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Design Document
LT7 716

Executive Summary

The instructional materials that will be created as part of this project will be designed to discuss the topic of computer security. The intended audience for these materials will be the teaching staff at the Lake Preston School District. Materials created will be used in training sessions to help introduce the learners to the world of computer security and the steps that they can take to help make sure that their computers do not become victims to an attack. This process will also assist the technology staff at the school district since the more the teaching staff understands about computer security, the less likely there will be breaches of computer security that will take place on the school's network. A website will be created to house the informational materials so that the teaching staff will have access to the materials at all time, including outside of the scheduled delivery times.

Learning Needs/Market Opportunity

The Lake Preston School District recently went to a 1:1 computing environment at the high school level and is the stages of converting the elementary and junior high to a 1:1 computing environment. At the high school level, the students are able to take their computers home to complete any assignments which may require that to be done. At the elementary and junior high levels, the students will each be assigned a laptop that will be specific for each student to use during the day but these students will not be able to take the laptops out of the building.

As a result of the school district going 1:1, there will be an increased amount of traffic using the school's network to access the Internet. There will also be an increase in the amount of file sharing that takes place between students and staff. These factors, along with other possible factors, shows that there is an increased need for the staff to have an understanding of the possible security threats that are present in the technology world as well as have an understanding of how they can prevent a breach of that security.

Instructional goals

1. Train the teaching staff to gain an understanding of what computer security is and why it is important.
2. Train the teach staff to be able identify different types of malware and how to prevent it from attacking their computer
3. Reduce the amount of time spent by district technology staff dealing with offsite network issues that may arise.
4. Reduce the number of technology security issues that arise at the Lake Preston School District.

Audience definition

The intended audience for these instructional materials will be the K-12 teaching staff at the Lake Preston School District. All members of the audience have been given access to either a laptop or tablet PC in which they are able to use both at school and at home. Overall, the teaching staff ranges in experience from beginning teachers to those with over 25 years of experience. The computer skill levels of these teachers range from intermediate to high as there has been training that has taken place previously to help the teachers become more comfortable with the technology they have been provided. All members of the teaching staff at Lake Preston are housed within a single building. While these teachers will come from a variety of content areas and age levels, each of them will have the similarity of teaching in a 1:1 computer environment. Motivation levels for the participants is expected to be high as the subject matter that is being covered will not only play a role in how they educate their students but it will also benefit them as it will provide a knowledge base for them to use at home.

Delivery Environment

Instruction will take place during the two of the school's two hour monthly in-service times as well as one of the full day in-service days. The majority of the information will be presented in a synchronous manner with the materials being presented by an instructor. The materials will be delivered through the use of an information website in which participants will have the opportunity to go back and review any materials that they may have questions about. Participants will need to make sure that they bring their school issued computer with them to the training sessions. The computers used need to have an Internet security software loaded on them, preferably Symantec.

General Outcomes

Learner goals for this project would include the following:

1. Explain what computer security is and why it is important,
2. Identify different types of malware and how to prevent it from attacking your computer,
3. Identify different options for connecting to the Internet at home,
4. Identify what a firewall is, how to set a firewall up, and how to test if the firewall is working,
5. Explain the basics of setting up a secure wireless network.

Assessment Strategies

In order to demonstrate that they have gained an understanding of the presented materials, the participants will need to complete a 20 to 25 question quiz over each of the five areas covered in the general outcomes that are expected for the course. Results of these quizzes will be compared to a pretest given for each of the outcomes in order to determine if the participants have gained a further understanding of the content material.

Content Organization

- Introduction to computer security
 - Define computer security
 - Look at consequences of neglecting computer security
 - Categorize learner's level of computer experience
 - Determine how secure each learner is in terms of computer security
- Introduction to malware
 - Define and discuss viruses, worms, trojans, adware, and spyware
 - Determine how to recognize if you're infected and how to clean your system if you are infected
 - Look at how to use software to help clean various forms of malware
- Introduction to connecting to the Internet at home
 - Cover guidelines for selecting type of Internet connection
- Introduction to firewalls
 - Look at personal firewalls and what services these firewalls provide
 - Use Norton Internet Security from Symantec to show examples of security features available
- Introduction to wireless networking
 - Determine the types of wireless networks that can be created
 - Discuss the security issues associated with creating a secure wireless network

Content Sources

The content will be presented by the instructor, which in this case will be myself. Information used during the instruction will come from the knowledge I have gained through teaching computers for the past ten years, as well as from the textbook *Protecting Your PC* by Ian Barile. Informational videos from YouTube and HowStuffWorks.com will be used to aide in the presentation. Additional information may be gained by participants as they use the Internet.

Barile, I. (2006). *Protecting your pc*. Boston, MA: Charles River Media.

Instructional Strategies

The content will be introduced to the learners through the use of lectures and discussions. The learners will begin each of the sections by taking a pretest to help introduce the information as well as to help the instructor determine how detailed the information presented needs to be. A slideshow presentation filled with information and examples will be given and will be followed by a group discussion on the subject matter. Students will have time to search the Internet for information about each of the sections and then will be given time to present this information to the rest of the participants. Each of the sections will include a posttest to gage the student learning that has taken place. These post tests will be corrected as a group so that further discussion can take place as necessary to ensure that the participants have an understanding of the information.

Standards

The website that will be used to house the instructional materials should meet the standards of accessibility set forth by the W3 Consortium. These standards can be found at <http://www.w3.org/standards/webdesign/accessibility>. All presentation materials and handouts should also be created with the idea of accessibility in mind.

Media

In order to effectively present the materials, it is important that all learners have a laptop or tablet computer that has Internet access. These computers also need to have Internet security software installed on them, such as Symantec. In order to present the materials, it is also important that the instructor have access to a projector and screen to display the information on. Speakers will also be needed as there will be videos that will be shown throughout the instruction. All of these items are provided to the teaching staff by the Lake Preston School District.

In order to create the website, the instructional designer will need to have access to a web authoring software. The Lake Preston School District currently has licenses for both FrontPage and Dreamweaver so either of those software packages could be used to create the website that will be used to house the materials. The website will need to be designed to run in Internet Explorer as that is the browser that is currently installed on the machines provided by the school.

Evaluation and Testing Plans

A pilot test will be conducted using a small group of the teaching staff. The members of the pilot group will come from a variety of age levels, years of experience, and known level of comfort using technology. The instructor will conduct the pilot test using all materials that are planned to be included in the finished product. This testing will take place at the Lake Preston School once the instructional materials have been completed. In order to ensure that the website is fully functional, the instructor will first test the site and will also have the pilot group test the usability of the website. Feedback will also be collected from participants after the materials have been presented to the whole group. Information collected from evaluations completed will be used as a means to determine what, if any, changes need to be done before presenting the finished product.