WEB SITE USABILITY STUDY
A CASE EXAMPLE OF BUTLER COUNTY COMMUNITY COLLEGE

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ABSTRACT

Butler County Community College has a newer web site that was launched in January 2001 after making numerous changes to the old site. But despite the continuous updates to the college's web site, no usability study has been conducted to test whether the web site is usable or not or to determine its usability. This paper is to report on a usability study that was conducted to determine issues with the usability of the web site www.bc3.org. The paper will conclude by making recommendations about the web site based on the findings of this study.

Keywords: Web Usability Test, Usability Test, Web Design Test, Web Usability Issues

INTRODUCTION

This paper reports on the usability study for a web site. It will use the web site of Butler County Community College as a case example. The study began September 2001 and was completed in December 2001. The paper will begin by giving introductory background information about the college. Following that, the paper will state the objectives of this report which will serve as an overview for the rest of the report.

Background

Butler County Community College (BC3) is a two years (junior) college that is located in the state of Pennsylvania. Like any other community college, BC3 provides education mainly to the residents of its county (Butler County). Various programs are introduced through BC3 and the college offers both traditional courses as well as on-line courses.

The need for a web site for BC3 was originated as a result of the growth that the college has been undergoing and the emphasis on the use of technology (especially the Internet) as tools for teaching. This need was heightened because of the increasing use of the Internet among colleges. BC3 launched first preliminary web site in the fall of 1996. The web site for the college has changed a number of times and more features are added to it. A more comprehensive web site for the college was launched in January 2001.

Despite the numerous changes that the web site has been undergoing and despite the many versions of the web site that were developed; the college has not conducted a comprehensive study to check the usability of the web site. In other words, the features that were added to the web site are not tested fully to ensure that they are working to a satisfactory degree or not.

Interface Description

The interface being studied is the web site for Butler County Community College, which has the URL (www.bc3.org). The web site contains information about the college; their academic

programs; information about schedule, faculty, and divisions; some statistical information and other information about the activities of the college.

The first page that users come across is of course the home page. From there users can connect to other pages of the site through the various hyperlinks and they can also link to external related pages from this web site. The home page contains more information that can fit on one screen. Thus, users have to scroll down if they want to view the rest of the information on the home page. The top of the screen is reserved for the images and text that are displayed and the remainder of the page is reserved for college's advertisements. In this ad space, the college places announcements about campus events, new programs offered at the college and any additional information that the college wants the users to see. So this space is designed to capture the attention of the users about what the college wants to advertise and promote. All the information on the web site is presented in HTML format except for the schedule. The schedule information is displayed in PDF format that requires an Acrobat Reader on the computer in which the information is to be displayed on.

Report Objectives

1- To explain the steps and procedures that was followed for completing the usability study.
2- To present analysis of the data gathered during the site visit.
3- To describe the arrangements of the prototype that was designed as a result of the findings of the site visit.
4- To illustrate the steps for preparing for the usability test.
5- To present the recommendations made after completing the usability study.

THE SITE VISIT

The site visit is intended to learn more about three elements of usability study: users, tasks and environment. Each of these three elements is important for the product design thus conducting a site visit is crucial to the success of the usability study of the web site.

Users are important for the design of any system because users decide whether to use the site or not. Systems are designed for users and designs that do not meet users' need often fails in the workplace. Users of the web site are of various backgrounds and experience levels. They are mainly students who are searching for information about a program, a course, an instructor, a schedule or any other information presented on the web site.

Learning about the sequence tasks is important to the usability test because through following tasks sequence it can decided whether it is easy or difficult to complete a task within a web site. Sequence tasks are the steps that it takes the web site visitors to find specific information they are looking for.

People do not complete tasks in isolation. Instead they are influenced by the activity around them, the physical characteristics of the workplace, and the type of equipment they are using. If the design does not fit into the environment, they may be frustrating or difficult to use. This same

role applies at deigns for web sites. To be able to browse the web and to find information at a particular web site, a suitable environment must be provided.

The majority of the visitors to the college's web site are students: current and perspective. Most students are considered experts because the y already used the Internet and are familiar with browsing the web. However there are some novice users among the students and a sample of those users are included in the usability test also.

Site Visit Factors:

The following factors were considered during the site visit:

1- User Types: Deciding on user types took a number of rounds of discussion to make sure that giving users certain names does not offend them. The term "novice" was originally suggested to describe those who had little or no experience. Then the term "lowest common denominator" was introduced but both terms are thought to offend some users and thus they were not used as part of the visit. The terms that were agreed on afterward to describe users are beginners, intermediate and advanced users.

2- Location and Time: Location of the intended site visit was discussed next. Some suggestions were made about selecting students who are applying for admission but the decision was made later to select classes of students and to conduct the study during their respective class times.

3- Number of users: A decision was made to select 14 students from each category of users (beginners, intermediate and advanced) for this study. The 14 students represent approximate number of students attending each of the 3 classes selected for this study.

4- Data collection techniques: Several data collection techniques were considered. But due to the large number of participants in the site visit (total of 42), it was thought that demographic and task questionnaire will be the most appropriate for this study. Then an idea was introduced to define tasks and set time limits to complete the tasks.

5- Number of observers: The procedure described earlier needed observers so they can take notes when observing users completing the tasks. Since there are 14 users in each group, it was determined that it is hard for one person to observe that many users. Thus a decision was reached to include two people to observe the users while browsing the web site.

6- Note taking: Both observers were directed to take notes as they observe the students completing the tasks assigned to them.

7- Schedule for site visit: A time schedule was prepared to conduct the site visit so to give the different groups the same length of time. Activities are defined and times are set for each activity as explained in the following table:

Time	Activity
5 Minutes	Greet users and talk to them in general about the web site
5 Minutes	Explain the purpose of the study, the procedures and distribute the questionnaire.
15 Minutes	Complete the tasks indicated in the questionnaire
10 Minutes	Interviewing two users
10 Minutes	Collecting questionnaire and organizing notes

Site Visit Procedure Summary

The site visit was conducted on October 25th, 2001. It classified the users into three types according to the following tables:

User Type	Description	Time Began Test
Beginners	Non-Computer major students who are taking their first computer class	8:00 AM
Intermediate	Computer major students who had at least one programming course	10:00 AM
Advanced	Computer major students that are in their second year of the program and completed at least 3 computer courses	11:00 AM

The site visit started by explaining the purpose of the site visit to the students. A point was stressed during the site visit is that the students were not being tested; instead the web site is tested. It also encouraged the students to express their feelings regarding the web site and the information they find. The site visit used the following techniques:

1- Task Questionnaire: Copies of questionnaire were passed to the students asking them to complete certain tasks.
2- Think-Aloud Protocol: The students were encouraged to think aloud while browsing the web and completing the questionnaire.
3- Random selection of interview: Two students were selected from each group to further ask them about their experience regarding the site visit.

Data Summary and Analysis

The questionnaires were collected after the site visit, the notes were gathered and more analysis was conducted on them. The following table summarizes the findings regarding completing the tasks within the allotted time.

User Type	# Participated	# Completed Within Allotted Time	% Completed Within Time
Beginner	14	10	71.42%
Intermediate	14	13	92.85%
Advanced	14	14	100%
Total	42	37	88%

There was a question in the task questionnaire about finding what is on college's events or the new programs that are offered by the college, a smaller number of users noticed the advertisement because they had to scroll down the home page and very few users noticed to scroll down (only 2 out of 42). The following table summarized the number of users who noticed the ad versus the number of students who missed it:

User Type	# Participated	# Users Found Advertisement	% Found Advertisement
Beginner	14	0	0%
Intermediate	14	0	0%
Advanced	14	2	14.2%
Total	42	2	5%

Based on the two tables above, it can be concluded that the users were successful in finding information about the site except for the question regarding the events taking place at the college. The following information was found also as a result of the site visit:

1- The design of the web site was effective enough to make it easy for most of the users to find the information they are looking for within the specified time.
2- The design of the site was not effective enough to capture the attention of the users regarding college events, new programs or any additional information that the college wants users to see in the advertisement section.
3- Some users were not able to view the schedule information and those who viewed the schedule information found the font size to be too small and hard to read. This is because the schedule information is stored in PDF format, which requires an Acrobat Reader, and some computers did not have this reader installed on them.
4- There were some dead-links encountered along the way when the users were browsing the site. Dead-link in this case means that either the browser displays an error page about missing hyperlink or it displays a different page that it is intended.
5- There were complains from users that there is no direct way to find information on the site. Instead, users had to click at least four times to find specific information about particular instructor, course or program they are looking for.

THE PROTOTYPE

Based on the findings from the site visit, the attention was focused on developing a prototype that will display an alternative method of design, to solve some of the problems that were found during the site visit. A prototype is an easily changeable draft or simulation of at least part of the web site. So in the case of the web design, the prototype will attempt to design parts of the interface that were found to be problematic to the users during the site visit.

Too Many Steps to Find Information

Going back to the findings of the site visit, users complained that it takes too many steps to find information on the web site. So the point here is to find a method of mapping that will aid the users to find information directly without pressing many extra buttons.

A search button is helpful to users in finding specific information on web sites. Through search buttons, users can enter the information they are looking for, click on the button and the search engine will take them directly to the page that contain the subject in which it was indexed. After considering the various factors for the search button, a decision was made to include a search button from Google so the students can use it to search for specific information on the site.

Advertisements are not visible:

The current design of the web site contains information on the home page that is not immediately visible. Instead, users have to scroll down if they want to view the information at the bottom of the home page. This information is about ads that the college wants to place on the home page so the students can see them. Placing this information at the bottom of the home page will diminish its visibility. Users have a better chance of looking at this ad if it is placed in a position that they do not have to scroll down so it will be more visible. The prototype that was developed for the home page suggests moving this advertisement up so it will be more visible.

Schedule Information Can Not Be Viewed Easily:

The schedule information is saved in PDF format. However, to display the schedule on the screen; users must have Acrobat Reader installed on their computers; otherwise the users will not be able to view the schedule. Even if the schedule is displayed on the screen, the font size is too small which makes it hard to read. A paper prototype was developed to sketch out the schedule information in standard HTML format.

Users Faced Dead-Links:

A dead-link means here that a user pressed a hyperlink button and the web site displayed a different page than the one that is supposed to display. A dead-link might also mean that a user clicks on a hyperlink and the browser displays an error page indicating that the page was not found. The students who participated in the site visit encountered both types of dead links when they were looking for information. The prototype that was developed included correction of these dead-links to direct the hyperlinks to the appropriate pages.

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USABILITY TEST

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After completing the design of the prototype, the attention was shifted toward the usability test. The following are the objectives for conducting the usability test:

- Determine the problems that students have searching for information on the web site in light of the changes to the web design.
- Assess the effectiveness by which users can find information on the web site.
- Deduce the efficiency of the web site to attract users to advertised information on the web site.
- Verify the accuracy of information displayed on the different pages, the consistency in the display format and the correctness of the links to which they point.

Methodology

The usability test took place after completing the prototype, and it was considered more to be of a comparison test with the design of the web site that was viewed during the site visit. A mock-up design was completed so that the students can compare it with the original design that they viewed during the site visit.

The usability test included a total 6 students: 2 from each user types, beginners, intermediate and advanced. It took place on November 26, 2001. On that day, the selected students were asked to find information about courses, instructors, programs and other information they like to search for. The students were encouraged to think aloud during their work on the web site. Then at the end of the test the students were interviewed to ask their views about the work they have done and the changes that were made to the design of the web site.

Usability Test Findings

- The search button was helpful to the students in finding what they are searching for.
- The students clearly noticed the advertisement that was placed at the end of the home page because they did not have to scroll down to find it.
- The schedule information was displayed properly and the format of the display was consistent with that of the remainder of the web site
- There were still some dead-links that the students faced during clicking different buttons to hyperlink and the browser display error messages indicating that it cannot find the page.

RECOMMENDATIONS

The following recommendations were made regarding the usability study after completing it:

- Provide a search button to help the students in their search for information on the web site.
- Redesign the home page so that the advertisement is displayed on the home page without the need by the students to scroll down to look at it.
- Modify the display of schedule information to an HTML format to be more readable and to be consistent with the display of the other pages of the site.
- Verify the accuracy of hyperlinks to make sure that students do not face dead links when they click on them.