IMPLEMENTING WEBQUESTS IN THE ELEMENTARY CLASSROOM

By

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ABSTRACT

Technology, including computers, is an ever increasing topic within the world today. Since technology is finding its way into classrooms, WebQuests, a particular learning tool that fosters student learning while working with the computer and the Internet are the focus of this curriculum project. The Internet can be a vast, unsecure network with a mix of accurate and inaccurate information. Teachers become responsible for sifting through the information on the Internet to create quality learning environments in the form of WebQuests for their students.

Although the research related to this topic is limited, several studies have shown positive outcomes for using computers technology in the classroom. Within this curriculum project is a manual, How to Create a WebQuest for Your Students, designed to provide teachers with a step-by-step guide for creating a WebQuest, implementing the tool in the classroom, and providing research-based ideologies for its use.
Table of Contents

Chapter 1 - Introduction
Overview of My Curriculum Project .......................................................... 5
Rationale ........................................................................................................ 7
Introduction to WebQuests ......................................................................... 7
Goal of Project ............................................................................................. 8
Challenges to Implementing WebQuests ....................................................... 9
Review of the Literature ............................................................................ 10
Summary ..................................................................................................... 11

Chapter 2 - Review of the Literature
Introduction .............................................................................................. 12
Theoretical Underpinnings ........................................................................... 12
Technological Literacy ............................................................................... 15
WebQuests ................................................................................................... 16
   Definition .............................................................................................. 16
   Components ............................................................................................ 16
Instructional Use ....................................................................................... 19
Using Computer Technology in the Classroom .......................................... 21
The Internet ............................................................................................... 23
Developmental Appropriateness .................................................................. 28
Effects of Technology Use .......................................................................... 29
   Positive Effects .................................................................................... 29
   Negative Effects .................................................................................. 30
Professional Development ......................................................................... 32
Summary ..................................................................................................... 34

Chapter 3 - Curriculum Project
Project Goals and Objectives ..................................................................... 35
Intended Audience ..................................................................................... 36
Format ........................................................................................................ 36
Choosing a Topic ....................................................................................... 36
Creating the Introduction ......................................................................... 37
Identifying the Task .................................................................................. 37
Selecting the Resources ........................................................................... 37
Evaluating and Assessing ......................................................................... 38
Concluding the WebQuest ....................................................................... 38
Resources .................................................................................................. 38
Dissemination of Project ......................................................................... 39
Timeline .................................................................................................. 39
Summary .................................................................................................. 39
### Chapter 4 - Links to National and State Standards

- National Learning Standards ................................................................. 40
  - Table 1 ........................................................................................... 41
  - Table 2 ........................................................................................... 44
- New York State Learning Standards ........................................................ 46
  - Table 3 ........................................................................................... 47
  - Table 4 ........................................................................................... 48
- Summary .................................................................................................. 49

### Chapter 5 - Discussion

- Introduction ............................................................................................. 50
- Subjects .................................................................................................... 50
  - Demographics ...................................................................................... 50
  - Representativeness ............................................................................. 51
  - Methodology ........................................................................................ 51
- Recommendations ..................................................................................... 51
  - Subjects ............................................................................................... 51
  - Demographics ...................................................................................... 52
  - Methodology ........................................................................................ 52
- Summary .................................................................................................. 52
- Summary of Project .................................................................................... 53

### References

- ............................................................... 54

### Appendices

- Appendix A .............................................................................................. 56
- Appendix B .............................................................................................. 57
- Appendix C .............................................................................................. 58
- Appendix D .............................................................................................. 59
Chapter 1

Introduction

Technology is becoming an important tool for use in the classroom as its use in society broadens. Based on the amount of articles found in databases about technology's presence in schools, research is ongoing and moving forward. According to Leu (2002), one of the leading researchers of technology literacy, information and communication technologies, known as ICTs, are being used more by teachers thus changing their views of literacy. As a result, the definition of literacy, the ability to read, is evolving according to a variety of researchers. With further advances in society and technology, the word literacy takes on new meanings. Television, e-mail, and in particular the Internet, are making their way into classrooms on a daily basis. These types of technology are also being included in the definition of technology literacy. Since technology is finding its way into classrooms, WebQuests, a particular learning tool that fosters student learning while working with the computer and the Internet are the focus of my curriculum project.

Overview of My Curriculum Project

This curriculum project examines the use of WebQuest activities and use the Internet in classrooms. A teacher’s manual, How to Create a WebQuest for Your Students will be developed as part of the curriculum project. My plan is to create an easy-to-use, detailed manual for elementary teachers on how to design an effective WebQuest. By reading my WebQuest manual, a teacher can determine how WebQuests can be integrated into his/her elementary curriculum.
The Internet is a network that connects computers around the world (Merriam Webster dictionary). WebQuests were designed by Bernie Dodge and Tom March in 1995 (Maddux & Cummings, 2007). They consist of a theme or topic with a series of activities that students follow on the computer using the Internet as a resource tool. Usually, WebQuests contain an introduction, a particular task, information sources, a process, guidance, and a conclusion. Students follow the tasks in the WebQuest on the computer either individually or in groups. The specific attributes of a WebQuest are described in the next chapter.

According to Ridgeway, Peters, and Tracy, WebQuests “make effective use of learners’ time and to support their thinking and active involvement at the levels of analysis, synthesis, transformation of information, decision making, and evaluation” (as cited by Ikpeze & Boyd, 2007 p. 645). WebQuests offer a variety of learning experiences and skills for the different types of learners in a classroom. The teacher controls the websites that students access, as well as the different types of media used. Harris (2000) documents how “Web-based activities can be the backbone of instruction, providing content and experiences that textbooks don’t” (as cited by Forbes, 2004, p.148). Students have the ability to access an endless amount of information within an authentic learning experience. With the proper guidance and instruction, teachers can learn how to create their own WebQuests, find appropriate resources, and learn from other models that can be incorporated into their own classrooms.

WebQuests can be used in a variety of ways such as an introduction to a unit, the knowledge base for an entire unit, supplemental information for the students, or additional
facts that the students locate. A WebQuest can cover topics, ranging from different content areas to particular books that students are reading, or to subjects of interest to the students.

**Rationale**

The topic of WebQuests is extremely important to me because I believe that specific technology sources have an enormous capacity to be some of the most significant and effective tools within a classroom. I possess a very strong background in computers since I have grown up using them on a daily basis. These days, students are also being exposed to computer technology in mass amounts. Using what students know for instruction can have lasting positive effects. In my personal experiences, I am aware that some teachers may not employ technology in the classroom because they do not know how to properly use it or do not understand this technology.

WebQuests engage students as they work together to complete the tasks at hand. Having created a WebQuest myself, it was evident to me that the process was enjoyable. I had full control of the resources, activities, and intended learning outcomes. The ability to choose the topic, Internet sources, video clips, and graphics is extremely important for capturing and retaining students’ attention. The Internet can be a vast place when locating specific information relevant to instruction; it can also contain inappropriate websites and false information. WebQuests allow a teacher to block sites from students’ view that are inappropriate and/or that contain inaccurate information. They also provide educational opportunities for students to compare and contrast a website’s credibility, information, and relevance to the topic being studied.

**Introduction to WebQuests**
Based on my own personal experiences with technology, educational training, and instruction in learning activities, I have constructed a definition of a WebQuest for the purposes of this project. A typical WebQuest involves a website developed by the teacher that has a series of steps for students to complete as they review websites for information and as they answer questions associated with the topic. For example, if the teacher created a WebQuest about ancient Egypt, students would be introduced to the topic as if they are archaeologists who are planning a dig in Egypt. The students would print out their excavation packet which would include questions about the information that they are going to be researching. The students would then follow the first step in the WebQuest which includes an external link to an educational website that provides them with enough information to answer the questions in their packet. The students would return to the WebQuest once they have answered the questions. From there, the students would follow the remaining steps, gathering more information about archaeologists and ancient Egypt. The teacher would assess student learning based on the excavation packets that the students submit. The students would also have time to reflect on their time in Egypt.

**Goal of Project**

The goal of this curriculum project is to clearly define a WebQuest, provide a rationale for its use, and create a manual for teachers on how to develop WebQuests. How to successfully use WebQuests in the classroom will also be addressed in my project. My project will focus on the use of WebQuests in second through sixth grade classrooms.

**Key Vocabulary**

Vocabulary terms will be discussed throughout this curriculum project. In order to assist reader understanding of WebQuests, five key terms must be defined, as these terms
appear repeatedly in this report and in my teacher’s manual. The definitions presented here were drawn from Merriam Webster dictionary.

*Internet* - an electronic communications network that connects computer networks and organizational computer facilities around the world.

*URL* - Uniform Resource Locators, which connect documents, images, and other files to which the students have access.

*World Wide Web* - a part of the Internet accessed through a graphical user interface; it contains documents often connected by hyperlinks.

*Email* – a means or system for transmitting messages electronically (as between computers on a network).

*Hyperlinks* - an electronic link providing direct access from one distinctively marked place in a hypertext or hypermedia document to another in the same or a different document.

**Challenges to Implementing WebQuests**

The problem that I saw when selecting this topic was lack of time for a teacher to create and implement WebQuests in the classroom. Time is becoming an issue in classrooms when talking to current classroom teachers. There does not seem to be enough time in the school day to get through all of the required material. WebQuests could prove to be time consuming to create, as well as to implement over the duration of a unit. With a majority of positive effects on the incorporation of WebQuest activities in a classroom, I want to find a way in which they can be used in a timely manner without losing the focus of what is required to be taught. Yet I need to be cognizant of the problems that arise when implementing WebQuests.
One problem related to computer use in the classroom is the availability of computers in a classroom; this concept has been labeled computer-to-student ratio. This term relates the number of computers available in a classroom to the number of students in the classroom. Money, class size, room size, and budget concerns, may all be reasons for a lack of available computers in a regular education classroom. WebQuests have generated positive results, however, if the environment is not suitable for implementation such benefits could be hard to achieve. If a teacher has access to only one computer, adaptations may be required if the teacher wishes to employ WebQuests with his/her students.

Student familiarity and experience with computers could also play a role in the effectiveness of using the computer as an instructional tool. Research has documented that, a learner’s previous exposure to computers has an effect on his/her ability to use the computer successfully in the classroom during an activity (for example, see, Van Leeuwen & Gabriel 2007). A closer look at the positive effects and implications for implementing WebQuests in the classroom will be described in the next chapter.

Review of the Literature

As part of this curriculum project I will discuss the positive and negative effects of using WebQuests and the Internet. In addition, I will look at the research that has been conducted on using the Internet with students, and the effects of using WebQuests for learning. Information about studies that have been conducted involving students and their use of the Internet will be summarized in Chapter 2. Literature about technology literacy or ICT will be reviewed for evidence of the use of other types of literacies in a classroom setting. The material collected will guide teachers towards determining if using WebQuests in their classrooms is appropriate and practical. The data gathered from my review will inform the
teacher as he/she weighs the positive and negative aspects of computer technology and its presence in the classroom. Research findings will also aid in the development of my teacher’s manual and a sample WebQuest.

Summary

Technology literacy is finding a place in teachers’ viewpoints today. Various types of media are being integrated into instruction. WebQuests can be an effective tool for providing enriched learning experiences for learners in elementary classrooms. Therefore, teachers need to be able to identify the positive effects of WebQuests and need to be able to create WebQuests for their students. The use of technology, specifically, WebQuests, will be explored in depth in the next chapter.
Chapter 2

Review of the Literature

Introduction

This chapter reviews the literature devoted to WebQuests, technology use in the classroom, and professional development. Theories relevant to my curriculum project are also described in Chapter 2. In this chapter information about the components of a WebQuest and using WebQuests in the classroom will be provided. Additionally, the positive and negative effects of using technology with students will be presented.

The literature review begins with a detailed explanation of what a WebQuest is followed by the components of implementing this technological tool in the classroom. The positive and negative effects of using technology with students will be covered so that teachers can determine the appropriateness for incorporating WebQuests in their classrooms.

Theoretical Underpinnings

The idea of using computer technology in the classroom with students is grounded in multiple theories that technology researchers have referenced.

Constructivist Theory

The Constructivist Theory of learning believes that students actively construct their own knowledge. Part of the theory of Constructivism includes the Engagement Theory where readers use metacognitive strategies, thinking about their own thinking, to comprehend a text. Guthrie (2006) introduced the Concept-Oriented Reading Instruction which identified five components regarding increasing student reading engagement (as cited in Tracey & Morrow, 2006). The Concept-Oriented Reading Instruction components directly
related to the topic of WebQuests include: themes in reading, use of hands-on activities, and integrating social collaboration. Students using WebQuests are reading material relevant to the overall theme for the topic which could include expository and narrative texts, poetry, or other genres depending on the text selected by the teacher. Hands-on activities could be included in the WebQuest as students are finding answers to questions. For example, a WebQuest on Ancient Egypt could ask students to create an ancient artifact based on the knowledge they acquired from the Internet resources. The Constructivist theory consists of students creating their own knowledge from the experiences that they encounter. This theory directly relates to the idea of WebQuests because students are exploring Internet sites and constructing knowledge based on what they are experiencing on the computer. Students also must be able to separate valuable and insignificant knowledge that they are gathering through Internet resources.

**Piaget’s Theory of Cognitive Development**

Piaget’s theory of cognitive development consists of children learning through different developmental stages as they grow. This theory relates to the topic of WebQuests because students learn the required skills to operate a computer as they advance through different stages of learning. Piaget also believed that a child’s ability to think changed over time. With WebQuests, students learn about operating a computer over time before they navigate through a WebQuest. Yan’s 2006 study on computer use in the classroom found that students in the upper grades showed higher levels of understanding aspects of the Internet than students in lower grades. This finding relates to Piaget’s theory because students in the upper grades have advanced through several stages of learning and growth.

**The Sociolinguistic Theory**
WebQuests allow students to work collaboratively in a group thus providing opportunities for social learning. The Sociolinguistic Theory states that language is learned through social situations with other people. This theory relates to the use of WebQuests in the classroom because students work in clusters; as a result, they are constantly talking with one another within their learning group. Also, this theory would relate to English language learners (ELLs) who are grouped with other students during this activity. Vygotsky’s Social Constructivist Theory asserts that children learn from social interactions with one another.

Vygotsky also introduced the idea of Scaffolding as part of the Social Constructivist Theory. Scaffolding is teacher assistance while students are learning. Teachers provide guidance and structure while presenting material to students. WebQuests incorporate the scaffolding technique through the processes, activities, and resources that the students are encountering. Each task, activity, and website has been carefully selected by the teacher to produce the intended student learning outcomes. Ikpeze and Boyd (2007) noted that for WebQuests to be effective, students should be “sufficiently scaffolded” (p. 652). The Scaffolded Knowledge Integration (SKI) theory, as discussed by Williams and colleagues (Williams, Linn, Ammon, & Gearhart, 2004) in their case study, includes four principles: “making thinking visible for students, making science accessible for students, providing social supports to students, and promoting autonomy for lifelong science learning” (p. 189). The SKI theory can be related to the topic of WebQuests even if the topic is not science content related.

The idea of WebQuest incorporates a variety of learning theories. Constructivist theories, cognitive development theories, and sociolinguistic theories are all theoretical underpinnings for computer technology.
Technological Literacy

Research of the topic of WebQuests generates a list of other topics that contain relevant information: computer technology use in the classroom, the Internet, the developmental appropriateness of such technology, and the effects of technology use on students. These topics are critical in determining the effectiveness and appropriateness of using WebQuests with students. In terms of literacy, new literacies have emerged with the advances in technology. The U.S. Department of Education reports that “technological literacy means the ability to use computer-related technologies to (a) improve productivity, performance, and learning and (b) expand the knowledge base to use these tools in content areas so that students’ academic achievement improves” (Labbo, Lue, & Kinzer., 2003, p. 300). As new skills are acquired with advanced technology, more literacies emerge such as “literacy of the Web (e.g., using search engines to locate information on the Internet or knowing effective strategies to critically evaluate website information)” (Teale, Leu, & Labbo, 2002, p. 654).

New Literacies

One of the overall theories amongst technology researchers details a new literacy emerging from information and communication technologies (ICT) involving the computer. Leu believes that “literacy is deictic: new literacies emerge from new technologies, regularly changing what it means to read and write” (Leu Jr., 2002, p. 466). The use of computers in the classroom is becoming increasingly more important as resources are becoming more readily available. “The computer offers new capabilities that that can conceivably enhance the conventional goals of reading instruction, such as increasing decoding ability, building
vocabulary, stimulating an interest in reading books, and improving spelling” (Reinking, Labbo, & McKenna, 2000, p. 111).

WebQuests

What exactly is a WebQuest? This section looks to answer the question by introducing the components of a WebQuest, and detailing how it can be used in the classroom.

Definition

WebQuests were designed and developed by Bernie Dodge and Tom March. In 1997, Dodge redefined a WebQuest as “an inquiry-oriented activity in which some or all of the information that learners interact with comes from resources on the Internet, optionally supplemented with videoconferencing” (Definitions, para. 2). Other educators have different definitions of a WebQuest such as activities delivered via the Internet, authentic, cooperative learning environments, exploration of information, or guided student learning. For the purpose of this curriculum project, a WebQuest will be defined as Dodge has described it; that is, as inquiry activities using resources from the Internet.

A WebQuest can either be short-term, lasting from one to three class sessions, or long-term, lasting anywhere from one week to one month. The teacher’s manual will focus on a long-term WebQuest only.

Components

Dodge (1997) suggests that a WebQuest contain six parts: an introduction, a task, information sources, the process, guidance, and a conclusion. Each of the components will be described in detail here.
**Introduction**

The introduction establishes the theme and includes graphics that stimulate interest for students. Students could also be introduced to the role that they will be playing while completing the WebQuest. For example, the Ancient Egypt WebQuest asks students to become archaeologists with specific roles as surveyor, analyst, or excavator. The introduction is the hook that draws the reader’s full attention.

**The Task**

The task describes what the students will be doing as they work through the WebQuest. For example, students working in a group could have a specific role within the WebQuest. The end product from the activities is listed so that students are aware of what they will be completing as they finish of the WebQuest. For example, students could be asked to create a poster based on the information they collected, create a skit or play, or write a newspaper article.

**The Process**

The process details exactly what steps or tasks that are required for students to complete using Internet sites embedded within the tasks. The process also explains how the students will accomplish the task. The process is where scaffolding is present. Students are scaffolded through the steps that they are completing. The Internet sources are embedded within the process. For example, in an Ancient Egypt WebQuest students could be asked to locate Cairo from a link to a map. Students would then write the coordinates for Cairo in their journal.

**Information Sources**
The information sources are selected by the teacher for the students to access as they gain credible knowledge about the topic. Teachers should always select Internet websites that are credible and include authentic sources of information. In order to do this, teachers will have to survey the websites before placing them in the WebQuests. Initially a teacher should look at the Internet http link to ensure that it is a credible source. For example, several websites are hosting sites for people to create and publish web pages. Geocities.com is one such hosting site. Information placed on hosting sites can come from unreliable sources, people who have posted false information, or people who have posted information that they believe to be true but the information is not substantiated. Additionally, this information could also be biased or narrow in perspective. Websites that have their own link, such as mfa.org, are set up by an organization. In this case, the Museum of Fine Arts, Boston, created a website specifically for information about their Ancient Egypt exhibit. Websites such as the mfa.org will also include a section about their organization and about the website so that teachers can find further information.

**Guidance or Evaluation**

The guidance, or evaluation, is the teacher’s way of assessing student learning through a rubric designed around the components of the WebQuest. The evaluation describes how the students should be performing for this activity. For example, a rubric could be constructed that lists key ideas or skills on which the students will be graded. Such ideas or skills could include teamwork, completion of a journal, and fulfillment of duties within their role.

**Conclusion**
The conclusion summarizes what the WebQuest while allowing for student self-reflection. Further questions could be posed to the students to extend thinking. For example, to conclude the Ancient Egypt WebQuest, students are given a link to a real newspaper story about an excavation in Cairo. Students are also asked what else they would want to know about Ancient Egypt. Listening to student responses to these questions could lead to generating a list of books to be read in the classroom, lessons on Egypt or archaeology, or even another WebQuest.

**Instructional Use**

WebQuests can be used in the classroom as an alternate learning tool for students besides the traditional textbook or instruction. Research has been conducted to determine whether WebQuests could produce positive learning outcomes for students who use this type technology.

**Efficacy of WebQuests**

Where do WebQuests fit within the instruction and curriculum of the classroom? WebQuests should be a tool used for instruction, an alternative to regular classroom instruction (Andrews, 1999, para.1). In order for the WebQuest to be effective, students should have an understanding of how a WebQuest works before they are expected to use this type of instruction. Maddux and Cummings (2007) state that “a WebQuest could be described more accurately as a lesson plan format—the effectiveness of which is totally dependent on a variety of teaching and learning variables” (p.120).

The efficacy of the WebQuest becomes directly related to the ability of the teacher to lead the students, establish the tasks at hand, and select the appropriate resources. Ipkeze and Boyd (2007) concluded that “WebQuests can facilitate thoughtful literacy when tasks are
carefully selected, organized, and delivered” (p.647). Maddux and Cummings (2007) also state that “lack of concern with the learner is the major weakness of the WebQuest approach” (p.119) which ties in with the teacher’s responsibilities for the instruction. Teachers could overlook many aspects of the students such as their reading ability, technology skills, developmental level, or social skills. Teachers could also assume that students have the skills required to perform the tasks associated with the WebQuest. Maddux and Cummings (2007) explain that there is an inherent assumption that students who are using a WebQuest have the capability to analyze, synthesize, and evaluate such an activity.

Ipkeze and Boyd (2007) conducted a WebQuest study involving six fifth grade students, five girls and one boy. The participants were either average or above average students. The study took place in an elementary school in a small, middle-income suburban town in Northeast United States. The students had learned some technology skills and used software prior to the commencement of the study. The classrooms contained one or two computers and the school had a well-equipped computer lab. A long-term WebQuest on the topic of environmental protection was selected based on the students’ interests. Data were collected through observations, notes, writing samples, rubrics, audio tapes, and student journals.

Before the WebQuest was implemented, students’ prior knowledge was activated through introductory lessons; mini-lessons about Internet use were taught. Students explored a website associated with the topic. The activities in the WebQuest consisted of collaborative readings, role playing, and responses to questions based on the information researched. Ipkeze and Boyd (2007) found that students enjoyed the activities as they worked together evaluating the websites. Since the activities were Internet-based, the lack of
student navigation, search, retrieval, and hypertext reading became apparent. Three participants in the study initially had difficulty locating the website for the actual WebQuest. Another participant who had experience with computers helped the other confused participants. The researchers suggested that teachers “need to ensure that learners are sufficiently scaffolded while at the same time giving them opportunities for exploration and encouraging them to take ownership of their learning” (p. 652).

Flexibility

WebQuests have the ability to be flexible both in the design and the materials embedded within them. Teachers can choose to create their own WebQuest or modify an existing one. There are many websites dedicated to supplying teachers with pre-made WebQuests that can be adapted. Teachers should closely look at pre-made WebQuests to ensure that information is accurate, the theme follows curriculum guidelines, and that the WebQuest would foster positive learning outcomes for the students who would be using it. Maddux and Cummings (2007) explain that “even more remarkable than the number of WebQuest sites is the fact that nearly all of the attention in the professional literature has been positive in nature.” (p. 117).

Research has shown that WebQuests do have an instructional purpose in the classroom. Whether the student learning produced from the WebQuest is positive in nature relies heavily on the teacher’s ability to guide and teach students.

Using Computer Technology in the Classroom

WebQuests use a great deal of computer technology for the resources and activities involved in this instructional instrument. Teachers should take into account a student’s technology background knowledge, computer use policies, and the role that computer
technology takes in the classroom. This section takes a closer look at using the computer and the skills associated with this tool.

**Background Knowledge**

Teachers must consider student knowledge of computers before they develop WebQuests. Teachers should not assume that all children have had access and exposure to computers before they have entered the classroom. Socioeconomic factors, as well as other unknown factors, may contribute to a student’s lack of experience with computer technology. At least one computer should be available for teachable moments during which the teacher can model strategies, information, or skills on the computer for all students to see.

According to Leu (2002) scheduling times for students to work independently or in pairs may help to establish a routine when using computers.

**Policies and Ethical Issues**

Teachers must also be aware of regulations, policies, and standards that are being established to provide both securities for the students as well as the teachers. Ethical issues are being considered by state governments including cyber ethics, that is, what is right and wrong in terms of computer use. For instance, the California State Assembly sought to pass a resolution regarding online piracy, (i.e., illegally downloading files from the Internet) in order to educate students about digital rights (Kruger, 2003).

**Role of Computer Technology**

With the increase in computer usage among teachers and students in the classroom and beyond, teachers must decide when using computers begins to take away from traditional resources and concepts. For example, Gambrell (2005) discusses how children and adults search for information. Encyclopedias and dictionaries in print format are rarely used when a
person can log on to search engines such as Google or Yahoo, and find their information
immediately. Gambrell goes on to state that although the Internet is being used instead of
books, a person may be reading more sources to expand his/her knowledge because the
information is readily available. Teachers also have to consider their own beliefs and
perspectives about using computers in the classroom. Some teachers could have negative
views towards technology or could have high expectations for using this type of tool in the
classroom.

Computer use has its place in the classroom; however, teachers are responsible for the
success of such technology use. Teachers are accountable for modeling, maintaining,
organizing, and performing for the students.

The Internet

WebQuests are made up of Internet-based activities and resources accessed by the
students. This section explains what teachers should be aware of including the skills required
for navigating the web, validity and reliability of websites, and techniques for modeling use
of the Internet.

Definition

The Internet, as defined by the Merriam-Webster dictionary (2008), is “an electronic
communications network that connects computer networks and organizational computer
facilities around the world”. The Internet has the ability to provide students with an endless
amount of information, experiences, and reading material. The Internet includes the World
Wide Web, “a part of the Internet accessed through a graphical user interface and containing
documents often connected by hyperlinks” (Merriam-Webster, 2008). The Web contains
URLs, Uniform Resource Locators, which connect documents, images, and other files to
which students have access. “The World Wide Web offers the means of linking text, graphics, animation, and sound across any computer connected to the Internet” (El-Hindi, 1998, para. 1).

**Benefits of Using the Internet**

The use of the Internet in classrooms can have positive effects on student learning. Pedaste and Sarapuu (2006) conducted a study about inquiry learning in which 262 participants completed a virtual hike through ecosystems. The participants were enrolled in grades 6 through 12; they were ages 12 to 19 years. Participants were grouped into teams of three to five people as they answered pre-test questionnaires to evaluate analytical skills and strategies that students used for analyzing visual information. Pedaste and Sarapuu found that students’ analytical skills used to solve problems within the virtual hike improved, as evidence by higher mean post-test scores than pre-test scores.

Scott (2003, as cited by Forbes, 2004) explained that although students may not be able to read words, using the Internet allows these students to read and comprehend pictures and other visual or audio material.

Karchmer-Klein and Layton (2006) reviewed literature-based collaborative Internet projects (CIP) which has participants reading texts and sharing responses via the Internet. Data were collected from electronic surveys, email interviews, and websites. The researchers found that CIT practices help to reinforce content being taught. The Internet helped students to make connections, actively participate in learning, and work with peers. The researchers and teachers involved in the study stated that the Internet was the most important technology aspect of the CIP design.
More research is needed to study student learning in the field of Internet technology use. Although the research currently available is limited, the studies reviewed here report several positive aspects of using the Internet in the classroom with students.

**Drawbacks to Using the Internet**

As stated previously, computers and the Internet offer opportunities for students to expand their knowledge base. A number of studies have documented student benefits in using computers and the Internet (for example, see Forbes (2004)). However, the use of the World Wide Web, also generates a significant number of issues. Bradshaw (2002, as cited by Ikpeze & Boyd, 2007) states that some of the problems associated with the internet involve "navigational disorientation, information overload, and distraction". Students may have difficulty finding buttons, programs, or files on the computer, therefore, experiencing navigational disorientation. With the vast amount of information available on the Internet, students may also experience *information overload*, a state in which they find themselves consumed and overwhelmed by the wealth of data. Since the Internet can bombard students with text, ads, images, and games, distractions could occur. The authenticity of the information on the Internet also poses a problem as information accuracy could be flawed, biased, or completely inaccurate.

Although the National Center for Education reported in 2002 that 99% of U.S. public schools have Internet access, Internet access should also be taken into consideration (Ipkeze & Boyd, 2007, p.645). With the availability of Internet access becoming more prominent in schools, laws were established to protect the safety of the students using computers. The Children's Internet Protection Act was signed in 2000; this law required schools to put filters on the amount of online material that students may encounter.
Yan (2006) conducted a study which examined students’ understanding of the Internet. The study included 322 elementary and middle school students. One hundred seventy-six students were girls while 146 students were boys. Of the 322 students, 76 were fourth graders, 87 were fifth graders, 50 were seventh graders, and 58 were in the eighth grade. The study took place in six elementary schools and one middle school in a New England suburb.

Data were collected from survey questions about the Internet including duration of use, frequency of use, classes attended, understanding of the technical aspects, and understanding of the social aspect of the Internet. Yan found that the frequent use of the Internet did not directly affect technical understanding but rather social understanding of the Internet. Students who frequently used the Internet were better able to understand social aspects of the Internet such as communications with people. Classes associated with using the Internet had the same results as frequency of use with the Internet. Age was identified as the most influential factor among the different areas examined by the study. The students in upper grades showed higher levels of understanding the technical and social aspects of the Internet. Older students who participated in the study had greater technical and social understandings of the Internet. According to the study, by the fifth and sixth grades, students understood the technical complexity of using the Internet. This finding directly relates to Piaget’s cognitive development theory. The students developed an understanding of using the computer and the Internet as their knowledge base grew from grade to grade. When students reach seventh and eighth grade, they understood the social complexity of the Internet at an adult level. Students’ understanding of the Internet aligns with the ways that children develop mentally, cognitively, and physically.
As students age, the technology skills that they have learned should also be developing. Students need to develop certain skills before they can navigate the computer effectively. Keyboarding, navigation, accessing specific information, and reflecting on received information are just some of the abilities needed for successful navigation of the Internet. Teachers need to prepare websites ahead of time to ensure that these sites are developmentally appropriate and suitable for their students. Monitoring and selecting suitable websites could become time consuming if a teacher has limited planning time for activities outside of the existing curriculum. Guidelines for students who are using the Internet must be covered. Labbo, Leu, and Kinzer (2003) stated that some school districts may require that parents sign permission slips before students can begin to work on the Internet. Permission slips would provide guidelines and serve as an agreement that students would follow district rules on technology when using the computer. The safety of students should always be considered when they are working with the Internet.

Email

One aspect of the Internet and its social collaboration use is email. Email, as defined by the Merriam-Webster dictionary, is “a means or system for transmitting messages electronically (as between computers on a network)”. Students may be required to use email in a WebQuest depending on the activities designed by the teacher. Tao and Reinking (2008) explored email and its effects on literacy skills. The researchers found that email enhances literacy through the students’ social interactions. Students get the chance to review their writing in an email before they send it, which allows for more review and reflection rather than immediate response. Tao and Reinking also found that shy and reserved students were more likely to participate in e-mail discussions rather than discussions in class. Email also
has the ability to provide students with multicultural experiences different from their own. Email pen pal systems can be arranged so that students are in contact with students from a different country or from a different region of a country. Email can be included in a WebQuest to connect students to other students, and to contact an organization for more information. In addition, the teacher could help any students accessing the WebQuest from home by using email.

The Internet, including email, can be used effectively in WebQuests for the classroom. In order for effective use and positive learning outcomes for students, teachers need to take into consideration preparing students with the skills required to use the Internet.

**Developmental Appropriateness**

WebQuests can be an effective tool to aid instruction as long as the information, resources, and text are developmentally appropriate for students. This section discusses the appropriate levels for incorporating WebQuests in the classroom.

Dodge, the creator of the WebQuest concept, claimed that WebQuests are appropriate "for children as young as those in the third grade, and added, 'there are some good ones that go lower.'" (as cited in Maddux & Cummings, 2007, p.121). Andrews (1999) claims that WebQuests can be used with younger children: "[WebQuests] may be used in any subject at any level, from first grade through college" (para. 2). Teachers must be able to determine if the material in a WebQuest is appropriate for their students. Although the WebQuest itself (i.e. activities and text) may be deemed appropriate for the grade level of the students, the resources could be above students’ reading levels. Since WebQuests have external components such as Internet resources, teachers should be aware of the material that students may be encountering as they negotiate a WebQuest.
In addition, teachers should also take into account whether a student is developmentally ready to work on a computer. Children learn to use computers, but this learning is a process that evolves over time. Based on students' previous exposure to computers either at home or in other classes, different computer ability levels should be considered. Children with advanced computer and keyboarding skills would be able to write a larger amount of words, navigate easier, and have an existing knowledge of how the computer works compared to a child who lacks experience with these skills. Observations in studies documented that students reach frustration levels because of an inability to type on the keyboard. Frustration levels may not provide a supportive environment for creativity, enthusiasm, and motivation for navigating or writing in a WebQuest.

**Effects of Technology Use**

Before teachers implement technology in their classrooms, the positive and negative effects of technology use should be explored. This section sheds light on the different effects that use of technology has on student attitudes, learning, and skill sets.

**Positive Effects**

Many positive effects of student technology use have been recorded by various researchers. Such findings include that students are generally excited about working with technology in the classroom. Labbo and Reinking (1999) researched five goals for positive integration of technology and literacy instruction. The researchers discussed the relationship between the research and practice of literacy with new computer technologies. The five goals of the study included new digital technologies available, new digital technologies used to enhance conventional literacy instruction, new technologies to positively transform literacy instruction, new technologies to prepare students for literacy in the future, and new
technologies used to empower students. Students improved on their skillsets in a variety of areas as they worked on the computer.

Reinking, Labbo, and McKenna (2000) found new capabilities in computers to “increase decoding ability, building vocabulary, stimulating interest in reading books, and improving spelling” (p. 114) in students. The researchers examined existing investigations related to literacy research and practice with new technologies. Reinking et al. reference Piaget’s constructivist theory when they concluded that both educators and researchers have incorporated new technologies into their literacy teaching. As the definition of literacy changes to reflects new technology advances, complete integration between technology and literacy instruction could mean a new stage of development for teachers and students.

Students developed pride in finding new information on the computer, and often share it with their peers. Computers allowed for more creativity in projects from students, as well as teachers.

**Negatives Effects**

There are some drawbacks to technology. That is, negative effects as well as challenges do exist when using technology with students. Some challenges could be “related to budget considerations, challenges related to professional development, and challenges related to using technology in ways that will make all of our lives better” (Leu Jr. & Charles, 2000, p. 108). Students are required to learn additional skill sets to work with computer technology. In addition, students may have to learn new symbols in conjunction with icons or multimedia presentations (McKenna, Reinking, & Labbo, 1999).
Some of the negative effects of computer use may result from student attitudes and student willingness to work with technology. Some students may become frustrated if they do not know how to properly operate a computer, keyboard, and mouse.

Other negative effects that could arise include ethical issues. Students’ use of the computer and Internet in a harmful way could occur, as students access either inappropriate websites, plagiarize material, or get involved in questionable social situations.

Kafai, Nixon, and Burnam (2007) investigated preservice teachers’ judgments about student scenarios involving the computer and Internet. The researchers believed that teachers need to understand policies associated with students using computers in the classroom so that they can establish regulations for students in their classrooms. The participants included 66 preservice teachers (57 women and 9 men) who were completing student teaching placements in elementary classrooms. The study took place in an urban California school district. Of the preservice teachers, 94% has years of computer experience with 80% having Internet experience. Ninety-eight percent of the participants had Internet access where they spent time either working on school work, using e-mail, or browsing the Internet.

Data were collected through a media survey consisting of six multiple-choice questions about years of computer/Internet experience, period of time spent on the computer, ownership of a computer, and whether Internet access was available in their home. Two hundred fifteen upper elementary students were administered the survey. The fifth grade students came from three different schools within an urban school district. The researchers found that based on the preservice teachers’ responses to the scenarios, the participants were able to predict students’ judgments about appropriate behaviors when using the computer. The preservice teachers, though, were not able to explain the reasoning behind the students
making such judgments. The researchers concluded that preservice teachers should be prepared for ethical issues that may find their way into the classroom. Teachers need to understand the computer and Internet issues so they can better help their students to recognize these important issues.

The quality number of positive and negative points generated about using technology in the classroom is apparent. Teachers should consider several important factors such as student strengths and areas of need, student interests, and the amount of new information that would be learned by the students.

**Professional Development**

In order for technology, computers, and WebQuests to be implemented effectively in classrooms, professional development is needed. Teachers should be well informed on the use of technology before they teach and develop activities intended for student use. This section addresses the knowledge that teachers should possess if they wish to incorporate technology in the classroom.

A 1997 survey by the Office of Social & Economic Data Analysis found that “at least 50% of veteran and new teachers identify themselves as educational technology novices, and only 42% of new teachers recently stated that they feel well prepared to use computers instructionally” (Labbo et al., 2003, p.300). With half of the teachers surveyed claiming novice technology skills the number of students affected by teacher computer experience is multiplied. For instance, one novice teacher is going to affect learning outcomes for the entire class of students.

There are many sources available to teachers to help them develop more knowledge about using technology in their classrooms. Staff development sessions, personnel who deal
specifically with technology, internet resources, other experienced teachers, and peer-reviewed journal articles are just a few of the sources that can be used to assist teachers. Labbo, Leu, and Kinzer (2003) explain that successful professional development should require demonstrations on how to effectively use the computer, on people who could act as continuing mentors and models, on hands-on training resources, on time for reflection, and on constant feedback. Teachers may need to adjust their teaching pedagogy to include technology since technology is becoming so widely used.

Lehman, Warfield, and Palm (2001) examined professional development regarding teachers’ use of the Internet in conjunction with their teaching. The goal of the study was to determine how the online forum served as support base for teacher inquiries regarding the use of technology in their teaching. The researchers focused on mathematics education; subjects included 12 participants, eight of whom were teachers, while the remaining four were project staff members. Of the four staff members, two were math educators, one a technology educator, and the other a math education graduate student.

Data were collected through the online forum on which participants posted messages reflecting on their teaching, students’ thinking and understanding, content not related to teaching, and the use of technology. The researchers concluded that the participants had low levels of participation and reflective responses regarding student thinking. The researchers did find positive results in the participants’ comfort levels with using the Internet and the amount of questions and comments discussed. Lehman, and colleagues concluded that the Internet has the capability of being a worthwhile tool for professional development and for the creation of a sense of community.
The National Education Technology Standards offer specific guidelines for teachers to “design, implement, and assess learning experiences to engage students and improve learning; enrich professional practice; and provide positive models for students, colleagues, and the community”, according to the International Society for Technology in Education website (http://www.iste.org/). These standards outline how teachers practice professional development to improve student learning overall. A complete list of the National Educational Technology standards for teachers is available in the Appendix A.

Summary

The literature review detailed important components for implementing WebQuests in the classroom. The information presented will help teachers form the foundational knowledge required for creating this type of technological learning environment with their students. Many of the researchers reported here are leaders in the field of technology in the classrooms. They offer results on the use of ICT in the elementary setting. Using technology with students can enhance or inhibit learning. In terms of learning theories associated with technology use in the classroom, Constructivist theories, Cognitive Development theories, and Sociolinguistic theories provide the theoretical support that teachers need when considering using WebQuests with their students. The teacher assumes a major role in controlling and managing how the students are performing with technology, particularly WebQuests.
Chapter 3

Curriculum Project

This curriculum project will produce a teacher’s manual for creating and incorporating WebQuests in the classroom. There are six major components of a WebQuest: an introduction, the task, sources, description of the process, evaluation, and the conclusion (Madduz & Cummings, 2007). Two different types of WebQuests can be implemented in the classroom, short-term and long-term. A short-term WebQuest, according to Dodge (1997), lasts from one to three class sessions, with acquisition and integration of knowledge as the goal for instruction. A student should have gained new knowledge about the topic after completing the short-term WebQuest. A long-term WebQuest, according to Dodge, lasts from one week to one month with extension and advancement in knowledge as the goal for instruction. A student should have gained extensive knowledge about the topic with the ability to show understanding through work. This curriculum project will outline and define the attributes of a long-term WebQuest.

Project Goals and Objectives

The goal of this manual is to provide a thorough knowledge base on the use of WebQuests in the classroom setting. One objective is to provide a detailed example of how to create and incorporate a WebQuest so that teachers would feel comfortable enough to create WebQuests for their students. A second objective focuses on evaluation of WebQuests; the manual will contain information that will assist the teacher and students in evaluating the success of the WebQuest. In How to Create a WebQuest for Your Students,
teachers will be informed about all aspects of a WebQuest, which includes using the internet and computers, and the effects of such technology on student learning.

**Intended Audience**

This manual, *How to Create a WebQuest for Your Students*, is intended for elementary teachers ranging from grades two to six. *How to Create a WebQuest for Your Students* is designed for both teachers who have extensive technology knowledge or for those who are new to the use of technology in their classrooms. In addition, my manual on WebQuests could be shared with paraprofessionals and preservice educators, particularly candidates enrolled in childhood education programs.

**Format of *How to Create a WebQuest for Your Students***

The teacher's manual, *How to Create a WebQuest for Your Students*, will be designed and organized according to Dodge's (1997) suggestions for the six components of a WebQuest: choosing a topic, creating the introduction, identifying the task, selecting the resources, evaluating and assessing, and concluding the WebQuest. Each component is described in the following sections of this chapter. The format of this manual is a how-to guide on the specific attributes of a WebQuest, with the final product including a sample WebQuest. The research described in the literature review provides the source for developing this manual. A summary of relevant research will appear in the manual as the research presents a wealth of information that will aid a teacher in developing a WebQuest for his/her classroom.

**Choosing a Topic**

Selecting a topic for a WebQuest should be based on the curriculum and availability of credible resources on the Internet. Teachers should consider their students' interests,
background knowledge, experiences, and reading levels. The topic should be engaging enough to hold students’ attention for the duration of the activity. A teacher should also map out the intended learning outcomes, as well as what is expected of the students prior to incorporating the WebQuest in the classroom.

**Creating the Introduction**

The introduction explains what the students will do and learn as they explore the WebQuest. An important aspect of the opening is that it should be visually appealing to students. Developing students’ interest in the scenario, or the topic at hand, is an integral component to the overall effectiveness of the WebQuest. Students should be intrigued by the topic, stimulated by the design, and excited by the engaging nature of the activities. The introduction is essential in drawing students in, and creating motivation for the unit.

**Identifying the Task**

This part of the WebQuest outlines what the students are going to be doing throughout the lesson. Subtasks are embedded within the WebQuest as students move along the scenario (the problem that the students are looking to solve), and act as preliminary information leading to the overall task. The tasks should be designed and planned well so that students are fulfilling the teacher’s expectations of the WebQuest. Instructional goals and outcomes should always be considered when establishing the components of the WebQuest. According to Dodge (2001) and March (2000), “the task should be firmly anchored in a real-life situation, doable, and interesting” (as cited by Halat, 2008, p.110).

**Selecting the Resources**

The computer has recently become a tool for instruction. The Internet resources accessed on the computer in a WebQuest are the core knowledge base for student learning.
The websites should be selected based on the amount of credible information they provide for usage in the classroom. Websites should be evaluated based on readability so that the appropriate reading level of the students is considered, otherwise the information will not be understood. Other media forms can be included in a WebQuest, such as video clips, sound bites, and images. According to Ikpeze and Boyd, “with multiple knowledge representations learners experience the same content in different ways” (2007, p.645).

**Evaluating and Assessing**

With instructional goals and student expectations in mind, the evaluation of student learning in a WebQuest can be based on a rubric created by the teacher. Students can complete the rubric themselves upon completion of the WebQuest activity. Teachers can also complete the rubric based on observations of the students and submitted student work. An assessment piece should be required to measure the amount of student learning; assessment information can be used to develop future instructions and/or to modify the WebQuest.

**Concluding the WebQuest**

WebQuests typically end with a review of what the students have learned throughout the tasks and activities. A closure for the entire activity wraps up what that the students have been completing over the duration of the time period designated for the WebQuest. The conclusion also offers students the option to extend what they have learned to other areas and experiences. An effective conclusion should impact the student in some form and lead to further inquiry.

**Resources**
There are a variety of websites available for teachers to design WebQuests, explore WebQuests that other people have created, or gather ideas about what to incorporate in an existing WebQuest. One Internet site is particularly helpful in designing and negotiating WebQuests; WebQuest.org provides a widespread library of WebQuests that educators have developed and shared.

Dissemination of Project

This curriculum project will be presented to colleagues in a poster presentation during the spring 2009 semester. In addition, it will also be available through SUNY Fredonia’s Reed Library. A future goal for the manual will be to distribute it to teaching colleagues for use in most classrooms.

Timeline

The proposal for this curriculum project will be developed in the fall 2008 semester. The manual itself will be developed in spring 2009 and will be included in the appendix of the final report.

Summary

The components of a WebQuest are vital for the overall efficacy with student learning. Each component has an intended learning outcome rooted in the design. How to Create a WebQuest for Your Students is designed for teachers to learn how to create a useful WebQuest that meets the needs of the students, curriculum, and teacher expected outcomes. Teachers can modify an existing WebQuest or create their own based on the directions presented in the manual.
Chapter 4

Links to Standards

Introduction

Ever since the enactment of No Child Left Behind, annual state-wide standardized testing, standards have been established to guide curriculum and instruction in schools districts across our nation. In our area, teachers must be able to base their lessons on the New York State Standards. I will link the activities associated with my project to national and state standards to show how the project directly connects with the desired learning outcomes found in the standards.

The curriculum project was created with the learning standards in mind. The WebQuest activity itself links with various national and state standards because it encompasses many different skills and topics. Students read, write, speak, and listen in a variety of ways, making the WebQuest complex and well suited for classroom instruction. Since WebQuests can be easily adapted to fit all sorts of topics, they could be linked to other content area standards.

National Standards

The International Reading Association (IRA) is a professional organization involved in teaching reading to all learners across the world. Table 1 presents the International Reading Association (IRA) standards that directly link to the topic of WebQuests. Nine of the IRA standards relate to my curriculum project. This full text of each standard appears in Appendix B.
<table>
<thead>
<tr>
<th>IRA Standard</th>
<th>Link to My Curriculum Project</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>STANDARD 1</strong>&lt;br&gt;Students read a wide range of print and nonprint texts to build an understanding of texts, of themselves, and of the cultures of the United States and the world; to acquire new information; to respond to the needs and demands of society and the workplace; and for personal fulfillment.</td>
<td>Students will read print and nonprint texts for comprehension while completing activities in the WebQuest.</td>
</tr>
<tr>
<td><strong>STANDARD 2</strong>&lt;br&gt;Students read a wide range of literature from many periods in many genres to build an understanding of the many dimensions (e.g., philosophical, ethical, aesthetic) of human experience.</td>
<td>Students will read material covering different genres as they progress through the WebQuest.</td>
</tr>
<tr>
<td><strong>STANDARD 3</strong>&lt;br&gt;Students apply a wide range of strategies to comprehend, interpret, evaluate, and appreciate texts.</td>
<td>Students will use several different strategies to understand the text from the resources and activities in the WebQuest.</td>
</tr>
<tr>
<td><strong>STANDARD 4</strong>&lt;br&gt;Students adjust their use of spoken, written, and visual language (e.g., conventions, style, vocabulary) to communicate effectively with a variety of audiences and for different purposes.</td>
<td>Students will work together in a social environment where they can discuss and help others while completing the WebQuest.</td>
</tr>
<tr>
<td>STANDARD 5</td>
<td>Students employ a wide range of strategies as they write and use different writing process elements appropriately to communicate with different audiences for a variety of purposes.</td>
</tr>
<tr>
<td>STANDARD 6</td>
<td>Students apply knowledge of language structure, language conventions (e.g., spelling and punctuation), media techniques, figurative language, and genre to create, critique, and discuss print and nonprint texts.</td>
</tr>
<tr>
<td>STANDARD 7</td>
<td>Students conduct research on issues and interests by generating ideas and questions, and by posing problems.</td>
</tr>
<tr>
<td>STANDARD 8</td>
<td>Students use a variety of technological and information resources (e.g., libraries, databases, computer networks, video) to gather and synthesize information and to create and communicate knowledge.</td>
</tr>
<tr>
<td>STANDARD 9</td>
<td>Students develop an understanding of and respect for diversity in language use, patterns, and dialects across cultures, ethnic groups, geographic regions, and social roles.</td>
</tr>
</tbody>
</table>
National Education Technology Standards

The National Education Technology Standards are embedded within the International Society for Technology in Education. These standards for students establish the skills, goals, and attitudes required to perform at an acceptable level within the area of technology. Table 2 displays the National Education Technology Standards for student performance in technology that are linked to my curriculum project. The entire text of each standard is available in Appendix C.
Table 2 Links to National Education Technology Standards

<table>
<thead>
<tr>
<th>NETS Standard</th>
<th>Link to My Curriculum Project</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>STANDARD 1</strong></td>
<td>Students will think creatively as they complete the tasks within the WebQuest. Students will use the computer as a form of technology to gather ideas.</td>
</tr>
<tr>
<td>Students demonstrate creative</td>
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<tr>
<td>thinking, construct knowledge,</td>
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<tr>
<td>and develop innovative products</td>
<td></td>
</tr>
<tr>
<td>and processes using technology.</td>
<td></td>
</tr>
<tr>
<td><strong>STANDARD 2</strong></td>
<td>Students will work collaboratively in groups while using the computer to complete the WebQuest. Students will use the digital environment on the computer when working on the activities.</td>
</tr>
<tr>
<td>Students use digital media and</td>
<td></td>
</tr>
<tr>
<td>environments to communicate and</td>
<td></td>
</tr>
<tr>
<td>work collaboratively, including at</td>
<td></td>
</tr>
<tr>
<td>a distance, to support individual</td>
<td></td>
</tr>
<tr>
<td>learning and contribute to the</td>
<td></td>
</tr>
<tr>
<td>learning of others.</td>
<td></td>
</tr>
<tr>
<td><strong>STANDARD 3</strong></td>
<td>Students will evaluate websites while working through the WebQuest. Students will examine a variety of resources available on the Internet.</td>
</tr>
<tr>
<td>Students apply digital tools to</td>
<td></td>
</tr>
<tr>
<td>gather, evaluate, and use</td>
<td></td>
</tr>
<tr>
<td>information.</td>
<td></td>
</tr>
<tr>
<td><strong>STANDARD 4</strong></td>
<td>Students will think critically while solving the problem established in the WebQuest. Students will collect information from different websites as they answer the questions.</td>
</tr>
<tr>
<td>Students use critical thinking</td>
<td></td>
</tr>
<tr>
<td>skills to plan and conduct</td>
<td></td>
</tr>
<tr>
<td>research, manage projects, solve</td>
<td></td>
</tr>
<tr>
<td>problems, and make informed</td>
<td></td>
</tr>
<tr>
<td>decisions using appropriate digital</td>
<td></td>
</tr>
<tr>
<td>tools and resources.</td>
<td></td>
</tr>
<tr>
<td>STANDARD 5</td>
<td>Students will learn the appropriate actions for browsing the Internet before they begin the WebQuest. Students will have gained a positive attitude toward working with technology established and modeled by the teacher.</td>
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<tr>
<td>---</td>
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</tr>
<tr>
<td>Students understand human, cultural, and societal issues related to technology and practice legal and ethical behavior.</td>
<td></td>
</tr>
<tr>
<td>STANDARD 6</td>
<td>Students will operate the computer successfully after completing mini-lessons about how to use the technology. Students will gain new understandings of computer use after completing the WebQuest activity.</td>
</tr>
<tr>
<td>Students demonstrate a sound understanding of technology concepts, systems, and operations.</td>
<td></td>
</tr>
</tbody>
</table>
New York State Standards

English Language Arts

The English Language Arts Standards (ELA) are created by the New York State Department of Education as performance indicators for students. Table 3 presents the New York State learning standards that align with the curriculum project topic of WebQuests. English Language Arts and Technology standards were the focus for linking to the curriculum project. The full text of each standard is available in Appendix D.
Table 3 Links to New York State ELA Learning Standards

<table>
<thead>
<tr>
<th>NYS Standard</th>
<th>Link to My Curriculum Project</th>
</tr>
</thead>
</table>
| **STANDARD 1**  
Students will read, write, listen, and speak for information and understanding. | Students will read, write, listen, and speak for understanding while they complete the WebQuest in groups. They will read and write according to the activities they complete. They will listen and speak to one another as they work in the social environment. |
| **STANDARD 2**  
Students will read, write, listen, and speak for literary response and expression. | Students will respond to the information they are gathering by completing the activities directly related to what they have learned in the WebQuest. |
| **STANDARD 3**  
Students will read, write, listen, and speak for critical analysis and evaluation. | Students will analyze and evaluate the resources in the WebQuest for validity and reliability. |
| **STANDARD 4**  
Students will read, write, listen, and speak for social interaction. | Students will be working in a socially constructed environment as they work in groups to complete the activities in the WebQuest. |

New York State Technology Standards
The Technology Standards are also designed by the New York Education Department to guide how and what teachers should be teaching in terms of technology. Table 4 presents the New York State learning standards that align with the curriculum project topic of WebQuests. Technology standards were the focus for linking to the curriculum project. The entire text of each standard is available in Appendix E.

Table 4 Links to New York State Technology Standards

<table>
<thead>
<tr>
<th>NYS Technology Standard</th>
<th>Link to My Curriculum Project</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>STANDARD 2</strong>&lt;br&gt;Students will access, generate, process, and transfer information using appropriate technologies.</td>
<td>Students will use the computer to look at different websites, email, and share information when completing the WebQuest.</td>
</tr>
<tr>
<td><strong>STANDARD 5</strong>&lt;br&gt;Students will apply technological knowledge and skills to design, construct, use, and evaluate products and systems to satisfy human and environmental needs.</td>
<td>Students will use technology knowledge and skills to work on the computer while working through the WebQuest.</td>
</tr>
<tr>
<td><strong>STANDARD 7</strong>&lt;br&gt;Students will apply the knowledge and thinking skills of mathematics, science, and technology to address real-life problems and make informed decisions.</td>
<td>Students will use existing knowledge and skills as they look at the problems posed in the WebQuest. They will make decisions and come to conclusions using the knowledge that they have.</td>
</tr>
</tbody>
</table>
Summary

As previously stated, WebQuests can be linked to an assortment of national and local standards. The complete description of the standards can be found in the appendix. The activities designed for the WebQuest have students exploring information on the Internet, reading non-print materials, interacting socially in groups, writing for comprehension, analyzing data, and making inferences based on the knowledge that they have acquired.

The curriculum project, Implementing WebQuests in the Classroom, is linked to national and state standards. These national and state standards serve as the basis for this project while the activities presented in the manual about WebQuests are grounded in the performance indicators.
Chapter 5

Discussion

Much of the research about the topics of WebQuests and technology is very narrow in its procedure and results. As a result, there is a lack of research directly related to the topic of WebQuests, perhaps because WebQuests have only existed since 1995. Since the topic of WebQuests does not have a large research base, studies involving computer use, the Internet, and technology were reviewed. The literature reviewed had limitations in the subjects used, the demographics of the study, and the methodology of the research design.

Subjects

Most of the research conducted used a subject pool of undergraduate teacher candidates rather than elementary students. A number of the studies used a small pool of subjects. For example, Ikpeze and Boyd (2007) used only six students for their study about web-based inquiry. Another study chose a small selection of teachers to participate. Using a small subject pool affects the generalizability of the results. The results from a small number of subjects cannot be generalized to the overall population of classroom students. Therefore, a larger number of participants is required for more accurate results.

Demographics

Many of the studies reviewed took place in middle income communities in the United States. Some studies were conducted outside of the United States. Computer access and availability could be related to the reason many of the studies were in middle income areas. Yan (2006) conducted a study about the Internet in a suburban New
England school. Only looking at one particular demographic group does not provide results that can be applied to populations.

**Representativeness**

The studies lacked an overall representation of students and teachers in a school. A majority of the studies selected average or above average students. Also, undergraduate students were selected who were already being trained as preservice teachers at the higher education level. The lack of student representation negatively affects the results as the studies do not provide enough information for teachers to make fully supported decisions on whether to use technology in the classroom. A majority of the studies’ results are not as applicable to classroom settings because of the shortage of student data.

**Methodology**

The materials used in the studies for collecting data were mostly surveys and questionnaires. Studies that involved undergraduate students and current teachers used surveys to judge perceptions about using computer technology. For example, Keengwe (2007) conducted a Computer Technology Integration study to understand the perceptions of technology effects on student learning. Most of the studies were conducted over a short period of time.

**Recommendations**

The literature review provided a variety of limitations to the studies researched. Several recommendations could be considered for these studies, as well as new research, to refine the subject pools, design, and methodology.

**Subjects**
The subjects used in future research should be expanded in the number of participants. Researchers should look at how students are performing when using computers and WebQuests. A large subject pool would allow for more results on student performance and for greater generalization to other subject groups. The focus of this thesis was on elementary school students; however, subjects could include a wide range of grade levels to compare results. WebQuests are flexible in nature, and can be easily adapted to be used in a kindergarten through high school setting, according to Dodge, the creator of WebQuests.

**Demographics**

Since most of the studies were conducted in middle income neighborhoods, covering other higher income and lower income areas would provide more results that could be generalized to other populations. Researchers may encounter some problems though if schools do not have the necessary materials, such as computers or whiteboards, to assist in the study. Researchers could secure grants and funding to provide schools with adequate and ample materials to sustain research. Including research from other countries may offer new insights regarding computer programs, resources, or methods of teaching.

**Methodology**

The studies in the literature review relied mostly on surveys answered by participants. Studying student work may prove more beneficial to the results if the research investigates how students performed on computer related tasks. WebQuests have specific grading criteria and rubrics that can be examined for results. Interviewing students who participated in a WebQuest may offer further perceptions about using
computers than a simple survey. Researchers need to create ways to evaluate a WebQuest, review student work, and discover how students perform and learn during their time spent on the computer.

**Summary**

Overall, there is a lack of relevant research on WebQuests that accurately depicts how students perform, how students learn, and how students perceive about using computer technology. As the topic of WebQuests is somewhat new to the education field, researchers must look to new research designs to provide teachers with plausible studies on the use of computer technology in the classroom.

**Summary of Project**

This curriculum project encompasses a wide range of technology-related research in the field of elementary education. A variety of learning theories provide the necessary support for implementing WebQuests in the classroom. Although the research related to this topic is narrow and limited, several studies have shown positive outcomes for using computers technology in the classroom. The manual, *How to Create a WebQuest for Your Students*, was designed to provide teachers with a step-by-step guide for creating a WebQuest, implementing the tool in the classroom, and providing research-based ideologies for its use. The topic of WebQuests is a fairly new idea in the education field, therefore researchers need to conduct more studies about its use while teachers should experiment with WebQuest models in the classrooms.
References


Appendix A

National Educational Technology Standards for Teachers

STANDARD 1. Facilitate and Inspire Student Learning and Creativity
Teachers use their knowledge of subject matter, teaching and learning, and technology to facilitate experiences that advance student learning, creativity, and innovation in both face-to-face and virtual environments.

Teachers:
- a. promote, support, and model creative and innovative thinking and inventiveness
- b. engage students in exploring real-world issues and solving authentic problems using digital tools and resources
- c. promote student reflection using collaborative tools to reveal and clarify students' conceptual understanding and thinking, planning, and creative processes
- d. model collaborative knowledge construction by engaging in learning with students, colleagues, and others in face-to-face and virtual environments

STANDARD 2. Design and Develop Digital-Age Learning Experiences and Assessments
Teachers design, develop, and evaluate authentic learning experiences and assessments incorporating contemporary tools and resources to maximize content learning in context and to develop the knowledge, skills, and attitudes identified in the NETS-S.

Teachers:
- a. design or adapt relevant learning experiences that incorporate digital tools and resources to promote student learning and creativity
- b. develop technology-enriched learning environments that enable all students to pursue their individual curiosities and become active participants in setting their own educational goals, managing their own learning, and assessing their own progress
- c. customize and personalize learning activities to address students' diverse learning styles, working strategies, and abilities using digital tools and resources
- d. provide students with multiple and varied formative and summative assessments aligned with content and technology standards and use resulting data to inform learning and teaching

STANDARD 3. Model Digital-Age Work and Learning
Teachers exhibit knowledge, skills, and work processes representative of an innovative professional in a global and digital society.

Teachers:
- a. demonstrate fluency in technology systems and the transfer of current knowledge to new technologies and situations
- b. collaborate with students, peers, parents, and community members using digital tools and resources to support student success and innovation
- c. communicate relevant information and ideas effectively to students, parents, and peers using a variety of digital-age media and formats
d. model and facilitate effective use of current and emerging digital tools to locate, analyze, evaluate, and use information resources to support research and learning

**STANDARD 4. Promote and Model Digital Citizenship and Responsibility**

Teachers understand local and global societal issues and responsibilities in an evolving digital culture and exhibit legal and ethical behavior in their professional practices.

Teachers:

a. advocate, model, and teach safe, legal, and ethical use of digital information and technology, including respect for copyright, intellectual property, and the appropriate documentation of sources
b. address the diverse needs of all learners by using learner-centered strategies and providing equitable access to appropriate digital tools and resources
c. promote and model digital etiquette and responsible social interactions related to the use of technology and information
d. develop and model cultural understanding and global awareness by engaging with colleagues and students of other cultures using digital-age communication and collaboration tools

**STANDARD 5. Engage in Professional Growth and Leadership**

Teachers continuously improve their professional practice, model lifelong learning, and exhibit leadership in their school and professional community by promoting and demonstrating the effective use of digital tools and resources.

Teachers:

a. participate in local and global learning communities to explore creative applications of technology to improve student learning
b. exhibit leadership by demonstrating a vision of technology infusion, participating in shared decision making and community building, and developing the leadership and technology skills of others
c. evaluate and reflect on current research and professional practice on a regular basis to make effective use of existing and emerging digital tools and resources in support of student learning
d. contribute to the effectiveness, vitality, and self-renewal of the teaching profession and of their school and community

**Appendix B**

**International Reading Association Standards**

**STANDARD 1**: Students read a wide range of print and nonprint texts to build an understanding of texts, of themselves, and of the cultures of the United States and the world; to acquire new information; to respond to the needs and demands of society and the workplace; and for personal fulfillment.
STANDARD 2: Students read a wide range of literature from many periods in many genres to build an understanding of the many dimensions (e.g., philosophical, ethical, aesthetic) of human experience.

STANDARD 3: Students apply a wide range of strategies to comprehend, interpret, evaluate, and appreciate texts.

STANDARD 4: Students adjust their use of spoken, written, and visual language (e.g., conventions, style, vocabulary) to communicate effectively with a variety of audiences and for different purposes.

STANDARD 5: Students employ a wide range of strategies as they write and use different writing process elements appropriately to communicate with different audiences for a variety of purposes.

STANDARD 6: Students apply knowledge of language structure, language conventions (e.g., spelling and punctuation), media techniques, figurative language, and genre to create, critique, and discuss print and nonprint texts.

STANDARD 7: Students conduct research on issues and interests by generating ideas and questions, and by posing problems.

STANDARD 8: Students use a variety of technological and information resources (e.g., libraries, databases, computer networks, video) to gather and synthesize information and to create and communicate knowledge.

STANDARD 9: Students develop an understanding of and respect for diversity in language use, patterns, and dialects across cultures, ethnic groups, geographic regions, and social roles.

Appendix C

National Educational Technology Standards

STANDARD 1. Creativity and Innovation
Students demonstrate creative thinking, construct knowledge, and develop innovative products and processes using technology.

Students:
   a. apply existing knowledge to generate new ideas, products, or processes.
   b. create original works as a means of personal or group expression.
   c. use models and simulations to explore complex systems and issues.
   d. identify trends and forecast possibilities.

STANDARD 2. Communication and Collaboration
Students use digital media and environments to communicate and work collaboratively, including at a distance, to support individual learning and contribute to the learning of others.

Students:
- interact, collaborate, and publish with peers, experts, or others employing a variety of digital environments and media.
- communicate information and ideas effectively to multiple audiences using a variety of media and formats.
- develop cultural understanding and global awareness by engaging with learners of other cultures.
- contribute to project teams to produce original works or solve problems.

STANDARD 3. Research and Information Fluency
Students apply digital tools to gather, evaluate, and use information.

Students:
- plan strategies to guide inquiry.
- locate, organize, analyze, evaluate, synthesize, and ethically use information from a variety of sources and media.
- evaluate and select information sources and digital tools based on the appropriateness to specific tasks.
- process data and report results.

STANDARD 4. Critical Thinking, Problem Solving, and Decision Making
Students use critical thinking skills to plan and conduct research, manage projects, solve problems, and make informed decisions using appropriate digital tools and resources.

Students:
- identify and define authentic problems and significant questions for investigation.
- plan and manage activities to develop a solution or complete a project.
- collect and analyze data to identify solutions and/or make informed decisions.
- use multiple processes and diverse perspectives to explore alternative solutions.

STANDARD 5. Digital Citizenship
Students understand human, cultural, and societal issues related to technology and practice legal and ethical behavior.

Students:
- advocate and practice safe, legal, and responsible use of information and technology.
- exhibit a positive attitude toward using technology that supports collaboration, learning, and productivity.
- demonstrate personal responsibility for lifelong learning.
- exhibit leadership for digital citizenship.

STANDARD 6. Technology Operations and Concepts
Students demonstrate a sound understanding of technology concepts, systems, and operations.
Students:
  a. understand and use technology systems.
  b. select and use applications effectively and productively.
  c. troubleshoot systems and applications.
  d. transfer current knowledge to learning of new technologies.

Appendix D

New York State ELA Standards

STANDARD 1: *Language for Information and Understanding*
Students will read, write, listen, and speak for information and understanding.

STANDARD 2: *Language for Literary Response and Expression*
Students will read, write, listen, and speak for literary response and expression.

STANDARD 3: *Language for Critical Analysis and Evaluation*
Students will read, write, listen, and speak for critical analysis and evaluation.

STANDARD 4: *Language for Social Interaction*
Students will read, write, listen, and speak for social interaction.

New York State Technology Standards

STANDARD 2: *Information Systems*
Students will access, generate, process, and transfer information using appropriate technologies.

STANDARD 5: *Technology*
Students will apply technological knowledge and skills to design, construct, use, and evaluate products and systems to satisfy human and environmental needs.

STANDARD 7: *Interdisciplinary Problem Solving*
Students will apply the knowledge and thinking skills of mathematics, science, and technology to address real-life problems and make informed decisions.
How to Create a WebQuest for Your Students

A how-to manual on using Microsoft Word to create a supplemental technology tool for the classroom.

Lauren Kicak
SUNY Fredonia
This manual is intended for elementary teachers ranging from grades two to six. *How to Create a WebQuest for Your Students* is designed for both teachers who have extensive technology knowledge or for those who are new to the use of technology in their classrooms.

In addition, this manual on WebQuests could be shared with paraprofessionals and preservice educators, particularly candidates enrolled in Childhood Education Programs.

I possess a very strong background in computers since I have grown up using them on a daily basis. Having created a WebQuest myself, it was evident to me that the process was enjoyable as both a teacher and a student. I had full control of the resources, activities, and intended learning outcomes. The ability to choose the topic, Internet sources, video clips, and graphics is extremely important for capturing and retaining students' attention.

A review of the literature concerning technology, WebQuests, and the Internet was conducted to ground the material in this manual.
Table of Contents

Introduction to WebQuests
- Preparing the Teacher ................................................................. 5
- Preparing the Students ................................................................. 6
- Effects of Using WebQuests ......................................................... 7
- Key Terminology ........................................................................... 8

Microsoft Word
- Navigating .................................................................................... 10
- Operating ...................................................................................... 12

Creating the WebQuest
- Selecting a Topic ........................................................................... 15
- Creating the Introduction ............................................................. 16
- Identifying the Task ....................................................................... 17
- Selecting the Resources ............................................................... 18
- Evaluating and Assessing .............................................................. 20
- Conclusion ..................................................................................... 21
- Putting It All Together ................................................................... 22

Adapting the WebQuest
- Students with Disabilities ............................................................. 26
- Students ELL ................................................................................ 26
- Students with Gifts & Talents ....................................................... 26

Additional Resources & References
- Books & Websites .......................................................................... 28
- References ..................................................................................... 28
- Appendix ....................................................................................... 30
Introduction to WebQuests

In this chapter:

Preparing the Teacher

What teachers should plan before using a WebQuest

Preparing the Students

What students should expect before working with a WebQuest

Effects of Using WebQuests

What research found in student outcomes and performance
Introduction to WebQuests

What is a WebQuest?

- A teacher developed website
- A series of tasks to be completed
- A list of Internet resources
- A number of questions to answer
- An evaluation of student learning

Why use a WebQuest in the classroom?

- Students will work with technology
- Students will work with others
- Students will use/learn different skills
- Students will explore the Internet
- Students will gain knowledge on a topic
- Students will learn in a fun, creative way
Introduction to WebQuests

Preparing the Teacher

The teacher plays a vital role in fostering student learning through the use of electronic resources. Teachers must research, organize, and plan the material being covered.

Research

Explore Internet websites
Check information for validity, reliability, credibility, and quality
Look for age appropriate reading material
Know the skillsets of your students before implementing this tool
Engage in professional development experiences for extended knowledge

Organize

Establish the skills required for students exploring the WebQuest
Group the students accordingly. Who will be working together on the project?
Set up the desired goals and outcomes for students
Create and distribute parent/guardian permission slips for computer terms and usage

Plan

Use mini-lessons for introducing technology, computers, and the WebQuest theme
Establish a time frame for the unit (usually four weeks)
Mix non-technology materials within the unit
Review evaluation rubric

Standards say:
National Education Technology Standards offer specific guidelines for teachers according to the International Society for Technology in Education. (http://www.iste.org/) Full list of standards on page 30.
Introduction to WebQuests

Preparing the Students

Students become active participants in this type of learning environment. Working collaboratively, students must be prepared before using a WebQuest.

Experience

Students watch computer use on overhead
Students use computers on a daily basis for familiarity
Students learn about the Internet
Students watch model WebQuest for familiarity

Setting up the Classroom

Place computers in readily accessible locations either in room or computer lab
Construct information to active prior knowledge
Introduce a bulletin board about the theme

Standards say:
The following national standards are applicable:
International Reading Association Standards
National Education Technology Standards
Full list of standards on page 30.
Introduction to WebQuests

Effects of Using WebQuests

What research says about using technology:

- Keyboading, navigation, accessing specific information, and reflecting on learned information are some of the abilities needed for successfully navigating the Internet
- Shy and reserved students could be more likely to participate in e-mail discussions than in class discussions
- Students develop pride in finding new information on the computer and choose to share it with their peers
- Computers allow for more creativity in projects by students and teachers

What research says about using WebQuests:

- WebQuests can facilitate thoughtful literacy when tasks are carefully selected, organized, and delivered (Ipkeze & Boyd, 2007)
- Efficacy of WebQuests comes from teacher’s ability to lead students, establish tasks, and select appropriate materials
- Students enjoy working on the activities and evaluating websites as a group
- Nearly all of the attention in professional literature regarding WebQuests has been positively reviewed

Research says:
Maddux and Cummings (2007) state that “a WebQuest could be described more accurately as a lesson plan format—the effectiveness of which is totally dependent on a variety of teaching and learning variables”
Introduction to WebQuests

Key Terminology

- **Internet** - an electronic communications network that connects computer networks and organizational computer facilities around the world.

- **URL** - Uniform Resource Locators, which connect documents, images, and other files to which students have access.

- **World Wide Web** - a part of the Internet accessed through a graphical user interface and containing documents often connected by hyperlinks.

- **Email** - a means or system for transmitting messages electronically (as between computers on a network).

- **Hyperlinks** - an electronic link providing direct access from one distinctively marked place in a hypertext or hypermedia document to another in the same document or a different document.

**Helpful Idea:**
Create a bulletin board for your classroom that displays key vocabulary that students will encounter on the Internet.
Microsoft
Word

In this chapter:

Navigating

Get to know the buttons and menu options available

Operating

Learn how to create and format a document
Navigating:

The Toolbar:

- The toolbar consists of buttons and menu options that will be accessed frequently when using Microsoft Word.
- Familiarizing yourself with all of the capabilities of the toolbar will allow for more design options in the WebQuest.

Frequently used options:

- These options appear as buttons or in the drop down menu items on the toolbar.

<table>
<thead>
<tr>
<th>New Document</th>
<th>Save Changes</th>
<th>Font Adjust Type</th>
<th>Font Adjust Size</th>
<th>Font Choose Color</th>
<th>Align Left, Center, Right, or Middle</th>
<th>Paste Place Copied Text or Image</th>
<th>Undo Go Back</th>
</tr>
</thead>
<tbody>
<tr>
<td>Create a blank document</td>
<td>Save changes</td>
<td>Adjust type</td>
<td>Adjust size</td>
<td>Choose the color</td>
<td>Left, Center, Right, or Middle</td>
<td>Place copied text or image</td>
<td>Go back</td>
</tr>
</tbody>
</table>

1 This manual is for use with Microsoft Word version 97 to 2003.
# Microsoft Word

## Frequently used menu items:

<table>
<thead>
<tr>
<th>File</th>
<th>Edit</th>
<th>Insert</th>
<th>Format</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>save as</td>
<td>copy</td>
<td>image - from file</td>
<td>background</td>
<td>draw table</td>
</tr>
<tr>
<td>save as webpage</td>
<td>paste</td>
<td>clipart</td>
<td>frames</td>
<td>insert</td>
</tr>
<tr>
<td></td>
<td></td>
<td>text box</td>
<td>style &amp; formatting</td>
<td></td>
</tr>
</tbody>
</table>

## What do these menu items do?

<table>
<thead>
<tr>
<th>Item</th>
<th>What it does</th>
</tr>
</thead>
<tbody>
<tr>
<td>Save as</td>
<td>Saves the document as a specific file name</td>
</tr>
<tr>
<td>Save as webpage</td>
<td>Saves the document in webpage format for use with the Internet</td>
</tr>
<tr>
<td>Copy</td>
<td><em>Keyboard shortcut (CTRL + C)</em>, copies selected text or image</td>
</tr>
<tr>
<td>Paste</td>
<td><em>Keyboard shortcut (CTRL + V)</em>, inserts copied text or image into document</td>
</tr>
<tr>
<td>Image - from file</td>
<td>Inserts an image stored on the computer</td>
</tr>
<tr>
<td>Clipart</td>
<td>Inserts an image stored in Word or connect to the Internet to access more</td>
</tr>
<tr>
<td>Text box</td>
<td>Places text close together or in a specific place, can be formatted for design</td>
</tr>
<tr>
<td>Background</td>
<td>Change the color, wallpaper, or texture (only visible in web-layout view)</td>
</tr>
<tr>
<td>Frames</td>
<td>Adds a section to the document that is always visible and stays in place</td>
</tr>
<tr>
<td>Style &amp; Formatting</td>
<td>Change the color of links or specific sections of text</td>
</tr>
<tr>
<td>Draw table</td>
<td>Click and drag the table in the document to your preference</td>
</tr>
<tr>
<td>Insert</td>
<td>Add rows or columns to an existing table</td>
</tr>
</tbody>
</table>

You will be working in Web Layout View as this will show you how the page will look on the Internet.
You will be creating and saving each document separately.

Creating a Document
Click file/new or click the icon.

Adding the Information
Enter text, text boxes, clipart, images, lines, tables, etc.
Click insert/image/from file or clipart. Resize images by grabbing one of the corners and dragging it to the desired size.
Click on the green dot to rotate the image.

Formatting the Page
Change the font, colors, sizes, etc.
Change the background color by clicking on format/background color.

Aligning Objects
Use the align buttons to move text boxes or images around on the page.
Align images by double clicking / text wrapping / in line with text.

Saving the Document
Select file/save or the icon.

Helpful Idea:
If you want many of your pages to look the same open one, edit the text, click save as to keep the formatting.
Creating the WebQuest

In this chapter:

Selecting a Topic
Pick a theme

Creating the Introduction
Draw the students in

Identifying the Task
Choose what the students will be doing

Selecting the Resources
Find appropriate websites for students to explore

Evaluating and Assessing
Create a rubric to measure student performance

Conclusion
Wrap up the theme and expand knowledge

Putting It All Together
Make the WebQuest work
Creating the WebQuest

Final Product

This is what the WebQuest will look like in the end:

Follow the 6 steps to create the WebQuest. You will make a separate Word document for each step.
Creating the WebQuest

Step 1: Selecting a Topic
The topic of the WebQuest is the overall theme with which students will be working. Several options are available for teachers to choose:

- Curriculum-Based Topics
  - Content Area specific (i.e. Social Studies or Science)

- Interest-Based Topics
  - Student interest specific (i.e. insects or WWII)

- Unit-Based Topics
  - Book specific (i.e. Number the Stars or The Mitten)

- Other Topics
  - Classroom rules or a classroom trip

The topic should be age appropriate, developmentally appropriate, and relevant.

Example:
Ancient Egypt with a focus on archaeology

Research says:
Extended research has been conducted for WebQuest use in different content areas like mathematics, science, and social studies.
Creating the WebQuest

Step 2: Creating the Introduction

The introduction paragraph should pull the students into the setting of the topic.

The introduction should be:

- Interesting
- Engaging
- Fun
- Mysterious

Adding pictures will give students a visual idea of what is to come.

Example:
The sun is hot, beating down on you from above. The air is dry, burning your throat as you take a sip of water from your canteen. The wind whips sand around you as you listen to it howling. You've made it to Cairo and now you're on a mission. Just ahead you can see an enormous object standing tall against the tan backdrop.
Creating the WebQuest

Step 3: Identifying the Task

What do you want your students to do?

- Students will examine websites looking for information that answers the questions that you have asked.
- Place students in teams for collaborative learning.
- Make a creative answer sheet on which students can document their answers.

Example:
Students are placed in teams of 3 with the job of surveyor, excavator, or analyst.

One of the questions for the surveyor consists of:
Where is Cairo?

Fill in the coordinates of latitude and longitude on your journal.

Research says:
A 2000 Reinking, Labbo, and McKenna study found that new capabilities in computers increase decoding ability, build vocabulary, stimulate interest in reading books, and improve spelling in students.

Save document as task.doc
Creating the WebQuest

Step 4: Selecting the Resources

Resources are the most important aspect of the WebQuest because the resources contain the content from which students will be gathering knowledge.

- Always check websites for authenticity, credibility, and readability.

What to look for in online resources:
The Good: [http://www.mfa.org/egypt/explore_ancient_egypt]

The Museum of Fine Arts houses one of the finest Egyptian collections of its kind in the world. A visit to the collection is a great way to learn about Egyptian art and civilization. It's also a chance to learn about history, language, religion, anthropology, and archaeology. There are approximately 40,000 objects in the collection. Ninety-five percent of these came from nearly forty years of scientific excavations in Egypt and the Sudan. This means that most of the objects in the MFA's collection were found where the ancient Egyptians left them, allowing archaeologists to study objects in their original context. Visitors come from around the world to see the MFA's Egyptian collection - now you can explore ancient Egypt with the click of a mouse.

Credible source?
Yes (organization)

Who is the author?
Museum of Fine Arts
Creating the WebQuest

Step 4: Selecting the Resources (continued)

The Bad: (http://www.geocities.com/thetropics/shores/7037)

Credible source?
No (geocities)

Who is the author?
Laurent Willen

Helpful Idea:
Create a mini lesson before using the WebQuest that involves students evaluating and critiquing websites.

Research says:
A 2006 Yan study found that students in higher grade levels showed higher levels of understanding technical and social aspects of the Internet.
Creating the WebQuest

Step 5: Evaluating & Assessing

The rubric serves as a form of assessment for the WebQuest. Did students meet your intended learning outcomes?

Rubric and Criteria

- Create a table using the draw table function.
- Include what you want your students to accomplish.
- Design a rating system to use with the entire class.
- Have students print out rubric to include with their answer sheet.

Example:

<table>
<thead>
<tr>
<th></th>
<th>Beginning 1</th>
<th>Developing 2</th>
<th>Accomplished 3</th>
<th>Exemplary 4</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Completed journal</td>
<td>Did not complete journal</td>
<td>Journal had very little information</td>
<td>Completed most parts of the journal</td>
<td>Completed all aspects of journal</td>
<td></td>
</tr>
<tr>
<td>Fulfilled duties of team role</td>
<td>Did not complete duties</td>
<td>Completed a few of the duties</td>
<td>Completed most of the duties</td>
<td>Completed all duties assigned</td>
<td></td>
</tr>
<tr>
<td>Collected research</td>
<td>Did not show any research found</td>
<td>Showed very little research</td>
<td>Showed some research</td>
<td>Showed various research</td>
<td></td>
</tr>
<tr>
<td>Quality of journal</td>
<td>10 or more errors</td>
<td>8 to 10 errors</td>
<td>4 to 7 errors</td>
<td>0 to 3 errors</td>
<td></td>
</tr>
<tr>
<td>Teamwork</td>
<td>Did not work with others</td>
<td>Worked somewhat with others</td>
<td>Average work with group</td>
<td>Worked well with teammates</td>
<td></td>
</tr>
</tbody>
</table>

Save document as evaluation.doc
Step 6: Conclusion

- Wrap it up by evoking more questions and interest!

- Review the material.

- Include a wrap up activity or assignment that reviews the experience.

- You may want to include how your students are now "experts" in the theme that was researched.

- Recommend books or articles relevant to the topic for extra reading.

Example:

BREAKING NEWS!
The local paper has caught wind of your findings. Read all about your discovery!

What have you learned about archaeology and Ancient Egypt? Write down a summary of your experience in Cairo.

Save document as conclusion.doc
Creating the WebQuest

Putting It All Together

Creating the Navigation Panel
To link the six processes to the actual WebQuest you will need to create a separate document, like the previous six documents.

- Type the text for each step (i.e. Introduction, Task, Process, etc.)
- Highlight the word and do a right click to bring up a menu.
- Select hyperlink and choose the document that you created for that section.
- Save the document as navigation.doc.
Creating the WebQuest

Putting It All Together (continued)

Creating the Frames
To create the actual WebQuest you will be working with frames using the separate documents that you have created.

Click on format/frames/new frame left to create the navigation panel where you will provide links for the six steps of the WebQuest.

Select the new navigation frame area that you just created. Click on frame properties to make the navigation document visible within the frame.

Formatting the Navigation Frame
Click on format/frames/frame properties to adjust how the navigation frame will look.
You can remove the border, include a scrollbar, or disable the resizing.
Creating the WebQuest

Putting It All Together (continued)

Linking to the Main Page
Each link should open up in the target frame where you introduce the WebQuest.
In edit hyperlink click on target frame to set the frame where the document should appear.

Editing Hyperlinks
To change the color of the hyperlink click on format/styles & formatting.
Select hyperlink followed by activating the drop down menu to select modify.
Adapting the WebQuest

In this chapter:

Students with Disabilities
Meeting the needs of disabled students

Students ELL
Working with English Language Learners

Students with Gifts & Talents
Modifying the WebQuest for different ability levels
Adapting the WebQuest

Making Adaptions

WebQuests are extremely flexible in that they can be modified for students from all different age levels, ability levels, and learning styles.

Students with Disabilities
- Text can be read aloud to students on the computer (Kurzweil 3000 is an example of a read-aloud program)
- WebQuests could use larger text
- Simpler directions could be developed

Students who are English Language Learners (ELLs)
- Websites offer alternate languages in which to view the text
- Online translator websites can be utilized

Students with Gifts or Talents
- Use higher readability or ability level websites for students
- Modify role assignments within the group for the WebQuest, such as creating more advanced projects or adding more criteria for journal entries

Standards say:
Research continues to be conducted on technology use with students with different capabilities.
Additional Resources & References

In this chapter:

Books

Guides for creating and using WebQuests.

Websites

Credible Internet sites for reference, samples, and discussion
Additional Resources & References

Resources

Browse pre-made WebQuests, share your WebQuest, or explore the community.
http://www.webquest.org


An online encyclopedia with credible, reliable information.
http://www.britannica.com/

References


National Learning Standards

Appendix A

National Educational Technology Standards for Teachers

STANDARD 1. Facilitate and Inspire Student Learning and Creativity
Teachers use their knowledge of subject matter, teaching and learning, and technology to facilitate experiences that advance student learning, creativity, and innovation in both face-to-face and virtual environments.
Teachers:
  a. promote, support, and model creative and innovative thinking and inventiveness
  b. engage students in exploring real-world issues and solving authentic problems using digital tools and resources
  c. promote student reflection using collaborative tools to reveal and clarify students' conceptual understanding and thinking, planning, and creative processes
  d. model collaborative knowledge construction by engaging in learning with students, colleagues, and others in face-to-face and virtual environments

STANDARD 2. Design and Develop Digital-Age Learning Experiences and Assessments
Teachers design, develop, and evaluate authentic learning experiences and assessments incorporating contemporary tools and resources to maximize content learning in context and to develop the knowledge, skills, and attitudes identified in the NETS • S.
Teachers:
  a. design or adapt relevant learning experiences that incorporate digital tools and resources to promote student learning and creativity
  b. develop technology-enriched learning environments that enable all students to pursue their individual curiosities and become active participants in setting their own educational goals, managing their own learning, and assessing their own progress
  c. customize and personalize learning activities to address students' diverse learning styles, working strategies, and abilities using digital tools and resources
  d. provide students with multiple and varied formative and summative assessments aligned with content and technology standards and use resulting data to inform learning and teaching

STANDARD 3. Model Digital-Age Work and Learning
Teachers exhibit knowledge, skills, and work processes representative of an innovative professional in a global and digital society.
Teachers:
a. demonstrate fluency in technology systems and the transfer of current knowledge to new technologies and situations
b. collaborate with students, peers, parents, and community members using digital tools and resources to support student success and innovation
c. communicate relevant information and ideas effectively to students, parents, and peers using a variety of digital-age media and formats
d. model and facilitate effective use of current and emerging digital tools to locate, analyze, evaluate, and use information resources to support research and learning

STANDARD 4. Promote and Model Digital Citizenship and Responsibility
Teachers understand local and global societal issues and responsibilities in an evolving digital culture and exhibit legal and ethical behavior in their professional practices.
Teachers:
a. advocate, model, and teach safe, legal, and ethical use of digital information and technology, including respect for copyright, intellectual property, and the appropriate documentation of sources
b. address the diverse needs of all learners by using learner-centered strategies and providing equitable access to appropriate digital tools and resources
c. promote and model digital etiquette and responsible social interactions related to the use of technology and information
d. develop and model cultural understanding and global awareness by engaging with colleagues and students of other cultures using digital-age communication and collaboration tools

STANDARD 5. Engage in Professional Growth and Leadership
Teachers continuously improve their professional practice, model lifelong learning, and exhibit leadership in their school and professional community by promoting and demonstrating the effective use of digital tools and resources.
Teachers:
a. participate in local and global learning communities to explore creative applications of technology to improve student learning
b. exhibit leadership by demonstrating a vision of technology infusion, participating in shared decision making and community building, and developing the leadership and technology skills of others
c. evaluate and reflect on current research and professional practice on a regular basis to make effective use of existing and emerging digital tools and resources in support of student learning
d. contribute to the effectiveness, vitality, and self-renewal of the teaching profession and of their school and community
Appendix B

International Reading Association Standards

STANDARD 1: Students read a wide range of print and nonprint texts to build an understanding of texts, of themselves, and of the cultures of the United States and the world; to acquire new information; to respond to the needs and demands of society and the workplace; and for personal fulfillment.

STANDARD 2: Students read a wide range of literature from many periods in many genres to build an understanding of the many dimensions (e.g., philosophical, ethical, aesthetic) of human experience.

STANDARD 3: Students apply a wide range of strategies to comprehend, interpret, evaluate, and appreciate texts.

STANDARD 4: Students adjust their use of spoken, written, and visual language (e.g., conventions, style, vocabulary) to communicate effectively with a variety of audiences and for different purposes.

STANDARD 5: Students employ a wide range of strategies as they write and use different writing process elements appropriately to communicate with different audiences for a variety of purposes.

STANDARD 6: Students apply knowledge of language structure, language conventions (e.g., spelling and punctuation), media techniques, figurative language, and genre to create, critique, and discuss print and nonprint texts.

STANDARD 7: Students conduct research on issues and interests by generating ideas and questions, and by posing problems.

STANDARD 8: Students use a variety of technological and information resources (e.g., libraries, databases, computer networks, video) to gather and synthesize information and to create and communicate knowledge.

STANDARD 9: Students develop an understanding of and respect for diversity in language use, patterns, and dialects across cultures, ethnic groups, geographic regions, and social roles.
Appendix C

National Educational Technology Standards

STANDARD 1. Creativity and Innovation
Students demonstrate creative thinking, construct knowledge, and develop innovative products and processes using technology.
Students:
  a. apply existing knowledge to generate new ideas, products, or processes.
  b. create original works as a means of personal or group expression.
  c. use models and simulations to explore complex systems and issues.
  d. identify trends and forecast possibilities.

STANDARD 2. Communication and Collaboration
Students use digital media and environments to communicate and work collaboratively, including at a distance, to support individual learning and contribute to the learning of others.
Students:
  a. interact, collaborate, and publish with peers, experts, or others employing a variety of digital environments and media.
  b. communicate information and ideas effectively to multiple audiences using a variety of media and formats.
  c. develop cultural understanding and global awareness by engaging with learners of other cultures.
  d. contribute to project teams to produce original works or solve problems.

STANDARD 3. Research and Information Fluency
Students apply digital tools to gather, evaluate, and use information.
Students:
  a. plan strategies to guide inquiry.
  b. locate, organize, analyze, evaluate, synthesize, and ethically use information from a variety of sources and media.
  c. evaluate and select information sources and digital tools based on the appropriateness to specific tasks.
  d. process data and report results.

STANDARD 4. Critical Thinking, Problem Solving, and Decision Making
Students use critical thinking skills to plan and conduct research, manage projects, solve problems, and make informed decisions using appropriate digital tools and resources.
Students:
  a. identify and define authentic problems and significant questions for investigation.
  b. plan and manage activities to develop a solution or complete a project.
  c. collect and analyze data to identify solutions and/or make informed decisions.
  d. use multiple processes and diverse perspectives to explore alternative solutions.
STANDARD 5. Digital Citizenship
Students understand human, cultural, and societal issues related to technology and practice legal and ethical behavior.
Students:
   a. advocate and practice safe, legal, and responsible use of information and technology.
   b. exhibit a positive attitude toward using technology that supports collaboration, learning, and productivity.
   c. demonstrate personal responsibility for lifelong learning.
   d. exhibit leadership for digital citizenship.

STANDARD 6. Technology Operations and Concepts
Students demonstrate a sound understanding of technology concepts, systems, and operations.
Students:
   a. understand and use technology systems.
   b. select and use applications effectively and productively.
   c. troubleshoot systems and applications.
   d. transfer current knowledge to learning of new technologies.
The sun is hot, beating down on you from above. The air is dry, burning your throat as you take a sip of water from your canteen. The wind whips sand around you as you listen to it howling. You've made it to Cairo and now you're on a mission. Just ahead you can see an enormous object standing tall against the tan backdrop.
You and your team of archaeologists have arrived in Cairo, Egypt on a quest to excavate an ancient Egyptian tomb buried beneath the desert.

Your mission is to locate the sight of the tomb, uncover the remains, excavate the materials, and analyze your findings. The locals are counting on you to solve the mystery of the ancient tomb that has been a missing part of their history for years!

You are in teams of three with the roles of surveyor, excavator, and analyst.

**Surveyor** – Your job is to locate the ancient tomb (the visual examination of a landscape for variations in ground surface (which might reveal buried walls or buildings) or for the distribution of artifacts on the surface)

**Excavator** – Your job is to dig up the ruins and safely remove fragile objects (the controlled exploration of what lies below the surface, usually carried out systematically in gridded trenches with shovel and trowel. It is often slow and tedious work which involves digging down a centimeter at a time, but can also be backbreaking, difficult toil, shoveling through meters of densely packed soil.)
**Analyst** – Your job is to study the artifacts (is the examination, description, classification, and identification of that material, as well as consideration of its broader meaning)

Working together as a team you must study the location of the tomb, the materials inside of the tomb, and identify your findings.

**Surveyor**

**Task**

Click on the icon next to your role to find out your part in the mission.
Your mission on this archaeological dig is to locate the ancient tomb.

Click here to print out your journal. You will write down your answers to the following questions.

Where is Cairo?
*Fill in the coordinates of latitude and longitude on your journal.*
Your mission on this archaeological dig is to uncover the remains of the tomb.

Click here to print out your journal. You will write down your answers to the following questions.

What tools will you need to dig up the site?
Write down your answers in your journal

Analyst.doc

🔍 Analyst

Your mission on this archaeological dig is to identify the remains found in the tomb.

Click here to print out your journal. You will write down your answers to the following questions.

What do you need to do to identify the materials found?
Write down what you would do when analyzing the remains.

Process.doc

Process
As a team discover more information about the artifacts that you have uncovered.

**Evaluation.doc**

## Evaluation

### Rubric

<table>
<thead>
<tr>
<th></th>
<th>Beginning</th>
<th>Developing</th>
<th>Accomplished</th>
<th>Exemplary</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Completed journal</strong></td>
<td>Did not complete journal</td>
<td>Journal had very little information</td>
<td>Completed most parts of the journal</td>
<td>Completed all aspects of journal</td>
<td>Score</td>
</tr>
<tr>
<td><strong>Fulfilled duties of team role</strong></td>
<td>Did not complete duties</td>
<td>Completed a few of the duties</td>
<td>Completed most of the duties</td>
<td>Completed all duties assigned</td>
<td>Score</td>
</tr>
<tr>
<td><strong>Collected research</strong></td>
<td>Did not show any research found</td>
<td>Showed very little research</td>
<td>Showed some research</td>
<td>Showed various research</td>
<td>Score</td>
</tr>
<tr>
<td><strong>Quality of journal</strong></td>
<td>10 or more errors</td>
<td>8 to 10 errors</td>
<td>4 to 7 errors</td>
<td>0 to 3 errors</td>
<td>Score</td>
</tr>
<tr>
<td><strong>Teamwork</strong></td>
<td>Did not work with others</td>
<td>Worked somewhat with others</td>
<td>Average work with group</td>
<td>Worked well with teammates</td>
<td>Score</td>
</tr>
</tbody>
</table>
Conclusion

BREAKING NEWS!

The local paper has caught wind of your findings.

Read all about your discovery!

What have you learned about archaeology and Ancient Egypt?

Write down a summary of your experience in Cairo.

What do you still want to know about Egypt?