world around us, and an amazing opportunity for students to expand their minds. There are so many occupations that involve science and the learning of science begins with elementary, to capture and fascinate these learners each and every day and technology can reinforce those learning opportunities.

There were a couple of sites that I enjoyed for their ability to supply resources for all subject areas. Some of the sites from certain subject areas had different subjects and topics available on them, but I focused on the subject of math or science based on what the site offered. These next two sites, I felt had the ability to supply teachers and students with an abundance of materials for any and all subject areas. "There are numerous sites that are usable for various subjects, including special area subjects like art, music, and physical education. These can be used no matter the age/subject. Both are extremely helpful

for teachers who need resources to use in their classroom and are not sure where to turn. I hope that you may find these useful for your classroom." I first learned about the following resource in one of my graduate program classes. I took an elective class on education and technology, and learned about a website called VoiceThread. VoiceThread is similar to Photostory, a Microsoft program, but it is way more interactive for students. The site allows you to "communicate, collaborate, and connect". "For a small fee, individual teachers, schools, or districts can use VoiceThread. Teachers and students can create their own VoiceThreads as well as look at a collection of them in the library of the site, where thousands of other students and classrooms have created VoiceThreads. On VoiceThread, you can upload, share and discuss documents, presentations, images, audio files and videos. Students can have their writing come to life on a VoiceThread with images and audio or text. There are 50 different media types available to use on VoiceThread. After students create VoiceThreads, other students in the class and the teacher can comment on each student's VoiceThread. You can make your VoiceThreads private to your class, or share it with the world. The site provides how to guides to train educators how to use all of the capabilities the site has to offer." It may seem like VoiceThread is complicated, but it only takes a few minutes to learn the basics of it. Students will absolutely love interacting on the website and sharing their pieces of work, it will definitely give students something to strive for while writing, because of the fact that their classmates will be able to view it.
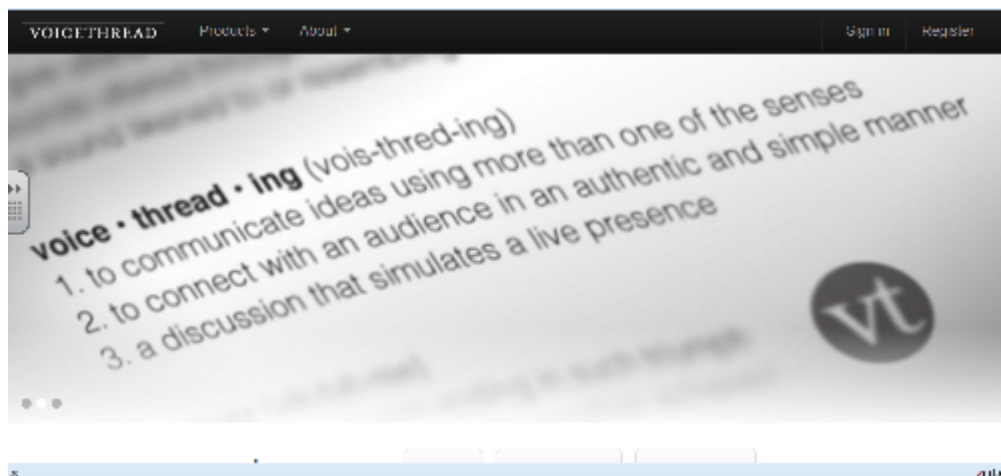
Interactive Sites for Education is a website that I promise teachers and students will use frequently for all different subject areas. When I first discovered the site, I was amazed at the amount of interactive sites that they used on their website; I even had sent some links to resources to teachers in the school I substitute teach at. "Interactive Sites for Education is a website with hundreds of resources for students. The website's homepage allows you to choose a subject area that you would like to view sites for, which includes math, English language arts, science, social studies, brainteasers, art, music, typing, holidays, teacher tools, and Spanish. When you click on a subject, it either brings you to various screenshots of sites, or it brings you to various topics related to a subject. For example, when clicking the subject area of math, it brings you to a page where it lists different topics, multiplication, addition, subtraction, etc. Once you choose a topic, it brings you to sites related to those topics. This site is packed with resources for teachers to use whole class, during centers, individual work, on the Smart Board, and more."
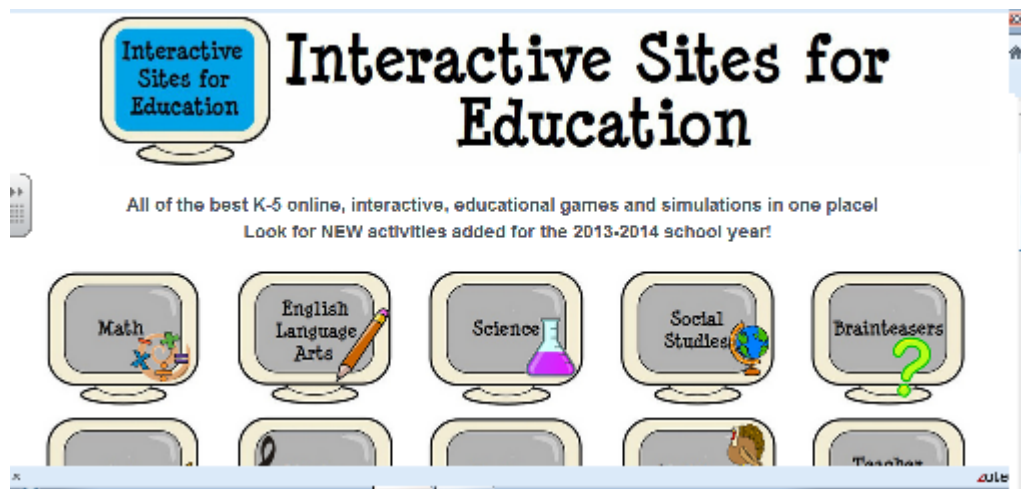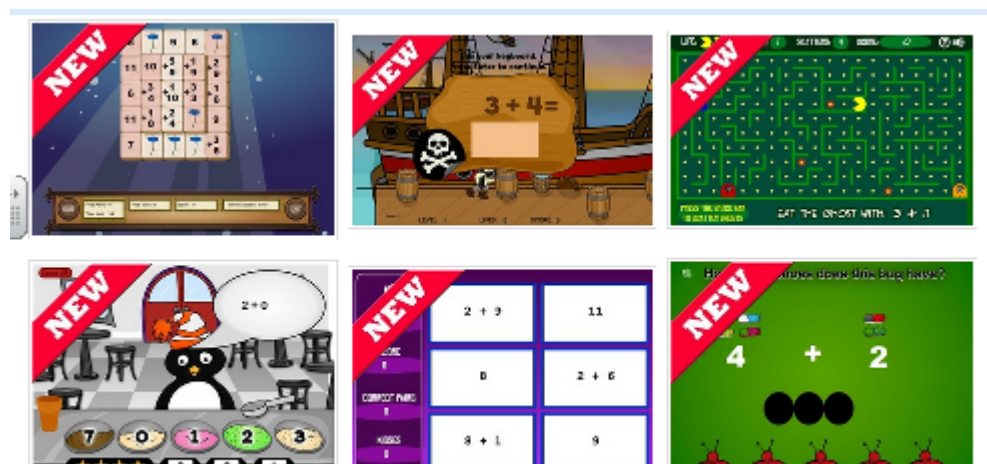
Many of the resources that I have brought forth on my technology website are mainly used for the computers or Interactive Whiteboard's provided in most classrooms. In 2013 though, iPad's and iPod's are becoming more and more popular in classrooms around the country. Many schools have provided iPad's for every classroom, or there are even a few to check out from the library. With the growing popularity of "apps" or applications, I wanted to provide teachers who are receiving these devices, with some knowledge on how to find resources to use on them. "With iPads and iPods becoming used more and more in classroom today, teachers need to be able to find the best "apps" available for student use.

These apps need to be easily searchable by grade level or subject area. Free apps are also always helpful on a classroom budget. These sites are some of the best that I have found in relation to Apps for use in the classroom! I hope you all have an APPetite to teach today using these great resources!"

iPad's and iPod's are made to be very user friendly. The touch screen aspect of it is sometimes what intimidates users, but this is what makes the devices great for learning opportunities. APPs in Education is a website that features tons of apps for student use. This is a wiki site that was created to showcase apps for use in education. The site is simple and easy to use yet efficient. The side bar has a variety of different topics to choose from when looking for a certain subject area app. These include animation, audio, art and picture making, geography and weather, history, images, languages, literacy, media, miscellaneous, music, numeracy, productivity, puzzles and games, revision, and science. When selecting a topic it brings you to a page with various apps relating to that topic. For example, this is some of the literacy app page." What is awesome about the site as well is that all of the apps range from being free to a few dollars for some selected apps. Free apps are the greatest resource, but some are so great that for only a few dollars, you cannot pass them up.
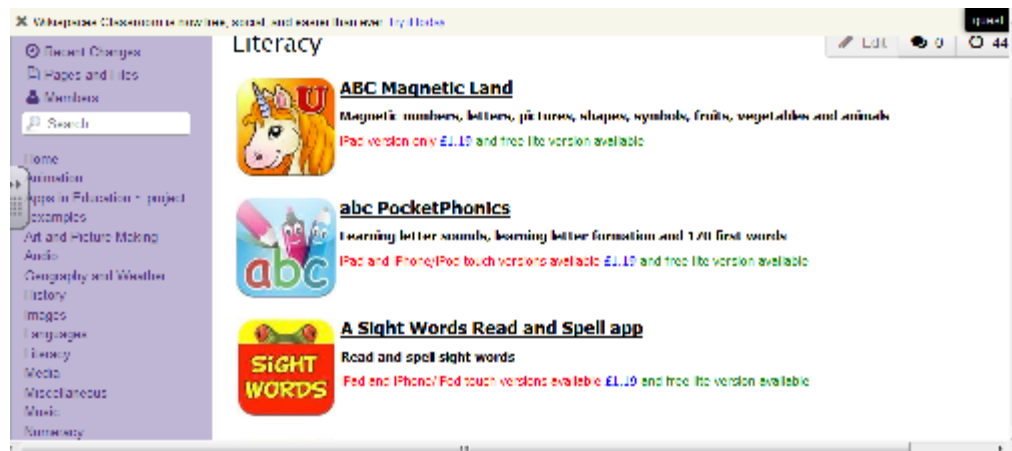
Education App Reviews is a website that reviews only a few apps for educational use, but they do so in a way that is very specific and helps us to see some of the greatest apps. "Education App Reviews just lists 10 apps for use in education grades Kindergarten through sixth grade. The site may only feature

10 apps but the author of the site gave a great review of each app, listing why he believes it is such an important app. The author also tells us that these are the best apps with Common Core content standards focus. The apps that he recommends are Splashtop Whiteboard, Rocket Math, Grammar Jammers, Grammar Experts: Parts of Speech lite, Multiplication Genius Lite, Baboom Paper, Videolicious, Science 360, World Book's World of Animals, and SkySafari 3. With each app that the author lists, a screenshot of the app and a description are provided, as well as links to the Common Core." With the Common Core Learning Standards becoming such a huge importance in schools today, this resource is beneficial for teachers looking to teach specifically to certain standards.
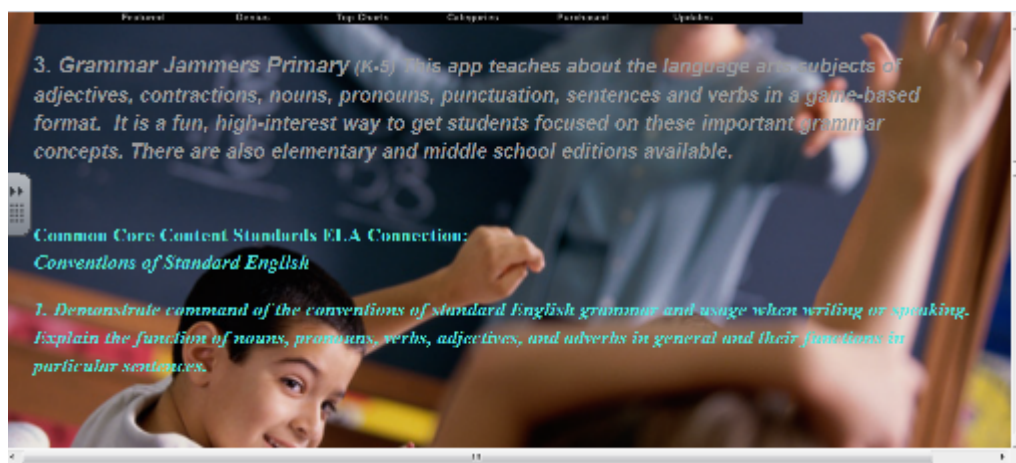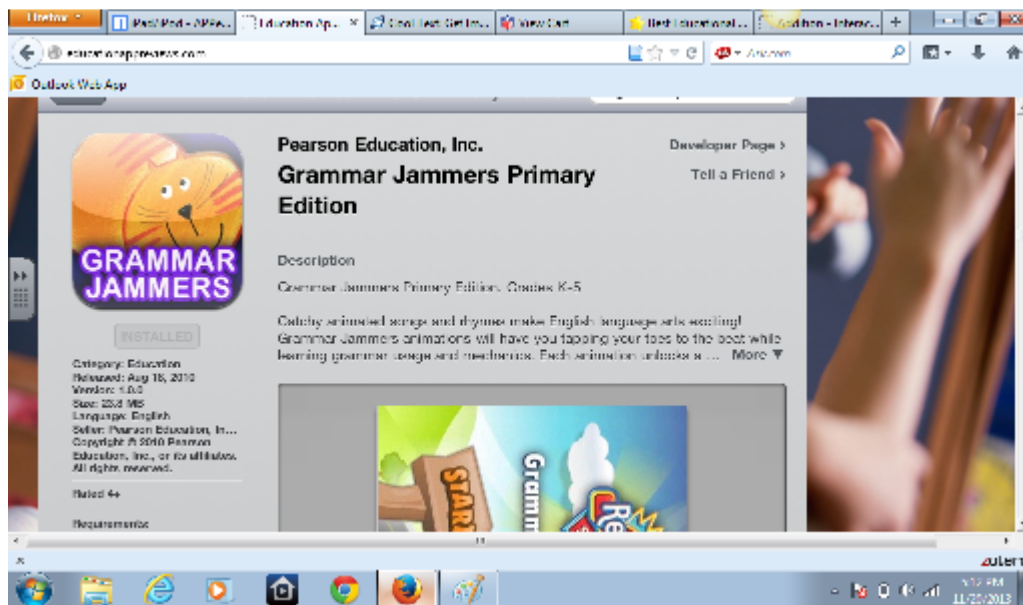
The last application internet resource that I have found is actually a review of the best educational apps, according to the creators of the site. "This site has an enormous amount of apps reviewed for student and teacher use, or even at home. The site has an about us quote stating "We find and review high-quality learning apps for tablet computers such as iPhone, iPad and Android. - Mostly for kids, but also for grown-ups. These apps are great for school and home use." The site has categories to choose from, always a plus in my book, easily searchable for educators who may not be tech savvy. The categories are divided up by ages 1-2, 3-6, 7-10, 11+, as well as categorized by subject area, art math, music, programming, reading, science, social studies, videos, and writing. There is also a link for all apps, and FREE ones! This is awesome because if you are really not looking to pay for apps or you have already spent too much on them; it is nice to be able to just look at free apps." Some parents may have iPad's or iPod's at home and being able to share with them some great apps for student use can benefit students outside of the classroom. I enjoy how the site is categorized by age level, and subject area, making it easy to find just what you need.

When I substitute teach, I see and hear students talk about their iPod touches or even their iPhone's, and it is amazing to be able to give students and parents some assistance on choosing the right apps for benefiting a child's education. Being able to help children learn outside of the classroom, and having them want to learn outside of the classroom with the use of these devices, is an amazing gift. With

the popularity of these devices rising, I felt that it was necessary to find resources available for iPad's and iPod's.

The last piece of my website is not about the resources or websites that I may find to assist teachers and students with learning, but about an important piece of technology that pops up in most classrooms today, the Interactive White Board, also known as the Smart board. A few years ago, these were only in a select number of classrooms. Not every classroom has a Smart board today, but their presence in classrooms is growing greatly each year. "The Interactive White Board, also know as the Smart Board, is an essential piece of technology in classrooms today, and they have the capacity to create numerous learning opportunities for students of the 21st century. For those who are just beginning to have a Smart Board in their classroom, or those who were never trained properly to use the Smart Board, I hope this section of my technology website will benefit you greatly." This part of my website shows pictures and screenshots of the Smart notebook software from a classroom computer, and gives directions on how to do some of the simple things on the Smart board. I explain each of the items at the top toolbar, and where to find the help option. I also give users a chance to check out the Smart Exchange website, a tool that is one of the most useful items for teachers who feel as though they do not have enough "time" for technology. The Smart Exchange website is free and offers users the opportunity to search by subject and grade level for different Smart Notebook presentations that are pre-made and available for users to download and have show up right on their own computers and Smart Boards. It is one of the most beneficial resources for teachers to use. Also, I show visitors how to find the Smart Notebook tutorial which goes through some of the new features of the program and the simple features as well. With this part of my website, I just wanted to give users who may not know a lot about the Interactive White Board, a chance to learn more about it, and find more ways to use it to benefit students learning and save themselves the time to teach themselves how to use the program. "The Smart Board can benefit your teaching and the learning of your students. There are endless things that you can do with the software, as well as just going on the internet and pulling up videos, websites, photos, and more for your students to

see. It really is the most amazing piece of technology used in classrooms today. If you have the opportunity to receive an Interactive White Board, take full advantage of it! Do not be frightened by it, just give yourself some time to learn the functions and tools available and it will benefit your classroom greatly!"

Conclusion

My decision to create this website was based off of the research and data that I had found on the lack of training for teachers using technology, the attitudes that teachers and professionals had towards technology, and the data that I had found from undergraduate programs on technology training not being widely available to future teachers. I hope that with this website, I can provide teachers, whether old or new, or future teachers with a bit of advice from somebody who considers one's self to have a love of having technology be used widely in the elementary classroom. The research that I had conducted over several months posed many negative factors about the use of technology in the classroom, and I hope to see only positive factors and comments about technology use in the classroom in just a few years. Our learners are twenty-first century learners, and "Digital Natives", and with technology changing each day, teachers of all ages and experiences must keep up with them in order to benefit their learning (Kelsey, Mata-Claflin, Holland, & Castillo, 2011).

Limitations of my Research

I had some limitations for my research that I wanted to address. I am currently a contract substitute teacher for a building in a district, meaning that I currently do not have my own classroom. When speaking to the principal about possibly using students for my research, she simply stated that the Board of Education does not like substitutes or professionals other than classroom teachers to use students for their work. Based on this information, I decided that conducting research with the use of students or classrooms was out of reach for me. I did want to focus on technology, but it was difficult to get data from classrooms without being in one. Also, technology is changing each and every day. As users visit

my website, some of the links may work, while others could be taken down in the future. Websites and the internet is always changing and modifying and although I chose some great resources, with many from widely known companies, websites can always change or be taken down. Also, the data that I had collected from Undergraduate colleges, Graduate programs, and School districts around Upstate New York, is based off the information that I could find off of their websites. There may be some inaccurate data because I could not find some of the information from their website. Most websites that I had visited, their information was something that I could find from a tab or link off of their main homepage about technology and education. If this was not available to me, I could not include their data in my findings. The data that I had found may be slightly off because of this limitation.

Suggestions for Future Research

The fact that I could not go into a classroom or school and have students use technology limited my ability to find whether technology really benefits students learning. Based off of the research that I had found, there is a lack of research of whether the technology used in classrooms actually affects students' performance and their ability to learn better because of the use of technology. It would be a great comparison to see how students do without technology, and their scores on mandatory state tests, and how students who use technology daily in classrooms do on state mandatory tests. Also, how their reading levels seem to grow through the use of technology, and whether their reading abilities are affected at all by the use of technology or not. Although it is strongly suggested to use technology today based on the amount of engagement students have towards it, it needs to be found whether or not the use of technology directed affects student achievement.

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