USABILITY TEST

May 2001

TECHSOURCE COLLEGE LIBRARY (TCL)

Contents

This is the summary of test results conducted on the new online catalog for TCL's newly established library. The summary includes these sections:

NOTE: This test is purely fictional. The TCL and its staff are the creation of this author but are intended to represent an average library. The participant profiles are completely fictitious and are not the results of a profiling. The test questions are meant to represent what might be a basic usability study of an online catalog, but this particular test has never been conducted, and the test scores are, again, the creation of the author. While they may exist somewhere, Deweyville, Dewey County, ILS, Inc., and the PCLog-it software are also all the author's inventions.

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1. Library Usability Design and Information Team

Name	Department	Test Role
Eli Jones	Digital Libraries	Design Team Representative
Emma Myers	Systems	Test Administrator
Karen Spencer	Reference	Video Operator
Mike Williams	Cataloging	Data-logger/Timer

This is the first formal usability test performed by TCL, so a small but representative group was sought out by the Digital Libraries department to perform tests on its new interface designs. One member of the testing group, Abigail Jones, represents the interests of the interface designers. Myers, Spencer, and Williams, though familiar with the new Web interface, played no role in its design or implementation.

Emma Myers served as the testing group's team leader for this particular test and was also responsible for test participant orientation. Karen Spencer assisted with setting up the analog video and screen recorders to record user interaction with the service. Mike Williams provided the testing space

in the cataloging department, and tabulated all the data that was recorded. All participants assisted in the recruiting of test participants.

2. Test Environment and Equipment

The testing lab consists of an extremely simple setup, including:

- Computer workstation with T-1 Internet connection, similar to those used in the reference desk area
- PCLog-it software to record computer session of each participant
- Video camera for taping the session and participant debriefing
- Three chairs: participant, test administrator, data-logger

3. Purpose

The TechSource College Library is located on a suburban campus in the city of Deweyville. The library's most widely used software product is the integrated library system provided by ILS, Inc. This software includes an integrated system for acquisitions, cataloging, circulation, and the online catalog. Dedicated to customer self-service, the TCL public interface, the online catalog, represents the paramount concern of the library.

ILS, Inc., has recently released the third version of its online catalog, representing a total restructuring of the software code, major improvements in functionality, and almost complete flexibility in its layout and design. At the same time, TCL has been adding several new titles to the collection; since the collection will be frozen for six months, this offered an opportune time for testing, since catalog search results will not be changing from day-to-day based on new additions to the system. The TCL catalog has been completely recreated and redesigned based on the new content of the library and the new features available in the online catalog.

The purpose of these tests is to determine whether the design enhancements added by the online catalog design team will improve overall usability of the catalog. Changes were compared with the usability of the existing online catalog. The team hopes to implement suggested changes, retest the service, and bring the new service up by spring semester 2002. For the purposes this summary the function and suite of services offered by the new online catalog interface will be referred to collectively as the catalog.

4. Problem Statements

After discussing the purpose of the catalog with several staff and focus groups throughout the library, the usability team determined several broad functions that the catalog should serve. These functions are stated in question form:

a) Can the user locate (in the catalog) a book by author or title?

b) Can the user physically locate a book based on the catalog information?

c) Can the user perform a subject search?

d) Can the user successfully limit a search by a specific format (for example, journal)?

e) Can the user perform a keyword search?

f) Does the user understand the navigational features of the catalog?

g) Can the user download, e-mail, and print citations?

h) Does the user understand how to search other library catalogs?

5. Participant Profiles

Identification of TCL's main constituents was probably the easiest part of the test. The main target groups were separated into four categories:

Current Students: Users already familiar with the services provided by the library; several have used the existing online catalog.

Future Students: Users who have not seen the existing online catalog and are influenced more by their overall Web interface experience. With the exception of staff, this group was determined to have the highest level of expectations.

Faculty: Usually the most educated segment of the user population, the faculty has a high expectation of high-quality service that may or not be matched by technical acumen.

Library Staff: Equally important to please, the staff users were separated into a fourth group. Given the more precise nature of their criticism and input, the usability team decided to administer the usability study to this group in a separate round of tests.

Secondary users included college staff and the general public, users whom it was determined are likely to use the TCL catalog, but are not considered primary users. In the interest of keeping the test groups small enough to not adversely affect test results, these groups were also slated for a separate round of testing.

Test Participant Profiles

Profile Characteristic	Response	Distribution %
Background		
Age	17-21	40.0
	21-25	20.0
	26-40	30.0
	41-50	0.0
	51+	10.0
Sex	Male	70.0
	Female	30.0
Student / Faculty Profile	Undergraduate	40.0
	Graduate	30.0
	Ph. D.	30.0
	Assistant Professor	50.0
	Associate Professor	0.0
	Full Professor	50.0

Test Participant Profiles (cont.)

Profile Characteristic	Response	Distribution %
Field of Study	Arts and Humanities	15.0
	Computer Science	15.0
	Engineering	20.0
	Life Sciences	10.0
	Physical Science	20.0
	Social Sciences	20.0
Computer Experience		
Computer Owner	Work	100.0
	Home	70.0
Computer Experience	0	0.0
	1-3 years	50.0
	3-6 years	30.0
	6+ years	20.0
OS Experience	Windows	80.0
	Macintosh	10.0
	Unix	10.0
Word Processing	0	0.00
	1-3 years	50.0
	3-6 years	40.0
	6+ years	10.0
Spreadsheet	0	70.0
	1-3 years	20.0
	3-6 years	10.0
	6+ years	0.0
Database	0	90.0
	1-3 years	10.0
	3-6 years	0.0
	6+ years	0.0
Other (primarily Desktop Publishing)	0-2 years	70.0
	2-5 years	30.0
	5-10 years	0.00
	10+ years	**0.0**
Internet Experience		
Web User	0	0.0
	1-3 years	70.0

Test Participant Profiles (cont.)

Profile Characteristic	Response	Distribution %
	3-6 years	20.0
	6+ years	10.0
Microsoft Internet Explorer	0	10.0
	1-3 years	70.0
	3-6 years	20.0
	6+ years	0.0
Netscape Navigator	0	0.0
	1-3 years	20.0
	3-6 years	70.0
	6+ years	10.0
America Online	0	40.0
	1-3 years	50.0
	3-6 years	10.0
	6+ years	0.0
WebTV	0	80.0
	1-3 years	20.0
PDAs	None	70.0
	WebPhone	10.0
	Hand-held	20.0
	Every Day	80.0
	Once a week	20.0
TCL Website	Very	50.0
	Moderately	20.0
	Somewhat	20.0
	Not at all	10.0

6. Methodology

The test will consist mainly of participants' search and retrieval tasks, determined to best represent real-life scenarios in using a catalog. The interactions will be used to gather data on the catalog usability. The test is broken down into parts:

- **Greeting and Participant Forms**

  Each participant will be greeted in the library lobby and escorted to the cataloging department, where the study will take place. Refreshments will be offered while the participant fills out the Profile questionnaire. Anonymity is stressed, and each participant is assigned a unique identification number.

- **Orientation**

  Someone from the staff usability team (usually the test administrator) will use a script to briefly explain the purpose of the testing and go over the test agenda. The participant will be told about the videotaping of sessions and is reminded that he or she can leave the test at any time. If the participant agrees to the test procedures, then the videotape consent form is presented for signing.

- **Usability Test**

  After all the paperwork is completed, the participant will be shown into the usability testing area and asked to complete a series of tasks related to the TCL online catalog. The test administrator will introduce each task.

  The test administrator will judge success, failure, and completion of each task. The data-logger will record all required information related to each task (listed below).

- **Participant Debriefing**

  After all the tasks have been completed, or the test administrator determines that the test should end, the test administrator will talk to each participant while being videotaped. The administrator will solicit verbal and written feedback on areas of usability and likability of the site, as well as comments regarding participant performance. The test administrator and data-logger will clear up questions or errors that occurred during the test.

  The importance of the debriefing session cannot be overstated, since it adds qualitative data to the quantitative analysis of the data collected for each task. User preferences and reactions to features can be gathered. Opinions about what might make the site more usable can be passed onto the design team or to ILS, Inc., for its next version of the software.

  After debriefing, participants were thanked and compensated with either a $10 copy card or used book gift certificate.

7. Scenarios (Task List)

C: Completion criteria. M: Maximum time allowed for completion.

#	Description	Detail
1	Find the catalog record for the book *Information Architecture for the World Wide* Web by Louis Rosenfeld & Peter Morville.	C: Bibliographic record displayed. M: 1 minute
2	Where would you physically find this book? What floor is it on?	C: 3rd floor technical section. User clicks on Location link M: 1 minute
3	How many books does the library have specifically about digital photography?	C: Subject search for digital photography (13 titles) OR keyword search and

#	Description	Detail
		subsequent system-suggested search for the proper subject heading. M: 3 minutes
4	How would you find a list of journals and magazines in the library that begin with the word "computer?"	C: Material limited search "journals and magazines" M: 1 minute
5	How many titles in the library have the word "penguin" or "penguins" in the title?	C: Keyword search for 'penguin*' (3 titles) Make note of use of Help Files M: 2 minutes
6	Perform a keyword search for the word "computer." Sort the list by year published.	C: Sort link used M: 1 minute
7	What is the 250th title in the list?	C: Confirm finding 250th title using the "jump to" feature. M: 1 minute (Paging forward cannot be completed in less than 1 minute.)
8	E-mail one of the catalog records to yourself.	C: Used the e-mail function by wither save/send function or directly from a single record. M: 2 minutes
9	Without going back to the catalog homepage, resubmit your search for the *Information Architecture* title.	C: Participant uses either the search history link, or types the search in the navigational query box. M: 1 minute
10	How would you find out if the local public library (Dewey County) has John Grisham's latest book?	C: Successful

#	Description	Detail
		Navigation to "Other Libraries" section and selection of Dewey County Library. M: 1 minute

8. Evaluation Measures

The data-logger will collect and mean-calculate the following data:

a) Average time to complete each task, and in some cases, the path taken for completion.

b) Percentage of participants who were able to successfully complete each task.

c) Error encounters:

Data-logger and test monitor record unusual task completion methods

Error made, but participant recovers

Error made, but participant does not recover

d) Post-test questionnaire: participants rank the site and the test itself; some answers are in written form, rather than tabulated.

9. Test Report and Data

Scenario Performance Data

Column key:

A: % completing task in time allotted

B: % completing task incorrectly or not in time

C: Mean time in seconds

D: Standard deviation

#	Description	A	B	C	D
1	Find the catalog record for the book *Information Architecture for the World Wide Web* by Louis Rosenfeld & Peter Morville.	100.0	0.0	11.0	2.2
2	Where would you physically find this book? What floor is it on?	90.0	10.0	16.0	8.1
3	How many books does the library have specifically about digital photography?	40.0	60.0	62.0	5.1
4	How would you find a list of journals and magazines in	80.0	20.0	20.0	2.0

Scenario Performance Data (cont.)

#	Description	A	B	C	D
	the library that begin with the word "computer?"				
5	How many titles in the library have the word "penguin" or "penguins" in the title?	70.0	30.0	29.0	3.5
6	Perform a keyword search for the word "computer." Sort the list by year published.	100.0	0.0	18.0	1.2
7	What is the 250th title in the list?	70.0	30.0	35.0	22.1
8	E-mail one of the catalog records to yourself.	90.0	10.0	48.0	6.3
9	Without going back to the catalog homepage, re-submit your search for the Information Architecture title.	50.0	50.0	30.0	8.6
10	How would you find out if the local public library (Dewey County) has John Grisham's latest book?	70.0	30.0	45.0	5.3

Test and Aesthetics Data

#	Question	% Strongly Disagree	% Disagree	% Neither	% Agree	% Strongly Agree
1	The tasks given to you were clear and easy to understand.	0	0	10	80	10
2	There was enough information on the main page of the site.	10	50	20	20	0
3	The information on all the pages was grouped logically and consistently.	10	20	20	40	10
4	There was too much information on many of the pages.	30	40	10	20	0

Test and Aesthetics Data (cont.)

#	Question	% Strongly Disagree	% Disagree	% Neither	% Agree	% Strongly Agree
5	I could use the site without getting lost.	10	20	10	50	10
6	There was too little information on many of the pages.	10	20	10	30	30
7	The navigational tools were easy to use and understand.	0	10	20	50	20
8	Navigation, layout, and color were consistent throughout the site.	0	0	0	80	20
9	Important information was always highlighted in some way.	10	30	30	30	0
10	Terminology was understandable throughout the site.	30	50	10	10	0
11	Content on the site was easy to read.	0	20	10	70	0
12	I had to scroll often to find the information I was looking for.	0	0	10	70	20
13	The graphics used were clear and understandable.	0	10	10	80	0
14	There were too many graphics on the site.	70	20	10	0	0
15	Any errors I encountered were clearly explained on the site.	30	40	20	10	0
16	The site was aesthetically pleasing.	0	10	30	50	10
17	Pages were fast to load.	30	50	20	0	0
18	The site was clear about the difference between keyword and subject searching.	50	40	10	0	0

Test and Aesthetics Data (cont.)

#	Question	% Strongly Disagree	% Disagree	% Neither	% Agree	% Strongly Agree
19	The "Keyword Tips" link offered useful information when I used it.	10	20	50	20	0

Overall Impression of the catalog = 6.7 (Mean)