

OneStart Portal Usability Report

Paper Prototype testing of Content/Layout Usability

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Executive Summary

In February 2001, a usability study was conducted to determine the performance and satisfaction differences between two interface designs used to personalize portal content for the OneStart portal system at Indiana University. Although the designs themselves were proof of concepts, they did represent two likely methods by which users will select content in the portal: namely a drag & drop and a browseable list. Six participants were selected from the UCS user contact list and the OneStart advisory committee. The first three participants began performing tasks with the drag and drop interface then moved on to the list interface (referred to as the “Big List” in this report). The interface order was reversed for the last three participants.

Although users experienced varying levels of difficulty with both interfaces, all six users chose the drag and drop design when asked to state their preference. A few users initially liked the list design, but noted that a long list of content titles would be cumbersome. The process of saving and closing one’s work inside the Personalization window continued to be problematic for users. The Restore button was a clear winner over the Cancel Changes button for returning a screen of values to its original settings. And finally, the use of precise, well-placed instructions on the drag and drop interface proved to be highly valuable for users during their interactions with the system.

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Purpose of Study

The purpose of this usability study was to compare two user interfaces that are used to personalize portal information. At present, both interfaces are considered to have valuable features. The tasks of this study were designed to test the viability of those features in an effort to include the best combination in the final design.

The **Drag and Drop** design (see Appendix A) consists of a single personalize window that allows the user to view expandable content categories to the left then drag channels of content into the columns to the right. Channels may also be arranged by dragging them to the desired location or deleted by dragging them back to the original location to the left. Instructions are provided at the top of the boxes to facilitate personalization. The drag and drop interface also includes a Restore button to cancel editing changes, a Save button, and a Close button to close the window and return to the main screen.

The **Big List** design (see Appendix B and C) separates the selection and arrangement of content into two pages, Content and Layout. Content titles are located on the left but are not expandable. The user selects and deletes content by clicking on check boxes that are located in the column section to the right. The Big List interface includes a Cancel Changes and a Close button. Since the design team has not finalized the buttons that will be used, users were given tasks requiring them to interact with the buttons and then asked for their opinions and preferences.

Participants

Six participants selected from the OneStart advisory committee and the Usability Consulting Services contact list were used for this study. All but one of the users said that they felt comfortable using computers and portals. The inexperienced user was also the only non-native English speaker and experienced far greater difficulty in completing the tasks than the other five users. Only one undergraduate user, a Computer Science major, participated in the study.

Table 1: Participant Distribution

Order	Gender	Position	Department	Cmpt Exp	Portal Exp
1	F	IU staff	UITS	Very	Some
2	F	IU staff	Library Info designer	Expert	Very
3	F	IU staff	RUGS	Some	Some
4	F	IU staff	Not recorded	Very	Very
5	M	Undergrad.	C.I.S.	Expert	Very
6	F	Grad/Staff	SLIS/Academic Support	Some	Little

Method

The study was designed to compare various features of two different interfaces with the intention of identifying the most powerful features and incorporating them into the portal's ultimate design. Observers recorded comments and noted the following occurrences throughout the session: Passed on first try, passed on second try, passed on more than 2 tries (i.e. experienced difficulty), and failed. Observed and recorded were the level of difficulty exhibited by users, comments about each interface, and each user's stated preference for the interface.

The user was greeted by the facilitator and introduced to the observer. Participants were then given a short tour of the lab and an explanation of the protocol for the session. The facilitator gave a brief explanation of the OneStart portal system and asked the users if they had seen or used the portal as well as any other portal system such as MyYahoo.

Each user was shown a paper-based interface then given a series of tasks to complete one at a time from the task list (see Appendix D). The user completed each task using a pointer to click on the various features of the interface and describing what they were thinking as they went along. In response to users' actions, the facilitator played the role of the computer, placing the appropriate system responses onto the participant's page in the form of paper cutouts. Prior to the test, the facilitator explained that not all parts of the system had been developed so certain responses might require them to try again.

After completing the tasks for each interface, the users were asked to comment on the design and specific buttons. Finally, users were shown both interfaces side by side and asked to choose their favorite. At this time, the observer was free to comment and ask questions. After the user had left the room, the facilitator and observer debriefed.

All sessions were conducted in the Usability Consulting Services lab and lasted between 30 and 45 minutes. Sessions were facilitated by James Lane and observed by one member of the OneStart team. Observers were Todd Zazelenchuk, Cynthia Ramlo, Rosemary Flynn, and Patricia Walsh.

Results and Recommendations

The results of the study have been summarized into two categories:

- Quantitative results
- Observations, user comments, and possible solutions

Quantitative Results

From an analysis of the quantitative results for the two interfaces:

1. Only 1 user saved changes before clicking on color, indicating that users need to be reminded to save changes before exiting the personalize section.
2. All 6 users moved channels easily from one column to another in the drag and drop section.
3. Users had trouble getting back to their front page. A few tried to click on My Pages.
4. Although users were confused about deleting a channel by having to drag it back to the left box, all but one performed the task correctly.
5. All 6 users chose the Drag and Drop interface though a few noted that the Big List interface was more intuitive and predictable.

Table 3. Quantitative Results

Drag and Drop Interface	User 1	User 2	User 3	User 4	User 5	User 6
getting to target page	2	1	1	1	D	1
books on loan	D	1	2	1	1	F
add IU Tech news	1	2	1	1	1	1
move weather channel	1	1	1	1	1	1
change color scheme (saved?)	2	1	F	D	D	2
remove IU Sports	1	1	1	1	1	F
go back to front page	1	1	F	F	1	D
Big List Interface						
getting to target page	1	1	2	1	1	D
change from 3 to 2 columns	1	1	D	1	1	1
add IU Sports/ Books on Loan	1	1	1	1	1	1
layout	--	1	D	1	1	D
move IU sports to the top	1	1	2	1	1	D
move Books on Loan	1	1	1	1	1	1
delete books on loan	1	1	D	1	1	F
go back to front page	1	1	F	1	1	2
Preference: DD / BL	DD	DD	DD	DD	DD	DD

Legend

--	This task was presented incorrectly during the pilot session and therefore omitted
1	Passed task on the first try
2	Passed task on the second try
D	Passed task, but experienced difficulty (took extra time or expressed confusion)
F	Failed task

Observations, User Comments and Possible Solutions

The majority of the qualitative data gathered from the test sessions revealed design issues that are not particularly tied to either interface design. Rather, problems were more closely related to misconceptions of what a function was intended to do. Design features that worked well are also included in the observations.

Since the data collected for this study was based on pass and failure rates as well as user comments and preferences, the format of this section relies heavily on user feedback and serves to supplement the Descriptive Statistics section in Table 3. The Possible Solutions are not prioritized. Rather, they are grouped according to the corresponding interface. Finally, a special section is devoted to the buttons used on both interfaces.

1. Drag and Drop Interface

Observation	User Comments	Possible Solution
1.1 Content Box		
Three users tried to drag entire category over to the channel area	The instructions tell me to drag it over but it won't go.	<p>Include a popup warning stating that an entire category may not be moved.</p> <p>Include instructions above the table stating that a plus sign means the category must first be expanded.</p>
1.2 Narrow / Wide columns		
All 6 users were able to place the channel correctly after the first or second try. Feedback message was clear.	I guess the w means wide.	No recommendation
1.3 Saving changes before going to color section		
Only one user attempted to save changes before clicking on color button. After seeing the dialog box asking if they wanted to save their changes, users tended to click the Save button more. Expressed confusion about which personalized info would be saved.	<p>I don't know if I should change my color first and then click save.</p> <p>I imagine it would pertain to all personalize information.</p>	Provide a dialog box asking users if they want to save their changes first.
1.4 Moving a channel		
All users successfully moved the weather channel from the left to the right column. One user was not sure where it would go.	Will this go into the other channel?	No recommendation

Observation	User Comments	Possible Solution
1.5 Deleting channels		
Users expressed ambiguity about where the content would go, but performed the task correctly (5/6 users).	I imagine it would go back to the category from whence it came.	Two users suggested including a garbage can to the bottom right of the area as a second option.
Instructions helped to clarify what the users were supposed to do.	Users commented that the instructions about dragging a channel back to remove were helpful.	No recommendation
1.6 Going back to the front page		
Half of the users tried to return to the front page by clicking on the My Pages tab at the top.	This must take me back to my homepage.	Reconsider the title of My Pages since it sounds like it would take the user back to a homepage. Consider changing the name of one of the bottom buttons to something that indicates the user is leaving the personalize section and returning to the front page.
1.7 Help		
Users expressed a desire to go to a help or search section when experiencing trouble.	I would go to help but I don't see anything here. I would probably try to use a search function to find the term first.	No recommendation since we are planning to include a help section. Include a help button for future tests to see how many users would go to it.

2. "Big List" Browse Interface

Observation	User Comments	Possible Solution
2.1 Changing from 3 to 2 columns		
Only 1 user experienced difficulty changing columns.		No recommendation
3 users thought that there was only one way to represent a 3 column layout since there is only one button.		Show all options or reduce the total number of possible choices.
2.2 Adding content		
All 6 users were able to successfully add content by using the checkboxes, including channels that could only fit in the wide column.	I guess there's only one column choice for IU Sports.	No recommendation
2.3 Switching to Layout		
2 out of 5 users experienced difficulty getting to the layout section. One task was not delivered correctly and was excluded from the data.	Am I supposed to drag the channels around?	The paper prototype is in black and white. Using color and location to make the Layout button stand out could help.
2.4 Moving channels		
Only 1 user experienced difficulty moving channels around in the layout section. The other participants used the arrows quickly and successfully.		No recommendation
2.5 Deleting channels		
1 user failed this task because he thought he would have to go back to the original content selection page.	I'm looking for a back button. I don't see it so I would go to My Pages.	No recommendation

3. Buttons

Observation	User Comments	Possible Solution

3.1 Restore		
<p>All 6 users thought that clicking the Restore button would return the content and layout to the original values that were there when they opened up the portal for that session.</p>	<p>I would expect it to return to how it was when I started this session.</p> <p>It wouldn't restore them if I had already clicked save.</p> <p>It wouldn't close the window like the Cancel Changes button would.</p>	<p>No recommendation. User perceptions of the button's functionality matched its actual function.</p>
3.2 Cancel Changes		
<p>2 users commented that they preferred the Cancel Changes button over the Restore button. However, 3 of the 6 users gave incorrect answers when asked what the Cancel Changes button would do.</p>	<p>It would close the window and take me back to the front page automatically (2 users).</p> <p>It would only cancel my most recent move, like the Undo arrow does.</p> <p>It would save my changes first, then close the window for me.</p>	<p>Use the restore button. Consider bringing the question up again to a larger audience in the next round of testing.</p>
3.3 Save (Drag and Drop interface)		
<p>Users understood what the Save button would do. The only problem was when they tried to go to another area (color) without saving first. One user thought that Save should pertain to any personalize changes.</p>	<p>I would expect to be able to change color or whatever then click Save for the whole Personalize section.</p>	<p>Provide a prompt reminding the user to save changes before moving to another section.</p> <p>*This approach has implications for efficiency of use for experienced users.</p>

3.4 Close (Big List interface)		
In the Big List interface, 3 users were unsure what would happen to their changes if they hit Close since there was no Save button.	I don't know if it would save first. Hopefully there would be a prompt asking me if I want to save my changes (2 users). It must be saving as I go (1 user).	Proceed with the independent buttons entitled Save and Close for now, but consider methods for making the process less intrusive. Retest during the next round of usability.

Discussion

While the screens tested in this study are expected to evolve prior to the first release of OneStart, they were representative of the two basic types of content selection functionality: Drag and drop vs. a browseable list. From this round of testing, a few key findings should help inform the future design iterations of the portal:

- Drag and Drop is preferred over the List approach in order to better manage content on a single screen without having to scroll through a long list of content titles.
- The Save and Close sequence for exiting the Personalization window remains a source of some concern and will require additional attention.
- “Restore” is more clearly understood than “Cancel Changes” for resetting values back to their original state.
- The use of precise, well-placed instructions for the Drag and Drop interface were used frequently and proved valuable.

All six participants in the study preferred the drag and drop interface, commenting that it was contained within one screen and that it had a manageable content list. Drawbacks to the Big List approach were the long content list and the multi-screen approach. Some users commented on the intuitive nature of the list design, however, and felt that if the content list could be improved it might actually be more usable than the drag and drop approach, especially for users with only basic computer skills. Since the Big List design may serve as the backbone of the ADA compliant interface, the design team should pay special attention to this design approach.

Users' comments indicate that the label for the Restore button most closely resembled what the users expected the button to do, whereas the Cancel Changes button conveyed a variety of functional possibilities (e.g. it will close the window without saving, it will only cancel the most recent move, it will first save and then close the window).

There remains an issue with the Save and Close buttons. Three users expressed some concern over how their information was being saved when the design contained only a Close button. While providing only a Close button without a Save option was intended to remove the saving process from the equation and thereby simplify things, it seems that the ‘simpler’ solution may not provide users with the assurance that their changes will be saved. However, the independent Save and Close buttons associated with the Drag and Drop design, did not perform without problems either. Four users demonstrated some level of difficulty in selecting the Save button before proceeding to change colors or returning to the Front Page of the portal. Based on these

results, the portal team needs to readdress this issue prior to the first release of the portal and once the personalization interface is closer to its final form.

Finally, five of the six participants involved in this study exhibited a level of comfort with computers and portals that may not be a true representation of the overall target audience. Some of these users have seen the OneStart prototypes as they have developed. More undergraduate users, as well as staff and faculty from departments not associated with technology need to be contacted and tested in future sessions.

Appendices

- A Drag and Drop interface
- B Big List interface (content screen)
- C Big List interface (layout screen)
- D Task list

Appendix A

Drag and Drop interface

The interface is divided into several sections:

- Navigation Tabs:** Content & Layout (active), Color, My Pages, Preferences.
- Page Selection:** Select Content & Layout for: My Front Page. Buttons: Restore, Save, Close.
- Interaction Mode:** Select details by: Drag & drop.
- Column Configuration:** Number of Columns: 1, 2, 2, 3 (selected).
- Drag-and-Drop Area:**
 - Source:** Drag content from below...
 - + IU Academic
 - + IU General
 - + IU Technology
 - + Personal
 - + World
 - Destination:** ...and drop it in a column over here. (Drag it back to remove)
 - Columns:**
 - Column 1:** Personalize, Weather, Inbox
 - Column 2 (wide):** IU News (w), IU Sports (w)
 - Column 3:** Bookmarks, Calendar, Google Search
- Footer:** Content & Layout, Color, My Pages, Preferences, Restore, Save, Close.

Appendix B

Big List interface (content)

The screenshot shows a configuration window titled 'Content & Layout' for 'My Front Page'. At the top, there are tabs for 'Content & Layout' (selected), 'Color', 'My Pages', and 'Preferences'. Below the tabs, there are buttons for 'Cancel changes' and 'Close'. The main area is divided into sections for selecting content details and columns.

Select Content & Layout for: My Front Page

Select details by: Big list

Number of Columns: 1, 2, 2, 3 (The third '2' is selected)

View Content or Layout: Content (selected), Layout

	About...	Column 1	Column 2	Column 3
IU Academic				
Address change	?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Bursar balance	?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Course schedule (w)	?		<input type="checkbox"/>	
Library - Books on loan	?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- IUCAT (w)	?		<input type="checkbox"/>	
- Request a book	?		<input type="checkbox"/>	
Transcripts	?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
IU General				
IU News (w)	?		<input checked="" type="checkbox"/>	
IU Sports (w)	?		<input type="checkbox"/>	

Appendix C

Big List interface (layout)

Content & Layout [Color](#) [My Pages](#) [Preferences](#)

Select Content & Layout for
My Front Page

Select details by **Big list**

Number of Columns 1 2 2 3

View Content or Layout Content Layout

Column 1	Column 2 (wide)
Address change Bursar balance	IU News (w)

[Content & Layout](#) [Color](#) [My Pages](#) [Preferences](#)

Appendix D

OneStart Paper Prototype Tasks

Drag and Drop menu

1. Use this screen to add a channel to your portal that would let you see which **books you have on loan from the library**.
2. Add a channel entitled, “**IU Technology News**”.
3. You would like to **move your weather channel** to the top of the far right column.
4. **Change the color scheme** of your portal (with explanation). Do you think it’s saved?
5. Remove the channel entitled, “**IU Sports**”.
6. You are done personalizing and you would like to **go back to your front page** to see the effects of your changes.

*We are **finished** with this section. We haven’t used the restore button yet. How would you use it and what would you expect it to do?

Big List menu

Now we’re going to do the **same types of tasks with a different interface**.

1. Use this screen to change your layout from **3 to 2 columns**. You would like it with the **narrow on the left** and the **wide on the right**.
2. (New screen) Now **add “IU Sports”** and “**Books on loan**” to your content.
**How would you go about moving your channels around? (Layout button?)*
3. You would like to rearrange the order of your content by **moving “IU Sports”** to the top of the column.
4. Now **move “Books on loan”** to another column.
5. You would like to **delete “Books on loan”**. How would you do that?
6. How would you go to your front page to see the changes you’ve made?

* We are **finished** with this section. We haven’t used the Cancel Changes button yet. How would you use it and what would you expect it to do?

* **Look at both designs. What is your preference?**