The Texas Course Redesign Learning Object Repository:
Research and Development for a Production System

THECB Learning Object Repository
LOR Version 3 Usability Testing Results

Prepared for

The Texas Higher Education Coordinating Board

by

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1. Introduction

In July 2009, the Texas Course Redesign Repository (TCRR) project team conducted the second round of usability testing on Version 3 of the TCRR with four participants from UT Telecampus and University of North Texas. The four participants are from various professional backgrounds, consisting of a digital librarian, a system analyst, an English lecturer, and a Spanish lecturer. Three testing sessions were carried out in the Wimba Live Classroom, where the participants' audio and screen activities were recorded. One session was conducted face to face and was audio recorded.

During each session, the team members observed each participant's activities and took notes of what the participant liked, did not like, and felt frustrated about the TCRR. Notes and recordings were analyzed afterwards. The issues identified are grouped into 18 categories:

> home page, discipline menus, disciplines and courses page, collection page, navigation bar, search, result list, course map level and course map, metadata, my folder and user account, download, help feature, interface color, icons, the title of the TCRR, the three home page java images, about page, screen resolution problems, and overall design and layout.

The following section presents the results of this round of usability testing.

2. Testing Results

2.1 Home Page Discipline Menus
The images that represent each discipline the TCRR contains and function like menus that show a list of sub-disciplines when users put their mouse over them. All participants liked the discipline menus on the home page and used them except one participant who did not realize these images perfume the menu function.

Two participants liked the menu to open without having to click it, and that it was a straightforward "streamlined way to start browsing."

2.2. Disciplines and Courses Page
This page presents all the courses and collections the TCRR contains. Some participants did not notice the link that says [Expand List], and some participants thought it was not obvious. One participant did not understand the hierarchy of the Disciplines and Courses Page. Another participant did not understand what an 'Asset' is. One participant suggested using rollover or a question mark to describe the term Asset in the expanded list.

One participant preferred that clicking on a discipline expand all the sub-disciplines within that discipline, then expand the courses within a selected sub-discipline, while another participant wanted the sub-disciplines and courses within that discipline to be fully expanded.

2.3. Collection Pages
These pages show the items in each collection. One participant would like to see an index of available items within each collection.

2.4. Navigation Bar
This is the tool bar located on the left hand side of the interface by which users can browse the entire repository or a particular course. One participant thought that when browsing, the subject of a learning

object would be more important than its title, and therefore the browsing option 'Subjects' should be in the top of the left navigation bar.

Currently the "Entire Repository" browsing list can be expanded and collapsed. Some participants would like the "Entire Repository" browsing list to be expanded so that they could have a choice to browse the entire repository or a particular course. Some other participants preferred the browsing list to be collapsed so that they could focus on a chosen course. They suggest making a difference between "Entire Repository" and "This Course" by using different colors or labels. One participant said that the term "This Course" did not help her realize where she was at all, and that she liked the breadcrumbs instead.

2.5. Search

This includes full text simple search and advanced search. When browsing a course or the repository, all participants tried to conduct searches by entering terms in the "enter first few letters" box located on each "Browsing By" page. For example: Participant #3 browsed by media format, and then entered the term "imperfect tense" in the "enter first few letters" box to conduct a search, but did not get the expected results. He was confused by the results and thought they would return items instead of media format terms.

One participant hoped that the result list could highlight the search term. She would like to broaden and narrow down the search to a different collection (e.g. the user conducts a search in the Units collection, and then she can narrow down the search in the Lessons collection, or expand the search to the entire repository just by clicking a button). She also wanted to enter more than three search terms in Advanced Search. Currently the TCRR system only provides three conjunction search lines.
Two participants tried to narrow down their search results by entering more keywords, but the system returned more items. The algorithm of the DSpace system which is used by the TCRR treats the relation between words as the Boolean search "or".

2.6. Result List

This is the list of items as a result of searching or browsing. Two participants did not realize that the items on the result list are expandable. However, they liked the idea to add a "plus/minus" or "expand/collapse" as a label or button that they could click to expand the item records. One participant did not notice that the record was expanded when she clicked on the title of an item, because the page did not automatically shift down.

2.7. Course Map Level and Course Map

These are are used in the TCRR to describe the learning objects' aggregation level. Two participants misunderstood the meaning of the numbers shown in the map. They thought that 'Level 1' should represent the highest level, i.e., the largest learning objects, and 'Level 4' should represent the smallest objects.

One participant liked the idea of presenting the course level visually. She thought the Course Map overall was helpful, but she wanted to see the "graphical representation" of size like the old puzzle icon (in version 2) instead of numbers.

None of the participant could understand what the term "Course Map Level" meant, especially what the level numbers referred to. One participant thought the level numbers describe the complexity of the learning objects' content. He did not like the term "map" because it does not connote to the notion of a hierarchy. Another participant stated that he did not need the Course Map if the metadata was more descriptive. He thought it looked redundant that "Course Map Level" and "Course Map" were shown in the same record.

2.8. Metadata

This is the record describes a learning object. One participant suggested adding an element to describe the file format, such as pdf and html. She also thought the current terms used for describing the media

formats were not descriptive enough, and she wanted to see something more specific like "Animation – flash" instead of "Animation".

Three participants would like to see "Related Items" with an icon in the bar where download and view show. One participant would like to know the "Education Level".

One participant would like the Affiliation and Author to be active hyperlinks that link to the University and the author's web page. One participant had no idea what a "permalink" is.

2.9 My Folder and User Account
Currently My Folder is in the dropdown menu of User Account at the top right corner. Two participants could not find My Folder, and another participant found it after reading the Help document. They all suggested making My Folder more visible.

One participant also recommended that in the light box that shows up when a user is adding an item to My Folder. The system provides a guide on how to get to My Folder.

2.10. Download
When a participant clicks the download button, a light box shows up and allows the participant to download either the IMS content package or the single file. However, if there is more than one file, the light box only shows one file to be downloaded. That is an error need to be fixed.

Participants wanted to know what they were downloading. One participant did not know how to extract a zip file after downloading it to his desktop.

2.11. Help Feature
This includes FAQ, glossary, and tutorial. One user wanted to be able to search in the help page. Two participants used the help page. One participant commented on the term "decompose" on the Help page; he thought it was hard for the users to understand and suggested using "break down" instead.

2.12. Interface Color
Two participants like the color. However, the other two participants were not very satisfied with the color scheme. One participant seemed to want brighter, more fun colors. The other participant saw the background as "institutional gray" which is "usually associated with education, learning, and being in a classroom". He did not like the darker tones either. He said the colors made it look like "a website put up by the government". He suggested that the project team "jazz it up a little bit". When pushed for more information on why the website should not look educational, he said it seemed "institutional". He thought the layout is fine, but the colors need to be "more attractive". He suggested using warm yellow, light red, or blue on the site.

2.13. Icons:
The participants liked the icons, except that one thought they "do not help and do not hurt".

2.14. The Title of the TCRR
One participant mentioned that he did not like the word "Repository" and that it sounds like the name of a "government committee". He said that "websites need an attractive name people will remember and go back to". The title "TCRR" sounds "very dry and dull". He suggested not using the term "Repository". He would rather prefer "digital library", "electronic resources", or an acronym that could be easily remembered.

2.15. The Three Home Page Java Images
One participant said he was missing something that told him how to start using the repository from the home page. He was directed to the second image on the java images, and he said this was what he

wanted, but that it should be the first image. He also said we should add a "Getting Started" or "Start here" link next to Help in a bright color.

The other participants did not closely inspect this feature. One participant said that he wanted to see the image switch out automatically.

2.16. About Page

One participant was not satisfied with the About page. He suggested that we "summarize this in fewer words; it's a lot of techno talk; simplify it for the average user; if I click this I think do I really want to read through this?"

He agreed with the suggestion of bullet points being the first on the page, but also said that he did not want to see the paragraphs beneath it. He thought that the content on the About page was important and needed to be on the site, but he wanted it as a link at the bottom of the page, after he clicks on a link saying "find out more."

When asked if he thought this was appropriate information for the About page, he said no. He wanted it to tell him why *he* should be there and how it would be useful to *him*, not about the project or history behind it.

2.17. Screen Resolution Problems

Screen resolution of one participant's monitor made the font larger and some things on the site fall of the side of the page (e.g., the course map button shows the icon and "Cou").

2.18. Overall Design and Layout

Generally, all participants liked the design and layout.

One participant seemed worried whether students would be using the site, that they wouldn't be interested. Also, he was concerned that the TCRR was competing with the whole Web so he wanted pictures and more creative things to attract users (although he did not clarify what that might be). He said it was a good start.

Another participant mentioned that the site was "very attractive, clean, and easily discernible," and would be a "very intuitive process."

Another participant liked it and stated it was "very clean" and all different parts of the site were "nicely contained", and that compared to other Repositories, nothing seemed out of place.

The other participant wasn't pleased with the colors, but he said the actual site was "not a daunting website", and liked the lack of too many buttons and links that would add clutter. He said it was "welcoming and easy to navigate" and didn't have any suggestions for additional features.

3. Discussion

The findings indicate that there is a learning curve for users. They need time to get familiar with the system. Overall, the participants like the TCRR, especially the language lectures, most likely because they have found the courses they are familiar with or are currently teaching and thus focus more on the content of the learning object. When finding a learning object, they liked to use the search function, although they did use the browse function. They did not spend much time exploring the browse capabilities the TCRR provides.

Most of them think that the "Download" and "Add to Folder" features are easy to use, although they may need more assistance or guidance, for example, on how to extract a zip file and how to go to My Folder.

Granularity is still an issue. Although the project team uses the course level map to show the aggregation of a course, the participants did not pay much attention to the descriptions on the map and could not easily understand the different levels the course is broken down at.

Another issue is how to make the functions more visible. Several functions, such as the Expand/Collapse list, the arrow for expanded items, and My folder, are considered very useful, but the users may not know how to use it or do not notice them at all.

Overall, the participants are satisfied with the metadata the TCRR provides. The only thing they would like to know but did not see on the metadata record is the related items.

The usability testing also reveals several problems we have not realized before. For example, the participants had trouble downloading items that contain more than one file.

4. Recommendations

After discussion, the project team decides to make the following improvement.
- Disciplines and courses page:
    1. Turn the collapsed/expand list text into a button or change the style to make it more apparent;
    2. Place items case studies, teaching guides, and assessments put into a subcategory of other.
- Result list
    1. Add + button on the right had side of title line for each option to expand the metadata list instead of the arrow
- Browsing by… page
    1. Get rid of the "Or enter first letters" browsing box
- Metadata
    1. Add the education level;
    2. Add the related items;
- My Folder and User Account
    1. Add "where is my folder" text in the light box when users add an item to my folder;
    2. Remove submissions from user account drop down list
- Course Map
    1. Create 5 images for light box to show users where they are at;
    2. Get rid of the course map icon;
    3. Add "?" as a link next to Course Level metadata element to point to a course map figure.
    4. Have new image of aggregation level visibly displayed on disciplines and courses page
- Help Page
    1. Add section on zip files to help
    2. Add search tips for searching.
- Home Page
    1. Have "flash" image rotate;
    2. Change colors, lighten the up a bit;
    3. Change current content to history and create another about page to tell users what the site can do for them and how they can contribute to the site.
- Download
    1. Create IMS content packages for the video and transcript files;
    2. Provide a choice for user to download different format audio files.
- Navigation Bar
    1. Make the "This Course" more obvious;
    2. Add more conjunction searching lines.