Mini Usability Study of a Web-Based Educational Activity
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Introduction

This portion of <u>Usability of Web-Based Educational Activities</u> is meant to be a model for teachers to use in their own classrooms, in the spirit of Teacher As A Researcher. This can be used both for assessing the overall usability of an existing web site that a teacher feels may enhance a lesson or unit, as well as assessing the usability of a site that the teacher is creating for their own lessons. The site studied for this was an existing web site, and was chosen because it seemed to present a few usability problems, specifically in navigating; the site uses frames, which can cause navigation problems and confusion for the user *if not used with great caution.*

It is a 5th grade level activity looking at forest uses, and is intended to integrate science, social studies, and language arts. The student for the study was the teacher's 10 year old son, who is currently in 5th grade. The study was meant to be very "quick and easy", to see if a 5th grade student felt like it was clear or confusing about what was expected of them, and to get around in the site. The entire study took just under 20 minutes (not including about 5 to 10 minutes to set up the recording equipment), so it is a process that a teacher could feasibly use during a lunch period or other time that one of their students might have "free" to help. The transcription and analysis took quite a long time but are not expected to be used by teachers to the extent they are done here; quick notes while reviewing the video would probably be sufficient to determine if a site has usability problems or not. This is further addressed in the analysis.

The study was conducted in the teacher's home on a Sunday in the late morning. It should be mentioned that the teacher and his family are fairly computer-literate. We have a home network with 2 desktop computers hard-wired into an Ethernet switch and 2 laptops which are wirelessly connected; this is mentioned since my son may be more adapted to Internet browsing than some other children. We also have a DSL Internet connection, so some issues relating to download speed may well have gone unnoticed.

The study was strictly done on a qualitative basis. It is possible to include quantitative measurements as well, such as how long it takes a student to complete a given task like finding a specific piece of information on a site. However, during review of the video of the study, it was

noticed that some places produced lengthier navigating than others, and this is addressed in the analysis/conclusions.

The study was videotaped using a Sony CCD-TR81 Hi8 camcorder which is about 10 years old. It was placed on a tripod and focused on the computer's monitor (a Dell 17" CRT) to record the pages visited and comments made by the student and teacher. On completion of the study, the teacher re-visited the web pages looked at and, using Paint Shop Pro version 6.01, captured the screen images using the "window" option which captured the entire browser (Internet Explorer 6.0) window; there were a few "area" captures as well to emphasize certain parts of pages. These images were then inserted into a Microsoft Word 2002 document, and using that program's draw toolbar (specifically AutoShapes), text callouts, as well as arrows and circles, were inserted into the captured images to highlight various things the participant mentioned while using the site.

The site used was called A Forest Forever and its URL is http://www.teachtheteachers.org/projects/MBergey/index.htm (note that the capitalization does matter.) It was found using Bernie Dodge's website (http://webquest.sdsu.edu/matrix.html) which has a matrix of "WebQuests" by grade level and subject. Bernie Dodge is a professor at San Diego State University and is considered by many to be the founding father of WebQuests (called here Web Based Educational Activities).

The test script used for the study/interview was based on an example in Don't Make Me Think; A Common Sense Approach to Web Usability by Steve Krug (2000, New Riders Publishing). The sample test script is available online at Steve Krug's web site- http://www.sensible.com/index.html.

Mini Study Transcript/Commentary/Screen Captures

Following is the transcript of the study, and screen image captures provided as figures to help clarify the dialog between the interviewer and participant.

The study began with the teacher making some preliminary comments and asking the student some questions. Steve Krug's sample test script mentioned above was downloaded from his web site as a Word document, and edited to suit the needs of the present study. The edited sample test script follows; then the actual interview transcription and analysis are in separate documents.

Edited Sample Test Script

OK Will, You probably already know, but let me explain why I've asked you to help out today: I'm thinking about using a web site for a lesson in class and want to see what it's like for students to use it, like if it's easy to understand and find your way around in. I'm thinking that this will take from 10 to 20 minutes, OK?

I want to make it clear right away that I'm testing the *site*, not you. You can't do anything wrong here. In fact, this is probably the one place today where you don't have to worry about making mistakes.

I want to hear exactly what you think, don't worry about hurting my feelings. I didn't create the pages you're going to look at. I want to be sure it doesn't confuse my students, so I need to know honestly what you think.

As we go along, I'm going to ask you to think out loud, to tell me what's going through your mind as you look at the web site. This will help me a lot.

If you have questions, just ask. I may not be able to answer them right away, since we're interested in how people do when they don't have someone sitting next to them, but I will try to answer any questions you still have when we're done.

I'm going to try to keep us moving, but we'll try to make sure that it's fun, too.

You may have noticed the camera. With your permission, I'm going to videotape the computer screen and what you have to say. The video will be used only to help me figure out what you like or don't like about the site, and it won't be seen by anyone except me. It also helps me, because I don't have to take as many notes.

Do you have any questions before we begin?

Before we look at the site, I'd like to ask you just a few quick questions. First, how old are you?

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Good. Now, roughly how many hours a week would you say you spend using the Internet, at school and at home?

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How do you spend that time? What sorts of web sites do you use at school, and at home?

_____

Do you have any favorite Web sites?

_____

Now, finally, have you used any educational web sites? Which ones?

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What did you like or not like about those sites?

_____

OK, great. We're done with the questions, and we can start looking at things.

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First, I'm just going to ask you to look at this page and tell me what you think it is, what strikes you about it, and what you think you would click on first.

And again, as much as possible, it will help us if you can try to think out loud so we know what you're thinking about.

Transcription begins in next document

In the transcription, the teacher is identified as **T-**, and the student as **S-**. Screen Captures of pertinent web pages viewed during the study are included as figures within the body of the transcription. Also, under each figure it is indicated which lines of the transcription that figure relates to.