USING THE INTERNET TO IMPROVE STUDENT LEARNING AND ACHIEVEMENT

by
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Table of Contents

Abstract

Teachers can use the Internet as a teaching tool to increase student achievement. Many teachers are intimidated by teaching with the Internet, due to lack of experience. By developing clear learning targets, directing students to specific web sites, and focusing on the content, teachers can have success teaching with the Internet. Content knowledge, preparation, understanding the students, and organization skills will help teachers succeed when teaching with the Internet. However, there is a higher risk of cheating during online classes, and teachers must be on guard against academic dishonesty. If teachers can effectively use the Internet in the classroom, they will be less dependent on textbook publishing companies, many of which are influenced by politics in large states.

Chapter I: Introduction

The first major step in the creation of the Internet was a letter written by J.C.R. Licklider of MIT in 1962. Licklider first proposed the idea of a global network of computers and worked to develop the idea for the United States Department of Defense. Leonard Kleinrock, also of MIT, created the idea of packet sharing, on which the idea of Internet connections was based. Originally, the Internet was known as ARPANET, and connected computers at a few universities. E-mail was first used on ARPANET by Ray Tomlinson in 1972. During the 1970s, colleges began sharing their catalogues and newsgroups started which focused on issues and allowed individuals to exchange ideas. Bob Kahn and others developed TCP/IP architecture in the 1970s, which advanced the Internet. In 1989, Peter Deutsch and his associates created an index of FTP sites, known as Archie, which was the first non-library catalogue that indexed Internet sites (Howe, 2010).

The first user-friendly Internet interface was developed at the University of Minnesota. The demonstration system was called a gopher, since the University of Minnesota Mascot was the golden gopher. The University of Nevada at Reno developed VERNONICA, which was a searchable index of gophers. Through the early 1990s, Internet use was limited to research, education, and government use, since it had been government funded. Delphi was the first company to offer online services commercially to subscribers in 1992. In 1995, the Internet began to be completely dependent on commercial networks. Companies such as AOL, Prodigy, and Compuserve then emerged. Microsoft's release of Windows 98 changed the internet, by changing the way the browser incorporated into the desktop. High speed and wireless Internet became popular in the 2000s. Since the late 1990s, the Internet has changed the way people access information, shop, do business, communicate, and live their lives (Howe, 2010).

The Internet is one of the major tools I use in my classroom. But, I am relatively young teacher, having been born in 1983. I am very comfortable using the Internet and computers in general. There are tasks that I complete in 20 minutes that it takes some older teachers hours to finish. Some of these teachers were adults when the Internet was first widely used and never reached the same comfort level with computers. Therefore, it is difficult for some of these teachers to incorporate the Internet into lessons.

In some cases, the Internet is not just a classroom tool. In some cases, the Internet has replaced school buildings as the venue in which classes are offered. Over half of the courses I took between 2009 and 2011 for my graduate program at Northern Michigan University were online courses. In Michigan, community college students can take courses online from any community college in the state and receive credit through the Michigan Community College Virtual Learning Collaborative (MCCVLC).

In May 2011, I was given the task of selecting new United States History Books for the Social Studies Department at Pickford High School. After investigating several different options, I settled on a textbook. However, Pickford Public Schools, like all Michigan Schools in 2011, had to deal with a cut in funding from the State of Michigan. Since the students would all have laptop computers, I began exploring the idea of an online textbook. Compared to a traditional textbook, a six-year subscription to an online textbook would cost nearly $20 less per book. Additionally, I hoped it would make students more comfortable using computers as learning tools and that they would be able to transition smoothly from using the online textbook to using the Internet during classroom activities. Moving to an online textbook was actually a calculated step in moving towards the elimination of textbooks from my Social Studies classes all together.

The motive for such a move is not only financial savings. I was tired of reading things in the textbook that I found to be inaccurate.

Statement of Problem

Trying to quantify the significance of the Internet on life in America is rather overwhelming. Almost every aspect of American life has been changed by the Internet, including education. There have been political efforts, including state and federal tax dollars, directed at getting computers and Internet into schools. Speaking about the importance of technology in the classroom is trendy, but I intend to focus on those methods which are most effective in improving student learning.

All of the schools in Michigan's Eastern Upper Peninsula have distributed Netbook computers to all junior high and high school students, as a result of a federal grant. Quickly, it was apparent to me that most of the other teachers and I were not sure how to best use the new computers to improve student learning. It was not challenging to come up with ideas that seemed promising, but I wanted to know how the Internet could most effectively be used. This study will be focused on answering that question.

Additionally, I want to examine the hold the textbook publishing industry has on curriculum of schools in the United States. I intend to examine if and in which ways the textbook publishing industry has altered curriculum in the United States and if such changes have compromised the academic integrity of the American education system. Increasingly more learning resources become available on the Internet. Accordingly, I will try to determine how the Internet can be used to rectify some of the problems in the American education system brought on by the textbook publishing industry.

Research Questions

1.) In an era of explicit curriculum mandates, high-stakes testing, and decreasing funds available for teacher resources, how can high school teachers effectively use the Internet to maximize student learning?
2.) In which ways does the textbook publishing industry have a hold on the curriculum and culture of schools?

Definition of Terms

1.) Direct Instruction- For the purpose of this study, direct instructed is defined as skills-oriented and emphasizing the use of small group, face-to face instruction by teachers and aides, using carefully articulated lessons in which cognitive skills are broken down into small units (Schug, Tarver, & Western, 2001).
2.) Differentiated Instruction- For the purpose of this study, differentiated instruction is referred to as teaching philosophy based on the premise that teachers should adapt instruction to student differences (Schug et al., 2001).
3.) Academic Dishonesty- For the sake of this study, Academic dishonesty includes cheating, plagiarizing, falsifying sources or bibliographies, knowingly helping other students cheat, working together on school assignments and projects that should be completed independently, and other attempts to obtain credit for academic work through fraudulent, deceptive, or dishonest means (Cizek, 1999; Dean, 2000).

Chapter II: Review of Literature

More Americans have access to the Internet than ever before. Over 76% of the population has access to the Internet, with the number growing as time goes by (U.S. Census Bureau, 2009). It is natural that educators would want to use the Internet as a tool to increase student learning and achievement. The challenge is to determine the best practices in education and to determine if technology can enhance those practices. Using technology for technology's sake would not be a wise move, so if educators know how to use technology efficiently, American students and inevitably American society will benefit.

Using the Internet to Teach Content

Wallace (2004) studied the problems and challenges teachers face when using the Internet and how the Internet supports and/or undermines teachers' work. Science teachers were the focus of the study, since science teachers were early users of Internet technology, as early in the history of the Internet, the government made many resources available to science teachers. An objective of the study was to find out how teachers would use the Internet in the absence of project support and guidance. An organization for teachers using technology was put in charge of recruiting possible teachers for the study (Wallace, 2004). Teachers were eliminated from consideration if they were:

1. early adopters (people who tried every new technology when it became available);
2. acting as the technology experts within the school;
3. teaching technology classes.

The teachers selected for the study used the technology made available to them, but did not actively seek it out. Seven candidates were selected and the candidates were observed teaching, after which, three candidates were selected for the study: Ms. Owens, Mr. Robbins, and

Ms. Varner. One factor that was considered when selecting the three candidates was diversity. The teachers came from different backgrounds and taught at different types of schools (Wallace, 2004).

The three teachers were observed 5-10 times for an entire class period. Data were gathered using pre- and post-interviews, classroom video records, and observation notes. Teachers were given an initial interview to gather information about the teachers' background and experience, ideas about science and teaching, training and experience with computers and the Internet, reasons for using the Internet in a science class, immediate plans for Internet use, and expectations for the future with respect to the Internet in schools (Wallace, 2004). Wallace took notes during classroom observations and recorded audio notes immediately after observations. Teachers were also interviewed after all of the other data had been collected.

There were 17 students in Owens's class for the study. Owens felt unprepared to use the Internet because such work was not included in her training and she was teaching about nuclear science for the first time. Students looked up facts and prepared for a debate. Most of Owens's interactions with students were unrelated to science and very brief. When Owens was interacting with students about science content, she usually just restated what the students had already found and did not ask many question. Students debated nuclear energy, but did not base most of their arguments on facts. Owens felt that the lesson was unsuccessful because she did not have clearly defined goals for the class and the class had a lack of adequate research techniques. Owens deducted that the next time she had an Internet based unit, she would have to specifically teach Internet searching skills (Wallace, 2004).

Robbins's students had the task of completing sets of questions about infectious diseases and writing short research reports (Wallace, 2004). Robbins viewed the Internet as "another tool"

and expected students to use it just like they would use a text book or other sources of information. Robbins gave helpful web sites only when asked. Wallace was unable to record accurate information on Robbins's interactions with students because the interactions were very fast and the school did not allow electronic data collection. During class time, Robbins would sit in the middle of the room and engage students in conversation. Robbins spent a significant time on discipline issues and talking with students about missing work or work that they had turned in. Robbins also tracked what students were doing on the Internet. At the end of the unit, Robbins expressed dissatisfaction over how the unit had progressed based on students not sufficiently helping each other out and low-level student responses to questions.

Varner taught five sections of accelerated physical science. The class that was observed for this study had 30 students in it, all of whom were on track for advanced placement science classes in their junior and senior years. Varner described the in-class Internet work as very draining because she had to continuously monitor students to make sure the equipment was not being mistreated and because the high achieving students were very insecure about doing open-ended assignments. For this activity, Varner had students use the AMS web site to interpret weather maps and make forecasts. Students were given worksheets with 30 questions per day. Varner moved rapidly from student to student, answering questions and asking students for explanations for what they were doing, with most of the interactions related to the substance of the assignment. Because Varner was well prepared and was familiar with the various elements of the assignment, she was able to anticipate issues students would have and was able to work with students on problems. Varner was very satisfied with the students work on the unit and their work on the exam, and felt that the Internet was an excellent tool that matched her fast-paced, content-focused style of teaching (Wallace, 2004).

The three of the teachers in the study faced four common challenges related to teaching with the Internet:

1. knowing the subject matter;
2. knowing what students knew previously and had the ability to do;
3. keeping track of student work; and
4. developing a coherent progression of ideas.

Knowledge of subject matter is necessary even in traditional teaching. Unlike a textbook, most Internet sites are not designed for teaching purposes. As such, the teacher must rely on knowledge of subject matter to decide which sites would be appropriate for student learning. All three teachers in this study took different approaches to using web sites. Owens let students choose any web sites they wanted, Varner had students use just one web site, and Robbins let students choose web sites, but when asked, directed students towards a few sites he was familiar with. Varner had the most interactions with students about the content of the assignment and also was the most satisfied of the three teachers with the Internet activity. Varner constructed the assignment so students would access information that was within her subject knowledge and interacted with students about that material (Wallace, 2004).

Since the Internet is not static, teachers using the Internet as a teaching tool face the challenge of teaching content that is often changing using technology and web sites that are often changing. Robbins had some success by limiting students to a few sites he was familiar with. Varner had success by understanding what her students knew and creating the assignment based on that knowledge. Owens's open-ended assignment gave her problems because students found content on web sites that Owens was unfamiliar with and could not help them with. All three teachers found assessing student work to be a challenge. Only Varner tested students on the

material they learned, as she would have with any other material. Robbins graded students based on their participation and completion of work, but did not test students on what they learned about science. Owens had no strategy to hold students accountable for their work (Wallace, 2004).

Since the Internet has such a large collection of information that may even seem limitless, it can be challenging for a teacher to organize the information on the Internet in a coherent way for students. Varner tried to meet this challenge by having students only use a single weather map each day. Owens failed to coherently organize her lesson about radiation. Owens understood that there was knowledge on the Internet that she wanted students to learn, but failed to make the connection. Robbins focused on teaching about the Internet instead of about science. Again, Wallace found that the narrowed focus approach Varner used seemed to be the most effective.

Differentiated Instruction

Cobb (2010) conducted study to determine whether it was best for teachers to use differentiated instruction or direct instruction when teaching using Internet-based software. Compass Learning Odyssey Reading is education software that incorporated differentiated instruction. My current school, Pickford High School, uses Compass Learning for students who need credit recovery. Cobb studied Nathan Hale School in Cleveland, Ohio, as it was a school that used Compass Learning software as a supplementary instructional tool (Cobb, 2010). Nathan Hale School is part of the Cleveland Metropolitan School District (CMSD), which is the largest urban school district in Ohio. Compass Learning (2010) uses differentiated instruction computer assisted instruction (CAI) uses thematic lessons based on the same pattern:

1 . a pre-reading activity introducing new academic ideas;

2. a digital presentation of the story; and

3. comprehension exercises that focus on sequencing, main ideas, and predicting.

Compass Learning Odyssey Reading software has shown to increase student performance at the high school level (Slavin, Cheung, Groff, & Lake, 2008). Teachers at Nathan Hale School were concerned with the issue of students not having computer and Internet access at their homes, since there were many minority students at the school and students from low socioeconomic backgrounds (Cobb, 2010). After all, minority households and families with adults with low education levels are far less likely to have Internet access (U.S. Census Bureau, 2009). Accordingly, teachers were forced to look for free or nearly free computer tools and had to consider whether students had access to computers at home when the teachers created assignments.

In order for teachers to incorporate Internet based instruction into their classrooms, the teachers need training and professional development. CMSD offered professional development courses, allowing teachers to incorporate technology into their classroom management, to improve instruction, teach them about computer tools, and aid communication with parents and the community (Cobb, 2010). CMSD teachers voluntarily answered 15 question surveys used to measure their comfort with technology and Internet based software. It was unclear from the literature of how many teachers participated in the survey. From the fall to the spring, there was not a statistically significant difference in teachers comfort with technology and Internet based software, but the teachers did report more computer use during the time period. Teachers reported a 2.6% increase in technology use from fall to spring (Cobb, 2010).

The survey results showed an increase in teachers using CAI to develop lesson plans, an increase in teachers creating ePortfolios, and an increase in teachers helping students create

digital video reflections, and an overall higher comfort level among teachers in using the technology tools to improve student achievement (Cobb, 2010). The teachers who used differentiated instruction and CAI for cooperation increased student achievement. Traynor (2003) found that differentiated instruction and CAI based cooperative learning improved student achievement, especially among disadvantaged African-American students.

Academic Dishonesty in Online Courses

Foster and Carnevale (2007) estimated that 1.5 million students across America enrolled in only online courses in 2006. That number increases each year, as Internet use continues to grow and colleges adapt. The University of Phoenix, which specializes in online college programs, serves nearly 438,000 students (Blumenstyk, 2011). Yet, while online courses offer students more opportunities, there is also a higher risk of academic dishonesty.

Sileo and Sileo (2008) appeared to review existing literature in order to study academic dishonesty in online classes. Sileo and Sileo suggested that in addition to many university students, many practicing teachers also take online courses so they can maintain certification and upgrade their skills and qualifications. Teachers deliver content using a variety of different technologies, which interactive television (ITV), video and audio conferencing, web based instruction (through Moodle, Blackboard, etc.), chat, and e-mail. Effective instructors engage students and encourage communication, just as instructors would do in a traditional class. Online platforms that instructors may use include:

1. course announcements, documents, and assignments;
2. Threaded discussion, chat, and instant messaging services;
3. Streaming video and multimedia presentations;
4. External links; and

5. Classtools such as calendars, address books, and grade books (Sileo & Sileo, 2008)

Unlike in traditional classes, students in online classes can complete classwork at convenient times. Students may feel that there is a lack of communication, as often communication is limited to e-mail and online exchanges. According to Sileo and Sileo (2008), students may be more likely to cheat because they have more time and energy, may be lonely, and have a lack of personal contact with the instructor. A simple web search reveals that there are many web sites devoted to providing students with term papers. Students within the classes sometimes communicate about assignments and examinations, without the knowledge of the instructor. Sometimes students even access examination materials early and share answers with other students in the class (Olt, 2002).

Students and teachers often do not have the same standards for what is considered cheating. Through surveys given to special education full-time and adjunct faculty and to special education undergraduate and graduate students, Sileo (2006) suggested that faculty members have a more stringent definition of cheating on Internet course than students. Instructors considered it to be cheating when students collaborate on out-of-class assignments without the instructor's approval and when students submit the same paper during different semesters. Therefore, it is the responsibility of instructors and administrators to make clear to students what is considered academic dishonesty and make sure students aware of the institution's academic standards (Hall & Kuh, 1998). Furthermore, instructors should work together with students collaboratively to establish policies on academic integrity and to identify clear examples of cheating (Sileo & Sileo, 2008). By working together with students to develop the policies, students are more likely to understand and follow the agreed upon policies.

Renard (2000) suggested that teachers should give students writing assignments that are personal to them and require the students to use higher level thinking skills as a method to reduce cheating. Renard also encouraged to teachers to engage students all throughout the writing process and make suggestions throughout the process. Strategies for reducing cheating in online courses include (Sileo & Sileo, 2008):

1. requiring students to use cameras during tests and discussions;
2. requesting early submission of written assignments throughout the course;
3. using chat software to administer random assessments;
4. using search engines to check students' writing for plagiarism.

Textbook Industry's Hold on Curriculum

In a study on literacy, censorship, and No Child Left Behind, Lehr (2010) examined how censorship and special interest groups influence the content that appears in textbooks. In the first decade of the 2000s, text books became more bland and non-offensive, so not as to anger any one political group. The change happened as state education boards dictated what could be in textbooks, as opposed to experts in the academic field. Lehr explained how text books then went from being bland to taking on a conservative bias based on textbook companies and education boards trying to please special interest groups. Since Texas is a very large state, decisions made by textbooks publishes to satisfy Texas influence the con

The Texas State Board of Education dictates would textbooks can be used at all levels of the Texas public school system. Since every child in the state at every level uses the books mandated by the state, textbook publishing companies sign multi-million-dollar contracts to produce textbooks for the state. The Texas legislature hold open hearings, in which citizens can

voice concerns over content in the textbooks, and the publishing companies sometimes make changes based on these hearings (Lehr, 2010).

One example of conservative groups altering the curriculum in Texas was the demand to include science standards challenging Darwin's theory of evolution. The Texas State Board of Education accepted the standards promoted by the conservative special interest groups, which included a statement requiring students to consider the creationist view of science and the creation of the earth. Conservative organizations like Focus on the Family and the Eagle Forum have succeeded in lobbying to get books with a multicultural focus banned from the classroom. Students have been studying from textbooks that present thing from the white perspective and not gaining a complete understanding of minority groups and other cultures (Lehr, 2010).

Writing for *The New York Times*, McKinley (2010) reported on Texas Republicans on the Texas State Board of Education making changes to the Texas social studies curriculum. Among the changes, American capitalism was portrayed as superior to any other economic system, Republican political philosophies were portrayed in positive way, and it was questioned whether the Founding Fathers intended for the government to be completely secular. All of the curriculum changes passed on a 10-5 vote, completely along party line. Attempts to portray Latino figures as role models for Texas's large Hispanic population were rejected. McKinley noted that elected State Board of Education Texas has influence beyond the state, as Texas is one of the largest purchasers of textbooks and very influential as to what content appears in the books.

Chapter III – Results and Analysis Relative to Problem

As the Internet continues to blend into almost every aspect of American life, teachers will have more opportunities to incorporate the Internet into instructional practices. Yet, without proper training, teachers may not be equipped to take advantage of all the Internet has to offer to increase student learning and achievement. By its very nature, the Internet breaks boundaries and allows teachers to innovate. However, the lack of boundaries can present problems for teachers (Wallace, 2004). As Wallace observed, if teachers do not establish clear boundaries for students, students can become unfocused and be unable to take advantage of the vast collection of knowledge available on the Internet. Even though the Internet offers what can seem like an endless variety of options, teachers can actually improve student learning and achievement by limiting the options available to students in particular lessons.

If the Internet is to be used to advance student learning and achievement, it has to be used as a classroom tool that students use to learn content knowledge. That means teachers cannot just teach students about computers and the Internet independently. Teachers sometimes feel like it is a challenge to assess students on Internet work. Wallace (2004) observed that the teacher who had the most success teaching with the Internet assessed students by giving them a test at the end of the unit. Sometimes teachers grade students based on participation, which prevents the teachers from knowing whether students have learned.

Wallace (2004) also observed that the main challenges of teaching with the Internet- knowing the subject matter, knowing what students know and can do, keeping track of student work, and developing a coherent progression of ideas- are all challenges of non-Internet based instruction, as well, but with Internet-based units the challenges may have new dynamics. If teachers are fully prepared to meet such challenges, teachers can create an Internet-based

framework for students to learn from. Differentiated instruction and cooperative learning are instructional methods that have raised student achievement, particularly among disadvantaged African American students. Differentiated instruction and cooperative learning can be effective as part of an Internet based teaching approach or a traditional approach (Cobb, 2010). However, the Internet provides additional opportunities for differentiated instruction and cooperative learning.

One potential drawback of Internet learning is that there is a higher risk of academic dishonesty. In many cases, students and teachers have a different concept of what is considered cheating (Sileo, 2006). Teachers can decrease instances of academic dishonesty by collaborating with students to establish clear policies on cheating. If students have a say in the creation of such policies, students are more likely to follow the policies (Sileo & Sileo, 2008). Teachers can also combat cheating in Internet courses by giving students writing assignments person to them, checking with students throughout the writing process (Renard, 2000), requiring students to use web cameras during testing and class discussions, using chat technology to give random quizzes and assessments, and using Internet tools available to check for plagiarism (Sileo & Sileo, 2008).

One benefit of the potential use of the Internet in the classroom would be decreased reliance on curriculum provided by textbook publishing companies. Textbook publishing companies are influenced by curriculum standards in the largest state, since schools in those states purchase a large quantity of textbooks (Lehr, 2010). As Lehr noted, it is often political bodies, not academics or experts in the field who determine what is in textbooks. Texas is one of the large states with major influence on the textbook companies. The Texas State Board of Education has been controlled by Republicans and passing curriculum standards defending and promoting a conservative political agenda (Lehr, 2010; McKinley, 2010). If teachers were able to

competently use the Internet for instruction, teachers would be able to locate either unbiased materials or materials that balance the ideological slant found in textbooks.

The benefits of using the Internet in the classroom include that the Internet can be used for differentiated instruction and cooperative learning, a vast array of resources and information can become available to students at an inexpensive rate, and that the Internet can be used to loosen the stranglehold the textbook publishing companies have on American schools. Teachers must be aware of the potential for cheating and academic dishonesty, and take appropriate steps to limit such situations. Teachers must also prepare and have strong content knowledge of the subjects the students study online and must prepare thoroughly. Limiting students to one or a small number of Internet sites and giving students a high quality assessment based on the content that students are to learn can increase student learning and achievement.

Chapter IV - Recommendations and Conclusion

Over the several months that I have spent studying this issue, I have discovered practices that teachers can use the Internet to improve student learning. I have also identified a major challenge to Internet learning, and have identified a major opportunity for teachers to use the Internet to replace unsatisfactory learning materials.

Recommendation

With over 76% of American citizens having access to the Internet (U.S. Census Bureau, 2009), and the number growing each day, teachers have the opportunity to tap the potential of the Internet to increase student learning and achievement. In order to take advantage of what the Internet has to offer teachers and students, teachers need to have strong content knowledge in the areas that they teach. Wallace (2004) indicated that teachers can increase student learning by limiting the scope of students Internet-based assignments. Instead of giving students open-ended assignments, teachers would get better results by giving students one or a few web sites to work from at a time. While the lack of boundaries may seem like one of major strong points of the Internet, teachers need to establish boundaries so students have a context to work from. Most of the content on the Internet was not designed for instructional purposes (Wallace, 2004), so teachers must sort through the material themselves, and design lesson plans that are appropriate for students.

Most of the attributes that would make teachers effective teaching with the Internet would also describe any effective teacher. Effective teachers have strong content knowledge, understand what students know and are able to do, keep track of student work, and develop a coherent progression of ideas. While a teacher teaching an Internet unit on weather would have to master the content on a certain weather web site to be highly effective, it is not much different

from a teacher having to master a novel before teaching from it. By using only a small part of the Internet and using it as a learning tool, and not as a destination itself, teachers can engage students and provide students with current information that printed textbooks are unable to provide.

Teachers should remember that when using the Internet as a learning tool, the content is still to the learning target. If a teacher is teaching a unit on the Civil War and decides to create an Internet assignment, the teacher must remember that the Civil War content is the learning target, not the Internet or other computer functions. Using the Internet for differentiated instruction and collaborative learning can increase student learning (Cobb, 2010). Often, teachers have trouble with creating assessments for Internet assignments (Wallace, 2004). The assessments should focus on the content, not on the computer. Accordingly, traditional tests on the content may be the most appropriate, even if the tests are completed online.

Cheating and academic dishonesty are valid concerns regarding online learning. The very nature of the Internet, with its many communications tools, allows students extended opportunities to cheat. When teaching online courses, teachers should assign personal and individualized assignments that would make cheating more difficult (Sileo & Sileo, 2008). Regular contact and communication can also reduce cheating, as it forces to student to interact with the teacher (and possible peers) and be able to explain the material the student is working on.

The politicized nature of the way curriculum is decided in large states like Texas is very troubling for the rest of the country. Since Texas orders a large share of the textbooks in the country, the Texas curriculum influences the content in the textbooks (Lehr, 2010; McKinley, 2010). If teachers are unsatisfied with the materials made available by the textbook publishing

companies, the Internet is a source of alternative materials. While most teachers are probably not prepared to rely completely on the Internet and to eliminate textbooks, teachers can move in that direction by becoming more comfortable teaching with the Internet and by creating Internet-based units of students. Since no one company owns the Internet, teachers can search for sites that they believe to be educational and appropriate for students. Eventually, the Internet could loosen the grip the textbook publishing companies have on the curriculum of American schools.

Areas for Further Research

There is very little research on the topic of online textbooks. It would be quite beneficial to study a school that has switched to online textbooks. I would suggest that the standardized test scores of the school be examined and compared to results from previous years, the scores of neighboring districts, and the average scores across the school's home state. Additionally, it would be helpful to track the progression of those same students from when they were younger and before they began using the online textbook.

Along the same line, I would like to see a study where four different classes that use an online textbook are observed. Ideally, the classes would be diverse. One of the classes would have to be urban and one of the classes would have to be rural. The classes would be different sizes, at different grade levels, and from different sized schools. The racial and ethnic makeup of the classes would be different. A researcher would observe each class for at least 20 hours, and conduct interviews with the classroom teacher before and after the observations. Three students from each class would be selected at random to be interviewed about their perceptions of the class and of the online textbook. The aim of the study would be to determine how to most effectively use online textbooks to increase student learning.

Summary and Conclusion

The Internet has become an integral part of American life. As more Americans gain Internet access and as children become more proficient with computers, teachers have the opportunity to use the Internet to increase student learning. The traits that make someone a good teacher who uses the Internet are in many cases traits that describe a good teacher who does not use the Internet. Content knowledge, preparation, the ability to understand students, and organizational skills has always been traits of successful teachers. Teachers who apply those traits to Internet based units can increase student learning in a new way.

Often, teachers are intimidated by the seemingly limitless nature of the Internet. While the boundary-free aspect of the Internet is often seen as a positive, it can be an obstacle to student learning. Teachers should narrow the focus of assignments to a specific topic and one or very few web sites. If assignments are too open ended and unclear, students may feel confused and the teacher may be disappointed by the lack of learning taking place (Wallace, 2004). Differentiated instruction and cooperative learning are effective instructional strategies that can be aided by the Internet (Cobb, 2010). Teachers should not be distracted by the Internet when assessing students, and should focus the assessments on the content that students are expected to learn. Assessments based on the content, as opposed to credit for just participating, are more likely to lead to positive learning outcomes.

While the Internet can be a great educational tool, teachers need to be aware of the risk that students could cheat. Whether it is e-mail or chat communication with classmates, or students copying and pasting, academic dishonesty can be a major problem with Internet learning (Sileo & Sileo, 2008). Since students and teachers may have different ideas about what is cheating, it would be best for teachers to collaborate with students on classroom rules and

procedures. Since students would have a role in creating the rules, they would be more likely to follow them (Sileo & Sileo, 2008). Teachers should also be engaged with students throughout the writing process and attempt to create assignments personal to each student.

Since the textbook publishing industry is influenced by the politically motivated curriculum of large states like Texas, textbook content may not always be unbiased. As a first step to eliminate dependency on the textbook publishing companies, teachers can effectively use the Internet to increase student learning (Lehr, 2010). Over time, the quality of material may improve, as well as student engagement and achievement.

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