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UX Research Report: Heuristic Evaluation

Executive Summary

This user research report will document the heuristic principles used on the Coursera discussion board in evaluation of the user interface (UI) design. The Heuristics Evaluation (1994) by Jakob Nielsen is a usability engineering method and a conventional method to evaluate and improve UI designs.

UX research evaluators perform an individual analysis on the ten principle findings and track the violation and details of each. The heuristic principles address topics like feedback, visibility, user control, efficiency, error handling, and usage of metaphors that are applicable to the real world.

Different UX research evaluators can identify a range of heuristics topics which are done independently and are assessed with a severity rating from 0 (non-usability problem) to 4 (usability catastrophe) with an assigned recommendation for each finding. Therefore, this UX research report will present each of the findings, an assigned severity rating and recommendations.

Findings and Recommendations

Finding 1. The shareable function, “Link to Post” button that generates a hyperlink and a shareable-copy hyperlink to a user’s post within the discussion forum redirects to a 404 error page. **Recommendation:** Create a ticket for the issue and have a system engineer to repair the code to the intended function.

Finding 2. Use of the “Like and Dislike” buttons functionality and consistency of use; its relationship to users feedback in relation to the ranking of a post’s information and helpfulness. **Recommendation:** Changing the use of terminology and signifiers to help users assess information more relevant to their needs.

Finding 3. Image uploading functions for adding images in post are inconsistent with the number of images added. **Recommendation:** Create a ticket for system engineers to test the code structure and implement fixes to maintain consistency of user’s input and output, or have system engineers implement a cap on the amount of images added to a given posting (e.g. maximum of 3 images per post).

Finding 4. A user deletes a post which asks the user to “cancel or delete” and when the post is deleted, there is no confirmation of the deletion and no possible way to undo that action. **Recommendation:** Create a visible system status that indicates the user’s action upon deletion of a post and provide users with a system status to undo the deletion of their posting.

Finding 5. The Discussion Forum’s create a post button generating two of the same post submission visible on the main post activity feed. **Recommendation:** Submit a ticket for system engineers to test the issue to address it functionally, and locate the issue if it resides with the user’s input or the code.

Finding 6. Editing posts and showing users that the post has been edited with a signifier. **Recommendation:** Implement a viable system status for editing posts that show a signifier after each edit.

Finding 7. Unnecessary use of using an image upload function that creates an extra step for users to add images to their postings. **Recommendation:** Remove the “upload file” button and allow the system to streamline the uploading of images when images are dropped/dragged /added to the pop-up section for adding images.

Finding 8. Inconsistency use of the “Like and Dislike” buttons for the main thread and individual user post threads. **Recommendation:** The “Like and Dislike” button should be consistent on all threads and post on the user’s interface. Remove all the dislike button functions to maintain consistency.

Finding 9. When creating a new post for a thread, a text field appears for input information, but when users click “x or cancel” – there is no indication or warning of saving or erasing the draft of their work. **Recommendation:** Create a viable system status and confirmation that will indicate that their work will not be saved if they click on the “x or cancel” buttons or the outside parameters of the text field.

Finding 10. In the description of the text input when there is no value present, it is missing the error tag warning users that the value is empty. **Recommendation:** Create ticket for engineers to test and adjust the consistency in the warning of user error of the text input value.

Introduction

Coursera (coursera.com) is an online learning platform that offers a variety of courses and programs for individuals to earn a bachelor's degree, master's degree and professional programs for certificates. This document is a UX research methodology conducted to provide insight and fine-tune user interface designs through the use of heuristic evaluation.

Through heuristic evaluation, our goals as UX researchers are to address subjects including feedback, system visibility status, user control, user efficiency, error handling prevention and avoidance, and usage of metaphors that are applicable to real-world situations. With the UX research conducted, this heuristic evaluation report aims to answer the following questions:

- Which heuristic principles are being violated?
- How are the heuristic principle violated
- What is the severity of the violation?
- What recommendations can we advise for each violation?
- What heuristic principles are being adhered to?

This report intends to highlight some interface design problems, offer some practical advice, and share some encouraging results on Coursera's strengths in the usability of the discussion board's interface design.

Methods

Scope of Evaluation

For this particular UX research report, we have determined the methods of evaluation and the scope of evaluation would include the interface design, usability and functionality of Coursera's discussion board section within a course module.

Heuristics Used

This UX research report employs the heuristics created by Jakob Nielsen in the Usability Inspection Methods (1994) chapter titled "Heuristic Evaluation" for this evaluation. The following names were added to the heuristics from "6 Tips for a Great Flex UX: Part 5" (Neil, n.d.) for clarification:

1. FEEDBACK: Visibility of system status
2. METAPHOR: Match between system and the real world
3. NAVIGATION: User control and freedom
4. CONSISTENCY: Consistency and standards
5. PREVENTION: Error prevention
6. MEMORY: Recognition rather than recall
7. EFFICIENCY: Flexibility and efficiency of use
8. DESIGN: Aesthetic and minimalist design
9. RECOVERY: Help users recognize, diagnose, and recover from errors
10. HELP: Help and documentation

Individual Heuristic Evaluations

Each heuristic evaluation is conducted on Coursera's discussion board, and the researcher involved takes multiple passes through the site's page and functionality to determine where the issues are located. The issues were then divided into groups according to the criteria from the list above that had been violated and how severe the violation was. The severity is derived from the five point rating scale referenced from Nielsen's "Heuristic Evaluation" chapter, Table 2.3 (1994):

0. I don't agree that this is a usability problem at all
1. Cosmetic problem only – need not be fixed unless extra time is available on project
2. Minor usability problem – fixing this should be given low priority
3. Major usability problem – important to fix, so should be given high priority
4. Usability catastrophe – imperative to fix this before product can be released

Finding and Recommendations

Summary Results

This heuristic evaluation presents instances where the user's usability, functionality and the UI design are observed to violate the heuristic principle.

Key Findings

Finding 1: The "Link to Post" Button Functionality Error

Severity: 4/4

Heuristic Violated: 4. *Consistency and standards*, 5. *Error prevention*

The shareable function is located under each thread listed as the "Link to Post" button that generates a hyperlink and a button for a shareable-copy of the

hyperlink to a user's post within the discussion forum redirects to a 404 error page. Being located in the main toolbar for users to share their post, this functionality is regarded a priority for the users.



Fig: Shows the steps to follow from the "Link to Post" button to reach the 404 page error

Recommendation: Create a ticket for the issue and have a system engineer to repair the code to its intended function. Other recommendations are to create a link that will share the thread directly to the user's email in composing a new email.

Finding 2: Use of "Like and Dislike" buttons functionality and consistency

Severity: 3/4

Heuristic Violated: 6. *Recognition rather than recall*

Use of the "Like and Dislike" buttons functionality and consistency of use; its relationship to users feedback in relation to the ranking of a post's information and helpfulness. Removing the text "Like" from the functionality of the button could provide for a more inclusive feeling for users and their use of it.

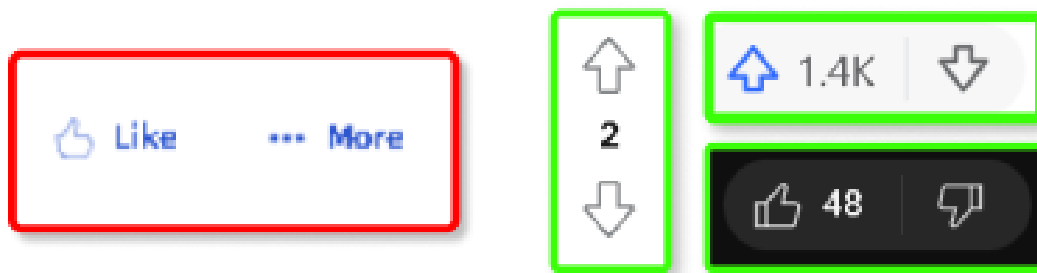


Fig: Shows Coursera "Like" button on the left and alternative voting functions on the right

Recommendation: Changing the use of terminology and signifiers to help users assess information more relevant to their needs. Changing the icons to symbolize a voting system to better reflect the helpfulness of a post's information and content.

Finding 3: Inconsistent Image Uploading/Post Function

Severity: 2/4

Heuristic Violated: 4. *Consistency and standards*, 5. *Error prevention*

The image uploading function for adding images for posting in threads is inconsistent with the number of images uploaded. The button is located under the text input field. The finding violates the consistency and expectation of what user's upload and could lead to users frustration in future incidents.

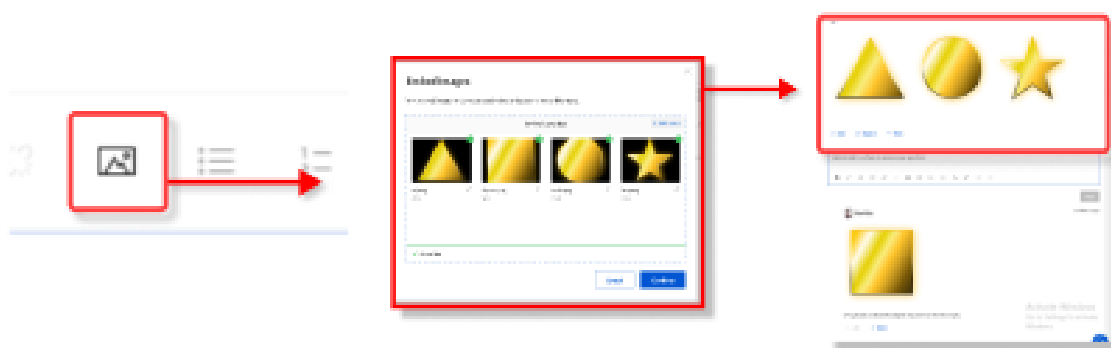


Fig: Demonstrates the steps to recreate the error of the image uploading function

Recommendation: Create a ticket for system engineers to test the code structure and implement fixes to maintain consistency of user's input and output, or have system engineers implement a cap on the amount of images added to a given posting (e.g. maximum of 3 images per post).

Finding 4: User Ability to Recover from “Cancel or Delete” of a Post

Severity: 2/4

Heuristic Violated: 1. *Visibility of system status* 4. *User control and freedom*

A user deletes a post which asks the user to “cancel or delete” and when the post is deleted, there is no confirmation of the deletion and no possible way to undo that action. The action of undoing a deleted post could provide users the relief of accidentally deleting this post from a thread.

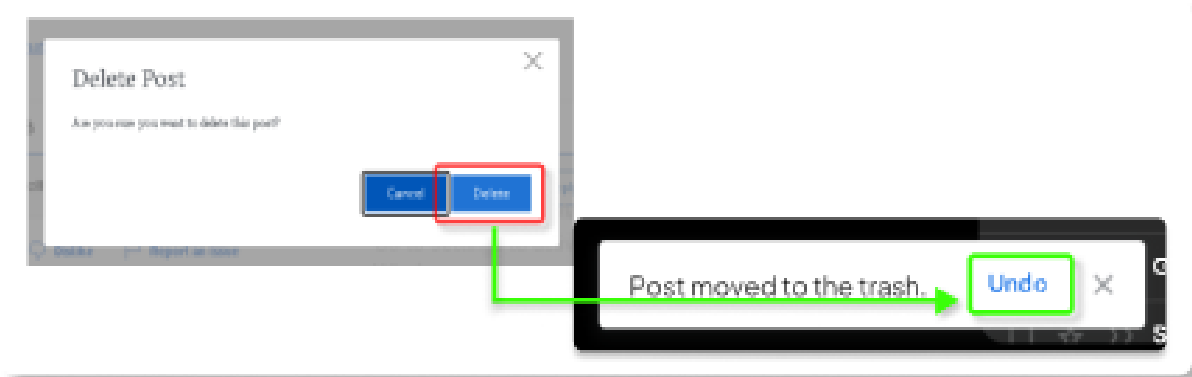


Fig: Shows an example of an undo delete post functionality

Recommendation: Create a visible system status that indicates the user's action upon deletion of a post and provide users with a system status to undo the deletion of their posting.

Finding 5: Duplicate Submission from “Create a Post” Function

Severity: 2/4

Heuristic Violated: 5. *Error prevention*

The Discussion Forum's create a post button generating two of the same post submission visible on the main post activity feed. This type of error could lead to

users confusion and unnecessary actions from the users in taking corrective actions.

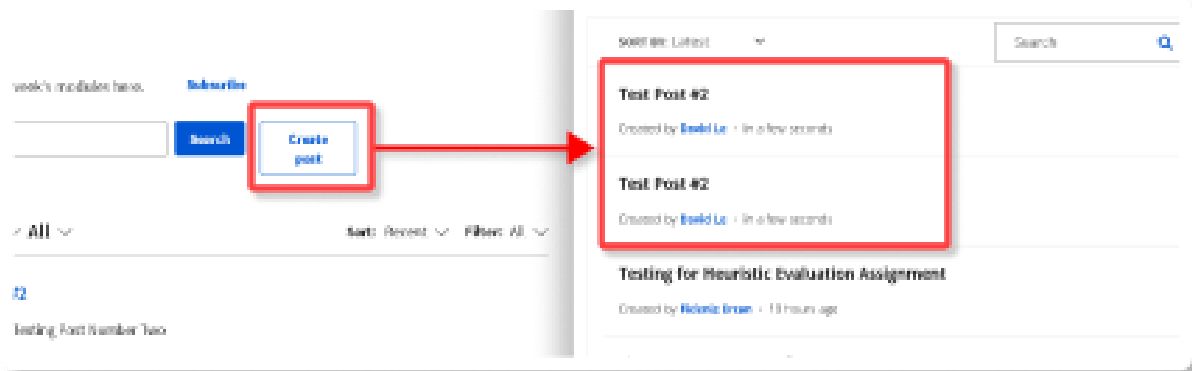


Fig: Show the step to recreate the double post error

Recommendation: Submit a ticket for system engineers to test the issue to address it functionally, and locate the issue if it resides with the user's input or the code. Have the duplication of posts eliminated from the main activity log.

Finding 6: Adding a Signifier After Editing a Post

Severity: 2/4

Heuristic Violated: 1. *Visibility of system status*

Editing posts and showing users that the post has been edited with a signifier. This will show other readers of the post that changes or updates to this particular post have been made, or continue to be maintained.



Fig: Shows a sample "edit" signifier after a post has been edited

Recommendation: Implement a viable system status for editing posts that show a signifier after each edit.

Finding 7: Removal of Unnecessary Button Function

Severity: 1/4

Heuristic Violated: 4. *Consistency and standards*, 5. *Error Prevention*

Unnecessary use of using an image upload function that creates an extra step for users to add images to their postings. Removing this upload button would help to relieve a user's cognitive load and also streamline the process of uploading images onto the input box.

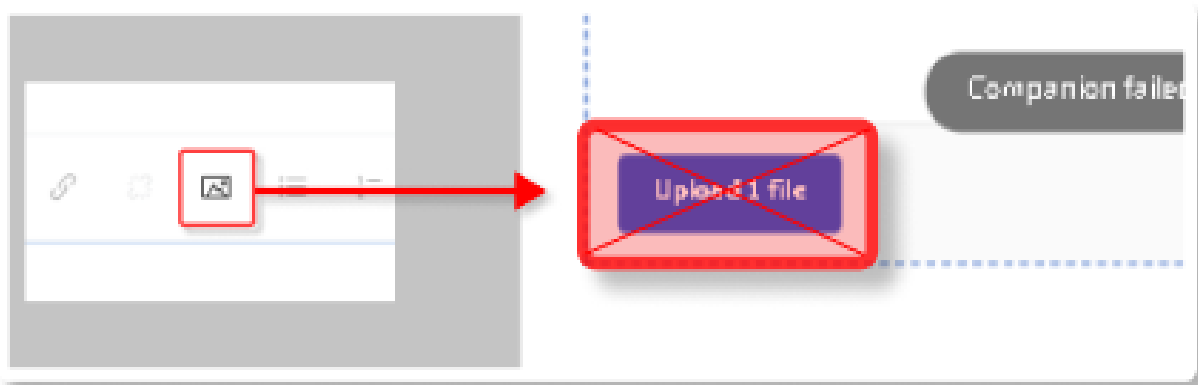


Fig: Shows the exact location of where to remove the upload button

Recommendation: Remove the “upload file” button and allow the system to streamline the uploading of images when images are dropped/dragged /added to the pop-up section for adding images.

Finding 8: Inconsistent Use of the “Like and Dislike” Button

Severity: 1/4

Heuristic Violated: 4. *Consistency and standards*, 1. *Visibility of system Settings*

Inconsistency use of the “Like and Dislike” buttons for the main thread and individual user post threads. The principle of consistency is important in this case so

that users consider the like functionally as an effective way to mark useful information.



Fig: Show two examples of inconsistency of the "Like" and "Like and Dislike" button usage

Recommendation: The "Like and Dislike" button should be consistent on all threads and post on the user's interface. Remove all the dislike button functions to maintain consistency.

Finding 9: User Warning for Cancellation of Unsaved Work

Severity: 1/4

Heuristic Violated: 9. *Help users recognize, diagnose, and recover from errors*

When creating a new post for a thread, a text field appears for input information, but when users click "x or cancel" – there is no indication or warning of saving or erasing the draft of their work.



Fig: The left shows the areas of exiting a "create a new post thread" and a the left shows a sample warning dialogue before closing out of the text field input

Recommendation: Create a viable system status and confirmation that will indicate that their work will not be saved if they click on the “x or cancel” buttons or the outside parameters of the text field.

Finding 10: Inconsistent Functionality of Text Input Field Error

Severity: 1/4

Heuristic Violated: *1. Visibility of system status, 4. Consistency and standards*

In the description of the text input when there is no value present, it is missing the error tag warning users that the value is empty. This is located in all the text input sections for creating a new post for a thread or adding onto a thread.

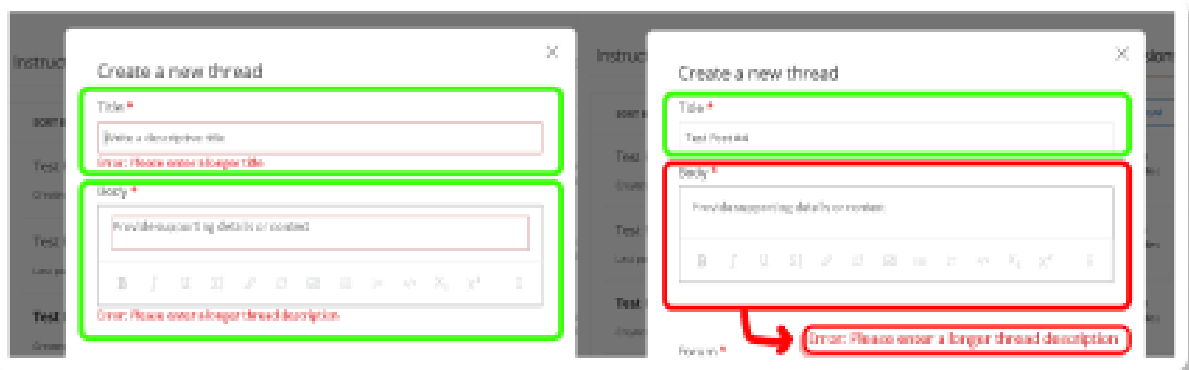


Fig: Shows the missing error on the right side that needs correcting

Recommendation: Create ticket for engineers to test and adjust the consistency in the warning of user error of the text input value.

Conclusion

The Heuristic evaluation of the Coursera’s discussion forum reveals that there are usability issues and UI design and functionality that violated the heuristics. It is important to address these issues found in this report to enhance the user experience of students using this online learning platform.