Technology: The Future of Education

An Honors Thesis (HONRS 499)

by

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May 2006

Graduation: Spring 2006
Abstract

The field of education, much like the world that surrounds it, is one of constant change and adaptation. At the forefront of influences on today’s pedagogical teaching methods is technology, or more specifically, how technology can be implemented in today’s classrooms to the benefit of both educators and students. As a future educator myself, technology in education is something that is sure to affect my professional career on a daily basis. As such, I have decided to research and complete a project which studies the possible uses of technology in education and gives several practical examples. The project will be presented in two main ways: 1) through a descriptive essay which outlines and describes the major technological artifacts and strategies that I plan to discuss, and 2) the technological artifacts themselves, which will be created by myself and stored as examples for the reader to refer to and explore. I plan to focus my research on the following technologies/strategies: Classroom/course webpages, WebQuests, technological games (such as Jeopardy, etc.), internet research/activities, and student-created technological products.

Acknowledgements

- I want to thank Dr. Scott Popplewell for taking the time to advise me throughout this project. His mentorship and support assisted me greatly.

- I would like to thank Dianna Monks for her assistance in helping me to complete the project on time and within the accepted parameters.
As the world blazes forward into the twenty-first century, one cannot help but sense the ever-growing presence and importance of technology in the everyday lives of people. Whether it be something as simple as using an electric toothbrush to brush one's teeth in the morning or something as complex and complicated as the microchips and hardware that make up the artificial heart, there is no question that technology is making a place for itself in all aspects of life. This emphasis is beginning to spread to areas in society such as education, where the prospects of technology in instruction are just now being fully realized. In the up and coming classroom of today, wooden school desks are being replaced by computer monitors and mousepads; chalk and erasers by virtual blackboards. As technology continues to become a vital facet in the world of everyday citizens, educators are learning to place a special importance on not only learning the new technologies available, but also implementing their use in classrooms across America. With this in mind, this project will seek to focus on a select few examples of ways to implement technology in the classroom. These examples will include: classroom/course webpages, WebQuests, technological games, internet research/activities, and student-created technological products.

As the leaders of tomorrow, the students of today will be required to adequately and intimately know the workings of all facets of technology both in and out of the workplace. As such, educators are now beginning to see a major paradigm shift in instructional methods to reflect the challenges present in today's society. For a student to be competitive in a global market, educational institutions can no longer rely simply on traditional educational strategies. To meet these demands, one must supplement and/or replace traditional methods of instruction with innovative educational experiences.
Some strategies include cooperative, discovery, and inquiry learning activities; however, to facilitate these methods, schools are finding it necessary to implement technology in the learning environment. By integrating technology and multimedia applications into the classroom, teachers are presented with a plethora of new tools to enhance a child's educational experience by creating a variety of methods to meet special needs, teach children how to manage information, and allow for opportunities to develop higher level thinking skills.

**The Importance of Educational Diversity**

We find ourselves today in a classroom full of students as diverse as the world in which we live. Research on the human brain has consistently shown that not all students learn by one particular strategy. Some students do well with the tried and true method of direct instruction, but the majority of students do not. To reach the most number of students, the teacher needs to create a variety of learning experiences. The first and most simplistic way is to use technology to supplement classroom instruction. Technology will help meet these demands by allowing students to interact with information within a different medium. There are numerous multimedia programs designed to meet the special needs of diverse learners. For example, a student learning English as a second language would benefit from a computer program where they could learn the language at their own pace. They could spend as much time as needed on the computer, without feeling pressured to keep up with thirty other students. Another type of learner may memorize facts and details better if the information is presented in musical form. One cannot expect all teachers to teach in this fashion, but a computer program or multimedia application may have the capabilities of doing so without taking additional time away
from other students. By utilizing such programs, a single teacher can employ many more resources and methods within one classroom rather than teaching the information in one manner to all students.

Another valuable way technology should be used in the classroom is to teach students how to manage information. The current generation of students has commonly been referred to as living in the “information society.” Never before in the history of the world have people had so much access to information. In 1985, Tom Stonier predicted in his article entitled “The Computer: Most Power Technology Ever” that “the first genuine revolution in over a century is beginning. It is based on the emergence of the home computer, and will result in a significant shift from school-based to home-based education” (13). While his predictions for the impact of new technologies such as the computer were a bit lofty at best, the impact of these technologies on the citizenry of America has been substantial, nonetheless. With the click of a mouse or remote control, one can know what is happening anywhere in the world at any given time. The students of today must become information literate; our democratic society depends on this fact.

Where better to teach children these skills than in the classroom? By incorporating technology into the curriculum, students will become exposed to a variety of modes of communication - both as sender and receiver. A teacher may utilize the vast amount of information on the internet to help students develop the skills necessary to determine a reliable source of information from an unreliable. Also, students will learn how to analyze and synthesize information gathered from a variety of resources and possibly develop a multi-media presentation to share their research with their classmates. Finally, students are also able to interact with people around the world, thanks to
technology - whether it is an expert on a particular subject they are studying or other students researching a similar question. What ever the particular scenario may be, technology allows teachers to expand the four walls of the traditional classroom and explore the world in which we live.

The Changing Roles of Educators and Students

According to the theory behind Benjamin Bloom’s Taxonomy, as children move through the hierarchy of learning, their studies should progressively move towards developing higher level thinking skills. Technology can facilitate this process when integrated within the existing curriculum. Gone are the days of spending hours mulling through over a dozen hard-copy books looking for information for a research project. With technology, students can shift their focus from acquiring information to the task at hand - synthesis, analysis and presentation of information. To guarantee that technology is being used appropriately to develop higher level thinking skills, the teacher must develop curriculum to do so. As a result, both roles of the teacher and student have begun to change dramatically over the last twenty years.

In the traditional model of education, the teacher was responsible for disseminating information to students. The students' primary responsibility was to consume and retain as many of the facts and figures as they could. The most successful students were those who could memorize and regurgitate information in a variety of format - writing papers, oral reports and tests. As time has shown, however, this form of education has met with very limited success and a great deal of criticism by educational reformers such as John Dewey. As Andrea Oseas and Julie M. Wood note in their article entitled “Multiple Literacies: New Skills for a New Millennium,” “Dewey and other like-
minded reformers were determined to free students from the shackles of subject-centered schools. They claimed that in such schools a rigid, institutional, authoritarian pedagogy left little room for active learning” (15). In addition to the limited success of traditional educational methods, it has been more recently discovered that these types of skills do not always prepare our students for their professional lives. For a student to be successful in today's job market, he or she must be able to assess and analyze information, not merely memorize. Businesses are looking for independent thinkers, not mindless robots. As instructors, educators must realize this fact and adjust their curriculum accordingly - and one way of implementing this change is through the use of technology.

Classroom/Course Webpages

In today’s world of consumer convenience and instant results, people like to have everything at their fingertips. Whether it is remote controls, fast food, or microwave ovens, American society is growing more and more accustomed to a high-paced, independent lifestyle. This mindset has grown exponentially since the advent of the internet, where now endless amounts of information lie in wait for a curious seeker. Playing its traditional role, the field of education is trying to catch up to the advancements in society by searching for new ways to utilize these new technologies in the classroom. In terms of convenience and accessibility for both students and teachers, the internet is beginning to show a great deal of potential. Not only is the internet a constant source of endless amounts of educational information, but it is also becoming an everyday convenience in a growing number of American students’ lives. As the following chart from the U.S. Department of Commerce shows, the internet continues to appear in more and more American households each year, with no slowdown in sight.
As the chart shows, the percentage of households with internet usage nearly doubled in three years, from 1998 to 2001. Estimates for 2005 place that number at nearly seventy-one percent, with more growth still expected. Needless to say, the internet is here to stay.

Instead of shrugging off these numbers as a byproduct of American advancement, educators should find ways to use this great, new resource to their advantage. With so many citizens, parents, and students connected to this virtual network, why not find a way to integrate it with their classroom? Rather than fearing the unknown or the untried, why not take a chance and see what the possible benefits might be to both them and their students? The introduction of the internet gives students the chance to connect to the school and a teacher’s classroom anytime, anywhere for whatever reason. Before they can connect to a virtual classroom, however, they need a home base from which to navigate. This is where the class webpage comes in.
The class webpage can serve a variety of functions for both the student and the teacher. Students can reread the course syllabus, look at what went on in class during days they missed, or even email the teacher with and questions or concerns that he or she might have concerning class work. As Professor Thomas J. Brown notes in his article entitled “The Purposes of Course Web Sites: A Case Study,” the introduction of a course website to his college classes had a dramatic impact even back in 1997 when he first experimented with the idea. As he describes, the course webpage quickly became the “class members’ primary point of electronic connection with each other, with the instructor, and with the on-line resources related to the subject studied” (61). Students saw the webpage as a tool to aid in success in the classroom and it quickly became a necessity to visit the site often.

Teachers can utilize a class webpage in a variety of methods. First, and perhaps most importantly, the class webpage serves as a means of disseminating basic information about the class to the students. This can include the classroom rules, the grading scale, syllabus/class schedule, and information about the teacher. Figure 1 below shows an example of a grading scale that I created for the sample class webpage for this project.

<table>
<thead>
<tr>
<th>Grade</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>A+</td>
<td>100 - 98%</td>
</tr>
<tr>
<td>A</td>
<td>97 - 94%</td>
</tr>
<tr>
<td>A-</td>
<td>93 - 90%</td>
</tr>
<tr>
<td>B+</td>
<td>89 - 87%</td>
</tr>
<tr>
<td>B</td>
<td>86 - 83%</td>
</tr>
<tr>
<td>B-</td>
<td>82 - 80%</td>
</tr>
<tr>
<td>C+</td>
<td>79 - 77%</td>
</tr>
<tr>
<td>C</td>
<td>76 - 73%</td>
</tr>
<tr>
<td>C-</td>
<td>72 - 70%</td>
</tr>
<tr>
<td>D+</td>
<td>69 - 67%</td>
</tr>
<tr>
<td>D</td>
<td>66 - 63%</td>
</tr>
<tr>
<td>D-</td>
<td>62 - 60%</td>
</tr>
<tr>
<td>F</td>
<td>59% and below</td>
</tr>
</tbody>
</table>

*Figure 1: Course Webpage Grading Scale*
Having this information readily available can become valuable for students with simple questions outside of school with no way of getting quick answers. In addition to the grading scale, I also list the classroom rules and expectations, personal and professional information about myself as an educator, the purpose and focus of the class, and a detailed breakdown of class assignments and activities.

The second major function of a class webpage is to provide students with a way of knowing what will be going on from day to day in the classroom. A student that may be absent for one day or perhaps gone for a series of days can simply navigate to the class website and be briefed on the events in class. Some teachers may even choose to post copies of the worksheets and activities on the internet for the students to copy, print, or study at home, as I have done in my example. In this way, students who may be absent but already have a fair understanding of the material are allowed the opportunity to get a head start and turn in their completed work upon return. In addition, students who were in class but happened to misplace or lose their work can simply navigate to the webpage and print out a new one. Such ease alleviates the excuses of many students of lost or forgotten homework.

The third and final function of a class webpage is to serve as a link source for classroom internet activities. Educators may want their students to visit certain websites or participate in certain activities on the world wide web and need a reliable link for the students to navigate from to begin their journey. By posting the links on the class webpage, educators will be doing just that. Students can utilize the links during activities in class, or if they happen to need more time, they can navigate back to the links at home and continue with their work. This gives the student more freedom and choice in
planning the best time and place to complete his or her work and allows the teacher greater flexibility in his or her planning.

**WebQuests**

In addition to class webpages, the internet can be used as a vital tool of discovery for almost any subject at hand. Whereas teachers used to let students search aimlessly on the internet in hopes of finding a few relevant facts, the internet-savvy educators of today have developed a much more structured and painless way for students to engage in independent research while simultaneously gaining the information that is desired. Most recently, these methods have taken the form of internet scavenger hunts known as “WebQuests.” Authors David L. Young and Brent G. Wilson of the article “WebQuests for Reflection and Conceptual Change” put the objectives of WebQuests very simply when they state, “the goal of WebQuests is to help students think and reason at higher levels, and use information to solve problems” (1). Put even more simply, WebQuests allow students to discover information individually, internalize it and make it their own, and then relay what they have learned to the teacher through a series of questions concerning what they have discovered. Immensely popular among students of all ages, this new type of web hunt seems to be catching on in classrooms throughout America.

While the concept of a WebQuest may seem simple enough, a successful WebQuest activity requires a great deal of planning and explanation. There are no set rules as to what must be included in a WebQuest activity, although it does seem that a certain number of common characteristics generally appear throughout most. According to Young and Wilson, this list includes:
1. An introduction that sets the stage and provides some background information.

2. A topic, task, or problem to be addressed.

3. A clear description of the process learners should go through in accomplishing the task.

4. A set of information sources needed to complete the task.

5. A conclusion that brings closure to the quest. (2-3)

While these steps may seem rather broad and obvious, they do provide a valuable general framework from which to develop a successful WebQuest.

The WebQuest that I created followed a similar pattern to the rules outlined above. In my example, I created a WebQuest focused on Ring of Fire in the Pacific Ocean. If this WebQuest were actually being taught, the introduction and background would be presented in the classroom through teacher-student discussion and sharing of ideas. Once the students gained a sufficient base knowledge, the teacher would then present the topic to the students. The directions for the WebQuest are specifically spelled out in a very detailed manner as to alleviate any confusion, but to ensure understanding from all, the teacher should read the directions aloud with the students. The base website, also created by me, gives a list of links that the students must follow to complete the activity. Noted at the end of the lesson plan, the students would then complete an activity that requires them to teach the information they have learned to others, thus ensuring that they have an adequate understanding of the subject matter.

Ultimately, WebQuests are valuable for a variety of reasons. First, a WebQuest activity allows students to work independently and at their own pace, giving students
time to themselves to practice their skills. Second, an individual activity such as a WebQuest allows an educator to circulate throughout the room and provide individual attention that is usually impossible to achieve. Third, WebQuests require students to utilize problem solving and critical thinking skills, both of which are extremely relevant in real world situations. Finally, the introduction of a WebQuest activity provides something new and refreshing to the class and an opportunity for students to put their formidable computer and technology skills to good use.

**Technological Games/Review Activities**

Perhaps one of the areas of greatest potential in terms of technological influence for teachers is that of review and assessment in the classroom. Traditional methods of review, such as lecture, question and answer, chalkboard games, and quizzing have resulted in successful, yet limited options for both teachers and students. In a world where students encounter technology on a daily basis, it seems only logical to surmise that many of the best methods by which students can review material and practice the skills they have learned should also include technology. With this in mind, it seems that the problem is not the students’ willingness to learn, but instead, the teacher’s knowledge and ability to find ways to incorporate technology into their review and assessment plans.

Some of the easiest and most effective places to look when one may want to incorporate technology into review games are the traditional games of our society. These are the games that students can easily identify with and already have a basic understanding of the rules of the game. In addition, many of these traditional games can be used in areas and subjects outside of their original purpose. As J. Steven Soulier notes in his book entitled *The Design and Development of Computer Based Instruction*, “the
game of Monopoly has, for example, been used as the basis on which to design many instructional games to teach everything from ecology to sportsmanship. Many of the popular arcade games can be modified to provide a vehicle for rapid-paced drill-and-practice of math and word skills” (46). Ultimately, the only limitation to this method is the teacher’s own creativity. If the teacher is willing to take the time and effort to find ways to incorporate these games, the majority of the work is already completed.

If an educator decides to implement this review strategy, the question then becomes, how can technology be used with these games? Monopoly, for example, is a classic board game, requiring nothing of technology or electronics. While a number of educational software companies offer computer software versions of Monopoly that are compatible for classroom activities, most teachers would be quick to recognize that the money required to pay the hefty price tags that often accompany such programs is hard to find. Most schools do not possess extra money for such ventures, especially when cheaper, traditional versions of the game are available. In addition, having to learn a new software program that will have to be introduced and presented to others may seem like a time-consuming and daunting task for teachers who feel uncomfortable with technology and computers. For those who are willing take the chance and implement these programs in their lessons, however, there is a cheap answer to the cost problem: freeware.

Put simply, freeware is software that is available for download or acquisition for free, usually over the internet. This software has often been created by computer-literate educators themselves with creative minds and generous hearts. A number of freeware websites can be found throughout the internet, such as FunBrain.com and educationworld.com, where teachers may browse and download any and all games that
are of interest to them. Once again, the only limit to such games is the ability and willingness of the teacher to learn the game and effectively use it. If this can be accomplished, there is a good chance that the game will be a success.

The review game that I chose to showcase for this project is another classic game in American society, Jeopardy. Being a future teacher of social studies, I was quick to recognize that Jeopardy has been an ongoing favorite as a tool for review in my field for some time. The version of Jeopardy showcased here is computer-based, requiring only one person to control the movement of the game. It is a freeware program based in Microsoft PowerPoint, a program commonly found on many school computers. Figure 2 below shows the main screen for the game where each of the categories and point values are displayed, much like the television version:

![Jeopardy Main Screen](image)

Figure 2: Review Jeopardy Main Screen

The version that I created would be used in a high school United States Government class during the end of a unit on the Constitution and important court cases. For this game to be played, the class would have to be divided into groups, or teams, either decided by the teacher or the students. These teams would then collectively choose categories and point
values, with the first team to offer the correct answer to the question receiving the points. Additional rules that would aid the teacher in determining which team gets to answer first could be developed as needed.

While technological review games and assessments will most certainly provide an added sense of fun and excitement to the classroom, one must be certain to ensure that the overall purpose of the game is educational and not merely for entertainment. Soulier lists several criteria for teachers to use when evaluating the educational purpose of an activity. As he states:

If a game is to be instructional, it must meet the following criteria:

1. It must be based on constructs that accurately represent and reflect the concept or skill being taught.

2. Success must be a result of the learner’s ability to master the concept, skill and constructs upon which the game was based.

3. The learner must be aware of the concepts or skills that are to be mastered and not perceive that they are just learning to “play a game.”

(46)

In terms of the Jeopardy game, this means that the teacher must make certain that students understand the goal of the game ahead of time. Students are not playing the game to take a break from learning, but instead to be given the opportunity to learn in a different style and method. The information presented in the Jeopardy game and any other game is just as important as material presented in a traditional lecture, and as such, students must understand that the game material must also be mastered.
Internet Research/Activities

One of the areas in which technology has become a significant benefit to students is in the area of research and information availability. Whereas before, students would spend countless hours sifting through limited selections of books and articles in their local or school library, many are now turning to the internet as their first and primary source of information. With this new wealth of information come both a great number of benefits and many potential pitfalls. Students now have an immeasurable amount of information at their fingertips, more than any previous student could have ever hoped or dreamed. Distant resources such as the Smithsonian in Washington D.C. and the Louvre in Paris are now available to students immediately, all the time. With the quality, credible sources of scholarly research inevitably comes those of lesser reliability, however. As a result, one must view the potential of the internet concerning scholarly research with both optimism and suspicion. If used correctly, the internet can serve as an invaluable resource that can greatly expand upon the basic knowledge of any individual. If used incorrectly, however, the inaccuracies and partiality present in many sources on the internet can cause a great deal of confusion and misunderstanding.

To help alleviate any of the potential negative effects of internet research, an educator must take the time to explain the proper way to evaluate the quality of a website before any true research begins. Even this process of evaluating websites can be somewhat ambiguous, with different educators and institutions creating different guidelines by which to evaluate internet sources. As such, more than anything else, the key to a successful internet research project is having clear, definable criteria by which to evaluate each potential internet source that a student might choose to incorporate into
Their project. These criteria must be made known at the beginning of the project and explained thoroughly and clearly.

The key to evaluating internet sources is the ability to discern between those sources that are scholarly and those that are personal. Robert Harris, a writer and educator with more than twenty-five years of teaching experience at the college and university level, provides a very vivid analogy of this fact on his educational website entitled “Evaluating Internet Research Sources.” “Think about the magazine section in your local grocery store,” Harris states. “If you reach out with your eyes closed and grab the first magazine you touch, you are about as likely to get a supermarket tabloid as you are a respected journal (actually more likely, since many respected journals don’t fare well in grocery stores)...Welcome to the Internet.” As Harris’ analogy shows, the large amount of information available on the internet varies in a variety of ways, including its accuracy, reliability, and value. While some of these ways, such as value, might be somewhat subjective, it is the job of both students and educators to develop objective and reliable ways on which to evaluate the usefulness of a particular website.

Harris’ site provides a number of helpful criteria for students to use when making such an evaluation. First, Harris suggests that you “pre-evaluate” what exactly your research will entail. As Harris states, “take a minute to ask yourself what exactly you are looking for. Do you want facts, opinions (authoritative or just anyone’s), reasoned arguments, statistics, narratives, eyewitness reports, descriptions? Is the purpose of your research to get new ideas, to find either factual or reasoned support...or something else?” Next, after this has been completed, use the CARS checklist (Credibility, Accuracy, Reasonableness, Support) to evaluate the quality of information on the site. Using this
checklist requires the student to evaluate many characteristics of the website, such as the author's credentials, the quality of sources he/she uses, the timeliness and recentness of the information, the audience and purpose, and the objectivity. If the website passes the CARS checklist, it is most likely a reliable and credible source.

The internet research project itself can take on a variety of methods. For the example included in this project, I have showcased a project that encompasses a variety of steps. Once again, being a social studies educator, I have focused this project around a topic in U.S. Government. In this project, students have the opportunity to create their own amendment to the United States Constitution. Through a series of brainstorming exercises, students would choose a topic in American society that they believe is important enough to require a constitutional amendment to protect or change. After this topic has been chosen, the students would then conduct the internet research to gain information on what efforts have already been made in real life in regards to their topic and their eventual success or failure. Ultimately, they would create the actual amendment itself with all of the correct legal wording and organization that a true amendment would have in addition to some sort of presentation to the rest of the class. This final product would showcase the quality of internet research that has been performed on their topic.

**Student-created Technological Products**

The final aspect of technological application in the classroom up for discussion in this project is perhaps the most broad and diverse: student-created technological products. With an ever-growing amount of technology and software available to students today, the possibilities for students to use these tools to create finished projects for classroom
activities seems almost endless. Whether it is a presentation or a paper, a skit or a song, almost any student product can involve technology at one point or another. In addition to being the most diverse, using technology for student products also provides the most hands-on opportunity for the student of any of the aforementioned possibilities. For a student to successfully create a technology-driven final product, they must first know the technology inside and out and then be able to integrate it effectively.

The main purpose of exposing students to technology and giving them opportunities to work with it is to acquaint them with something that will aid them in the future. With the presence of technology growing more and more apparent everyday, employees in the business world are being forced to become more and more technology-literate in their particular business field or expertise. In his article discussing areas of job growth in the United States, author Joseph Giodorno notes, “the booming United States high-tech industry has created more than one million jobs since 1993 and provides a total annual payroll of more than $240 billion.” With such explosive job growth, it becomes obvious that technology is very much the wave of the future. It is therefore the job of educators to expose their students to these technologies as often as possible and begin to prepare them for what awaits in the adult world.

In advocating the idea of technological student products, one must also remember to maintain an objective means of evaluating such products. If students were to create group video skits or online picture collage presentations, for example, the teacher must be able to evaluate each of the final products according to a common set of guidelines and requirements. As such, it seems necessary to suggest that before students are set free to complete their products, they must first be made aware of the grading criteria. This is
usually best accomplished through a uniform grading rubric that can be distributed to all students beforehand. This way, both the teacher and the students know what is expected in the final product, alleviating a great deal of confusion and potential for error.

In keeping with the previous example, the example that I have chosen to showcase for this topic are actual student examples of presentations that were created from the amendment project that was described earlier. One example shows a PowerPoint presentation created by a student who wanted to advocate a constitutional amendment prohibiting abortion. Another example is another PowerPoint presentation by a student wishing to pass a constitutional amendment that would abolish the Electoral College. In both examples, the students used technology to supplement the presentation they gave to the class on their amendment. Also included is a final example of how technological products can also aid in instruction. This example showcases a cognitive PowerPoint presentation I put together to discuss the various stages of the Cold War strictly through pictures. It had a profound effect on the students’ interest in the subject.

Conclusion

By examining the topics presented in this project, it becomes evident that the educators of today have a variety of assets in technology at their disposal. With the students of today being more technologically-capable than ever, the requirements placed on teachers to integrate technology in the classroom has never been more necessary or needed. In order to adequately and effectively implement technology both in instruction and activities, educators must be willing to throw away old habits in favor of new ideas and concepts. Teachers must not half-heartedly seek to learn about the technological tools around them, but instead fully embrace the diverse teaching options that technology
provides to the classroom. Administrators, in addition, must make technology training a priority for their faculty and help to ensure that all educators in their school have the technologies available to them to implement the new skills that they have learned.

Technology provides a great opportunity for educators to reach students in new and interesting ways, ways that will better peak the interest and attentiveness of students. We cannot afford to pass up this opportunity; the very future of our society, through technologically-educated citizens, depends on it.


Lesson 2: The Ring of Fire

Subject/Topic: World Geography / The Ring of Fire
Standards Addressed: WG.3.6, WG.3.8, WG.3.9, WG.5.4, WG.6.1, WG.6.2
Class / Grade: Geography / Underclassmen

Materials: Computers with internet access, drawing/writing materials, class set of activity worksheet, colored paper, markers

Objectives: (Student will be able to:)
- Know and understand the theory of plate tectonics.
- Use the Internet to research the Ring of Fire, and answer questions about this region.
- Give both written and visual explanations concerning what they have learned.

Goal for Learner:
This lesson will help you to understand the different layers of the Earth. We will look at a chocolate covered cherry and see how it is much the same as the Earth.

Procedure:
1. Ask students to describe what they know about plate tectonics, including what the theory states and how plate movements affect geological events on the Earth's surface. Are they aware of any areas on Earth that are particularly affected by plate movements today? Give examples of events that are caused or influenced by plate movement (earthquakes, volcanoes, etc) (5 min)
2. Introduce the Ring of Fire region to the students. Show where this area is located on the map and give examples of major events that have occurred there (earthquakes in L.A., San Francisco, Mt. St. Helens, Alaska earthquake 1964 – Good Friday Earthquake – 9.2, Japan earthquakes). (5 min)
3. Take students up to computer lab. Have students use the Internet to research the geographic region known as the Ring of Fire. Direct them to this website of links:
   http://www.bsu.edu/web/jmschall/shs/ringoffire.htm
   (If the site does not work, these are the individual links)
   - http://www.pbs.org/wnet/savageearth
   Pass out the student activity worksheet and give students time to complete the activity. (20 min)
4. Return to class and go over the results of the internet activity. (10 min)
5. Pass out blank colored computer paper with colored pencils. Instruct students that they are now "teachers" attempting to explain the Ring of Fire to elementary school students.
Give suggestions to the students as to what they can draw to make their explanations clear. Make any drawings or explanations simple and clear. (10 min)

**Evaluation**
The drawing/description activity at the end will provide some indication of the amount of understanding that each student has about the Ring of Fire. This activity will demonstrate mastery of the subject material by requiring that the students explain it to someone else.
The Ring of Fire Web Activity

Directions: Type in the following web address to access the links for the rest of this activity:

http://www.bsu.edu/web/jmschall/shs/ringoffire.htm

Using the links provided, answer the questions below:

1. Where is the Ring of Fire? Name the countries and oceans that the Ring of Fire runs by, through, or near.

2. Why is it called the Ring of Fire?

3. What does the Ring of Fire have to do with plate tectonics?

4. What events on the Earth's surface tend to occur in this region more frequently than in other regions of the Earth? Why do they occur here?

5. What do trenches and mountain ranges have to do with the Ring of Fire and plate tectonics?

6. Name three major volcanic areas located within the Ring of Fire.

Indonesia Tsunami

7. What major event occurred on December 26, 2004 and was directly the result of a tectonic plate movement?

8. Which country experienced the most deaths from this disaster and what was the death toll in this country?
9. What was the approximate speed of the tsunami wave that occurred?

10. The tsunami wave even reached the eastern coast of ________, which was almost 3,000 miles away from the epicenter.

11. Using the Tsunami Map link at the bottom of the page, name the island country off of the coast of India that was also affected by the tsunami.

12. What was the death toll in this country?

Alaskan Earthquake

13. The Alaskan Earthquake of 1964 occurred on ________________ (date) at ________ in the morning.

14. What makes this earthquake important?

15. The sudden uplift of the Alaskan seafloor caused a ____________, which was responsible for _________ of the 131 deaths.

16. The tsunami traveled at speeds over ______ miles per hour.

17. The 1964 Alaskan earthquake was the largest earthquake ever recorded in North America in terms of _________________.

18. The ___________________ was the worst U.S. earthquake in terms of death toll, however, resulting in at least 700 deaths.

Earthquakes in Indiana

19. Where did the largest earthquake in Indiana occur? What was the date? What was the magnitude of the earthquake?

20. Where did the most recent earthquake in Indiana occur? What was the date? What was the magnitude of the earthquake?

21. Click on the "Seismic Hazard Map of Indiana" link. What areas of Indiana appear to be the most likely to experience an earthquake?

22. What area of Indiana is least likely to experience an earthquake?

23. On the left side of the screen, click on the "Earthquake Activity in the Last 8 - 30 Days" link. When did the most recent earthquake in the world occur? What was its location and magnitude?
Appendix B: Internet Research/Activities Artifact

What Do You Want to Change?
The Amendment Process Project

Now that you have a basic idea of how the formal amendment process works in the United States, you are being given the opportunity to put this process to work by creating your own constitutional amendment. Through both research and your own personal opinions, you will choose a topic that you think is crucial to our society today in some way. You will then create a draft of your own amendment which will either push for protection or change of the topic you have considered. In addition to writing the amendment, you will create an accompanying research paper that outlines why you think this amendment is both important and necessary to the people of the United States. Finally, you will present your proposed amendment to the rest of the class in one of a variety of ways and receive questions and debate from the rest of the class.

Scoring for the project will be broken down as follows:

<table>
<thead>
<tr>
<th>Research Process</th>
<th>200 pts.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amendment topic / Sources</td>
<td>15 pts.</td>
</tr>
<tr>
<td>Paper Outline</td>
<td>15 pts.</td>
</tr>
<tr>
<td>Research Paper</td>
<td>90 pts.</td>
</tr>
<tr>
<td>Amendment</td>
<td>30 pts.</td>
</tr>
<tr>
<td>Presentation / Debate</td>
<td>50 pts.</td>
</tr>
<tr>
<td>Total</td>
<td>200 pts.</td>
</tr>
</tbody>
</table>

Research Process
To help you gain ideas and information on both your amendment and research paper, several days will be spent in the computer lab to allow you to gather information. During your time there, you will complete two activities that will aid you in your overall project.

Amendment topic / Sources
You will identify your amendment topic in general terms, stating what issue you would like to preserve or change. You will also list three sources of information that you intend to use in researching your amendment and paper. This must be turned in and approved before you can proceed with the rest of your research.

Paper Outline
After gaining sufficient research on your amendment, you will create an outline of your research paper. This will aid you later when you begin to write your research paper. This will be turned in and graded and returned to you.

Research Paper
The research paper itself will be three to five pages in length. Use the research paper to present factual evidence which will support your claim for the need of the amendment. The paper serves as a chance for you to argue your case. In the paper, you should address the following questions:

- Why is this issue important or necessary to the people of the United States?
- What ideas or solutions to this issue have been offered in the past?
- What groups of citizens/legislators will support your amendment? What groups will oppose?
- What questions or arguments might those who are opposed to your amendment have and how will you address those questions/arguments?
- What are the benefits to the implementation of this amendment?
- Do you think this amendment could be successfully adopted in real life? Why or why not?

Amendment
In addition to your research paper, you will actually write out your amendment using the customary legal wording that is present in all constitutional amendments. You will also use traditional structuring in creating your amendment, complete with sections and clauses. Refer to the real-life amendments
in the Constitution for proper structuring and wording. You will also consider which method you would use in getting your amendment passed (Congress, state legislatures, state conventions, etc.), and consider a time limit on how long the amendment will be open for ratification before it expires.

**Presentation/Debate**
The final portion of your project will involve the presentation of the amendment that you have created. This is your chance for you to argue the worthiness of your amendment in front of your classmates. Students will be allowed to ask you questions and debate the amendment’s effectiveness, so make sure you are familiar with the information you are presenting. The presentation must include a visual aid or support of some sort. It may take on any shape or form, so long as it aids you in persuading the audience. Examples of presentations include:

- Posterboard / collage
- PowerPoint presentation
- Video
- Song / Lyrics
- Skit / Theatrical performance
- Game

Your presentation must also be approved by the teacher. Due dates will be given on when you must submit your ideas for the presentation. In your presentation, you will be graded on how familiar you are with your topic, effectiveness of the presentation, ability to answer/respond to questions, use of support/visual aid, and use of time. Average presentation time will be five minutes.
Research Process: Amendment Topic / Sources

Name_________________________________________ Date_________________ Class____________

Directions: Using the internet and the “Possible Amendments” handout as resources, choose a topic on which you would like to create an amendment. Make sure to choose a topic that will have plenty of information readily available to aid you in research.

Amendment Topic: ____________________________________________________________

Briefly describe what this amendment sets out to accomplish: __________________________

______________________________________________________________________________

______________________________________________________________________________

______________________________________________________________________________

Will this proposed amendment affect any amendments already in place?

Who/what will this amendment affect?

Who might support and oppose this amendment?

List three internet sources that you plan to use to research this amendment. As a rule, stick to websites ending in “.edu, .gov, or .org” as they are usually more impartial and reliable. Try to avoid sites ending in “.com.” In your listing, include the title of the site, the web address (http:/...), and the author.

1. ___________________________________________ http://__________________________ by ____________

2. ___________________________________________ http://__________________________ by ____________

3. ___________________________________________ http://__________________________ by ____________
Possible Amendments
102nd to the 109th Terms of Congress (1991-2006)

1. To specifically permit prayer at school meetings and ceremonies
2. To allow non-natural born citizens to become President if they have been a citizen for 20 years
3. To specifically allow Congress to regulate the amount of personal funds a candidate to public office can expend in a campaign
4. To ensure that apportionment of Representatives be set by counting only citizens
5. To make the filibuster in the Senate a part of the Constitution
6. To provide for continuity of government in case of a catastrophic event
7. To lower the age restriction on Representatives and Senators from 30 and 25 respectively to 21
8. To ensure that citizens of U.S. territories and commonwealths can vote in presidential elections
9. To guarantee the right to use the word "God" in the Pledge of Allegiance and the national motto
10. To restrict marriage in all states to be between a man and a woman
11. To remove any protection any court may find for child pornography
12. To allow Congress to pass laws for emergency replenishment of its membership should more than a quarter of either house be killed
13. To place Presidential nominees immediately into position, providing the Senate with 120 days to reject the nominee before the appointment is automatically permanent
14. Calling for the repeal of the 8th Amendment and its replacement with wording prohibiting incarceration for minor traffic offenses
15. To specify that progressive income taxes must be used
16. To specify a right to "equal high quality" health care
17. To limit pardons granted between October 1 and January 21 of any presidential election year
18. To require a balanced budget without use of Social Security Trust Fund monies
19. To allow for any person who has been a citizen of the United States for twenty years or more to be eligible for the Presidency
20. To force the members of Congress and the President to forfeit their salary, on a per diem basis, for every day past the end of the fiscal year that a budget for that year is not approved.
21. To provide a new method for proposing amendments to the Constitution, where two-thirds of all state legislatures could start the process
22. To allow Congress to enact campaign spending limits on federal elections
23. To allow Congress to enact campaign spending limits on state elections
24. To declare that life begins at conception and that the 5th and 14th amendments apply to unborn children
25. To prohibit courts from instructing any state or lower government to levy or raise taxes
26. To force a national referendum for any deficit spending
27. To provide for the reconfirmation of federal judges every 12 years
28. To prohibit the early release of convicted criminals
29. To define the legal effect of international treaties
Appendix B: Internet Research/Activities Artifact

30. To clarify that the Constitution neither prohibits nor requires school prayer
31. To establish judicial terms of office
32. To clarify the meaning of the 2nd Amendment
33. To provide for the reconfirmation of federal judges every 6 years
34. To force a two-thirds vote for any bill that raises taxes
35. To repeal the 16th Amendment and specifically prohibit an income tax
36. To permit the States to set term limits for their Representatives and Senators
37. To allow a Presidential pardon of an individual only after said individual has been tried and convicted of a crime
38. To allow Congress to pass legislation to allow the Supreme Court to remove federal judges from office
39. To provide for the reconfirmation of federal judges every 10 years
40. To provide for the recall of Representatives and Senators
41. To remove automatic citizenship of children born in the U.S. to non-resident parents
42. To enable or repeal laws by popular vote
43. To define a process to allow amendments to the Constitution be proposed by a popular (“grass-roots”) effort
44. To force a three-fifths vote for any bill that raises taxes
45. To prohibit retroactive taxation
46. To provide for run-off Presidential elections if no one candidate receives more than 50% of the vote
47. To prohibit abortion
48. To bar imposition on the States of unfunded federal mandates
49. To disallow the desecration of the U.S. Flag
50. To allow a line-item veto in appropriations bills
51. To expand the term of Representatives to four years
52. To provide for direct election of the President and Vice-President (eliminating the Electoral College)
53. To force a balanced budget
54. To prohibit involuntary bussing of students
55. To make English the official language of the United States
56. To set term limits on Representatives and Senators
57. To repeal the 22nd Amendment (removing Presidential term limits)
58. To guarantee a right to employment opportunity for all citizens
59. To grant protections to unborn children
60. To provide for “moments of silence” in public schools
61. To allow Congress to regulate expenditures for and contributions to political campaigns
62. To provide for the rights of crime victims
63. To provide for access to medical care for all citizens
64. To repeal the 2nd Amendment (right to bear arms)
Appendix B: Internet Research/Activities Artifact

Schall 31

65. To prohibit the death penalty

66. To repeal the 26th Amendment (granting the vote to 18-year olds) and granting the right to vote to 16-year olds

67. To provide equal rights to men and women

Research Process: Paper Outline

To successfully organize your research paper, you will need to develop a variety of components that will be put together in a logical order. Your research paper must include these following items:

1. **Introduction**
   Your paper must begin with a paragraph (or two) that introduces the topic you are discussing. Try and structure your paragraph to include a "hook" that will immediately catch the interest of the reader or in some way draw the reader's attention to your paper. For example, if you were proposing an amendment to prohibit the death penalty, you could begin your paper with a short story that showcased the horrors of someone being put into the electric chair but not killed on the first attempt. You by no means have to begin with a story. There are many methods of catching the reader's interest. The other purpose of the introduction paragraph is to preview for the reader what you are planning to discuss. Without giving a full summary, use your introduction paragraph to outline the purpose of your paper.

2. **Thesis**
   The thesis is the most important part of your paper and should be included somewhere (usually toward the end) of your introduction paragraph(s). The thesis is the statement of purpose for your paper and is usually no more than one sentence in length. In your thesis, you will state the amendment that you are proposing and the argument behind it. Here is an example of a thesis:

   With so many imperfections in our current judicial system, the death penalty should not only be restricted, but also totally banned from use in any area of the United States to prevent the future deaths of potentially innocent citizens.

   In this example, both the amendment itself is mentioned along with the reason why it is needed. Make sure that your thesis statement is strong and easily recognizable. Your thesis will set the tone for the rest of your paper.

3. **Body**
   The body of the paper is the "meat and potatoes" of your argument. It is here where you will lay out the details of your amendment and support your view with factual evidence. The evidence you present in the body of your paper should be focused toward answering the following questions:

   - Why is this issue important or necessary to the people of the United States?
   - What ideas or solutions to this issue have been offered in the past?
   - What groups of citizens/legislators will support your amendment? What groups will oppose?
   - What questions or arguments might those who are opposed to your amendment have and how will you address those questions/arguments?
   - What are the benefits to the implementation of this amendment?
   - Do you think this amendment could be successfully adopted in real life? Why or why not?

4. **Conclusion**
   After making your argument and explaining your amendment, you will conclude with a final paragraph that summarizes what you have written. Try and view your conclusion as your one last chance to convince the reader of your position. It should bring your arguments to a close.

5. **Bibliography**
Appendix B: Internet Research/Activities Artifact

On a page following your paper, you will list all of the sources that you have used in your paper. This page is called a bibliography and follows a very precise format.

For **books** you used as sources, record the information of the book in the following format:

Author. *Title of Book*. Place of Publication: Company of Publication, year of publication.

Example:


For **internet** sites you used as sources, record the information of the site in the following format:

Author (if applicable). "Title of Specific Page." *Title of Overall Website*. Year of Publication or last update. Organization responsible for website. Date you accessed site (with date first, then month, then year) <Website address>.

Example:


For **magazines** or **scholarly journals** you used as sources, record the information in the following format:

Author. "Title of Article." *Title of Magazine or Journal*. Date of Publication: pages in magazine of article.

Example:


For citations of other works, refer to this site: <http://www.liu.edu/cwis/cwp/library/workshop/citmla.htm>

The outline itself should follow the traditional Roman numeral style:

I. Introduction

II. Topic 1
   A. Evidence 1
   B. Evidence 2
Appendix B: Internet Research/Activities Artifact

1. Detail 1

2. Detail 2
   a. More detail 1
   b. More detail 2