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A WebQuest for the Instruction of Appropriate Online Behavior

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Abstract

The requirements of the Children's Internet Protection Act (CIPA) and the expectations of the Iowa Department of Education's (2012) Iowa Core Curriculum 21st Century Skills increase the importance of having an organized collection of resources to teach Internet safety. These requirements and the literature reviewed confirmed the importance of preparing students to use the Internet safely and ethically and be productive digital citizens. While the teachers in the Calamus-Wheatland School District were already instructing students in appropriate online behavior, there wasn't an organized Internet Safety resource that could be used effectively within the time limits of the scheduled computer classes. The original plan for this project was to compile a list of free online resources that could be viewed by students to learn about Internet safety. As the researcher read through journal articles, the project evolved into a structured WebQuest for fourth through sixth grade students to use to learn about digital citizenship.

Thirty-three online sites containing videos and activities to teach appropriate Internet behavior were reviewed using a form that was created based on the literature reviewed regarding website usability, WebQuest usability, and Internet safety was completed. The evaluation form asked questions regarding navigation, color, and font because the literature reviewed showed these criteria were important to the usability and appeal of a website. The forms were compared to determine which websites and activities the researcher felt would best meet the curricular needs of the district, engage the students, and fit in the computer lab timeframe. The WebQuest was then created using seven of these selected resources. The WebQuest created during this research will serve as a resource for teacher librarians and teachers in the computer lab and the classroom.

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ABSTRACT

The requirements of the Children's Internet Protection Act (CIPA) and the expectations of the Iowa Department of Education's (2012) Iowa Core Curriculum 21st Century Skills increase the importance of having an organized collection of resources to teach Internet safety. These requirements and the literature reviewed confirmed the importance of preparing students to use the Internet safely and ethically and be productive digital citizens. While the teachers in the Calamus-Wheatland School District were already instructing students in appropriate online behavior, there wasn't an organized Internet Safety resource that could be used effectively within the time limits of the scheduled computer classes. The original plan for this project was to compile a list of free online resources that could be viewed by students to learn about Internet safety. As the researcher read through journal articles, the project evolved into a structured WebQuest for fourth through sixth grade students to use to learn about digital citizenship.

Thirty-three online sites containing videos and activities to teach appropriate Internet behavior were reviewed using a form that was created based on the literature reviewed regarding website usability, WebQuest usability, and Internet safety was completed. The evaluation form asked questions regarding navigation, color, and font because the literature reviewed showed these criteria were important to the usability and appeal of a website. The forms were compared to determine which websites and activities the researcher felt would best meet the curricular needs of the district, engage the students, and fit in the computer lab timeframe. The WebQuest was then created using seven of these selected resources. The WebQuest created during this research will serve as a resource for teacher librarians and teachers in the computer lab and the classroom.

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CHAPTER 1

INTRODUCTION

> The Children's Internet Protection Act (CIPA) was enacted by Congress in 2000 to address concerns about children's access to obscene or harmful content over the Internet. CIPA imposes certain requirements on schools or libraries that receive discounts for Internet access or internal connections through the E-rate program – a program that makes certain communications services and products more affordable for eligible schools and libraries. In early 2001, the FCC issued rules implementing CIPA and provided updates to those rules in 2011. (Federal Communications Commission [FCC], 2012)

The CIPA updates in 2011 required schools to "provide for educating minors about appropriate online behavior, including interacting with other individuals on social networking websites and in chat rooms, and cyberbullying awareness and response" (FCC, 2012) beginning in July 2012.

The Internet has become a pervasive tool in the education of students. Its use, however, raises concerns of Internet safety and digital citizenship. The safety concerns and the additional requirements of the Children's Internet Protection Act (CIPA) in 2012 increase the importance of having an organized collection of resources to ensure students are prepared to use the Internet safely and ethically and be productive digital citizens.

Problem Statement

Many Internet safety resources are already available to teach digital citizenship. In fact, a Google search of the terms "teaching Internet safety" yielded an overwhelming 142,000 results. However, some sites are unwieldy or too difficult for student to navigate efficiently in the short time allotted for in-class instruction. Other sites require annual subscription fees that may preclude school use. In light of time and fiscal constraints, an organized web resource to highlight selected free digital citizenship resources would benefit teacher-librarians, teachers, and students.

Justification

Internet Safety

Gutnick, Robb, Takeuchi, and Kotler (2010) reported 24% of three year olds, 50% of five year olds, and about 67% of eight year olds use the Internet. Jones and Fox (2009) reported 93% of twelve to seventeen year olds are online. This significant number of students using the Internet raises concerns regarding Internet safety and digital citizenship. These concerns are real. Dowell, Burgess, and Cavanaugh (2009) found students posted personal information such as photos, e-mail addresses, names, and addresses online. In addition, the students responded they were exposed to inappropriate websites while online and admitted to intentionally embarrassing friends, family members, and strangers online. According to *Information Power: Building Partnerships for Learning*:

> The nature, quantity, and availability of information today and the rapid evolution of information technologies have helped to breed a need for continuous learning. Members of the learning community can access information more efficiently and more effectively than ever before. They look to new, personally rewarding and socially responsible methods to evaluate and use that information. (American Library Association [ALA], 1998, p. 54)

Information Power: Building Partnerships for Learning explains the teacher librarian's role of information specialist: "As information specialists, the library media specialist provides leadership and expertise in acquiring and evaluating information resources in all formats" (ALA, 1998, p. 5). This role puts teacher librarians in a position to teach and promote Internet safety. A WebQuest to teach digital citizenship will help the teacher librarian accomplish this task.

Common Core

In 2012, Demski interviewed curriculum expert Heidi Hayes Jacobs. She quoted Jacobs as saying, "We, as educators, should be making astute and responsive choices that prepare our students for the future" (p. 42). In addition to teaching our students about print literacy, Demski writes that Jacobs urges educators to include instruction in digital literacy, media literacy, and global literacy. In addition, Jacobs feels there is a "clear emphasis on media and digital tools in the Common Core" (p. 42). This finding is true. The Common Core contains explicit expectations regarding media and digital literacy such as Internet safety.

The Iowa Department of Education's (2010) Iowa Core Curriculum 21st Century Skills expect that "each Iowa student will be empowered with the technological knowledge and skills to learn effectively and live productively" (p. 64). Technology literacy is one component of the 21st Century Skills. Iowa Core Technology Literacy skills expect students in Kindergarten – 2nd grade to "understand and practice appropriate and safe uses of technology" (p.79). Students in grades 3-5 are expected to "understand and practice appropriate, legal, and safe uses of technology for lifelong learning" (p. 76). In addition, students in grades 6-8 are expected to "understand the legal and ethical issues of technology as related to individuals, cultures, and societies" (p. 74). This project will organize a collection of free resources to meet these Iowa Core expectations of technology literacy.

Purpose Statement

The purpose of this project is to create a WebQuest for fourth through sixth grade students to use to learn about digital citizenship. The WebQuest will guide students

through a collection of free resources available online to educate them about appropriate online behavior and Internet safety in order to meet the July 2012 CIPA requirements.

Research Questions

1) What design and organizational features need to be considered in developing a WebQuest to teach digital citizenship?
2) How will the resources to teach online safety be selected?

Assumptions

One assumption in this project is that students will have enough prior knowledge to be able to navigate the WebQuest with a partner.

Limitations

This project will not be an all-inclusive curriculum. It will be limited to games, activities, videos, and resources to teach and reinforce digital citizenship to students in fourth through sixth grades. It will highlight several free Internet resources in order to make it easy to access grade appropriate material. The project will be tailored to the Calamus-Wheatland educational community so that it fits the curricular needs of the district and the concerns most evident in a rural environment.

CHAPTER 2

LITERATURE REVIEW

The purpose of this project is to create a WebQuest for fourth through sixth grade students to use to learn about digital citizenship. The WebQuest will guide students through a collection of free resources available online to educate them about appropriate online behavior and Internet safety in order to meet the July 2012 CIPA requirements. The literature related to this project consists of web site usability, WebQuest usability, and Internet safety.

Web Site Usability

Cobus, Dent, and Ondrusek's (2005) purpose was to study the Hunter College Library's web site. The site had undergone some changes already and more were proposed. Therefore, a committee was formed to decide what links on the site were still confusing to users and to observe if the changes already in place were helping patrons. Thirty students from Hunter College participated in the study in various capacities over a fifteen-week period. First, two students reviewed the ten exercises that would be completed on the Web site and provided feedback to improve that aspect of the study. Second, six students completed the ten exercises using the Web site to determine if any changes needed to be made to the exercises before the first study was completed. Third, eight students completed the revised exercises to test the Web site. The researchers made changes to the site and exercises based on the feedback from the first round of the study. Fourteen students completed the modified exercises on the updated web site in a second round of the study. In all parts of the study, the researchers observed the participants as they completed the exercises on the web site. Their comments and search moves were

recorded. Both quantitative and qualitative methods were used to analyze the data obtained through the recordings. Cobus et al. learned the number of links on the navigation sidebar of the homepage was an issue on the website. To solve this, like items were combined into broader categories to reduce the number of links, and the links used most often were placed at the top of the sidebar. In addition, the researchers learned many links were confusing because their appearance was not consistent throughout the site. To resolve this, a common format for links was used. Another finding was the names of some links were too general so students didn't know what to expect when using them. To solve this, unclear names were changed and descriptions were added to the links to clarify them.

While Cobus et al. (2005) analyzed one website, Nathan and Yeow (2011) studied the design of several different industries' web sites. Nathan and Yeow sought to test hypotheses relating to seven important website usability factors. They wanted to determine which factors were more important on various industries' websites. The seven website usability factors they tested related to: use of color and font, use of graphics and multimedia, clarity of the goals of the website, trustworthiness of the website, interactivity of the website, ease of the website's navigation, and download speed of the website. They hypothesized that all of these features affected the participants' opinion of a web site's overall usability. Nathan and Yeow studied 400 university students from Malaysia between the age of 18 and 21 who were familiar with technology. Each of the participants completed an online questionnaire and reviewed the seven usability factors on 40 websites of their choice from a list of 36 different industries. A website could only be evaluated by 15 different participants to ensure a variety of websites would be

reviewed. After filtering the data to determine its reliability, 76.9% of the total data points from 5,595 websites were analyzed using computer software. Nathan and Yeow found that the web usability factors differed for each industry. For children's education websites, the participants ranked the usability factors in the following order from most important to least important: use of color and font, clarity of the goals in the website, the interactivity of the website, use of graphics and multimedia, the trustworthiness of the website, the downloading speed of the website, and the ease of the site's navigation.

Nathan and Yeow's (2011) study participants were between the ages of 18 and 21, and they reviewed the websites of various industries. Naidu's (2005) study participants; however, were younger and focused solely on the usability of three children's websites. Naidu studied 30 elementary students between the age of 7 and 11 with at least one year of computer and Internet experience. The students were assigned one of the three following websites chosen for the study: EnchantedLearning.com, FactMonster.com, or InfoPlease.com Homework Center. The students were asked to complete seven tasks using their website. They were then asked to rate their experience with the website. The results were organized into tables. Naidu found when the students had difficulty locating information it was for several reasons. One reason was that students often did not scroll to the bottom of a page to look for information. A second reason was if there were too many links on a site the children became overwhelmed or lost and did not continue to look for the information. A third reason was when the descriptions on the links within the site did not clearly match the wording of the task the students found it difficult to locate the information. Although Naidu found the students were equally satisfied with the websites, participants who reviewed FactMonster.com had positive comments

regarding the colors in the sites. The other sites contained less color.

The studies by Cobus et al. (2005), Naidu (2005), and Nathan and Yeow (2011) all revealed that website usability is an important factor in user satisfaction. Usability factors relating to navigation and aesthetics were prevalent in their findings. The researcher will consider these factors when creating the project.

WebQuest Usability

Bernie Dodge and Tom March developed the WebQuest model as a way for teachers to provide an inquiry-based, organized way for students to use the Internet for learning. WebQuests provide this structure through six components: an introduction, a task, a list of resources, a process, an evaluation, and a conclusion (MacGregor, 2004).

Abbitt and Ophus' (2008) purpose was to examine the various research studies about the impacts of WebQuests and report on the findings. They conducted a search in five academic databases for literature relating to the WebQuest strategy. They analyzed 108 resources from this search and classified them into three groups: research, descriptive, or informational. From the literature, Abbitt and Ophus discovered several findings. They found that students generally were more motivated using WebQuests. The researchers surmised that the motivation might have come from the use of technology and inquiry-based learning. Similarly, a study completed by Kanuka et al. (as cited in Abbitt and Ophus) found that WebQuests engaged students in higher order thinking; unfortunately, it could not be determined which aspects of the activity facilitated this learning. The largest finding related to collaboration. Abbitt and Ophus found that in all of the studies they reviewed, the majority of students reported a positive impact in their learning when a WebQuest required collaboration. In their review of the literature, Abbitt

and Ophus found no definite proof that WebQuests improved student learning more than any other teaching method. However, the methods used in WebQuests, such as technology, collaboration, and inquiry learning often increased student's motivation to learn.

While Abbitt and Ophus (2008) reviewed existing studies, MacGregor and Lou's (2004) purpose was to determine if a study guide and a concept map template containing explicit instructions would increase students' learning during a WebQuest. In addition, they wanted to determine which website features helped students find the relevant information they needed to complete the WebQuest task. MacGregor and Lou conducted a pilot study with 24 fourth grade students to determine the findings when explicit instructions were given regarding the information to be included in the WebQuest's final project. All of the students were given the goal of the assignment and the criteria for the final project. However, only half received explicit directions for the information and organization expected on the final project. MacGregor and Lou found the explicit procedures supported the students' learning; however, they did not assist students enough during their searches. Therefore, they conducted a mixed method research study of 52 fifth graders in two separate classes taught by the same teacher. First, they asked the students to complete a multiple-choice pretest about endangered species. Next, the students completed the project by filling out a study guide using the resources in the WebQuest. After the study guide was completed, the students wrote down information they had learned during their research. As a culminating activity, the students created a slide show using their information. While the students were using web sites to find their information, the researchers questioned and observed them regarding the features of the

web site that helped or hindered them with their research. These observations and interviews helped the researchers evaluate the quality of the websites. Using quantitative and qualitative methods, the researchers compared the findings between the students who received the explicit procedures and those who did not. MacGregor and Lou found that providing study guides and concept maps did support students using a Web Quest. The study guide established a purpose for the students' web searches, and the concept map helped students organize that information and kept them on task. In addition, MacGregor and Lou discovered three features of web design that helped students' learning. When the graphics supported the concepts, the text was at an appropriate reading level, and the site was easy to read and navigate, the students' learning improved.

Research indicated that WebQuest usability is enhanced when students collaborate and are given clear instructions and procedures regarding expectations. These findings regarding usability should be considered when creating a WebQuest.

Internet Safety

Research documents the importance of Internet safety. The studies show that appropriate online behavior and cyberbullying awareness and response are two aspects of digital citizenship that need to be addressed.

Dowell, Burgess, and Cavanaugh's (2009) purpose was to study the Internet behaviors of sixth, seventh, and eighth grade adolescents to determine their use of the Internet, the depth of their knowledge of Internet safety, and the types of behaviors they exhibited online. This study was done because past studies had not focused on this age group. To explore this issue, Dowell et al. conducted a research study to examine the Internet use and Internet risk-taking behaviors of middle school students. Four hundred

and four students from a public and a parochial school in the United States participated in the study. The students completed a paper survey during school, and the surveys were analyzed and recorded. Dowell et al. found that the responses were similar between the public and parochial schools. Several risky Internet behaviors were documented. For example, students reported posting personal information such as photos, e-mail addresses, names, and addresses. In addition, students responded they were exposed to inappropriate websites while online. Another risky behavior reported by students was online harassment. Students admitted intentionally embarrassing friends, family members, and strangers online. The researchers discovered that students who reported posting their own photo online had a higher chance of participating in risky behaviors than students who didn't post their own photo online.

While Dowel et al. (2009) discovered the types of risky behaviors students participated in online; Lenhart and Madden's (2007) purpose was to study a specific risky behavior more in depth. The researchers questioned whether teens were sharing too much personal information online. They used discussions from teen focus groups and information from the Pew Internet and American Life Project's 2006 Parents & Teens Survey to answer this question. This project surveyed 935 United States teenagers from 12 to 17 years old and their parents. The surveys were analyzed and findings reported. Lenhart and Madden found eight major discoveries in their research. First, they learned "many teenagers avidly use social networking sites like MySpace and Facebook, and employ a variety of tools and techniques to manage their online identities" (p. i). Second, they found "teens post a variety of things on their profiles, but a first name and photo are standard" (p. ii). Third, they discovered "boys and girls have different views and different

behaviors when it comes to privacy" (p. iii). Fourth, they found "older teens share more personal information than younger teens" (p. iv). Fifth, they learned "to teens, all personal information is not created equal. They say it is very important to understand the context of an information-seeking encounter" (p. iv). Sixth, they discovered "most teen profile creators suspect that a motivated person could eventually identify them. They also think strangers are more likely to contact teens online than offline" (p. iv). Seventh, they learned "parents are using technical and non-technical measures to protect their children online" (p. v). Eighth, they discovered "more households have rules about internet use than have rules about other media" (p. vi).

While Lenhart and Madden (2007) partnered to study if teens were sharing too much personal information online. Lenhart (2007) alone questioned the amount of cyberbulling among teens. To answer this question, Lenhart used information from teen focus groups and the Pew Internet and American Life Project's 2006 Parents & Teens Survey. The surveys were analyzed and findings reported. Lenhart discovered 32% of teens online have experienced cyberbullying. The most common form of cyberbullying reported was having private information, such as an email or chat message, made public. This was reported by 15% of the participants. About 13% of those surveyed said someone had spread a rumor about them. The same number said they had received threatening emails or messages. About 6% said an embarrassing picture was posted of them without their permission. In addition, Lenhart found that girls experienced cyberbullying more than boys. The surveys, however, discovered that bullying is still occurring more offline than online. About 67% of the teens said that bullying is more likely to occur offline.

The importance of Internet safety is clearly documented through research. The studies show that online behavior and cyberbullying awareness and response are two aspects of digital citizenship that need to be addressed. These findings should be considered when creating a WebQuest about Internet safety.

Summary

In order to meet the July 2012 CIPA requirements, a WebQuest will be created to guide students through a collection of free Internet safety resources available online. Dowell et al. (2009) found that middle school students were starting to participate in high-risk Internet behaviors. This reinforces the importance of providing this education to the fourth through sixth grade elementary students. Dowel et al., Lenhart (2007), and Lenhart & Madden (2007) all found that students participated in risky behaviors online such as posting personal information online and cyberbullying. Therefore, these are the topics that will be featured in the WebQuest. According to the research reviewed, the WebQuest itself should include some important features. Abbitt and Ophus (2008) found that in all of the studies they reviewed, the majority of students reported a positive impact in their learning when a WebQuest required collaboration. In addition, MacGregor and Lou (2004) found that providing study guides and concept maps supported students using a WebQuest. They also discovered three features of web design that helped students' learning. When the graphics supported the concepts, the text was at an appropriate reading level, and the site was easy to read and navigate, the students' learning improved. These findings will all be considered when creating the Internet safety WebQuest.

CHAPTER 3

PROCEDURES

The requirements of the Children's Internet Protection Act (CIPA) and the expectations of the Iowa Department of Education's (2012) Iowa Core Curriculum 21st Century Skills increase the importance of having an organized collection of resources to teach Internet safety. These requirements and the literature reviewed confirmed the importance of preparing students to use the Internet safely and ethically and be productive digital citizens. While the teachers in the Calamus-Wheatland School District were already instructing students in appropriate online behavior, there wasn't an organized Internet Safety resource that could be used effectively within the time limits of a scheduled computer class. This project created such a resource.

Description of Project

The purpose of this project was to create a WebQuest for fourth, fifth, and sixth grade students in the Calamus-Wheatland School District to use to learn about digital citizenship that could be stopped and resumed throughout three or four 30-minute computer lab times. The WebQuest guides students through a collection of free online resources that educate them about appropriate online behavior and cyberbullying in order to meet the July 2012 CIPA requirements.

The Internet Safety WebQuest was created using Google Sites. The Calamus Wheatland School District uses the Google education services; therefore, the WebQuest developer was familiar with Google Sites and was able to use the site's features proficiently.

Procedure

The focus of this project was to create a WebQuest to teach safe online behavior and cyberbullying. These topics chosen were based on the Federal Communications Commission's (FCC) update to the Children's Internet Protection Act (CIPA) in 2011 that required schools to "provide for educating minors about appropriate online behavior, including interacting with other individuals on social networking websites and in chat rooms, and cyberbullying awareness and response" (Federal Communications Commission, 2012). The topics were also chosen based on the research of Internet Safety. Studies conducted by Dowell et al. (2009), Lenhart (2007), and Lenhart and Madden (2007) all reported that students participated in risky online behaviors such as posting personal information and online harassment. The CIPA requirements and research both confirmed the need for digital citizenship education.

The researcher began by conducting an Internet exploratory search using the terms "Internet Safety Resources" through the search engine Google. This search produced 42,500 results. Using the first few pages of results, the researcher was able to browse through sites related to Internet safety. In addition, many sites recommended other sites to visit. Through this exploratory search, the researcher was able to bookmark thirty-three free online sites containing videos and activities to teach appropriate Internet behavior (see Appendix A).

The researcher then created the Website Activity Evaluation Form (Appendix B) based on the literature reviewed regarding website usability, WebQuest usability, and Internet safety. This form was completed for each of the thirty-three bookmarked sites.

The first section on the form asked to explain if the site addressed safe online behavior or cyberbullying. The researcher wanted a mix of Internet safety websites and cyberbullying websites; therefore, this information was used to ensure all topics were covered.

The second section on the form focused on navigation. Cobus et al. (2005) and Naidu (2005) learned that navigation links were often confusing on websites, and Naidu (2005) found that students often had difficulty locating information on a website because they did not scroll to the bottom of a page to look for it. Therefore, the researcher included this section to record information about the number and clarity of links on the site and the amount of scrolling required on the site. The sites that were ultimately chosen for the WebQuest all linked directly to the main activity. For example, the video titled "What is Personal Information" was the first item that appeared when going to the site. Students did not have to choose any additional links to view the activity. The McGruff Crime Dog site containing tips for safe online behavior; however, did not meet the criteria regarding navigation. It wasn't possible to link directly to the tips. Students would have to start at the home page and choose several links before they found the tips. This could be confusing for some students; therefore, the researcher did not choose this site for inclusion on the WebQuest.

The third section on the form focused on color and font. Nathan and Yeow (2011) found that the use of bright, bold colors and fonts was the most important usability factor for children's education websites. Therefore, the researcher included this section to record information about the colors and fonts used on the site. The sites that were used in the WebQuest all contained bright, bold colors and fonts. For example, the Professor

Garfield Video and Activity was a cartoon containing bright primary colors. The black and white text was a font that was easy for students to see and read. The On Guard Online video "Stand Up to Cyberbullying" contained light background colors, no text, and simple cut out animated figures. The plain format may not have been as engaging to students, so it was not included in the WebQuest.

The fourth section contained a space to record any additional notes about the site that could influence the final decision on its inclusion in the WebQuest. For example, the researcher recorded the time the activity would take to complete in this section so pacing could be considered when creating the WebQuest. The researcher wanted the activity to be completed within three or four thirty-minute class periods. Therefore, the first four activities include one longer activity and three short videos. These should take students less than 30 minutes to complete during the first day of class. The last three activities include one longer activity and two short videos. These should also take less than 30 minutes to complete during the second day of class. This will leave two periods to review any sites and to complete the poster activity. Also, the researcher used this section to record opinions on the interest level of the activity. For example, the League of Super Citizen videos from Learn 360 were recommended for the 4^{th}-6^{th} grade level; however, after viewing them, the researcher felt the upper elementary students would find them childish. For this reason, these videos were not included in the WebQuest.

In addition, the researcher added the question, "Consider this site in the WebQuest? Yes/No/Maybe" at the bottom of the Website Activity Evaluation Form. The researcher answered "Yes" if the site's links were clear, scrolling was minimal, and colors and fonts were bright. The researcher answered "No" if the site's links were not

clear, scrolling was excessive, and colors and fonts were plain. If the site met some of the criteria, the researcher answered "Maybe." Seventeen sites received a "Yes" response. Eleven sites were given a "Maybe" response. Five sites did not meet any of the criteria for inclusion on the WebQuest. The researcher again reviewed the evaluation forms of the seventeen "Yes" sites. Seven sites were chosen from these based on the forms' descriptions of the content and the length of the activity.

The researcher began to construct the WebQuest using Google Sites once the seven websites were found. Findings from the studies of web site and WebQuest usability served as a guide to the design of the project. Cobus et al. (2005) and Naidu (2005) learned that navigation links were often confusing on websites. To solve this, like items were combined into broader categories to reduce the number of links. Unclear link names were changed, and a description was added, if necessary. In addition, links used most frequently were placed at the top of the sidebar. In order to eliminate confusion on the WebQuest, the researcher used clearly labeled links and placed them at the top of the page.

Nathan and Yeow (2011) found that the use of color and font was the most important usability factor for children's education websites. In addition, Naidu (2005) found similar results regarding color. Naidu asked students to review the children's websites EnchantedLearning.com, FactMonster.com, or InfoPlease.com Homework Center. The students preferred FactMonster.com because it was the most colorful site of the three. EnchantedLearning.com and InfoPlease.com Homework Center both have plain white page backgrounds. FactMonster.com has a bright yellow page background. All of the fonts on Enchanted Learning.com and InfoPlease.com Homework Center are very

similar in size and color. Factmonster.com uses different text colors, sizes, and fonts to create distinctive organized sections. The students preferred Factmonster.com because of its bold choices of color and font. Therefore, the researcher chose a Google site template that had bold colors and fonts that would enhance the design of the WebQuest and engage the learner.

Naidu (2005) found that students often had difficulty locating information on a website because they did not scroll to the bottom of a page to look for it. To eliminate this problem, the researcher kept as much content on the top of the screen as possible to minimize the need for scrolling.

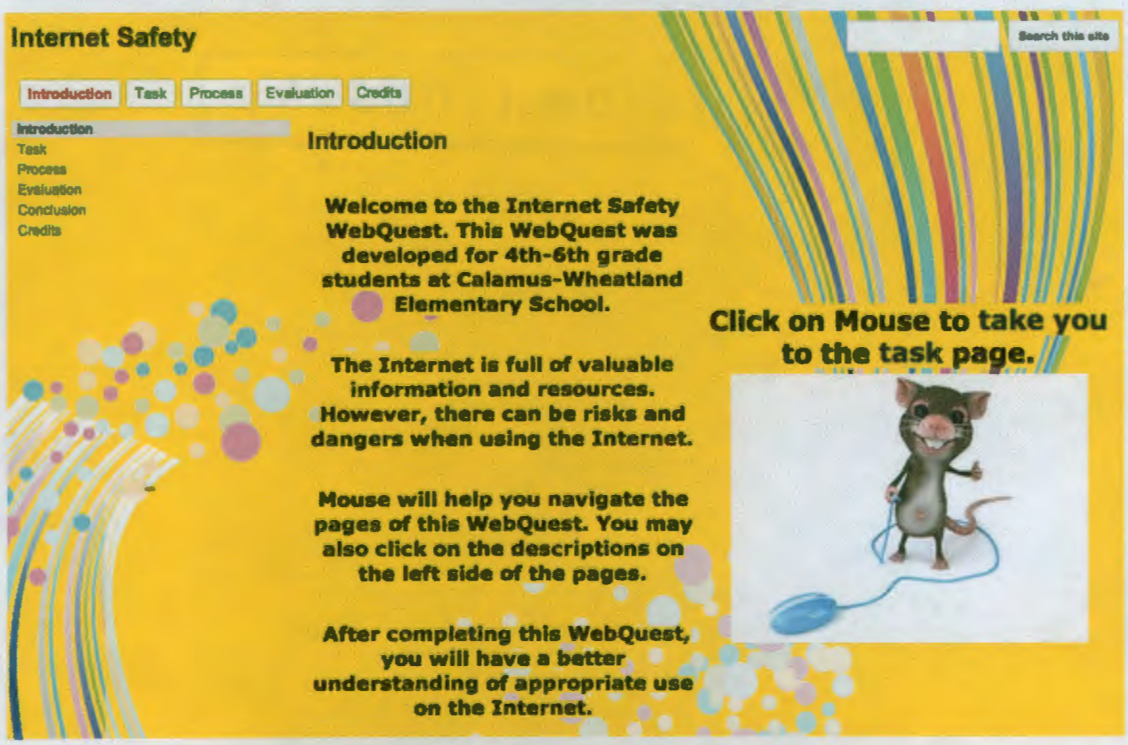
The website was constructed using the principles of a WebQuest. Six components were used to provide an inquiry-based, organized activity: an introduction, a task, a list of resources, a process, an evaluation, and a conclusion (MacGregor & Lou, 2004). Research indicated that WebQuest usability is enhanced when students collaborated and were given clear instructions and procedures regarding expectations. Abbitt and Ophus (2008) found that students generally were more motivated using WebQuests and reported a positive impact in their learning when a WebQuest required collaboration. Based on this finding, the researcher created the WebQuest as a partner activity to encourage collaboration.

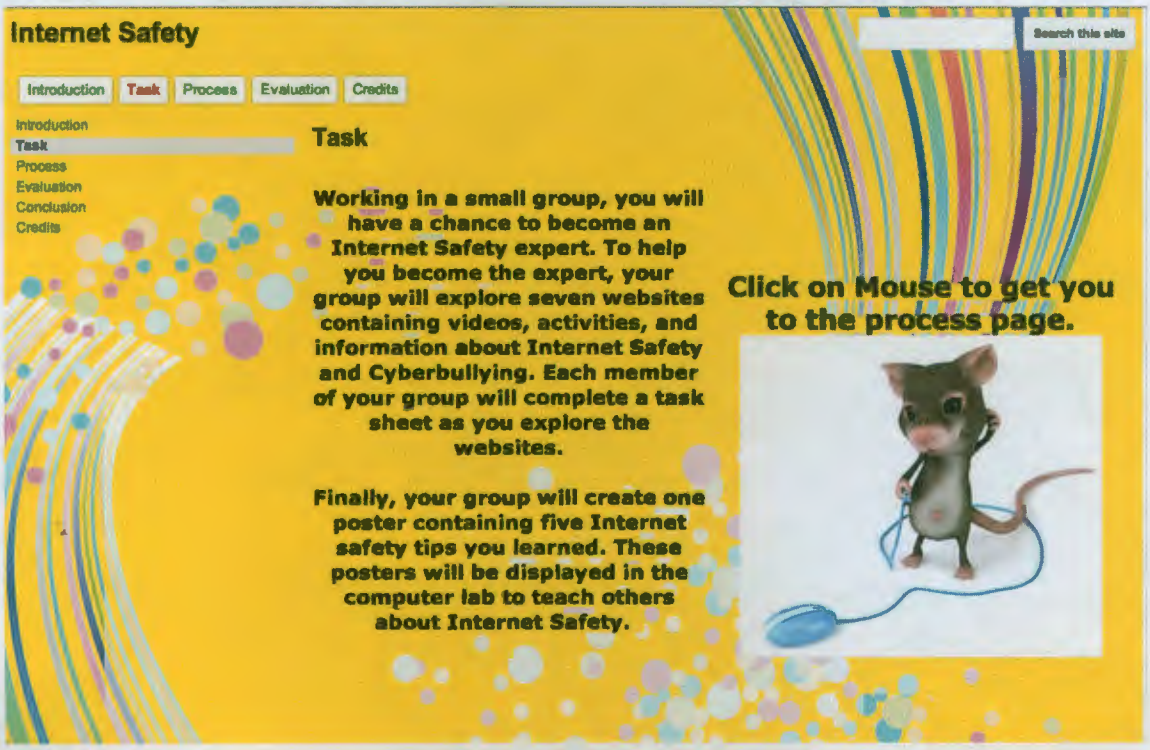
MacGregor and Lou (2004) found that providing students with study guides and concept maps supported their learning when using a WebQuest. These tools helped keep the students organized and on task. Because of this research, a task sheet (see Appendix C) was created for the students to use during the WebQuest.

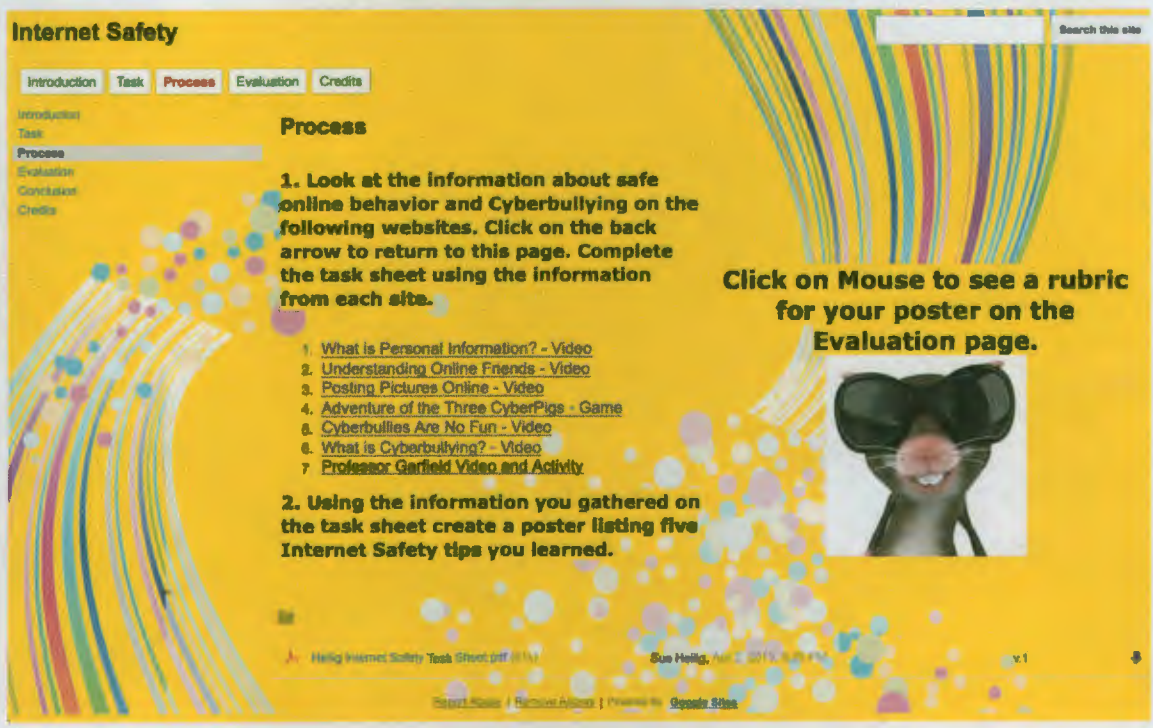
CHAPTER 4

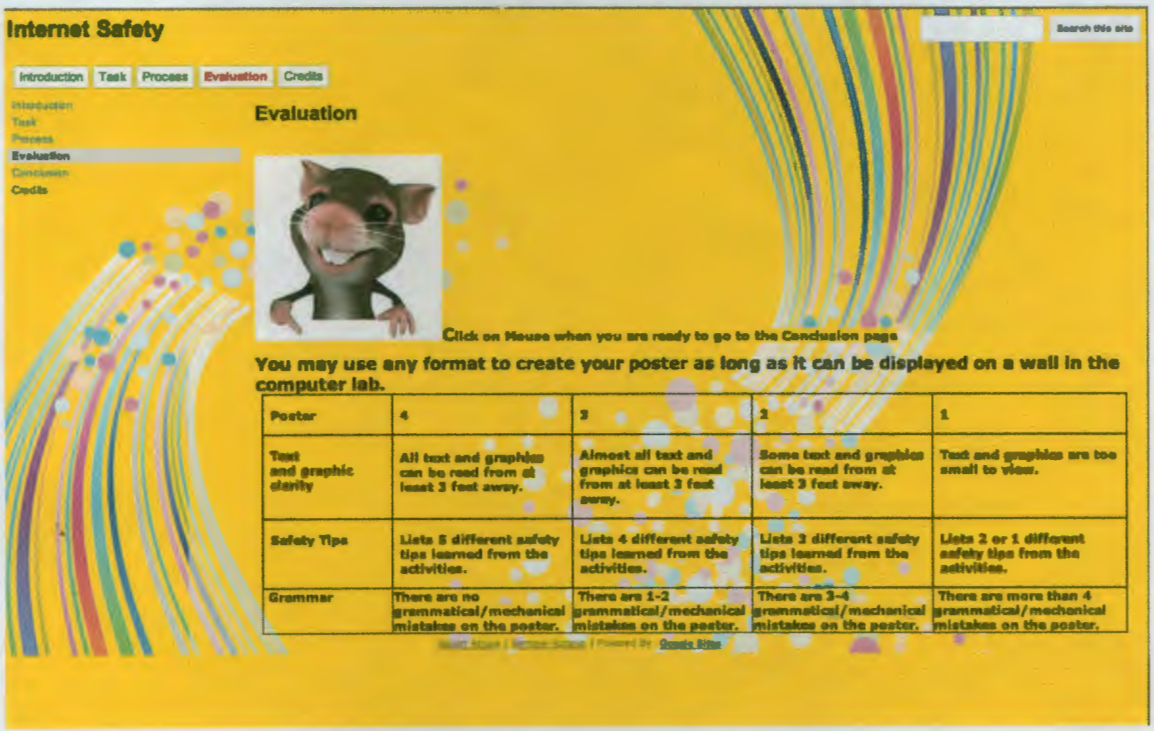
PROJECT

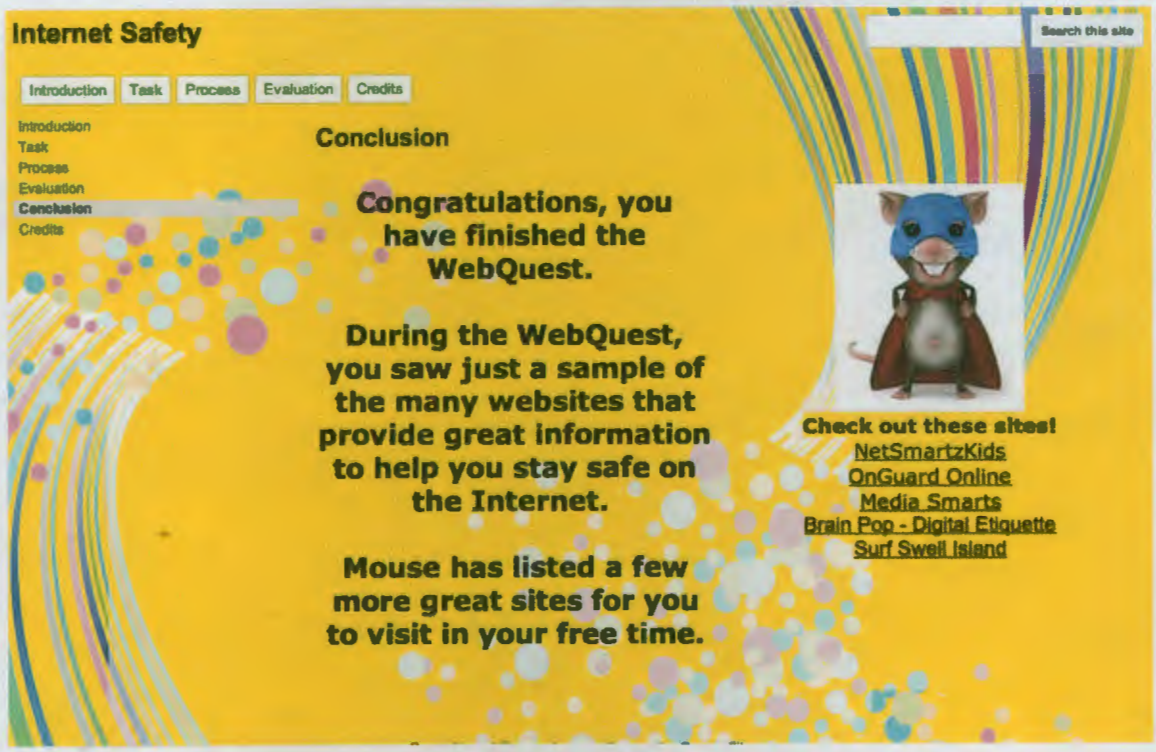
This project is an Internet Safety WebQuest for fourth, fifth, and sixth grade students in the Calamus-Wheatland School District. Sites selected for the WebQuest underwent a review using a form created based on the literature reviewed. The WebQuest consists of six components: an introduction, a task, a list of resources, a process, an evaluation, and a conclusion (MacGregor, 2004). Working in a small group, the students explore seven websites containing videos, activities, and information about Internet safety and cyberbullying. Each member of the group will complete a task sheet to help them focus as they explore the websites. The students will then create a poster containing five safety tips they learned during the WebQuest. The WebQuest can be accessed at https://sites.google.com/a/cal-wheat.net/internet-safety/ .

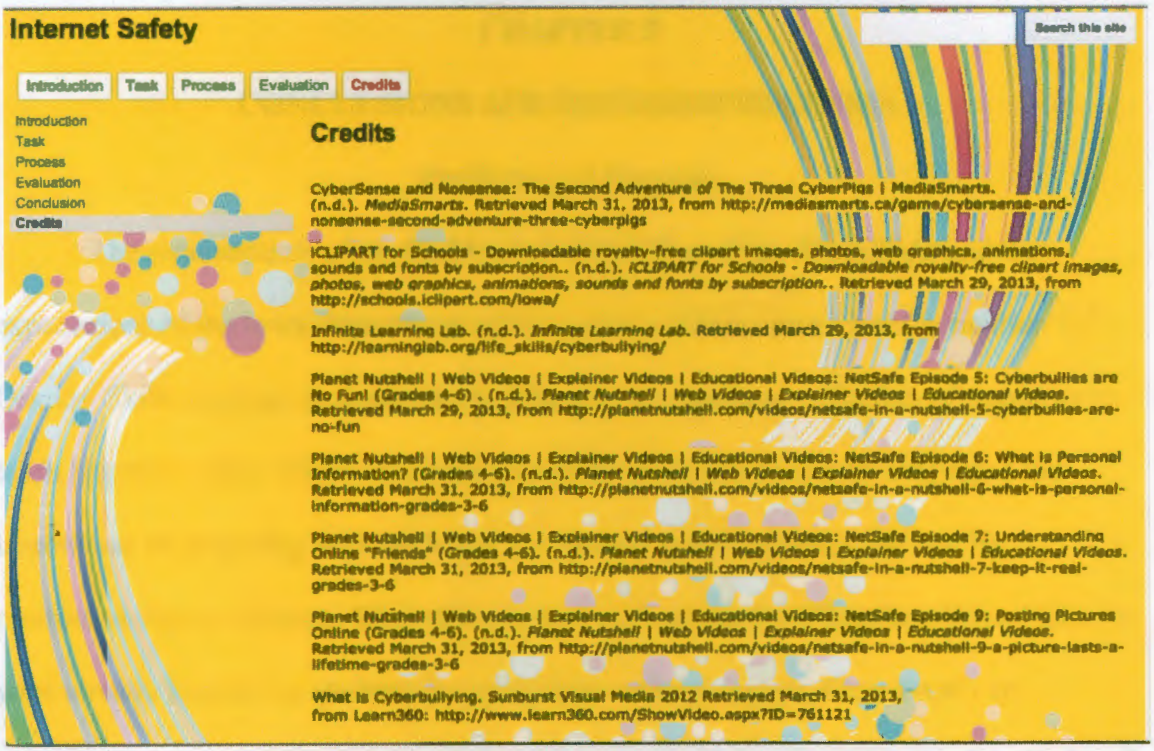



Internet Safety
Search this site
Introduction
Task
Process
Evaluation
Credits
Introduction
Task
Process
Evaluation
Conclusion
Credits
Task
Working in a small group, you will have a chance to become an Internet Safety expert. To help you become the expert, your group will explore seven websites containing videos, activities, and information about Internet Safety and Cyberbullying. Each member of your group will complete a task sheet as you explore the websites.
Finally, your group will create one poster containing five Internet safety tips you learned. These posters will be displayed in the computer lab to teach others about Internet Safety.
Click on Mouse to get you to the process page.


Internet Safety
Search this site
Introduction
Task
Process
Evaluation
Credits
Introduction
Task
Process
Evaluation
Conclusion
Credits
Process
1. Look at the information about safe online behavior and Cyberbullying on the following websites. Click on the back arrow to return to this page. Complete the task sheet using the information from each site.
1. What is Personal Information? - Video
2. Understanding Online Friends - Video
3. Posting Pictures Online - Video
4. Adventure of the Three CyberPigs - Game
5. Cyberbullies Are No Fun - Video
6. What is Cyberbullying? - Video
7. Professor Garfield Video and Activity
2. Using the information you gathered on the task sheet create a poster listing five Internet Safety tips you learned.
Click on Mouse to see a rubric for your poster on the Evaluation page.


Internet Safety
Search this site
Introduction
Task
Process
Evaluation
Credits
Introduction
Task
Process
Evaluation
Conclusion
Credits
Evaluation
Click on Mouse when you are ready to go to the Conclusion page
You may use any format to create your poster as long as it can be displayed on a wall in the computer lab.
Poster | 4 | 3 | 2 | 1
Text and graphic clarity | All text and graphics can be read from at least 3 feet away. | Almost all text and graphics can be read from at least 3 feet away. | Some text and graphics can be read from at least 3 feet away. | Text and graphics are too small to view.
Safety Tips | Lists 5 different safety tips learned from the activities. | Lists 4 different safety tips learned from the activities. | Lists 3 different safety tips learned from the activities. | Lists 2 or 1 different safety tips from the activities.
Grammar | There are no grammatical/mechanical mistakes on the poster. | There are 1-2 grammatical/mechanical mistakes on the poster. | There are 3-4 grammatical/mechanical mistakes on the poster. | There are more than 4 grammatical/mechanical mistakes on the poster.


Internet Safety
Search this site
Introduction
Task
Process
Evaluation
Credits
Introduction
Task
Process
Evaluation
Conclusion
Credits
Conclusion
Congratulations, you have finished the WebQuest.
During the WebQuest, you saw just a sample of the many websites that provide great information to help you stay safe on the Internet.
Mouse has listed a few more great sites for you to visit in your free time.
Check out these sites!
NetSmartzKids
OnGuard Online
Media Smarts
Brain Pop - Digital Etiquette
Surf Swell Island


Internet Safety
Search this site
Introduction
Task
Process
Evaluation
Credits
Introduction
Task
Process
Evaluation
Conclusion
Credits
Credits
CyberSense and Nonsense: The Second Adventure of The Three CyberPigs | MediaSmarts. (n.d.). MediaSmarts. Retrieved March 31, 2013, from http://mediasmarts.ca/game/cybersense-and-nonsense-second-adventure-three-cyberpigs
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Infinite Learning Lab. (n.d.). Infinite Learning Lab. Retrieved March 29, 2013, from http://learninglab.org/life_skills/cyberbullying/
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Planet Nutshell | Web Videos | Explainer Videos | Educational Videos: NetSafe Episode 9: Posting Pictures Online (Grades 4-6). (n.d.). Planet Nutshell | Web Videos | Explainer Videos | Educational Videos. Retrieved March 31, 2013, from http://planetnutshell.com/videos/netsafe-in-a-nutshell-9-a-picture-lasts-a-lifetime-grades-3-6
What is Cyberbullying. Sunburst Visual Media 2012 Retrieved March 31, 2013, from Learn360: http://www.learn360.com/ShowVideo.aspx?ID=761121

CHAPTER 5

CONCLUSIONS AND RECOMMENDATIONS

Problem and Purpose

The requirements of the Children's Internet Protection Act (CIPA) and the expectations of the Iowa Department of Education's (2012) Iowa Core Curriculum 21st Century Skills increase the importance of having an organized collection of resources to teach Internet safety. These requirements and the literature reviewed confirmed the importance of preparing students to use the Internet safely and ethically and be productive digital citizens. While the teachers in the Calamus-Wheatland School District were already instructing students in appropriate online behavior, there wasn't an organized Internet Safety resource that could be used effectively within the time limits of a scheduled computer class. The purpose of this project was to create a WebQuest for fourth through sixth grade students to use to learn about digital citizenship. The WebQuest will guide students through a collection of free resources available online to educate them about appropriate online behavior and Internet safety in order to meet the July 2012 CIPA requirements.

Summary

The researcher bookmarked thirty-three online sites containing videos and activities to teach appropriate Internet behavior during a search of the terms "Internet Safety Resources." The researcher then completed the Website Activity Evaluation Form (Appendix B) that was created based on the literature reviewed regarding website usability, WebQuest usability, and Internet safety. The evaluation form asked questions regarding navigation, color, and font because the literature reviewed showed these

criteria were important to the usability and appeal of a website. The researcher recorded any additional notes about the site that could influence the final decision on its inclusion in the WebQuest. For example, the researcher recorded the time the activity would take to complete in this section so pacing could be considered when creating the WebQuest and noted opinions on the interest level of the activity.

In addition, the researcher added the question, "Consider this site in the WebQuest? Yes/No/Maybe" at the bottom of the Website Activity Evaluation Form. The researcher answered "Yes" if the site's links were clear, scrolling was minimal, and colors and fonts were bright. The researcher answered "No" if the site's links were not clear, scrolling was excessive, and colors and fonts were plain. If the site met some of the criteria, the researcher answered "Maybe." Seventeen sites received a "Yes" response. Eleven sites were given a "Maybe" response. Five sites did not meet any of the criteria for inclusion on the WebQuest. The researcher again reviewed the evaluation forms of the seventeen "Yes" sites. Of the seventeen sites, three were game sites that would take students less than fifteen minutes to complete. Two of the three game sites were chosen for the WebQuest. The game that wasn't chosen contained many other activities that were not related to Internet safety that could divert students' attention. Twelve of the sites contained videos ranging from 59 seconds to five minutes. Two of the videos contained characters that upper elementary students might find childish. Three of the videos were limited in their content. Two of the videos contained dated technology, characters, and settings. The five videos chosen contained Internet safety and cyberbullying information in a modern, engaging format. Two of the sites were lists of Internet safety tips. These

sites contained appropriate information; however, this list format was not as engaging as the game or video format.

As the researcher constructed the WebQuest, a poster activity was added to evaluate the understanding of the concepts of Internet safety. The questions on the task sheet require only basic comprehension and were designed as a way to guide the students through the activities and ensure the completion of the activities. The poster activity was added to create an assessment where the students would have to think about the websites they viewed and choose five important tips they learned.

In addition to the poster activity, the researcher added links to five sites on the conclusion page. These were sites that were selected for possible inclusion in the WebQuest, but didn't fit the time constraints of the scheduled computer lab class. Students who complete the assignment early can visit these sites to view additional activities to enrich the WebQuest experience.

Conclusions

The researcher began this project with a basic plan to compile a list of free websites that students could explore independently to learn about Internet safety. Unfortunately, a complete list of free resources would be impossible. This was confirmed when a Google search of the terms "teaching Internet safety" yielded an overwhelming 142,000 results. Some of the sites were too difficult for a student to navigate efficiently in the time allotted for in-class instruction. Other sites required annual subscription fees. In addition, the researcher was concerned that a general list of resources would not be used effectively.

It was while researching website usability, the researcher discovered information regarding WebQuests. The researcher learned from Abbitt and Ophus' (2008) article that the methods used in WebQuests, such as technology, collaboration, and inquiry learning often increased students' motivation to learn. Because the researcher wanted students to receive the greatest benefit from the activity, the project evolved into a structured WebQuest with an assessment component. It will serve as a resource for teacher librarians and teachers in the computer lab and the classroom. The first users of this WebQuest will be students in the computer lab under the direction of the teacher librarian. In the future, teachers may use this resource in their own classrooms if the need to teach Internet Safety arises.

Recommendations

The Internet Safety WebQuest was created for fourth, fifth, and sixth grade students. At this time, all of the students can complete the WebQuest. In the future, the researcher would like to develop separate WebQuests for each grade. This will allow the WebQuests to be more age specific, and students will have access to a unique WebQuest each year.

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APPENDIX A

WEB SITES EVALUATED

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APPENDIX B

WEBSITE ACTIVITY EVALUATION FORM

Website Name:

Website URL:

Website/Activity focus:

Safe Online Behavior: Describe the website/activity in the box on the right if the focus is safe online behavior. Examples include: interacting with other individuals on social networking websites and in chat rooms.	

Cyberbullying: Describe the website/activity in the box on the right if the focus is cyberbullying.	

Navigation:

Is this a website/activity where the children will have to choose links?	Yes/No:

If yes, answer the following questions:

From how many links does the student have to choose?	Number:
Are the descriptions/names of the links clear and consistent?	Explain:

Additional notes about links:

Is this a website where the students will have to scroll?	Yes/No:
If yes, will the main content fit on the first screen without scrolling?	

Color and Font:

Background color:	
Describe the style, size, and color of the fonts used:	
Describe if/how style and color will engage students?	

Additional Notes:

Consider this site in the WebQuest? Yes/No/Maybe	

APPENDIX C
INTERNET SAFETY TASK SHEET

Internet Safety WebQuest Task Sheet

1) Watch the video: What is Personal Information? The video names 7 forms of personal information that should only be given out to people you trust. Can you list at least 4 of them?

2) Watch the video: Understanding Online Friends. How should you decide whom to be friends with online?

3) Watch the video: Posting Pictures Online. The video names 5 reasons why it is so important to think before you post a picture on the Internet. Can you list at least 3 of the reasons?

4) Watch the video and the quiz about the Adventures of the Three Cyber Pigs. Give 3 Internet safety tips you learned from the video and quiz.

How many Privacy stars did you earn after the quiz? _____

5) Watch the video: Cyberbullies Are No Fun. What are cyber bullies?

6) Watch the video: What is Cyberbullying? Fill in the blanks below.

Cyberbullying is spreading hateful _____,

_____, and _____ using a computer or cell phone.

7) Watch the Professor Garfield video and complete the activity. Answer the following questions.

_____ is when someone says mean things, spreads rumors or distorts the truth.

_____ is when you pretend to be someone other than yourself by stealing passwords.

_____ is when you block someone from joining a group or deleting someone from one.

_____ is when someone tells you they are going to do something to you or someone you love.

The video talks about 6 steps to stop Cyberbullying. Can you name three?