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Effective Implementation of Technology

Abstract

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Technology, when properly used, will help students acquire the skills they need to survive in a complex, highly technological knowledge-based economy. Integrating technology into classroom instruction means more than teaching basic computer skills and software programs in a separate computer class. Effective technology integration is achieved when the use of technology is routine and transparent and when technology supports curricular goals. To find out how effective schools in the Rochester area are at implementing technology, a study was conducted with 11 administrators and teachers. Each person answered questions on a survey to see how comfortable they were at using technology, implementing technology and the resources available to them?

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Abstract

Technology is ubiquitous, touching almost every part of our lives, our communities, our homes, yet most schools lag behind when it comes to integrating technology into classroom learning. Many schools are just beginning to explore the true potential technology can offer towards teaching and learning. Technology, when properly used, will help students acquire the skills they need to survive in a complex, highly technological knowledge-based economy. Integrating technology into classroom instruction means more than teaching basic computer skills and software programs in a separate computer class. Effective technology integration is achieved when the use of technology is routine and transparent and when technology supports curricular goals. To find out how effective schools in the Rochester area are at implementing technology, a study was conducted with 11 administrators and teachers. Each person answered questions on a survey to see how comfortable they were at using technology, implementing technology and the resources available to them?

Effective Implementation of Technology in the Classroom

In today's society of informational instant gratification, people have begun to gain knowledge through the internet, television and other types of media. It has become apparent that society as a whole is changing the way it gathers and stores information. Although some still gain their information through newspapers and books many have shifted to more easily accessible forms of data gathering. One area where technology has caused a large shift is in the field of education. With the number of students inundated with smart phones, students are one touch away from the internet, music, Facebook, Twitter and YouTube videos. This increase has become quite a challenge for educators to keep up with various forms of media that are interesting to students while still allowing the transmission of non-watered down material.

With new educational technologies such as Smart Boards becoming an everyday staple of the classroom it has become imperative that educators not only possess this new technology, but more importantly be able to navigate through and manipulate this technology to best meet the needs of their students. If teachers are not feeling prepared for this task, educational administrators need to ensure the success of all teachers both young and old and provide them with professional development opportunities. ChanLin (2007) states, "There is a consensus among educators and various social communities that current educational practices need to prepare students to thrive in an ever changing technological society" (p. 45). This means that in order for students to be successful in a global economy based on growing informational technologies, it has become more and more important for students to have exposure to various media types.

The difficulties facing teachers in the implementation of technology creates another obstacle; how can teachers affect the way that students perceive technology in their classrooms?

Can a teacher's opinion of how technology should be used in their lessons shift as they learn new teaching techniques? Does a teacher's preconceived notion about technology alter that educator's effectiveness in using different types of technology? These questions are extremely important because all the technology in the world won't help educate students if teachers are uneducated on how to use technology or unwilling to use the technology provided for them.

Literature Review

Within this literature review, the themes that will be discussed are: the many barriers facing the implementation of technology in classrooms; professional development; the positives of using technology in the classroom; and a discussion about educators involved in the implementation of technology.

Barriers facing the implementation of technology in classrooms

Edmunds (2007) states, "Proponents of computer-based technologies in the classroom have long argued that the use of technology can have a transformative power on teaching and learning" (p. 417). This means that in most educational settings computers have become a common place, however there are still many barriers facing the implementation of technology. One such problem facing the use of technology is the ability of teachers to gain access to the types of resources needed to effectively implement these technologies. External or first-level barriers are the most common detractors of successful uses of technology in the classroom. These factors include the lack of access to computers, software, planning time and administrative support (Ertmer, 2008). These external problems are often the most easily remedied. Through increased funding and the possibility of receiving both governmental and private grants; the lack of adequate amounts of resources can be overcome (Banister, 2006). Obviously, without the correct amount of resources it would be difficult for educators to effectively implement and use

technologies within the pedagogy. ChanLin (2007) states, “It is strongly agreed by most of the teachers that, of the environmental issues, hardware and software are the essential elements” (p. 53). In other words, the first way to ensure the integration of technology is to equip teachers and school districts with the correct resources in the form of both technology and software needed to achieve their technological and instructional goals.

The second area in which the transmission of information and communications technologies (ICT) (Levin, 2008) needs to be improved is in the arena of administrative support. With the creation and use of new technology comes the difficulty of learning how to create new forms of instructional lessons. Berrett (2006) states, “Most teachers are not aware of the many opportunities teaching technology can bring” (p. 3). As a new teacher coming into the classroom the opportunities can be very overwhelming. This level of anxiety can be greatly increased or decreased depending on the amount of support you receive from your peers and your school district. ChanLin (2007) states, “Fostering changes in learning and teaching requires environmental, social and curricular support” (p. 53). The more support you have overall the better off you will be. The same can be said for the assimilation of technology in everyday courses. According to Kim (2008), first year teachers “often are encouraged to use technology with little introduction or support from subject-matter experts. In contexts such as these, new technologies applied to language learning often fall short of expectations” (p. 61). One way in which support can be given to staff is in the form of a technical administrator. These individuals are responsible for helping teachers and other administrators with the everyday use of media in their classroom.

In order for teachers to achieve the levels of technological implementation that experts and constructivists would like, they must first be able to seamlessly incorporate technology into

their curriculum. Seamless implementation of technology is also a problem for veteran teachers who are using new forms of technologies that are otherwise foreign to them. Ertmer (2007) stated that “A recent survey conducted by the U.S. Department of Education demonstrated that only one-third of teachers felt well prepared to use computers and the internet in their classrooms, although 99% of public schools have internet connections” (p. 248). Teachers are not feeling prepared to use the technology in the classroom let alone teach it to their students, which is why there needs to be more professional development focused on the use of technology in the classroom.

Professional Development

Professional development has always been an important tool for teachers, and never before has it been more needed than in the area of educational technology. In the past, most staff development within the school was seen as helping teachers to gain the knowledge of their curriculum in the administration of information using overheads, worksheets and books. A flood of technology has changed the face of classrooms, and due to all of the new media types influencing both society and the field of education. Professional development has become a determining factor in the success of teachers with relation to the use of technology. Not only do teachers face the difficulties of creating lessons with various media but teachers have to master programs like those responsible for grading and attendance. All of these tools can be complicated to learn and is one reason why planning periods and administrative supports regarding technology are so important. O’Hanlon (2007) stated that,

Teachers in the experimental classrooms who received additional professional development teaching math with laptops reported they more competently taught mathematics using technology, and students performed significantly better on

standardized tests than students in comparative classrooms in which teachers did not receive professional development. (p. 28)

In other words, professional development of staff simply works, and as a result students perform better.

Along with the professional development of teachers is the mentoring of new educators. Mentoring consists of many factors, some of which include curriculum, educational resources such as books, worksheets, lesson plans and videos which help in the educating of students. Mentors can also be a rather powerful tool in the modeling of how to teach, and deal with potential classroom management issues as well as possible conflicts with parents. In other words mentors can be a fountain of information to new educators. Technology is no exception. Kim (2008) stated, “We must provide language instructors with opportunities to observe peers who have expertise in using technology in their classrooms, rather than having them work with computer support personnel who have no expertise in language teaching” (p. 76). While this quote is discipline specific, the overall view is clear; teachers should be learning technology from teachers within their own fields of study. Learning from teachers within your specific field is very important because although it has been previously stated that technical specialists are a wonderful tool from which much information can be attained; it shows that topic specific mentors may have a better understanding of how the software can be effectively used in their individual discipline.

In the area of professional development there are many types of workshops school districts can use to effectively integrate technology into their classrooms. One such seminar is run by the Centers for Quality Teaching and Learning. According to Edmunds (2007), their workshop consists of “a seven-day, 50 hour intensive professional development program that

models the connection between instructional practices, the curriculum, and the use of computers” (p. 420). The goal of the new push toward the use of technology is based on the constructivist’s idea of education. Edmunds (2007) goes further to say that,

Constructivism is a theory of knowing. It “challenges the assumption that meanings reside in words, actions, and objects, independently of an interpreter. Teachers and students are viewed as active meaning-makers who continually give contextually based meanings to each other’s words and actions as they interact. (p. 418)

Edmunds is indicating that information is usually integrated by students and teachers based on information and data they already know. For students to have a chance of understanding new information, they must first be able to relate to or recall information that correlated to the subject in question. That is one reason these workshops by the Centers for Quality Teaching and Learning are so effective. Edmund (2007) states that,

The first five days of the professional development program model the classroom with teacher participants primarily assuming the role of students in a constructivist compatible, student-centered, environment. The activities are grounded in the curriculum students study and are connected to how students learn. (p. 420)

This seminar is an invaluable device for teachers because not only does this type of environment teach them different ways of understanding how students learn but it gives them a model for integrating it into their planning. This seminar also allows teachers to observe first-hand technology that is being modeled for them in a manner that can attain the goals they have set for themselves in the classroom.

Computers have predominately been used by educators to create new worksheets using programs such as Microsoft Word and Internet Explorer and to use email for communication

with parents and other staff. Coppola (2005) states that, “Learning to open application programs and exchanging emails reveals little or nothing to teacher about the potential digital students have for teaching and learning” (p. 1570). Teachers are now being inundated with new and often foreign informational technologies which are challenging the way they teach. As a result educational institutions have begun to add new training into their curriculum. Banister (2006) states, “The International Society for Technology in Education asserts that preservice teachers must complete a sequence of experiences that develop an in-depth understanding of how technology can be used as a toll in teaching and learning” (p. 209). The new push to more interactive ways of conveying data has led to the creation of new educational standards in the education of tomorrow’s teachers.

Another problem facing educators is the lack of learning based programs with which to create and convey data in a manner where learning can be student-based. Coppola (2005) states, “The general-purpose machines available today, and the software designed specifically to serve the needs of these machines lack any understanding of the learning process or the school setting” (p. 1573). Many experts in the realm of education believe that in order for students to take more ownership in their personal studies they must first be able to assimilate the information into their own understanding of the material being taught. This connection with students is what many multimedia applications lack.

Positives of Using Technology in the Classroom

There are however many positives with technology in the classroom; for one they allow students to have various visual effects. Wilen-Daugenti (2012) talks about how from PowerPoint’s and videos, to music and pictures there are many things that can be enhanced through the use of technology in the classroom. Baule (2007) states, “Studies have shown that

the longer the learner remains on task, the more likely he or she is to learn” (p. 16). Therefore, in order for students to learn they have to be interested and engaged in the topic of study.

Technology can certainly help educators to keep their students on task and engaged.

Technology can also be a wonderful tool in assessing the knowledge students possess in a certain field of education. One such tool is adaptive testing: Baule (2007) states that,

in an adaptive test the computer will truly find out what level of skill the student possesses. If the student gets a wrong answer, adaptive software can present the next question to address the same learning goal but at a level of skill below the previous question. (p. 17)

This type of software can be very helpful to educators in judging what material needs to be covered in more depth, and which concepts their pupils already know. This type of computer based test also allows the teacher instantaneous feedback which can be invaluable to a teacher with time constraints.

According to Edyburn (2007), other resources that are available for educators include; websites that analyze new products, social commentaries on technology trends and surveys that offer data-based evidence about changes and trends in current technology use...these sites are devoted exclusively to alerting readers to what's new and providing early evaluations of products' strengths and shortcomings. (p. 65)

While there are many sites about technology out there a few of the best include Engadget, Gizmodo, and Pop-Gadget (Edyburn, 2007). With resources like these, teachers are more able to keep up with current technological trends which may help them to integrate new kinds of media into their pedagogy. The problem with the use of technology is the fact that technology is ever

changing and updating. But with the use of such resources teachers and administrators can make themselves aware of possible new programs available for future requisition.

Thus far, the focus of this literature review has been on types of technologies being used in the classroom; from projectors, computers, software and other environmental resources. Along with these new technologies comes the support teachers must receive in order to incorporate these resources (Wilens-Daugenti, 2012). Through professional development, administrative supports, mentoring programs, and internet and technology based resources; teachers can have a better understanding of what is possible with regard to the uses within their curriculum. Unfortunately, types of technology being used in the classroom, is not the only obstacle to using the actual technologies; in fact the biggest factor is the individual educator involved in the implementation of the techniques used to create change in their fields.

Educator involved in the implementation of Technology

Earlier discussion led to the obstacles of “first order barriers.” These included no access to computer, poor software, and lack of administrative support. Ertmer (2008), turns to “internal or second-order barriers related to teachers’ beliefs about instructional technology, preferred teaching methodologies, and willingness to make changes to classroom practices” (p. 247). With creation of so many varied types of technologies in the area of education, it can be an overwhelming feeling for teachers who are just starting out. It can be even more difficult for teachers who have been in the field for an extended period of time. People on the whole are resistant to change; and rarely do they want to go outside of their comfort zone. The same can be said for teachers who have been in the classroom teaching well before these new technologies were created. Prensky (2007) came up with the concept of digital immigrants versus digital natives and Edyburn (2007) states that “According to this concept, our children are growing up

in a world where they access and use technology as digital natives, whereas adults are entering this world as immigrants trying to make sense of it all” (p. 66). Adults aren’t used to using technologies as prevalently as are their students and because of this, teachers often have a more difficult time of navigating through different types of technology. Students on the other hand have been flooded with various types of media from TV, to video games, computers, cell-phones, and MP3 players and have grown up using them in various aspects of their lives. Edyburn (2007) states that “Prensky has also made some interesting observations about the nature of multitasking in young adults (Twitch speed)” (p. 66). The ability of students to multitask and move more quickly with relation to their fine motor movement has been increased with the availability of new technologies. According to Levin (2008), as a result of teachers being digital immigrants they often have “feelings of intimidation if they sense that students know more than them” (p. 237). Meaning that if teachers are not up to par with the technology piece they are using, students and/or teacher might not take the activity seriously.

Another problem facing the assimilation of new technologies is that many educators do not see the point of changing their pedagogy when they have been successful in the past. Levin (2008), states that “this means that teachers must be involved in at least two radical changes; they must learn to use technology and they must fundamentally change how they teach” (p. 235). Due to the more interactive ways of conveying and transferring data from the old school of thought to the new technology based views of education, there has been a rift created between some teachers and their administrators. Banister (2006) states that “to facilitate this type of massive transition, faculty members must first catch a vision for the ways in which the incorporation of technologies can enhance and strengthen their teaching” (p. 210). In order for technology to have an impact, teachers must first see how impactful and transformative

technology can be. ChanLin (2007) says that “In order to get teachers trained, the skills and attitude necessary for the meaningful application of computer technology in their classrooms is essential. Flexible curricula and more effort on systematic planning and training in various curricular design/implementation are important.” (p. 53). Teachers must first have a positive outlook on learning about new technology and then be willing to work, plan and utilize it in their classrooms.

A teacher’s point of view on technology and its uses in the classroom are pertinent in the way that they decide to use these interactive devices. Ertmer (2007) states that, “Teachers come to their teacher educational programs with an existing set of beliefs, based on their own experiences as learners, and these experience play a critical role in shaping their future practices” (p. 249). So in order for educators to effectively use technology they must first understand themselves and the way they have been taught to use machines in the past. A teacher who is positive about technology is much more likely to use it in their everyday planning of instruction, even though they may not be completely skilled in its applications (Wilen-Daugenti, 2012). Conversely someone who dislikes technology is much less likely to implement these practices. Many teachers simply choose not to use technology because they lack the confidence to do so. Ertmer (2007) “defined self-efficacy as personal beliefs about one’s capability to learn or perform actions at designated levels” (p. 249). Teachers must therefore believe that they can use technology successfully or else they won’t be self-assured enough to do so.

In addition to having self-confidence and a positive outlook on technology teachers must also be willing to continually self-reflect and analyze their uses of technology. Teachers have often reflected on their success of particular lessons and the use of particular technologies shouldn’t be any different. By reflecting on how an individual technology piece was used, a

teacher may decide to add something to the lesson, take something out, or just scrap the lesson all together. Coppola (2005) said, “Best of all, we discover that the most important of qualities among successful teachers are a willingness to experiment, to rethink the traditional, and chose where digital systems were potentially helpful to students” (p. 1578). Along with having to use technology, teachers must also be able to assess how productive their uses were. In addition teachers have the ability to use their creativity to engage students in their topics of interest.

Conclusion

In order to be a good educator and effectively integrate technology in the classroom teachers must first be open to the idea of technological use. In addition educators must be flexible in their use of technology and professional in their analysis of themselves and their lessons. Along with these individual characteristics teachers and schools must also have adequate resources in the form of both technology and support. Teachers must receive professional development and have the ability to plan with their colleges. Lastly teachers must engage students and give them ownership of their education which should include a student-centered environment.

Methods

The survey below was sent out to eleven teachers and administrators in both urban and suburban school districts.

Survey Questions - SurveyMonkey

Technology in the Classroom

1. Are you an Administrator or a Teacher?

- Administrator
- Teacher

2. How comfortable are you when it comes to using technology?



3. How often is Professional Development on technology offered to teachers?

- Once a month
- Once a year
- Multiple times a month
- Multiple times a year
- Summers only

4. In regard to question three, what topics within technology were included in the Professional Development workshop(s) last year?

- Smartboards
- Barriers facing the implementation of technology in classrooms
- Positives of using technology in the classroom
- Moodle
- Laptops

5. Is it a requirement that ALL teachers (in your district) use technology in their classrooms?

- Yes
- No

6. In regard to question five, if this is a requirement, how is it enforced? How is it monitored?

7. On a scale of 1-5, with 5 being VERY comfortable, how comfortable do you feel teachers are with implementing technology in their classroom?

- 1
- 2
- 3
- 4
- 5

8. Please explain your answer to question seven.



9. Does your district offer a Media Specialist for teachers to go to with questions or concerns regarding technology?

Yes

No

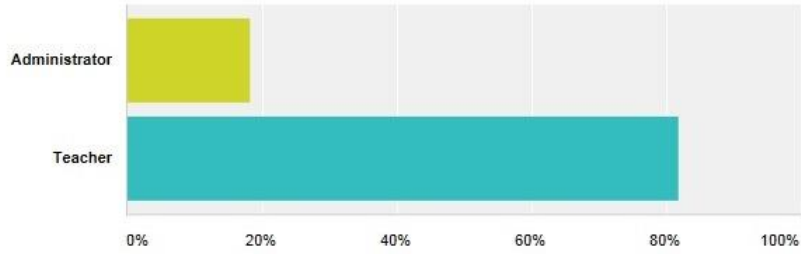
10. If you answered yes to question nine, how does this specialist support teachers?



Results

Are you an Administrator or a Teacher?

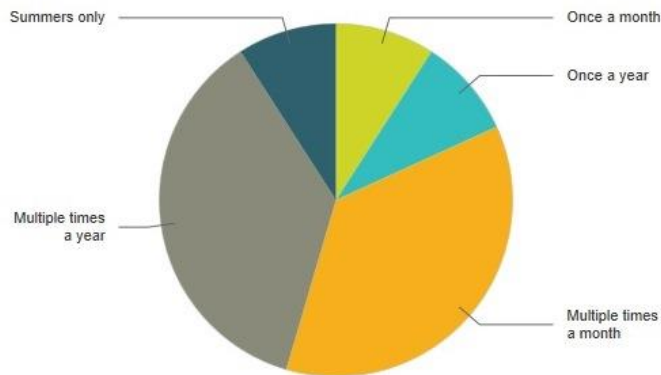
Answered: 11 Skipped: 0



Answer Choices	Responses	Count
Administrator	18.18%	2
Teacher	81.82%	9
Total		11

How often is Professional Development on technology offered to teachers?

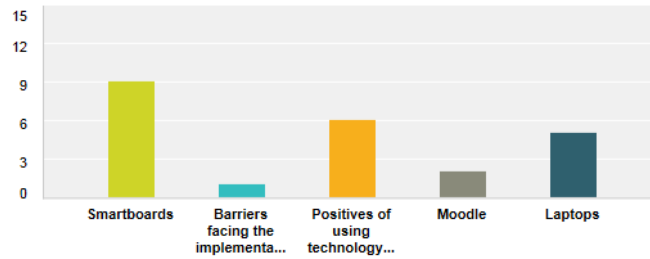
Answered: 11 Skipped: 0



Answer Choices	Responses	Count
Once a month	9.09%	1
Once a year	9.09%	1
Multiple times a month	36.36%	4
Multiple times a year	36.36%	4
Summers only	9.09%	1
Total		11

In regard to question three, what topics within technology were included in the Professional Development workshop(s) last year?

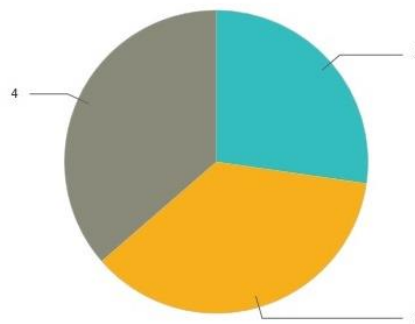
Answered: 11 Skipped: 0



Answer Choices	Responses
Smartboards	81.82% 9
Barriers facing the implementation of technology in classrooms	9.09% 1
Positives of using technology in the classroom	54.55% 6
Moodle	18.18% 2
Laptops	45.45% 5
Total Respondents: 11	

On a scale of 1-5, with 5 being VERY comfortable, how comfortable do you feel teachers are with implementing technology in their classroom?

Answered: 11 Skipped: 0



Answer Choices	Responses
1	0% 0
2	27.27% 3
3	36.36% 4
4	36.36% 4
5	0% 0
Total	11

Findings

Based on my research both teachers and administrators are fairly comfortable with using technology in the class. Two teachers even stated that they use it daily in their classroom for about 85% of their instruction and learning activities. When it comes to professional development, teachers said their district offers it multiple times a year for teachers / administrators to better themselves in the field of technology. Topics that are covered at these professional development workshops include items that are both relevant and important to use in their classrooms. From smartboards to moodle to laptops, most teachers are getting a good foundation of what to use in their classrooms and how to use it. Most of the eleven teachers and administrators surveyed said that technology is not required but administration would like to see it being used in the classrooms. However, there isn't much enforcement due to so many resources being cut, there seems to be very little support for teachers who want it. One teacher stated that, "we have technology benchmarks that all students must meet and those are part of a student's cumulative folder. All teachers have a SmartBoard in their classroom - it's very difficult to teach without using it. There are various skill levels as to the ability to develop presentations with 'all the bells and whistles'." When asked the question, how comfortable do you feel teachers are with implementing technology in their classroom? Many teachers responded that many teachers in school WANT to include technology, but really don't understand it enough or take enough risks to get comfortable. They want to be told exactly how to use it, not get creative to find their own ways to incorporate it. With all of the demands of teachers now, many teachers feel like technology is not a priority. Teachers need to realize that if they would attend trainings, they would see just how useful it is when doing Daily 5, CCLS, etc. Technology is constantly changing. Those that embrace change feel more comfortable taking risks and trying new things

in the classroom. Many teachers can be set in their ways and hesitant to embrace change. There isn't a lot of support for teachers which also can make it difficult for some to implement new technology into their classrooms.

Discussion

As a student in the educational field I have come to the conclusion that technology in the classroom is an invaluable tool with which teachers can better transmit information to students. As a result I have come up with a comprehensive strategy to bring what I know about technology into my own classroom. As a new teacher my first step will be to see what types of technology are at my disposal. In order to effectively implement technology you must know what kind of resources you have the ability to use, because the types of technology available will determine to what extent you can use technology. My next step would be to determine what type of information I will be transmitting to my students. Due to the Common Core Curriculum, prior to being hired, I could begin to break down the goals of the district into various topic lessons. Usually districts also have a pacing chart for educators to ensure that they stay on task. I would also seek out advice from colleagues. Peers can also be a source of information for many resources and technology is certainly one. Some teachers know how to obtain technology that you might not even be aware you have the ability to use. For example veteran teachers would know whether or not you are able to sign out various technologies from computer labs or libraries. Media specialists are important for various reasons; they not only have access to many products but they often have a greater understanding of how to use technologies in a way you haven't thought of. Also, often times if there is a program or software that you really want they can help you obtain it and if not they can put it on a list of possible resources for the following school year. Within my individual lessons, I will ensure that there are many multimedia

interactions between students and the instruction. Music is underutilized in the classroom; in many lessons music could be used to draw connections with lyrics and issues going on during time periods in social studies, for example. Tactile objects are also an important part of education; while some objects are certainly out of the question in their uses in the classroom too few educators bring in media and technology in the form of objects student can observe and touch. In addition to this, movies in the form of shortened clips can also be an effective way of using technology to help students relate to issues and topics being studied in the classroom. Even a simple picture can have a profound impact on students; visual learning has become an important part of student's everyday world and it should also be developed in curriculum. One problem with many multimedia presentations is that they are simply used as a different way to take notes. PowerPoint presentations are notorious for this; but it does not have to be so. By incorporating technology into the classroom it opens up the classroom into a very open environment where students are engaged in learning and having fun while learning. As a new teacher implementing technology into my lessons I would attempt to have as many different media types as possible and instead of simply force-feeding students information I would instead have them question things. I would ask things like, why do you think this picture is important? What is its significance? In this way I would invite students to think for themselves, creating a student-centered, student led environment. Although some educators may think that this may be very difficult for students depending on the topic being covered; I would still attempt to challenge students. Often time students know much more than educators think they do; and there is usually at least one student that has the prior knowledge to link the information being taught to their classmates. However if they weren't able to answer these questions I would then move onto other questions with the aim of slowly guiding students toward the goals of the lesson. Another

avenue I would pursue in my implementation of technology is professional development; through seminars and conferences I would attempt to gain new skills that would positively affect the education of my students. Whether it was a seminar on constructivist teaching styles or informational updates on new programs being used in the classroom I would ensure that as a teacher I was trying to continually learn just like I would expect my students to. Depending on funding and available resources I would also apply for grants to update the media in my individual classroom setting. In addition to all of these tools I would also set up some kind of hands on activity in which students would go the computer center or library and answer questions using websites. These sites would include not only those with relevant data but would also be tools which students could use to find information in the future. In my everyday usage of technology I would be ever evaluating myself as a teacher. What went well? What things do I need to work on in my presentation of data? Were my curriculum goals met? What things could I add to the presentation to keep students more engaged? How was my pacing? Did I go too fast or too slow? Did I have extra time at the end of the lesson to bring the students back to my essential question? Do I know what to do if my smart board brakes down? All of these questions and many more are the types of things that would be going through my head as I thought about the lesson. Lastly I believe that a teacher has to be flexible in the classroom. Often time teachers miss teachable moments in their classrooms because they are too focused on doing things in a strict order without any room for engaging and answering questions asked by students. While structure within the classroom is very important so is the ability of teachers to shift their strategies and goals within certain lesson.

Reflective Dialog

In the area technology there are many obstacles to overcome; from the integration of various programs and software; to the training of staff. But what is being done to ensure the equal distribution of information to all students. For example as an educator you are limited in what you can do by the economic group you are dealing with. An affluent community school is much more likely to have online resources available to students. In some districts all homework is posted on individual teacher links within the district homepage. However lower income schools and students are less likely to have access at home.

Another issue surrounding technology is funding and resources. Although the digital divide is closing slowly the amount of digital and technical support staff in some school districts is much greater than in others. Since technically proficient staff is so important how can there be such a difference in the amount of allocated resources for technical specialists?

The allocation of resources is yet another issue facing educators. Who do you bring proposals to in regard to acquiring new technologies? As a new teacher wanting to use various types of technology; what do you do if the types of machines you are accustomed to using aren't available? How do you gain funding for things like ipads and audio systems if your classroom isn't equipped with these items? How do educators know where to obtain all the possible grants available for the acquisition of new technologies? Also to what degree are administrators willing to supply trainings that teachers feel they need in order to better understand the technologies being used in their classrooms?

With the creation of new technologies like Smart-Boards and the assimilation of other forms of technology why haven't many large software companies come up with any

revolutionary new educational programs? Although there are programs like PowerPoint there doesn't seem to be any software that can truly interact with students on the level of video games. Think of the amount of time that many students and adults spend playing video games such as "Call of Duty" and "Halo." Why can't video game developers design intense, highly interactive games with the purpose of actually educating students? Just think about the change in attitudes of some students in your classroom. Think about the level of engagement for some of the highest energy students; they are usually very active and play sports and/or video games. Think about how much fun learning could be if you were actually fighting battles during the Civil War, experiencing life in the roaring twenties firsthand or playing an interactive game that applies to mathematics. One game that has stood the test of time is Oregon Trail; although it has been around for nearly 20 years students still enjoy playing it while still gathering actual information about the hardships facing people moving west into the frontier. Instead video game developers are too busy creating games like "Grand Theft Auto" which teaches people to car-jack, rape, steal and assault people.

In the area of technology there are many road-blocks to the successful integration of media into everyday lessons. However it is important to understand that the educational technological revolution is in its infancy. As educators continue to use technology the amount of possible resources for all educators will increase. This is a very exciting time in education and while there are difficulties in changing any system the potential gains are much more important. The key to success is simply continuing to grow in your uses of technology in the classroom; because the more you work with technology in your classrooms the more proficient you will become.

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