



Drupal Usability Testing: Eye Tracking Methodology

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Table of Contents

| | |
|---|-----------|
| Executive Summary | 3 |
| User Profiles..... | 4 |
| Testing Methodology | 6 |
| Overview | 6 |
| Phase I Pre-Survey..... | 6 |
| Phase II Usability Test | 6 |
| Phase III Post-Survey | 7 |
| List of Observed Issues..... | 8 |
| APPENDICES | 19 |
| APPENDIX 1: Participant Consent Form | 20 |
| APPENDIX 2: Background Questionnaire | 21 |
| APPENDIX 3: Pre-Test Questionnaire | 22 |
| APPENDIX 4: Post-Test Questionnaire | 23 |
| APPENDIX 5: Pre-Test and Post-Test Analysis | 24 |
| APPENDIX 6: Gallery Website Text for Participants | 26 |
| APPENDIX 7: Time on Task Analysis | 27 |
| APPENDIX 8: Usability Test Script | 28 |

Executive Summary

Overview

The Drupal software is an open-source, collaborative effort, driven by the mental-models and terminology of the developers who created it, who are very experienced and advanced web developers. It is a content management system that “allows an individual or a community of users to easily publish, manage and organize a wide variety of content on a website” (<http://drupal.org/about>). The depth of knowledge of the Drupal developers may enable them to overlook the complexities of their own product, especially for novice website administrators.

The goal of the usability test was to learn what changes can be made to the user interface to increase the success of web administrators using Drupal to create websites.

Key Findings

The usability testing focused on two core functions: adding content and navigation links, and setting up a user account with appropriate permissions. While most participants were successful at completing most tasks, three very important issues were discovered.

- Participants did not notice that the navigation links were displayed in the upper right corner of the web page.
- The process for creating a user with specific permissions was challenging for the participants, as most wanted to create a user and then assign permissions directly to the user account.
- Participants did not make the connection that they were on the site that they were editing.

Detailed descriptions of these findings are listed on pages 8-18.

Recommendations

We recommend these changes to address the key findings:

- Consider changing the placement of links to the left side of the screen. Also, consider using a different color to highlight the new links when they are first displayed, or put a message on screen in a yellow box to alert the user to the location of the link in the upper right.
- Consider showing the "Roles" section the first time a user is created--even if the only roles in the system are the two default roles. Having this option allows users to see their next step is to create a role.
- Reposition location of administrator navigation bar from vertical position to horizontal position.

User Profiles

The participants consisted of 3 experienced users, with an average of 10 years of web development experience, and more than 6 years experience with content management systems; and 1 less-experienced user, with just 6 months of web development experience, and 1 month of experience with content management systems (highlighted below). All of the participants had experience with custom-built, or proprietary, content management systems from the organizations they worked with; only one had experience with the popular systems WordPress and Movable Type.

| | Participant 5 | Participant 6 | Participant 7 | Participant 8 |
|---|---------------------------------------|-------------------|-------------------|--|
| Test Date | 4/11/08 | 4/11/08 | 4/15/08 | 4/17/08 |
| Name | Jeff | Andrew | Jack | Randy |
| Job Title | Consultant | Web Administrator | Web Developer | Manager of Technical Services |
| Education Level | graduate | college - 4 years | college - 4 years | graduate |
| Estimate of how long participant has worked in web development. | 10 years | 10 years | 6 months | 10 years |
| Estimate of how long participant has used content management systems. | 8-10 years | 9 years | 1 month | 5 years |
| CMS's participant has used. | internal systems by Verizon, Erickson | home-grown | custom-built one | custom, WordPress, Movable Type, Interwoven TeamSite |

Figure1 User experience

User Profiles, continued

When compared our 4 participants with those of the second group (Becca Scollan, Malia Nagle, Cynthia York), we saw a similar breakdown of users; 3 experienced and 1 less-experienced.

Group One (Them):

| | Participant | | | | AVG |
|------------|-------------|----|-----|------|------|
| | 1 | 2 | 3 | 4 | |
| Title | webmaster | IA | Mgr | DBMA | |
| *Education | 18 | 18 | 16 | 18 | 17.5 |
| *Web Dev | 8 | 12 | 10 | 2 | 8.8 |
| *CMS | 4 | 5 | 7 | 2 | 4.5 |

Group Two (Us):

| | Participant | | | | AVG |
|------------|-------------|-----------|---------|-----|------|
| | 5 | 6 | 7 | 8 | |
| Title | Consultant | Web Admin | Web Dev | Mgr | |
| *Education | 18 | 16 | 16 | 18 | 17.0 |
| *Web Dev | 10 | 10 | 0.5 | 10 | 7.6 |
| *CMS | 10 | 9 | 0.1 | 5 | 6.0 |

Figure 2 User comparisons by group

* Educ = Education level: 16 = completed college; 18 = completed graduate school.
 Webdev = years of experience in web development. CMS = years of experience with Content Management Systems.

Testing Methodology

Overview

The testing was conducted at the University of Baltimore's Usability Lab. The hardware and software used were a Tobii 1750 eyetracker device and ClearView eyetracking software.

Our team conducted four test sessions with 4 web administrators. Each web administrator had several years experience creating web sites and using content management software. None of them had any previous experience with, or exposure to, Drupal.

During each usability test session, the participant was asked to perform typical tasks involved when setting up a web site:

- Create a web page with a sample Mission statement and make this the "home page" or main landing page
- Create an "About Us" web page, make sure there is a link to the About Us web page available on the website
- Create a "board member" user account that only has permission to add and edit content, but cannot change the site structure or design.

Phase I Pre-Survey

Each participant was screened for previous web administration experience, and to ensure that none had used Drupal before. Prior to each eyetracking session, we asked a few open-ended questions regarding content management systems the participant had experienced and what features they thought were important in a content management system.

Phase II Usability Test

We had the participant look at the opening screen on a Drupal web server and answer a few questions about whether he felt he would be able to successfully set up a simple web site (pre-survey). After each task was completed, we asked questions to clarify what we observed.

Although we did not ask the participants to use a "talk aloud" protocol, to describe out loud what they were doing while interacting with Drupal, 3 of the 4 participants spontaneously talked aloud and provided this information during the test session. After all tasks were completed, we asked additional follow up questions to help us understand points where the participant seemed to struggle with accomplishing the task.

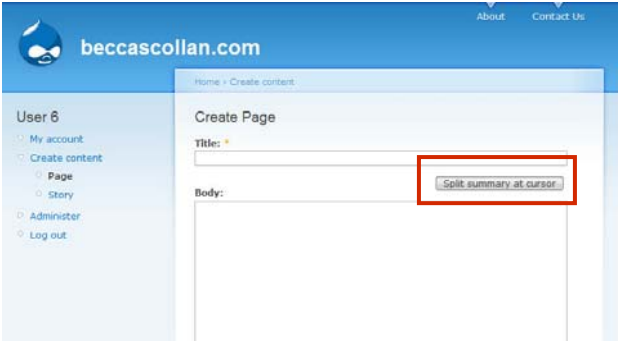
Phase III Post-Survey

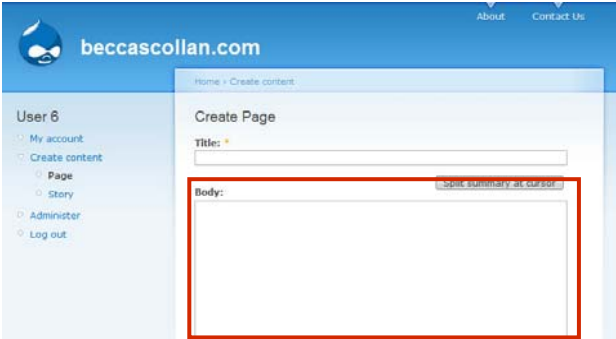
Our concluding activity was to conduct a post-survey. We asked the participants the same questions we asked before the session began.

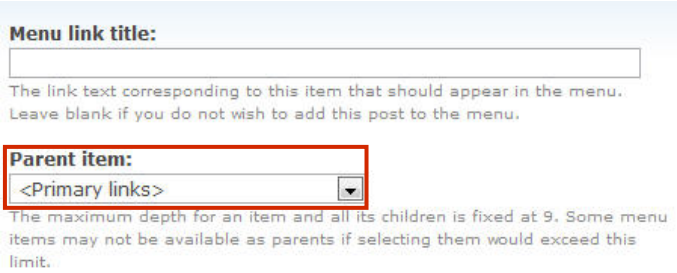
Phase IV Analysis

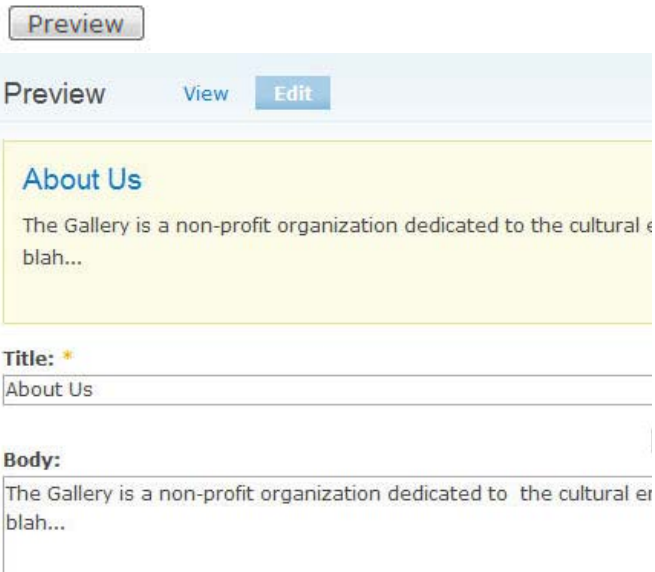
Each participant's eye movements were recorded with the Tobii 1750 eyetracker. The eyetracker tool also recorded the computer screen contents, combined with the audio of what was said and webcam video of the participant's face. These videos were examined by the usability test team, partially transcribed, and key activities with start and stop times were noted.


List of Observed Issues

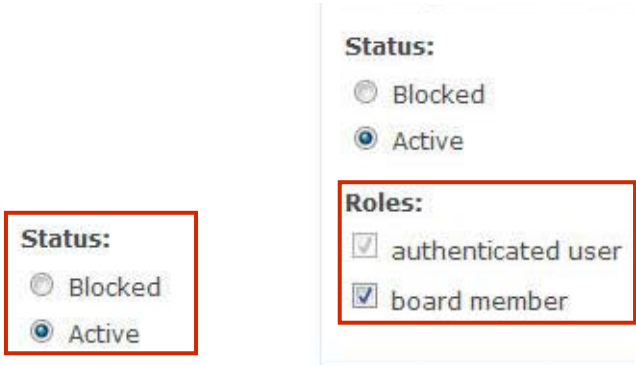
| Issue | Observation/ Screen shot | Recommendation | Level of Severity <i>(Major, Moderate, Minor, Good)</i> |
|-------------------------|---|--|--|
| Split Summary at Cursor | <p>Users encountered the "Split Summary at Cursor" button when they were creating pages. Two tasks were to create an "About Us" page for the website, and to put the "Mission" on the home page. Users went into the left navigation link, "Create Content" and then selected "Page" to create a new web page. When users came to this screen to create a page, their mental model was that they were creating a web page. They did not understand what "Split Summary At Cursor" meant.</p>  | <p>Consider removing the "Split summary at Cursor" button from the "Create Page" screen, or provide help icon next to the "Split Summary at Cursor" button, so that someone can click that help icon to get a quick answer (perhaps in a pop-up window) what the functionality is.</p> | Major |

| Issue | Observation/ Screen shot | Recommendation | Level of Severity <i>(Major, Moderate, Minor, Good)</i> |
|----------------------------|---|---|--|
| <p>Content Editor Page</p> | <p>Users had two tasks that involved creating content: to create an "About Us" page for the website, and to put the "Mission" on the home page.</p> <p>Users went into the left navigation link, "Create Content" and then selected "Page" to create a new web page. When users began typing text in the Body input field, they were unclear how to format it. All asked if they could type HTML code and/or if there was a WYSIWYG editor available. Users who are familiar with creating web pages in other applications frequently know at the outset what the formatting capabilities of the application are.</p> <p>For example, in most web-based content creation tools, there is a visual tool-bar on screen that indicates that the person can highlight text and then click a B (bold) icon to format the text in bold. The bare-bones Body field has no toolbar, and it is unclear whether entering HTML code is acceptable.</p>  | <p>Consider providing a text cue on screen next to Body: label that indicates that entering HTML code is OK. Alternatively, provide a WYSIWYG toolbar. Several users commented that a WYSIWYG toolbar would be optimal for people entering content who are not web experts, and would not know HTML tags.</p> | <p>Major</p> |

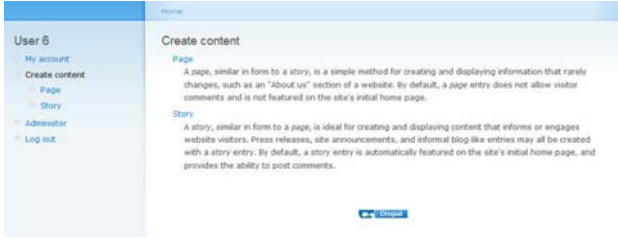
| Issue | Observation/ Screen shot | Recommendation | Level of Severity <i>(Major, Moderate, Minor, Good)</i> |
|---------------------|---|---|--|
| Parent Item Section | <p>When creating a page, all users noticed the "Parent Item" below the content area for the page. Each was unclear about what the function is for this item and how to use it. Moreover, they seem to be confused as to why it may be in the "create content" section.</p>  <p>The screenshot shows a form with two sections. The first section is titled 'Menu link title:' and has a text input field. Below it is the text: 'The link text corresponding to this item that should appear in the menu. Leave blank if you do not wish to add this post to the menu.' The second section is titled 'Parent item:' and has a dropdown menu. The dropdown menu is highlighted with a red border and shows the text '<Primary links>'. Below the dropdown is the text: 'The maximum depth for an item and all its children is fixed at 9. Some menu items may not be available as parents if selecting them would exceed this limit.'</p> | <p>Consider changing the default view of options at the bottom of the Create Page screen so that the "Publishing options" are displayed, rather than the "Menu settings." This way, users will first see the Publishing options, which are relatively straightforward, and can click the Menu settings if desired to explore that option.</p> | Moderate |

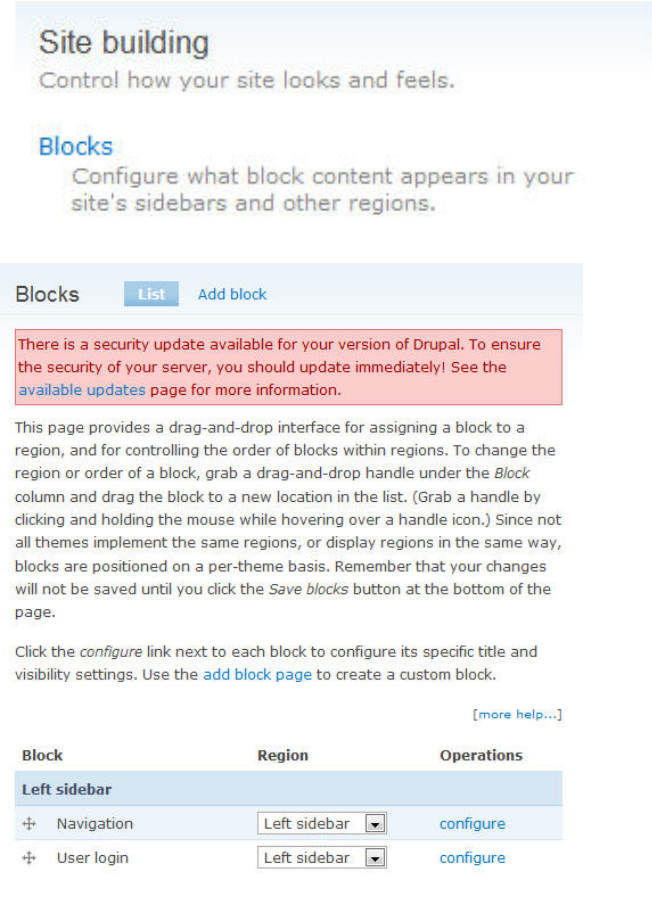
| Issue | Observation/ Screen shot | Recommendation | Level of Severity <i>(Major, Moderate, Minor, Good)</i> |
|----------------------------|---|---|--|
| Preview Page Functionality | <p>All users clicked this button immediately following creation of new pages and major editorial changes to the Drupal Client site. Users thought this button was logically placed on the page which facilitated verification of their input. Every single user tested understood to click the preview button following any text input and major content creation on the site. They all agreed that this was a positive feature which enhanced their user experience.</p>  <p>The screenshot shows a 'Preview' button at the top left. Below it is a navigation bar with 'Preview', 'View', and 'Edit' buttons. The main content area shows a preview of a page titled 'About Us' with the text 'The Gallery is a non-profit organization dedicated to the cultural er blah...'. Below the preview are input fields for 'Title: *' (containing 'About Us') and 'Body:' (containing 'The Gallery is a non-profit organization dedicated to the cultural er blah...').</p> | <p>This button was frequently used correctly and received positive feedback. We recommend keeping this feature and possibly adding the preview button to other pages of the site so that users may have a method of validating "other" major content creation and management tasks.</p> | <p>Good</p> |

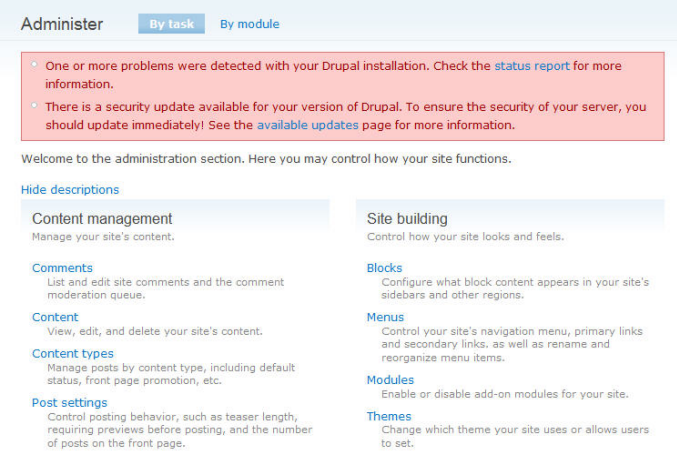
| Issue | Observation/ Screen shot | Recommendation | Level of Severity <i>(Major, Moderate, Minor, Good)</i> |
|---|--|--|--|
| <p>Horizontal Navigation Bar (in upper right)</p> | <p>Some users glanced over the navigation links in the upper right, but did not recognize that they were there. They would continue to search the page for the navigation they just created, not realizing it was there the whole time.</p> <p>One user was able to locate the navigation but failed at changing the order of appearance as they were automatically listed alphabetically across the top of the page. One user never looked in the upper-right corner of the window.</p>  <p>The screenshot shows a blue navigation bar at the top of a webpage. On the right side of the bar, there are two links: 'About' and 'Contact Us'. These links are enclosed in a red rectangular box. Below the navigation bar, the page content is partially visible, including the text 'an.com', 'Home', 'Create content', and 'Page'. A small paragraph of text is also visible: 'A page, similar in form to a story, is a simple method for creating and'.</p> | <p>Consider changing the placement of links to the left side of the screen. Also, consider using a different color to highlight the new links when they are first displayed, or put a message on screen in a yellow box (similar to the weak password warning) to alert the user to the location of the link in the upper right.</p> | <p>Major</p> |

| Issue | Observation/ Screen shot | Recommendation | Level of Severity <i>(Major, Moderate, Minor, Good)</i> |
|-------------------------|--|---|--|
| User Roles/ Permissions | <p>Users were quickly able to create a new user; however, they were unclear on the next step for giving special permissions to the newly created user account. One user commented that he thought there should be permission options right on the same screen with create user; the concept of the "role" was not clear to him and he never clicked the "Roles" menu to add a role. For two users, they were familiar with the concept of users, roles and permissions, but it was not clear which order these tasks should be completed. Users continually shifted through multiple menus trying to locate menu buttons and information about how to set up users and create roles. Often times, users repeated steps because they did not understand if they correctly created users or were able to create them at all. Users were also confused about the proper order to start the task, i.e., to create users then roles, or to set up roles, then create the users as it appeared they were able to do either one first.</p>  | <p>Consider showing the "Roles" section the first time a user is created--even if the only roles in the system are the two default roles. Having this option allows users to see their next step is to create a role. This action will be more strongly supported by providing instructions next to the Roles: section; <i>"A role defines a group of users that have certain privileges as defined in user permissions."</i></p> | Major |

| Issue | Observation/ Screen shot | Recommendation | Level of Severity <i>(Major, Moderate, Minor, Good)</i> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|----------------------------|--|-------------------------------------|--|--------------------|--------------|--------------------|--|--|--|----------------|-------------------------------------|-------------------------------------|-------------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|------------------|--------------------------|--------------------------|--------------------------|---------------------|--------------------------|--------------------------|-------------------------------------|----------------------|--------------------------|--------------------------|-------------------------------------|------------|--------------|--------------------|--|----------------|-------------------------------------|--------------------------|--------------------------|------------------|--------------------------|---------------------|-------------------------------------|----------------------|-------------------------------------|--|-----------------|
| Permissions Options Screen | <p>Users were confused why the checkboxes to select options were located very far from the choices, completely across screen, rather than next to the option to make selecting that option easy.</p> <p><i>This is the screen if the administrator goes into Permissions:</i></p> <table border="1"> <thead> <tr> <th>Permission</th> <th>anonymous user</th> <th>authenticated user</th> <th>board member</th> </tr> </thead> <tbody> <tr> <td colspan="4">node module</td> </tr> <tr> <td>access content</td> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td>administer content types</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td>administer nodes</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td>create page content</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td>create story content</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> </tr> </tbody> </table> <p><i>This is the screen if the administrator goes into the Roles section, and then selects Edit Permissions next to a specific role:</i></p> <table border="1"> <thead> <tr> <th>Permission</th> <th>board member</th> </tr> </thead> <tbody> <tr> <td colspan="2">node module</td> </tr> <tr> <td>access content</td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td>administer content types</td> <td><input type="checkbox"/></td> </tr> <tr> <td>administer nodes</td> <td><input type="checkbox"/></td> </tr> <tr> <td>create page content</td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td>create story content</td> <td><input checked="" type="checkbox"/></td> </tr> </tbody> </table> | Permission | anonymous user | authenticated user | board member | node module | | | | access content | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | administer content types | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | administer nodes | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | create page content | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | create story content | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | Permission | board member | node module | | access content | <input checked="" type="checkbox"/> | administer content types | <input type="checkbox"/> | administer nodes | <input type="checkbox"/> | create page content | <input checked="" type="checkbox"/> | create story content | <input checked="" type="checkbox"/> | <p>Consider placing the checkboxes just to the left of the permission (example: [] access content).</p> | <p>Moderate</p> |
| Permission | anonymous user | authenticated user | board member | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| node module | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| access content | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| administer content types | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| administer nodes | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| create page content | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| create story content | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Permission | board member | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| node module | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| access content | <input checked="" type="checkbox"/> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| administer content types | <input type="checkbox"/> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| administer nodes | <input type="checkbox"/> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| create page content | <input checked="" type="checkbox"/> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| create story content | <input checked="" type="checkbox"/> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| Issue | Observation/ Screen shot | Recommendation | Level of Severity <i>(Major, Moderate, Minor, Good)</i> |
|-------------------------|--|---|--|
| Page and Story | <p>Users spend significant time reading and re-reading the definitions for page and story to try and choose which option they wish to create a page on the Drupal Site. Users eventually choose to create one however, they are unsure if they choose the correct option for their desired task.</p>  | Consider changing the term "page" to another term such as "Item." | Moderate-Minor |
| Administrator Interface | Users do not realize they are viewing the actual website they are editing. All uses mentioned wanting to "preview" the website. | Reposition location of administrator navigation bar from vertical position to horizontal position. This works in tandem with repositioning the global navigation links. | Major |

| Issue | Observation/ Screen shot | Recommendation | Level of Severity <i>(Major, Moderate, Minor, Good)</i> | | | | | | | | | | | | |
|---------------------|--|---------------------------|--|------------|---------------------|--|--|--------------|----------------|---------------------------|--------------|----------------|---------------------------|---|----------|
| Block and Region | <p>Users notice the choices of block and region prominently displayed on the Site Building page indicating possible importance. Users do not see a definition next to these terms thus had to search in Drupal help. Moreover, they were not successful in figuring out their exact use through trial and error, thus they decide to stay away from these options.</p>  <p>Site building Control how your site looks and feels.</p> <p>Blocks Configure what block content appears in your site's sidebars and other regions.</p> <p>Blocks List Add block</p> <p>There is a security update available for your version of Drupal. To ensure the security of your server, you should update immediately! See the available updates page for more information.</p> <p>This page provides a drag-and-drop interface for assigning a block to a region, and for controlling the order of blocks within regions. To change the region or order of a block, grab a drag-and-drop handle under the <i>Block</i> column and drag the block to a new location in the list. (Grab a handle by clicking and holding the mouse while hovering over a handle icon.) Since not all themes implement the same regions, or display regions in the same way, blocks are positioned on a per-theme basis. Remember that your changes will not be saved until you click the <i>Save blocks</i> button at the bottom of the page.</p> <p>Click the <i>configure</i> link next to each block to configure its specific title and visibility settings. Use the add block page to create a custom block.</p> <p>[more help...]</p> <table border="1"> <thead> <tr> <th>Block</th> <th>Region</th> <th>Operations</th> </tr> </thead> <tbody> <tr> <td colspan="3">Left sidebar</td> </tr> <tr> <td>⊕ Navigation</td> <td>Left sidebar ▾</td> <td>configure</td> </tr> <tr> <td>⊕ User login</td> <td>Left sidebar ▾</td> <td>configure</td> </tr> </tbody> </table> | Block | Region | Operations | Left sidebar | | | ⊕ Navigation | Left sidebar ▾ | configure | ⊕ User login | Left sidebar ▾ | configure | Consider adding a mini-diagram of the page, with areas of the screen outlined as "regions", and the block content within the region outlined, to demonstrate that blocks are pieces that go inside regions. | Moderate |
| Block | Region | Operations | | | | | | | | | | | | | |
| Left sidebar | | | | | | | | | | | | | | | |
| ⊕ Navigation | Left sidebar ▾ | configure | | | | | | | | | | | | | |
| ⊕ User login | Left sidebar ▾ | configure | | | | | | | | | | | | | |

| Issue | Observation/ Screen shot | Recommendation | Level of Severity <i>(Major, Moderate, Minor, Good)</i> |
|---------------------|---|--|--|
| Administration Page | <p>Users all expressed a feeling of being overwhelmed, stating that there are too many options on this page. They took a long time carefully reading each option to try and locate what they needed to quickly complete their assigned task. Some users were confused due to similar content and definitions in the sections. Users agreed that this page simply has too many options to practically begin a task. They expressed views that the options should be on different pages, not all on one large menu with multiple sections. Users also said that the content is not differentiated enough within the sections and that some headings appeared to be redundant.</p>  | <p>Consider changing this page to just list the main section titles and a one-sentence description of the actions available when that title is clicked.</p> <p>Example:</p> <p>Content management. Manage site content, including comments, post settings, RSS publishing.</p> <p>User Management. Create and manage users, roles, permissions, and access to the site.</p> <p>Site building. Control how your site looks and feels with Themes, modules, blocks, menus, and URL aliases.</p> <p>Site Configuration. Adjust site configuration options such as Clean URLs, Date and time, Error reporting, and Logging and alerts.</p> <p>Reports. View reports from system logs and other status information</p> | Major-Moderate |

| Issue | Observation/ Screen shot | Recommendation | Level of Severity <i>(Major, Moderate, Minor, Good)</i> |
|--|---|---|--|
| Sitemap/ outline | When a user wished to see their newly created page, they faced many problems which they did not expect as their "normal" methods of doing so did not work with Drupal. Some users would exit the program, continually hit back buttons on the browser, keyboard shortcuts for the browser to go back, and unsuccessfully click on options of the Drupal Site to try and locate their created pages. Every user struggled and offered verbal feedback about this difficulty. | Consider modifying the "Create Content" module to include an option to view a list of existing content pieces. Example: <i>Page paragraph of text description.....</i> <i>Story paragraph of text description....</i> <i>Manage paragraph of text description...</i> | Major |
| Drupal logo icon in the lower middle of screen | All users frequently look at the Drupal logo icon in the lower middle of the screen. The position is reminiscent of an "OK" button seen in other interfaces. | Consider moving the Drupal logo icon to the lower left corner, and restyle as a "Powered by Drupal" logo, to clearly indicate that this is a logo icon, not a button. | Minor |
| Password is weak | When users create a new user account and create a password, a red alert box is displayed that indicates the password is weak. This causes users to type in a new password, often multiple times, as the warning changes from red to orange to yellow to green. No guidance is provided on screen to indicate characteristics of a strong password; also, users think that the red warning is an error that they can't create the user account with the weak password. | Consider adding text to the screen that includes characteristics of a strong password, and/or include a help icon for user to click for more information about weak/ strong password. Consider changing warning message color from red to orange, because red is associated with a failure (and interpreted to mean that the user account can't be created until the error is fixed). | Minor |

APPENDICES

1. Consent Form
2. Background Questionnaire
3. Pre-Test Questionnaire
4. Post-Test Questionnaire
5. Pre-Test and Post-Test Analysis
6. Gallery Website Text for Participants
7. Time on Task Analysis
8. Test Script

APPENDIX 1: Participant Consent Form

About the Study

The University of Baltimore team will conduct a usability study of the Drupal content management software. The primary purpose of this study is to help achieve a better understanding of usability issues in regards to the administrator interface.

Participation in the study

Participation in the study is completely voluntary. The study will consist of computer use observation and brief question and answer session that will last approximately 1 hour.

The team will record the session on videotape. The video will be used to complete any notes that were missed during the interview. The data from all participants will be assembled, reviewed and interpreted, with the findings presented the instructor, class and the Drupal development community.

If you prefer, your identity can remain anonymous. In that case, the team will assign you a unique ID number in place of your name.

Informed Consent

I understand that I am under no obligation, as participation in the research is voluntary, and that I may stop my participation in any part of the study for any reason should I wish to do so by simply asking a member of the research group or contacting them via phone, email or writing at any time.

By signing the following, I agree to participate in the research study. I fully understand the requirements of the study, and have had the opportunity to ask the interviewers/researchers any questions or concerns prior to commencing the study.

I acknowledge I have reviewed and agree to all the statements above:

| | |
|----------------------------------|-------------|
| Name: | Date: |
| Phone: | |
| Can we contact you by telephone? | YES NO |

APPENDIX 2: Background Questionnaire

Date:

First Name:

Job Title:

Education (circle one):

high school
graduate

college 1 2 3 4

graduate

post

About how long (estimate) have you worked in web development?

About how long (estimate) have you used content management systems?

Which content management system(s) do you have experience with?

APPENDIX 3: Pre-Test Questionnaire

Before you use Drupal, we would like to learn what you think about it. For each question below, please check the answer that best describes you.

1. Drupal looks easy to use.

| | | | | |
|--------------------------|--------------------------|---------------------------|--------------------------|--------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| strongly disagree | disagree | neither agree or disagree | agree | strongly agree |

2. The categories and words I see in the Drupal interface make sense to me.

| | | | | |
|--------------------------|--------------------------|---------------------------|--------------------------|--------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| strongly disagree | disagree | neither agree or disagree | agree | strongly agree |

APPENDIX 4: Post-Test Questionnaire

For each question below, please check the answer that best describes you.

1. Overall, Drupal was easy to use.

| | | | | |
|--------------------------|--------------------------|---------------------------|--------------------------|--------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| strongly disagree | disagree | neither agree or disagree | agree | strongly agree |

2. The categories and words in the Drupal interface made sense to me.

| | | | | |
|--------------------------|--------------------------|---------------------------|--------------------------|--------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| strongly disagree | disagree | neither agree or disagree | agree | strongly agree |

3. Drupal is similar to other content management tools I've used in the past.

| | | | | |
|--------------------------|--------------------------|---------------------------|--------------------------|--------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| strongly disagree | disagree | neither agree or disagree | agree | strongly agree |

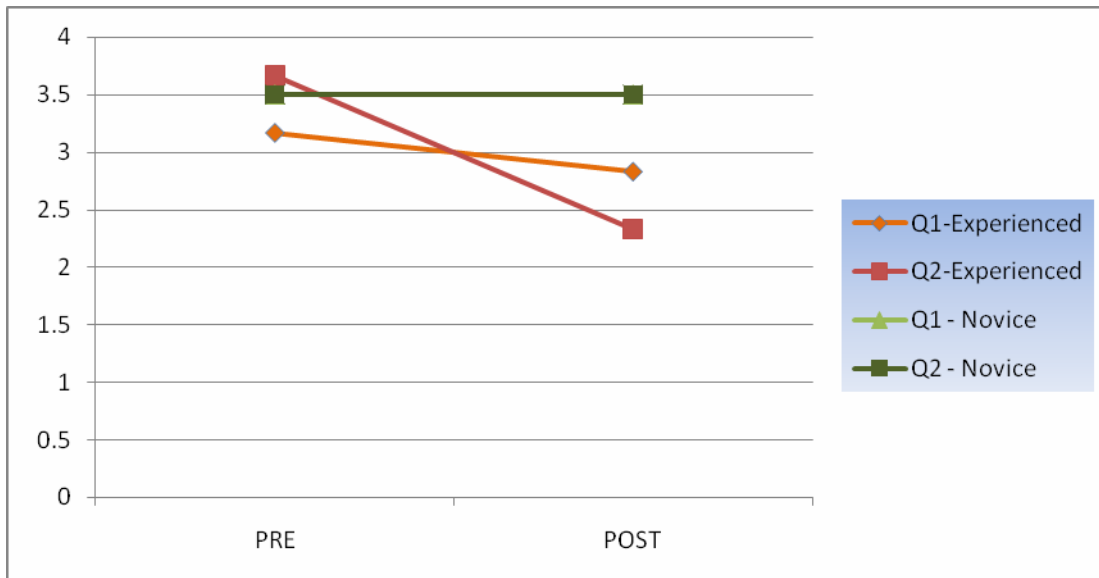
APPENDIX 5: Pre-Test and Post-Test Analysis

We saw an interesting difference in the responses to the pre-test and post-test questions. Before actually working in the tool, we had participants review the Drupal administration web page. We presented participants with a questionnaire containing two Likert Scale (1-5) questions that asked if Drupal looked easy to use, and if the categories and words in the Drupal interface “made sense”.

The participants with more experience (an average of 10 years of experience with web development), and more than 6 years experience with content management systems) did not perform the tasks faster than the participants with less experience, which may indicate that the more experienced participants were hindered by having additional experience with other systems.

| participant | 5 | 6 | 7 | 8 | GRP A - AVG | 1 | 2 | 3 | 4 | GRP B - AVG | AVG - BOT H | More EXP | Less EXP |
|-------------|---|---|---|---|-------------------|---|---|---|---|-------------------|----------------------|-------------|-------------|
| PRE | | | | | | | | | | | | | |
| looks easy | 4 | 3 | 3 | 3 | 3.25 | 3 | 3 | 3 | 4 | 3.25 | 3.25 | 3.2 | 3.5 |
| makeSense | 4 | 2 | 3 | 4 | 3.25 | 4 | 4 | 4 | 4 | 4 | 3.625 | 3.7 | 3.5 |
| POST | | | | | | | | | | | | | |
| easyToUse | 2 | 2 | 4 | 4 | 3 | 4 | 4 | 1 | 3 | 3 | 3 | 2.8 | 3.5 |
| Categories | 1 | 2 | 5 | 2 | 2.5 | 4 | 4 | 1 | 2 | 2.75 | 2.625 | 2.8 | 3.5 |
| Similar | 2 | 4 | 2 | 4 | 3 | 2 | 2 | 1 | 2 | 1.75 | 2.375 | 2.5 | 2 |

When we average the answers of the more experienced users across both groups, we can see that their responses to the pre-test questions averaged 3.2 and 3.7; for the post-test questions, their responses to the same questions averaged 2.8 and 2.8.



This indicates that after using Drupal for the tasks, the experienced users rated Drupal lower for ease of use, and much lower for the belief that the categories and words made sense. The less-experienced users maintained the same rating both pre- and post-test, which could indicate that they do not have as strong a mental model from working with other content management systems. The more experienced users may be struggling against the concepts and mental models that they have from working with other systems.

APPENDIX 6: Gallery Website Text for Participants

LOGIN INFORMATION

http://beccascollan.com/gallery7/

username: User 7 [*note space and capitalization*]

password: IAT642test

Gallery 7 website text

Mission Statement

- To further interest in arts and crafts in the Baltimore area.
- To promote fellowship and exchange of ideas among active artists, craftspersons, patrons and others (the general public) throughout Connecticut.
- To encourage appreciation of the arts by means of educational programs, exhibits, workshops, and lectures.

About Us

The Gallery is a non-profit organization dedicated to the cultural enrichment of the community. We are supported by membership, tuition fees, art related fund raising events and private donations. Grants from state and local corporations have been given for special projects.

Contact Us

- Jane Smith, President
- Phone: 410-555-1212
- Email: jane.smith@gallery.com

APPENDIX 7: Time on Task Analysis




Times given in *mm:ss*. Notice that Participant 7, the least experienced web developer in the group, performed some tasks (2 and 4) faster than some other participants, and even for the tasks where Participant 7 was the slowest, the times for tasks 1 and 3 are within two minutes of the next slowest participant. Task 5 (create a user and assign permissions) was significantly more complex, and took Participant 7 about 16 minutes to complete; however, participant 6, a very experienced web developer, took almost 11 minutes to complete the task.



| | Participant 5 | Participant 6 | Participant 7 | Participant 8 |
|--------|-------------------------|---------------|---------------|------------------|
| Task 1 | 01:05 | 03:31 | 07:38 | 05:21 |
| Task 2 | 00:40 | 01:25 | 02:41 | 06:05 |
| Task 3 | 06:52 | 02:00 | 07:50 | 0 – already done |
| Task 4 | 03:20 | 13:42 | 03:20 | 0 – already done |
| Task 5 | This task was not used. | | | |
| Task 6 | 04:08 | 10:47 | 16:04 | 05:31 |


-

APPENDIX 8: Usability Test Script

(Comment: This table has been modified for print purposes.)

| Moderator Script | Notes |
|--|-------|
| <p>Show participant into room. Stay in room with participant.</p> <p>Please read and sign this consent form.</p> <p> [provide consent form]</p> | |
| <p>We'd like to get some background information about you...</p> <p> [provide Background Information]</p> | |
| <p>Explain to participant that you will do the eye calibration... that they will look at dots on the screen...</p> <p> have partner in observation room do the eye calibration – YOU stay in room</p> | |
| <p>TELL PARTICIPANT: Drupal is an open source content management system developed by a large, international community. The Drupal community would like to make the CMS <u>more useful</u> and easy to use for site administrators such as yourself. We know you're <u>very capable</u> and familiar with working with such applications, but please feel open to letting us know whenever something seems confusing or you're about to hunt around for an answer, and talk aloud any issues as they come up. We're <u>testing the CMS</u>, <u>not</u> your abilities, so don't feel uncomfortable with pointing out anything that makes your work difficult. Anyway, we're not Drupal developers ourselves, so we won't take it personally.</p> | |
| <p>TELL PARTICIPANT: Before we look at Drupal, I'd like to understand how you choose a Content Management System to use.</p> <p>Do you select the CMS? Or someone else?</p> <p>What matters to you about a Content Management System?</p> <p>What are important features?</p> | |

| Moderator Script | Notes |
|--|-------|
| <p>Familiarization</p> <p> <i>put up the beccascollan.com/gallery website</i></p> <p>LOG IN!</p> <p>Take a moment to look at the main site administration page. Before taking another step:</p> <p>How would you start?</p> <p>What is your sense of where you can go, and what you can do from this page?</p> <p>What is your overall impression of the page - do you feel like you can do what you need to do?</p> <p> <i>[provide pre-test questionnaire]</i></p> | |
| <p><i>Introduce scenario:</i></p> <p>Imagine your client is a non-profit art gallery and education center.</p> <p>They've chosen Drupal for the CMS. At this point, they've already uploaded Drupal to the server, configured the database and completed all of the initial installation steps.</p> | |
| <p>Task 1:</p> <p>Put the <i>mission statement</i> text on the site. You don't have to type in all the text. Please say aloud when you've completed the task.</p> <p><i>Follow up questions</i></p> <ul style="list-style-type: none"> - - review key choices participant made - why did you choose _____ ? - - where did you expect to find _____ ? - - what expectations do you have for locating and editing this content now that it's up? | |
| <p>Task 2:</p> <p>They also would like an "About Us" landing page.. Its URL should read /about</p> <p><i>Follow up questions</i></p> <ul style="list-style-type: none"> - - review key choices participant made - why did you choose _____ ? | |
| <p>Task 3:</p> <p>Create a <u>global navigation link</u> on the home page to the About Us page. Make sure the link reads "About Us"</p> <p><i>Follow up questions</i></p> <ul style="list-style-type: none"> - - review key choices participant made - why did you choose _____ ? | |

| Moderator Script | Notes |
|---|-------|
| <p>Task 4:</p> <p>Ensure that the mission statement is available on the home page. If it isn't, please make it appear there.</p> <p><i>Follow up questions</i> - - review key choices participant made - why did you choose _____ ?</p> | |
| <p>Task 5:</p> <p>Create a Contact Us page and link to it from the home page.</p> <p><i>Follow up questions</i> - - review key choices participant made - why did you choose _____ ?</p> | |
| <p>Task 6:</p> <p>Set up a special log in account for board members so that they can edit and create new content but not play with the structure or design of the site.</p> <p><i>Follow up questions</i> - - review key choices participant made - why did you choose _____ ?</p> | |
| <p>Conclusion</p> <p style="text-align: center;"> <i>[provide post-test questionnaire]</i></p> <p>Did Drupal work in a way you expected it to? What are your thoughts on the terms used? What do you think about the experience of using Drupal?</p> | |