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THE CHANGING ROLE OF TECHNOLOGY AT THE ELEMENTARY SCHOOL LEVEL

The Changing Role of Technology at the Elementary School Level

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ABSTRACT

The world we live in has become heavily influenced by technology. Elementary education is no exception. In today's classrooms, there are a multitude of technological programs and resources used by teachers and students. This capstone examines the changing role of technology at the elementary school level. Through the use of literature review, online research, and interviews with multiple elementary teachers in Santa Cruz County, results findings reveal the effects on teaching and learning at the elementary school level. There are many positive outcomes as well as some of concern for this transition. This new technology comes with a learning curve that will require schools to provide more resources for teachers, including training and technological assistance. With the right tools and trainings, technology can be a very powerful tool when used in moderation in the classroom.

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BACKGROUND:

Thinking back to my days in my elementary school as a student from 1998-2005, I picture some technology in the classroom. We had a few large, box-like computers, overhead projectors, and televisions with a VHS player attached. Though it was just beginning to grow at this time, the technology we did have in the classroom was used very often. The copy machine used to be a teacher's "best friend." Making hundreds of copies weekly to pass out to students. This technology is still used today but classrooms are now becoming paperless. Many documents today are shared through the Internet on different means of technology, such as Google Classroom. (Google, 2015).

When I got to sixth grade, our school just got a set of Apple MacBook Laptops. There was one set for the entire school that each class shared. I still remember the cart so clearly. It was metal with a charging station for each laptop. As a student, I thought this was the greatest thing. I felt proud that they trusted us to use these machines. Because this was so new to our generation, it did make me a little nervous at first. I was not familiar with how to use a Mac or even where to begin. We used these computers to learn how to use programs like Microsoft Word and the Internet for research. This was my first time being exposed to these tools. I have taken what I have learned then and have used it throughout my educational career and daily life.

Over time, technology has been greatly enhanced in the classroom. There has always been some form of technology in schools. Looking back, we can examine what was used and how it affected teachers and students. Simple technology like

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the chalkboard, introduced in 1890 and the pencil in 1900, made a huge difference in the classroom. They allowed teachers to present material to students and writing was made much easier. The overhead projector was invented in 1930, this created many new opportunities for teaching. In the 1950s came videotapes as well as the photocopier and in the 1970s students and teachers were introduced to the handheld calculator as well as the Scantron testing system (Purdue, 2015) . These are all technologies we many still see in the classroom today and made a huge impact on education. Looking towards the future, computers and iPads may make the same impact. We have to keep up with technology and learn how to best integrate them into our classes and curriculum. More children are going to school and continuing on to higher education than ever before.

The U.S. Department of Education reports that high school enrollment was only 10% in 1900, but by 1992 had expanded to 95%. The number of students in college in 1930 was around 1 million, but by 2012 had grown to a record 21.6 million. Teachers needed new methods of instruction and testing, and students were looking for new ways to communicate, study, and learn (Snyder, 1993, p. 7)

From my observations, students in elementary school today are much more familiar with technology. This generation is so comfortable with it. It is everywhere in their day-to-day lives. Using computers, iPhones and iPads almost seems second nature to them because they have so much more exposure. My research will be valuable for teachers as well as administrators. It is very important to know what is available and how to properly use it in the classroom. Some technology is more useful than others and this research will determine what is best. For administrators, this may be helpful to see if more resources are needed or if there are means of technology that would be beneficial for their schools. This information

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can also be informative for parents of elementary school students. Some may be unaware of what is being used to educate their children. It can also enhance parent and teacher communication if parents are aware of how to best use these resources. This may also help those who want to help educate their children at home and can use programs through technology to do so.

INTRODUCTION:

When choosing my capstone topic, I really wanted to research something that interests me and will benefit my future career as an educator. Technology is such a large part of today's society and it is growing rapidly. I now realize how much I rely on technology in my own day-to-day life. Especially as a student, we use it to complete assignments and communicate with professors and our peers. Technology in classrooms has increased by at least 100 times what it was two decades ago. This is due to the idea that it helps collaborate, communicate, and solve problems. Using these new devices also prepares students for a competitive marketplace in the 21st century (Lim, 2013).

Almost all jobs in our world today use some form of technology. Most career paths we will choose require us to at least know the basics of how to work a computer or a smartphone. It used to be that one the most important computer skill to learn was how to properly type on a keyboard. Today there is so much more to know. It is crucial to know how to quickly access information and how to properly use many devices. This is because using new technology is very efficient and makes things easier for businesses. The next generations of students are already learning this without even knowing. They will learn just by being exposed to the technology.

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It is necessary for us as future educators to facilitate this learning. Students have access to unimaginable amounts of information today.

The Internet provides an incredible research tool that can be their best friend or worst enemy. Students need to be taught how to sift through the millions of web pages available on a topic and find what they need...and be able to trust what they find (Nichols, 2013, p.1).

We are responsible for shaping the minds of our students and preparing them for whatever may come their way. It may seem like using so much technology at a young age is too early, but this is now the way of the world. Students are already exposed to a great deal of media and gadgets, we should help them use it in the best way possible. We want to help prepare them for the modern workforce.

I have observed that this technology is beginning to make its way into elementary schools and creating new opportunities for teachers and students. Technology can be a great resource in the classroom and adds many new options for teaching and learning. As with anything new, there can be some difficulties in learning how to use these new technologies.

To determine the role of technology in elementary schools I have created primary and secondary research questions. These have guided me through my data analysis and literature review. By answering the following questions I hope to learn more about how technology affects teachers as well as students in the classroom and what resources are available for assistance.

My primary research question is: How has the change in technology affected teaching and learning at the elementary level?

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My secondary research questions are: What types of new technology means are being used for teaching and learning in the classrooms? What are the pros and cons of using the new technology in classrooms? Are there schools in Santa Cruz County that adopt new technology to be used in their classrooms? If so, what processes do they have to go through to incorporate it into their daily instruction? How does technology affect teaching and learning in the elementary school classrooms? And how do teachers feel about the changing role of technology in their classrooms. Are there resources available for teachers who want to incorporate new technology in their classroom?

LITERATURE REVIEW:

Technology has changed the way teachers teach. In the literature I reviewed, I found that there are so many new devices available for educational purposes. These come with some very positive outcomes and well as some negatives. There are many people around the country that are trying to use these new programs in their schools to see if they better education (Starr, 2011). I have found that technology in schools is here to stay, but how to best use it is still being worked out.

In order to talk about technology in the classroom, it is important to discuss what is being used and how. Technology integration is a very important topic today and continues to grow (Persaud, 2015). There are many pieces of technology available that are being implemented into education. Many students in this generation and those to follow will grow up with technology in every aspect of their lives. They are so familiar with using these items that it has become second nature.

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What types of technology mean are being used for teaching and learning in the classrooms? We know that there is a greater amount of technology present in schools today. There are many physical items that you may see when you walk into a classroom and hundreds of programs available to use for lesson planning, instruction, etc.. I have researched the ones that are most commonly used. Every school has a different budget or view on technology integration and this will affect what is available.

Laptops are portable computers that can be used for typing papers as well as research. There are also many applications that can be downloaded to promote education. Some schools provide students with laptops to help connect with teachers and parents outside of school. Companies like Apple and Microsoft are really focusing on how to make laptops as useful as possible in the classroom (Apple, 2015).

Interactive Whiteboards are very new to me. I just had my first experience with these on the CSUMB campus. Smart Board is a general term for these but are produced by multiple companies. Their description reads, "...an interactive touch screen technology that connects to a projector or computer and significantly improves the overall meeting and presentation experience" (Smart Board, 2015, p.1). These are beginning to replace whiteboards that use erasable pens. An interactive whiteboard connects with your computer and allows you to do much more

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Document Cameras are a very user-friendly piece of technology. It is a camera that can hook up to a television or projector. Typically, these replace the use of overhead projectors. You can zoom in or out on any item you place below the camera and it is shown on the screen you are using. A document camera in the classroom can reduce a teacher's workload by allowing them to project one item instead of giving each student a copy (Education Technology Network, 2009).

Apple iPads and iPad Minis are thin, portable tablets used for learning, projects or online research. There are many applications that can be downloaded onto the device and used for education. According to Apple, (2015), "There's a reason both teachers and students love iPads. It enables endless opportunities to create hands-on, customizable learning experiences. Reach more students with apps and books geared to any level or subject (p.1)" The applications that are available for iPads make education interesting and hands on for students. These include programs for math, literacy, science, and more. Most of these are free and available to teachers and students. There are also many books available to read on iPads (Hutchinson, 2012). The possibilities seem endless.

A study was done in 2012 to research the affects of technology integration in elementary schools. This was done with a fourth grade class of 23 students and the goal was to see how using iPads would enhance student learning, focusing on literacy. The teacher Mrs. Dill agreed to incorporate them into learning everyday for three weeks. She had no been familiar with this technology prior to the experiment. She used technology to teach the curriculum she had planned focusing on reading skills and comprehension. They used applications on the iPad such as iBooks,

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Doodle Buddy, and Strip Designer in order to do activities such as reading, illustrating, and even creating comics. At the end of the study, “We found that Mrs. Dill was able to meet her literacy goals while simultaneously introducing some of the new literacy skills associated with 21st-century technologies” (Hutchinson, 2012).

What are the pros and cons of using new technology in the classrooms?

Technology integration not only can enhance subjects like math and science, it also helps prepare students for the future. New technology is produced every single day. While researching different programs, I found that many of them have just been produced and lots of companies are now gearing their equipment towards education.

This also helps students who learn best from different techniques than just a teacher lecturing. “One of the most prominent education theories driving this specific research is Howard Gardner’s Theory of Multiple Intelligences” (Kenney, 2011, p. 68). He believed that students need different forms of learning in order to gain the most knowledge. Some are logical learners while others need movement or music in the classroom. Technology can provide so many new outlets for learning activities. This is one of the major benefits of incorporating it into schools.

One of the downsides to technology is losing person-to-person contact. It can take away from some social interactions. Though it increases accessibility to a wide variety of materials, there can be a loss of human communication that is vital to learning. When asked about technology, many teachers have their own opinion. Andrew Kemp from the University of Georgia believes in technology integration and

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using it with teacher to student interactions. He uses blogs, Youtube, Powerpoint, social media, etc. to present material to his students. He believes that,

To teach, you need human interaction. While PowerPoints might replace overheads, and YouTube might replace a video, the interaction between student and teacher is essential. There is nothing in the electronic world that replaces the facial recognition, the tone of voice, the furled brow that a classroom can create (Kemp, 2014, p.5).

Technology integration should not replace teacher to student or student to student interactions in the classroom. There are many ways to incorporate these things together to be successful (Sulfaro, 2006). Technology can also fail often. There are times when teachers must be prepared with a back up plan in something isn't working. We do not want to lose many traditional teaching methods in case of technological difficulties.

What processes do schools have to go through to incorporate technology into their daily instruction? Not all schools have the budget to add a great deal of technology to their classrooms. One way to help get more technology into a school is to start small and get teachers and administrators on board. If there is a small part of the budget that allows for technology, find what will be most successful and get the staff energized on the topic. This will help people to see why technology should become a focus of the budget discussions.

If teachers are required to add technology integration goals to their professional growth plans, they will have an impetus to try something new, especially if the administrator makes it clear that teachers are safe to take risks (Hamilton, 2007, p.27).

Teachers and staff have the power to decide what they would like to see at their schools if they work together collaboratively. "Teachers of the future must be

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proactive. Such proactivity can be stepping outside the box/class to write grants for funding and reaching out to local businesses for support” (Donaldson, 2015).

I spoke with many elementary school teachers to discuss their views on this topic.

There are many different opinions on technology in schools. It is still a new part of education that needs to be tested and worked out. After finding research online and from scholarly sources, I wanted to see what local educators thought about the topic. They are the ones using these items everyday and see the direct affect it has on their students.

METHODS AND PROCEDURES:

To learn more about technology in the classroom and how it affects teachers and students, I decided to interview elementary school teachers and get their insight. I conducted five interviews with teachers in Santa Cruz County. They each teach a different grade level and at three different schools. Two of the schools are in the same school district and the third is in another. This helped me determine what different resources are available and if it was based on a location or school district. The expenditure per student in each of these schools is very similar. I am not focusing on which schools have access to technology but how it is being used. I also chose to get a variety of age levels to see what is used and how many different ways technology can be applied to learning.

I chose to interview teachers because they are the ones in the classroom using this technology everyday. Each teacher that participated has been teaching for 9 or more years. They have seen this transition of the increase of technology in the classroom. They also see the results when using it with students. I chose to ask

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them questions about what technology they use most and how it affects their students their teaching as well as students learning.

When writing my interview questions (See Appendix A), I incorporated my primary and secondary questions. This was very helpful in getting constructive answers from the participants. They were very eager to answer and had a lot of incite. I based the questions on how they view technology. It is important for my research to find out how comfortable they are with technology and if resources are available to assist them. This is a very relevant topic on schools today and it is becoming a large part of the educational system.

RESULTS, FINDINGS, AND DISCUSSION:

Working with local teachers was the most interesting part of this research. They know this topic better than anyone else because they are the ones in the classroom everyday. There were a variety of answers but the common trend for each teacher is some type of technology was found in their classrooms at all times. They each used them differently but agreed that we live in a world where this is very prevalent.

Each teacher has many things they share in common as well as some differences (See Appendix B). The amount and types of technology used changes based on age level being taught. They each have things that they like about technology as well as some challenges. Society today is full of technology and this data shows that the classroom setting is no different.

What types of new technology means are being used for teaching and learning in the classrooms?

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Each teacher I interviewed uses a document camera to present material to their students in the classroom. These are very new to schools but becoming more popular because of how they work. One of the benefits of these cameras is being able to share student work and project it for the whole class to see. “The kids love coming up and showing their work or writing and having all of their classmates watch what they're doing on the TV” (Z. Skonges, Personal Communication, 20 October 2015). You will also find either a large flat screen television or projector to display work for their students.

The teachers also all use a personal laptop or computer to plan lessons or communicate with parents. The latest and greatest technology that some of these teachers have access to are class sets of iPads. Brenda Ashworth, who teaches sixth grade, used these more often than other younger classes. They have a class set of iPads that students can use for schoolwork. They use different programs and applications for daily learning. These students are able to make presentations on their iPads and then share them with the class (B. Ashworth, Personal Communication, 28 October 2015). Three of the five teachers now use these weekly in their lessons.

One teacher is now using a microphone in her class. Zoe has a large speaker mounted on the wall and allows students to share their writing, explain math problems, or share with their peers while using the microphone. I have been able to observe the students using the microphone in class for various different projects and it is very effective. It seems to help those students who are shy and need a little extra help when talking in front of a large group.

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Another form of technology that was used by all teachers was email. They use this to communicate with parents as well as colleagues. Information can be shared about what is going on in class or update parents on student's behavior.

I type a weekly email and send it to all of the parents from our class about what the students are learning each week. I also use email daily to communicate with parents about their child's behavior and academic progress (Z. Skognes, personal communication, 20 October 2015).

The downsides to email were that some parents expect very quick responses and it is hard to interpret the tone of an email. Eleanor stated, "Some conversations should not be left to email, the tone of a message can sometimes get lost in an email, so you have to be careful with that" (Eleanor Jonas, Personal Communication, 28 October 2015).

What are the pros and cons of using new technology in the classroom?

The final teacher I spoke with is very comfortable with technology. She is typically the one at school to help other teachers when they have questions. She uses many different programs such as Starfall, Funbrain Jr., Brainpop Jr., Lexia, as well as other Scholastic magazine online and video clips. She feels that the material is very age appropriate and enjoys using it her classroom. When asked if she what affect technology had on her students she said,

I think a positive affect because this generation of students will need to know how to use technology especially when their future job will depend on their knowledge of these technology tools. Utilizing the technology at such a young and having to be comfortable with exploring and not being afraid to try new things on the computer whereas my generation has a harder time learning some of the new programs. We notice that some students can explain things to us that we didn't understand (M. Sandman, Personal Communication, 20 November 2015).

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It is so important for us to adjust our learning to the next generation of learners. We have to remember that some times their brains make work differently that ours. They are exposed to so much more technology at a young age then those who are currently educators. As Mary said, they are not afraid to take risks when it comes to exploring new things in the world of technology. They have been around it their whole life. We should foster this curiosity and help them use it in the best way possible.

Overall, the majority of the data I found talked about a positive outlook towards technology in the elementary classroom. It helps keep students engaged and excited as well as adding variety to the classroom. It can also help make things efficient and communication is made easier.

However, Eleanor had different feelings. She enjoys using some technology in the classroom but feels that students become too reliant on it. She stated,

I think they learn better when they make a connection with a person, whether that be a teacher or a classmate. I also think that discussion and using spoken language are a very important part of learning...you can't really discuss what you know or how you solved a problem with a computer screen (E. Jonas, Personal Communication, 9 October 2015).

She feels that too much technology can be harmful to students. They need to be exposed to it and familiar with it because it is such a large part of society but they should not rely on technology for everything.

Another problem that each teacher mentioned is when technology fails. There is not always someone available to help those who are not familiar with the piece of equipment or specific program. Some schools have more help available than others but there is not a lot of support available over all. Zoe explained that

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there are occasional trainings put on by the district office and a tech liason who is available twice a week. When asked about resources available, Brenda felt it is minimal.

My tech-savvy colleagues have been my biggest resource. I have taken some professional development classes that helped introduce me to many of the Google apps. It is a lot of learning by doing. The students are much more intuitive with most of it (B. Ashworth, Personal Communication, 28 October 2015).

Overall, the amount of help available for day-to-day help with using technology is very minimal.

How does the new technology affect teaching and learning in the elementary school classrooms according to teachers? And how do teachers feel about the changing role of technology in the classrooms?

From my information collected, it is clear that there is a consensus about which technology is most useful. Each teacher discussed the use of a document camera and its benefits for teaching as well as learning. Teachers are able to present almost anything to the class when using this tool. When asked about specific pieces of technology Adrienne stated, “ The best thing that I use that makes instruction easier is the document camera and projector. This allows me to show student work but also allows me to show/teach whole group lessons”(A. Cramer, Personal Communication, 20 October 2015). Each teacher had something very positive to say about this piece of equipment.

In terms of students learning, the teachers primarily felt that technology can help keep students engaged and interacted in class. The downside to this is that many students are familiar with technology. They have technology at home that

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they are very familiar with and this can cause distractions in the classroom.

Adrienne felt that students have a hard time separating technology used for fun and when it should be educational. They like to use technology to play games or interact socially. She also feels that they should spend more time away from technology and playing outside with friends. There needs to be a balance (A. Cramer, Personal Communication, 20 October 2015).

Are there school districts in the Santa Cruz area that adopt new technology to be used in their classrooms? If so, what processes do teachers go through to incorporate it into their daily instruction?

New technology is implemented in schools based on budgets and what is most needed. From what I found in my research, the teachers did not request the technology in their class it was a schools decision. Both Zoe and Mary teach kindergarten at the same school. They were given new technology in their classroom at the same time. It was a school-wide upgrade (M. Sandman, Personal Communication, 20 November 2015). New technology is discussed and its importance is evaluated. If there is room in the budget, these items will be updated. Teachers can request items or give ideas but it is based on the schools funding and amount of money set in place for technology. If there is something you wish to have for your classroom and feel it will be very valuable to students, educators can always push for them. For one teacher, she had a class set of iPads donated by a parent. This is another way new technology can be implemented at schools (A. Cramer, Personal Communication, 20 October 2015).

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After reviewing this data, I feel that technology is going to be an integral part of education no matter what. Some forms are more useful than others. It is important to find the best ways to present technology to students. Although technology use requires monitoring to keep students on task, it can also help keep them engaged and excited about learning.

It seems that based on the data from these teachers, they understand the importance of familiarizing students with technology as it becomes so vital to today's world. We are at the beginning stages of technology integration and I believe it is only going to grow more and more as new technology is invented.

PROBLEMS AND LIMITATIONS:

One problem I encountered was a teacher that was unable to answer my questions. She was very eager to help with my project but did not feel that she had the proper knowledge to do the interview. As an older teacher, she was very uncomfortable with the use of technology in the classroom. She wanted to know more about the topic but explained to me that there are not many resources to educate teachers on how to use new technology.

This is a major problem I found throughout my interviews as well. There is a very limited amount of support for teachers when it comes to technical help and training. Usually there are the only people available on campus to assist are faculty members who are "tech-savvy" but not in a paid position to assist with difficulties. I was disappointed to not be able to conduct this interview but it also gave me great insight on what needs to change as technology becomes a large part of education.

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RECOMMENDATION:

After reviewing the data I received and researched, it is clear that technology in the classroom is here to stay. I recommend that schools consider incorporating a technical specialist to be on campus. This should be included in the school budget when hiring staff. I believe that this is going to become more important as time goes on. I found that many teachers are eager to learn more about how to incorporate technology but do not know where to begin.

I also recommend offering training sessions to all teachers. These may offer workshops or lectures about new technology and programs that are available and how to use them. This can even be something made mandatory in order to get the most out of the technology that you have available. If technology is used right, it can be very beneficial for teachers and students in the classroom.

CONCLUSION:

From my literature review and interviews with five local teachers I found that the role of technology in schools is changing greatly and does have a large impact on teaching and learning. Because of the era we live in, technology is all around us. There are a number of devices and programs that focus on education and can be helpful to teachers and students. It is an adjustment to bring these items into the classroom and there are pros and cons to all of it. But in the end, most schools are embracing this movement in the 21st century and finding the best ways to adapt them into the curriculum.

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As a millennial, technology has been big a part of most of my life. I grew up during a time of a major boom in this industry. Companies in Silicon Valley and all over the world began producing new items and competing with each other to have the latest and greatest product. I became comfortable with using technology and now I feel like I can use most products with confidence, even if they are new to me.

Generations before me do not have that same level of comfort. This technology has not been a part of their lives forever and they may require some training. I feel that using technology in the classroom today is very important and has a large affect on teaching and learning. It can be beneficial in teaching curriculum and providing information to students in new and exciting ways. Technology is hands on and keeps the students engaged in learning.

I also believe that exposing children to this technology will be beneficial to them in the future. Their career in the modern workforce may require much technology use and they need to be prepared for that. Technology enhances student and parent communication with teachers and provides easy access to information.

Like anything else in life, technology use should in moderation. Students need to recognize when it is appropriate to use technology for educational purposes and not recreational. There is so much technology around kids today. It is the teacher's responsibility to provide a balance of multiple learning tools in their classrooms. As wonderful as technology can be, we cannot rely on it for everything.

More often than not, technology fails us. Something can break or a program stalls, we need resources on campus to help fix these problems. If there is no one around to fix it, teachers need to have a back up plan for students. That is why it is

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important to still use tools we have in the past like hard copies of books as opposed to ones on a tablet.

Technology in schools can be a great tool when used in the right way. This requires training for teachers and many options for students in the classroom. Someday our students may be the ones introducing us to new technology because it is such an important part of the future generations. As educators, we should encourage and support our students, always preparing them for a bright and successful future.

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Appendix A

Teacher Interview Questions

1. What grade do you teach? How many years have you been teaching?

2. What types of technology do you use most in your classroom?

3. Are there any specific types of technology that make your instruction easier?

4. How does technology affect your communication with parents?

5. Do you use technology to present material to students?

6. Are there any computer or online programs your students use for class or homework?

7. How does the use of technology affect students learning?
(Positively or negatively)

8. Do you feel that technology helps keep students engaged? Is it ever distracting?

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9. Are there pieces of technology you wish were available in your classroom?

10. Do you find that there are any downsides to the technology in your classroom? Any challenges?

11. Are there resources available to assist you and other teachers in training on new technology or technological difficulties?

12. If applicable: Are there things that you wish were not so technological? (For example, cameras and smart boards vs. overhead projectors and white boards? Would you rather not use technology in your classroom?

13. Are there any other feelings on technology you would like to express at this time?

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Appendix B

RESULTS: Table A Teacher Interview Data

	Most used technology	How technology affects teaching	How technology affects learning
Brenda Ashworth -6 th Grade -14 years of teaching	-iPads -Desktop Computers -Document Camera	-Allows for more access to parents and easier communication - Information is easily accessible to share with students -Very helpful when presenting material to the whole class	-Can get students engaged but also be distracting. -Information right at students fingertips -Hard to resist temptation of playing games and socializing
Zoe Skognes -Kindergarten -10 years of teaching	-Document camera -TV -Personal laptop -Computer lab (once a week) -Microphones	-Helps display information to the whole class -Enhanced communication with parents	-Students have a access to computers and educational videos -Keeps students engaged -Microphones helps shy students
Adrienne Cramer -1 st Grade -9 years of teaching	-Document camera -Projector -iPads -Personal Computer	-Enhanced communication with parents (Sometimes email has drawbacks) -Easy to present material to the whole class and present student work	-Reading and spelling programs help low readers -Have to separate appropriate use of technology and recreational use -Students engaged but also can be distracted
Eleanor Jonas -2 nd grade -10 years of teaching	-Laptops in the classroom -Document camera	-Email communication with parents and colleagues can be quick, but not always the best way to communicate -Easy to present material to the whole class	-Computers helpful for typing practice -Students rely on technology too much -Should be a balance between how to use technology but not too much

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Mary Sandman -Kindergarten -16 years of teaching	-Document Camera -TV -iPads -Educational computer programs	-Scholastic clips appropriate for grade level -Document camera to present material -Weekly blog to communicate with parents	-Many computer programs keep students engaged -Helpful for their future job, students become comfortable with using technology
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