MOTIVATING STUDENTS TO LEARN USING TECHNOLOGY

A Paper

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Introduction

Motivating children to learn in an educational setting has been an increasing problem in my classroom. More and more students are coming to school with no desire to learn or without any idea why education is so important. I want to be able to show children why education is important and then instill a life long learning desire so that future learning will be more easily accomplished. I see a continuing number of students enter Kindergarten without any interest to learn to read or write. Many do not have experiences with books and language.

Also I have observed that the technological world that my students will grow up in outside of my classroom and the technology environment in my classroom are very different. My classroom offers very little technology-enhanced learning compared to the social environment where the use of technology is so prevalent that almost all careers will one day be dependent upon technology in one way or another. I began to wonder if my school environment offered more technologically friendly curriculum, would the motivation of my students improve and could I better prepare them more success for their future careers?

One of the roles for schools is to prepare students for the workforce of tomorrow. Wheeler (2001) suggests in his article that information technologies in the classroom are here to stay. Technology is changing and evolving continually. The digital divide between schools and the workforce will only become greater unless we begin to implement technology in the classroom (Wheeler, 2001). With the rapidly changing technological workforce, and a culture of high tech communication and information, schools must stay up-to-date on future technological changes. Schools from the
administration on down to the teachers must begin to take advantage of the technology available. One of the major debated issues in education today is the role of technology in the educational setting, and how much technology will be implemented in the classroom. Many schools, as in Osborn Elementary School, have limited technology equipment and the equipment that is available is out-dated making technology integration almost impossible.

My project is to find a way to implement technology in my classroom as a tool and strategy to motivate students to learn. I want to find ways in which to change my student’s attitudes towards learning by instilling a love for learning in the school environment. I want my students to know why learning is important to them. I propose that the use of technology as a tool for learning will engage students and help to develop an intrinsic motivation. I will teach reading and writing with old strategies in new ways using technology. I believe that using technology as a tool for learning will make learning more student-centered, hands-on, and motivational.

Review of the Literature

Understanding Motivation

Children are born with an innate desire to interact with the environment (Carlton & Winsler, 1998; Dickinson, 1995). Interaction in the environment leads children to new knowledge and a desire to know more about their environment. Children begin to realize that when they interact with their environment events can happen. When children realize that they can control events, they begin to become intrinsically motivated. Researchers found that children in later years can develop extrinsic motivation (Carlton & Winsler, 1998; Dickinson, 1995). Extrinsic motivation is developed when a child learns that
actions can bring about tactile rewards. When children are extrinsically motivated, it an be detrimental to the child’s learning. Children who are extrinsically motivated tend to believe that actions and events just happen versus the intrinsically motivated child that believes his/her effort makes events happen (Carlton & Winsler, 1998).

The child’s developing perception of control over events and actions is the driving force of motivation and learning (Carlton & Winsler, 1998; Solvberg, 2002). Many other research studies found that it is a child’s need to make sense of the environment and seek explanations of his/her world that help shape self-perceptions (Carlton & Winsler, 1998; Dickinson, 1995; Kozminsky & Kozminsky, 2003). As children mature, they develop a sense of autonomy and competence.

Autonomy is a child’s inner sense that he/she can control his/her actions and that the control is coming from one’s self (Dickinson, 1995; Kozminsky & Kozminsky, 2003). Children from homes where autonomy and independence is supported tend to transfer this to the school environment (Carlton & Winsler, 1998; Dickinson, 1995). Controlling environments may cause children to feel a lack of control over their actions. This can then lead to extrinsic motivation, a lack of responsibility for their actions, and disinterest in their environment (Carlton & Winsler, 1998). Carlton and Winsler (1998) suggest that by looking at a child’s development, researchers can discover why school age children do not seem to possess an interest to learn.

Hootstein (1996) states that there are an increasing number of children that are at risk of dropping out of school with no motivation to learn. More children are coming to school inattentive, bored, and unable to see any connections between school learning and the lives they lead outside of school (Hootstein, 1996). It is children’s positive
relationships with others that help to develop positive self-images and autonomy (Carlton & Winsler, 1998; Cooper & Brna, 2002). Positive relationships with others can help to develop trust. When children feel a bond of trust, they feel secure to take chances to explore and experiment with the world around them, which intrinsically motivates them to new learning (Cooper & Brna, 2002).

A young child’s motivation begins to develop in the home and teachers at school can contribute to his/her motivational development. Motivation is an important and complex topic because it can determine a child’s way of functioning in a learning environment, and it can be an indicator of a child’s success or failure in school (Carlton & Winsler, 1998; Kozminsky & Kozminsky, 2003; Page, 2002). Recent findings are suggesting that technology can be a key to engaging hard-to-motivate children.

**Benefits of Integration of Technology**

Information and communication technologies (ICT) have positively impacted our worlds’ productivity in the workforce to a large extent. Researchers are seeking to find answers about the impact of ICT in the educational environment (Cooper & Brna, 2002; Page, 2002; Wheeler, 2001). Common statements reflecting the positive influence of ICT in the educational setting have been reported to be positive student attitudes, higher self-esteem, more student engagement, and increased student achievement (Butzin, 2001; Cooper & Brna, 2002; Page, 2002).

There are benefits for school administration and faculty also. Wheeler (2001) states that the roles of teachers are changing based on the new technologies that are being developed. Teachers will become more facilitators of knowledge instead of lecturers. Teachers will become organizers and enablers when ICT is used to its full capabilities.
(Wheeler, 2001). Wheeler (2001) suggests that ICT will enable students to become critical thinkers, will promote information literacy, and will enable students to be ready for the unknown workforce of tomorrow. Two studies have shown that when ICT technologies have been used as an integrated part of the curriculum, students become highly engaged for longer periods of time, higher achievement in academic, and less behavior problems (Butzin, 2001; Cooper & Brna, 2002).

With ongoing research studies and controversies, ICT is not going to go away. As Wheeler (2001) suggests the roles of teachers and students will change and the vast amount of information will only become more and more readily accessible. We live in a technological world so we must make the same advances in our schools (Wheeler, 2001). We are beginning to live in a world where the measurement of knowledge and success is not in what we can remember, but in how quickly we can find the answers and access information.

Problems of Technology Implementation

Technology is great when it works, but many times technology doesn’t work. Bottino, Forcheri, and Molfino (1998) stated that computers and technology became widespread in the educational setting in about the 1980s, however technology has remained at experimental stages and has been used as an added curriculum instead of an integrated tool in the classroom. As researchers are trying to understand the impact and management of technology in the educational setting, they are finding many obstacles to the full implementation of technology (Bottino, Forcheri, & Molfino, 1998; Pelgrum, 2001; Shaw & PCAST Panel on Educational Technology 1998; Zhao et al., 2002). These researchers
have identified the following problems that interfere with implementation of technology in schools:

- Different objectives of technology-based tools
- Faculty taking the time to learn new software and finding ways to implement in an already full curriculum
- Modifying teaching strategies to effectively use technology
- Students learning the new software to make technology integration possible
- Effective assessment of technology tools and integration
- The inability for the educational environment to keep up-to-date with on-going technological advances for which schools must depend on others to use technology (Bottino, Forcheri, & Molfino, 1998; Pelgrum, 2001; Shaw & PCAST Panel on Educational Technology 1998; Zhao et al., 2002).

The teacher’s goals and the different objectives of technology-based tools create part of the problem of implementing technology (Bottino, Forcheri, & Molfino, 1998). There are many different teacher philosophies regarding how many computers are enough in their classroom. For example, some teachers want one computer per student; some teachers like a computer lab time, some teachers believe one computer for every two students is sufficient (Pelgrum, 2001). Also the reality of team teaching and differing teacher philosophies becomes an added obstacle to technology (Bottino, Forcheri, & Molfino, 1998; Pelgrum, 2001; Zhao, et al., 2002).

Zhao et al. (2002), state that despite the dramatic growth in access to computers, technology use remains very low. The time constraints for teachers to learn and implement new technologies in an already full curriculum become another obstacle in
implementing technology (Bottino, Forcheri, & Molfino, 1998; Pelgrum, 2001; Shaw & PCAST Panel on Educational Technology 1998; Zhao et al., 2002). After teachers’ learn the new informational technologies, the students’ need to learn how to use the new informational technologies. Students must be able to operate informational technology before they can benefit from the extended learning technology can offer (Bottino, Forcheri, & Molfino, 1998; Pelgrum, 2001; Shaw & PCAST Panel on Educational Technology, 1998; Zhao et al., 2002).

Next the researchers’ state that assessment of the use of technology is very difficult (Bottino, Forcheri, & Molfino, 1998; Pelgrum, 2001; Shaw & PCAST Panel on Educational Technology, 1998; Zhao et al., 2002). Schools that are integrating informational technologies are using many different methods for implementation (Bottino, Forcheri, & Molfino, 1998; Pelgrum, 2001; Shaw & PCAST Panel on Educational Technology, 1998; Zhao et al., 2002). Devising consistent assessment guidelines for the many uses and methods of informational technologies has proven difficult because of the various ways schools are implementing technology (Bottino, Forcheri, & Molfino, 1998; Shaw & PCAST Panel on Educational Technology, 1998).

Another problem of technology is the cooperation between school and industry. It has been noted in research studies that the structured setting of education and the way technology is used versus the way industry uses technology are not the same (Bottino, Forcheri, & Molfino, 1998). Industry uses technology to help production and for output. Education uses information and communication technology to teach and learn. So the idea of using informational technology to prepare the students for the future workforce may not be working (Bottino et al., 1998; Pelgrum, 2001; Zhao, et al., 2002).
Additionally when new information and communication technologies are introduced into the schools, the faculty may need to depend on others outside their building or environment to fully use and keep equipment running to make integration time-effective (Bottino, Forcheri, & Molfino, 1998; Pelgrum, 2001; Zhao, et al., 2002).

With all the problems that educators face with the integration of technology, why do schools keep trying to use information and communication technologies? Many research studies have documented benefits of integrating information and communication technologies that make the struggles of implementation worth fighting for (Butzin, 2001; Cooper & Brna, 2002; Karagiorgi & Charalambous, 2004; Page, 2002; Wheeler, 2001).

Students Motivation and the Use of Technology

Common statements from researchers reflect upon the influence of technology in the educational setting. They have reported positive student attitudes, higher self-esteem, more student engagement, and increased student achievement (Butzin, 2001; Cooper & Brna, 2002; Page, 2002). Solvberg’s (2003) studies confirm these findings and state that students enjoy using computers and found it to be a positive motivation and indicator of students’ achievement, behavior and learning. He also stated that his studies were based on technology that was integrated into the curriculum and was perceived by students as part of the normal procedures in the classroom (Solvberg, 2003).

The educational benefits found were more than just a motivational value when using technology. Wheeler’s (2001) studies suggests that the use of technology enabled students to become critical thinkers, promoted information literacy, and enabled students to be ready for the unknown workforce of tomorrow. Two other findings by Butzin (2001) and Cooper and Brna (2002) demonstrated that when technologies were used as
an integrated part of the curriculum, students become highly engaged for longer periods of time, students achieved higher academic skills, and there were less behavior problems reported during school.

The results of Page’s (2002) research also confirmed the findings that technology-enriched environments were more likely to consist of student-initiated learning. The students were engaging and participating more not only in teacher-led instruction but in student-centered and individualized interactions also. This same study observed that low-socio economic children in elementary environments gained higher levels of mathematic achievement, higher levels of self-esteem, and worked well in cooperative groups to accomplish common tasks when teachers used technology-enriched curriculum (Page, 2002).

A study done in Israel by Romi, Hansenson, and Hansenson (2002) examined the connection between the detachment and motivation of their low socio-economic youth in society versus other students and their attitudes towards electronic learning (e-learning). The study concentrated on the areas of motivation and pleasure and cognition using e-learning. The study didn’t find any major differences in areas of motivation and pleasure, however the difference in cognition was great (Romi, Hansenson, & Hansenson, 2002).

After completing this study, the group of students that were at risk for school drop out showed major gains in cognition (Romi, Hansenson, & Hansenson, 2002). The researchers’ reasoning was due to the positive attitudes towards e-learning and motivation to use technology. In Israel, computers are easily accessible through youth centers, community centers, school and home (Romi, Hansenson, & Hansenson, 2002). In other countries, computers are not as easily accessible and therefore more adult youth
tend to have negative attitudes towards e-learning for fear of being made fun. The authors of this research stated that because computers are so readily available to everyone, the fears of mistakes that are sometimes attached to using unfamiliar equipment was not evident (Romi, Hansenson, & Hansenson, 2002).

**Developmentally Appropriate Technology**

The developmental appropriateness of early childhood students using technology has been raised. Yelland (1999) reiterates that one of the foundational assumptions of early childhood is that young children learn through play. Children learn through hands-on discovery and manipulation. The debates in early childhood center around what is too much time in front of a computer screen and what may not be in the best interest of children in their early years of childhood (Gimbert & Cristol, 2004; Yelland, 1999). With the increase of technological toys and information technologies educators are faced with the decision of what is best for children (Yelland, 1999). Yelland suggests that traditional activities can now be enhanced and complemented with different experiences that have been enhanced with new technologies. New software is being developed for young children that take into account the needs of young children to create and manipulate objects. Yelland strongly suggests that if educators do not take advantage of the new technologies, the divide between education and popular culture will continue to become greater.

Another study by Judge, Puckett, and Cabuk (2004) confirms that developmentally appropriate use of computers in early education could benefit young children. Computers can provide children with a creative world to explore that is developmentally appropriate (Judge, Puckett, & Cabuk 2004). Technology-enriched
classrooms now integrate the use of teacher selected software and Internet resources that provide a collaborative atmosphere that will support and encourage the motivation for students’ success. Teachers will change their role as a teacher to one of guidance and assistance in learning in a model classroom (Judge, Puckett, & Cabuk 2004). However, without special selection of well-designed software and functional equipment, technology can become rote learning like the use of flashcards and worksheets (Judge, Puckett, & Cabuk, 2004).

Wheeler (2001) suggests that computers have the capability to offer greater autonomy in learning. Young students can also learn how to access, manipulate, store, create, and retrieve information (2001). Technology can offer students an opportunity in which they can collaboratively learn with others in their own environment and abroad (2001). Wheeler goes on to report that computers also offer students an opportunity to make connections between internal thinking and external social interactions through the computer keyboard. Early childhood children in his study became quick to master the ability to communicate effectively because of the non-threatening enjoyable collaborative atmosphere that computers offer in an educational setting that is authentic (2001).

A commentary on preschoolers, computers, and school readiness implied that there was a positive effect on young children’s cognitive abilities when children had access to computers (Spooner, 2004). Spooner’s findings showed that there was no difference in cognitive ability between the children from different socio-economic cultures and the children of parents’ with varying degrees of education (2004).

There was a study done in the UK called the Networked Interactive Media in Schools (NIMIS) project (Cooper & Brna, 2002). NIMIS was an international European
Union funded project where a classroom of the future was created. This study examined how teachers and students were involved in the development and design of the classroom hardware and software technologies (Cooper & Brna, 2002). The relationships and interactions between the students and teachers were documented, as well as, the high levels of engagement and attitudinal responses as related to the learning with technology (Cooper & Brna, 2002).

Their findings indicated that the cognitive growth measured through standardized testing in the areas of reading and writing increased more than 14 months on average. The expected increase was only a 9 month increase (Cooper & Brna, 2002). The success of the NIMIS project was due to a carefully planned technology environment. The positive relationships between the teachers and students were also a key factor (Cooper & Brna, 2002). The positive nature of the relationships in the classroom between peers and teachers nurtured children’s self-esteem and the desire to control their environment. These influences helped to affect the way children behave and learn in the classroom. It was suggested that the NIMIS project promoted more opportunities for children to be positive and motivated for longer periods of time (Cooper & Brna, 2002).

Gimbert and Cristol (2004) claimed in their article that they found studies from researchers Guthrie and Richardson (1995) and Talley, Lancy, and Lee (1997) that claimed young children were intrinsically motivated to use computers and spent more focused time on computer related activities than on non-computer related activities. One of Gimbert and Cristol’s (2004) case studies was a second grade class whose teacher wanted to integrate computers into the math curriculum. The results of this experience showed that the students could practice and reinforce the math skills with technology
(Gimbert & Cristol, 2004). Then the students could use the technology as a tool to demonstrate competency in technology and math. Lastly, it was stated that the students’ attitudes about using the computers were always enthusiastic (Gimbert & Cristol, 2004).

Turbill’s (2001) study took place in Australia. The study resulted in conflicting evidence about using technology in an early childhood setting (Turbill, 2001). During his study, he found the frustrations of technology that was documented earlier. His study found that technology is not as powerful when there are not enough computers present when implementing technology.

Another interesting finding was the connection between literacy and technology and kindergarten teachers’ views of reading. Turbill (2001) makes the suggestion that today kindergarten students not only have to learn to read books made of paper, but they also need to learn to read in a digital format, namely software and Internet sites. Reading is not just learning to read print, but to read visuals and animation also (Turbill, 2001).

Children’s motivation and technology enriched classrooms are a combination that seems to be synonymous in the educational setting (Cooper & Brna, 2002; Romi, Hansenson, & Hansenson, 2002; Solvberg, 2003; Yelland, 1999). There is more and more evidence that computers serve as a motivational tool that can enhance children’s self-esteem and attitudes toward learning. Children are naturally motivated when using technology (Cooper & Brna, 2002). With the growing body of evidence that supports the positive influence of technology, schools and teachers must plan carefully to integrate technology into the curriculum to capitalize on its benefits (Cooper & Brna, 2002; Romi, Hansenson, & Hansenson, 2002; Solvberg, 2003; Yelland, 1999).
Summary

I am convinced more than ever that we need to implement technology into the every day lessons in the classroom. Technology must be integrated to have the greatest positive impact on students. Time will only tell whether technology is a tool that will dim in the eyes of students and become less motivational. However, I do believe that we need to teach using the same culture as the children live. I know most of my students do not have access to technology. As a teacher I hope to broaden the views and ideas of my students to reach beyond what they know and embrace new learning. I feel that it is more important to use technology in the classroom to give my children the experiences that they are lacking in their home environments.

I believe that schools today have a great range of teachers that want to integrate ICT into the curriculum, teachers that only buy into ICT about half the time, teachers that want to use ICT but don’t have the knowledge or skills to implement it, and lastly teachers that don’t want any part of ICT. I also believe that schools have the same range of technology equipment. Some schools are ICT advanced, some schools are somewhat equipped to use ICT, and some schools are under-equipped to integrate ICT into curriculum. Lastly, I also believe that funding for equipment, professional development and training, and support for new technologies are all issues that contribute to lack of ICT integration.

I propose a solution for Osborn Elementary School that would be a movement towards ICT integration. I suggest that SMART boards be acquired to begin the journey of ICT integration. SMART boards are advertised to be hands-on for students and make
ICT interactive. I suggest that students would become more highly motivated with the use of SMART Boards and may generate positive attitudes towards learning. SMART boards may be an effective tool in our building of diverse special needs and low-economic culture.

SMART boards would be an aid for teachers in organizing and managing curriculum that would coincide with the philosophies of teaching at Osborn. Zhao (2002) states that when teachers’ beliefs and approach to teaching is consistent with the technology that he or she is choosing to use, the teacher is more likely to succeed in using that technology. The research study goes on to state that when the value of technology was limited to a peripheral function and when the teacher found a connection between the technology and the curriculum, technology integration was more likely to succeed (Zhao, 2002).

Administration would be able to take advantage of SMART boards capabilities to make professional development more effective. SMART boards would be economical because of its versatility as a TV screen, projection component and software capabilities. The SMARTer Kids Foundation offers grants for SMART products. Our administration may be able to take advantage of the grant that is offered to place SMART Board products in the hands of our teachers and administration.

After contacting a SMART Board dealer in our area, I have arranged for a SMART Board demonstration for our administration and staff. I will submit the online grant with approval of my administration and seek other local funding to fully finance the SMART products that are being requested. If we receive the grant for the SMART products, our building will automatically receive a grant for professional development
and integration of the SMART boards for our faculty. I believe that adding SMART products to our existing technologies will enhance the technologies that we have without making great changes all at one time for our faculty. I believe that small steps towards integration will be more effective than trying to bring great changes to our building all at one time.
REFERENCES


**Biography**

*Tari Mole is a third year kindergarten teacher at Osborn Elementary School for Ashland City Schools. She has worked in the education field for nine years. Tari is a graduate of Ashland University with a major in Early Childhood Education and a minor in Literacy. She is earning her Master’s of Education degree in Educational Technology through Ashland University. Projected graduation date is May of 2005. She has one son who is the light of her life! To reach Tari Mole, email her at: kmole@aol.com*