Final Term Report

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H543 – Usability and Evaluative Methods

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Executive Summary

Flickr is a social networking website whose main focus is photo sharing. Flickr allows users from around the globe to upload and various photos with friends, family and other Flickr members. To further enhance the user experience and accessibility, Flickr has a mobile application that allows users to upload, edit and share photos, much like the web version of the application.

Initially, our team of graduate students from Indiana University School of Informatics in Indianapolis performed an expert review to evaluate Flickr. Based on the identified issues from the expert review, a usability test was implemented which consisted of users completing a variety of tasks on both the web and mobile application. The tasks were based around the main functions of Flickr such as: Create an Album, Upload Photos, Delete Photos, Leave a Comment on another user's photo, Change Privacy Settings, and Sign out Securely from the application. All users completed a post-task comfort rating as well as pre-test and post-test questionnaire to collect demographical data and assess the overall usability of Flickr (SUS score).

To note, a few users felt that many tasks on Flickr website were cumbersome. This was reflected through users rating the Flickr website with a SUS score of 61. Even though users gave the web version of Flickr a competent score, many struggled or failed completely to finish the tasks. Also while reviewing Flickr for this project, Flickr created a new "Beta" version for uploading, editing, and viewing photographs. Because of this new feature, two users were selected to complete tasks using the newer version and rate their experience.

In regards to the Flickr mobile application, however, virtually all users found the application counterintuitive and gave the Flickr app a failing score of 22. Many mobile users felt the placement of things like the option to "Sign Out" was inconsistent with other social media application standards. Furthermore, many users felt that options to modify, edit, and delete photos were not instinctive.

As mentioned above, based on the responses we collected from the post-test questionnaire, we calculated the SUS score and tried to determine the usability of the product as a desktop website versus the android mobile app version. The accepted industrial average SUS score is 68. A SUS score of above 68 would be considered above average and anything below 68 is below average. Our calculations showed us the following overall SUS ratings:
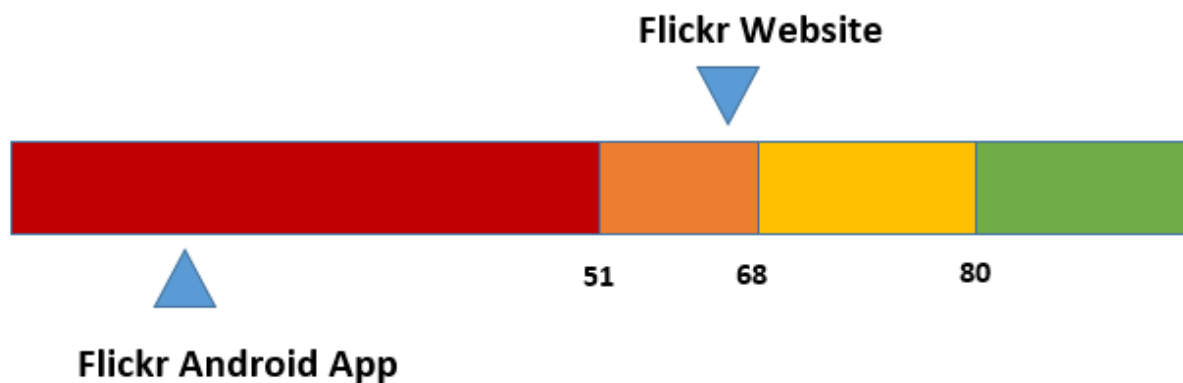
Average SUS score for the Flickr Desktop Website: 61

Average SUS score for the Flickr Android Mobile App: 22

The above graph clearly indicates that while the Flickr desktop website is usable, it has definite scope for improvement to make the product more easily acceptable. The android mobile app, on the other hand, received very low scores indicating difficulty in using the app, poor user experience and major redesigns for improvement.

I. Application Overview & Methodology

WHAT WE TESTED?

FLICKR DESKTOP WEBSITE AND THE ANDROID MOBILE APP WAS TESTED.

WHO WE TESTED?

TOTAL 11 USERS PARTICIPATED TO TEST FLICKR. SIX TESTED THE WEB APPLICATION WHILE FIVE TESTED THE MOBILE APPLICATION. USERS WERE FROM A VARIETY OF BACKGROUNDS THAT INCLUDED UNDERGRADUATE STUDENTS, GRADUATE STUDENTS, AND WORKING PROFESSIONALS.

WHERE WE TESTED?

THE MAJORITY OF SESSIONS TOOK PLACE ON FIRST FLOOR IN THE STUDENT CENTER LABS AT THE ICTC BUILDING. OTHER TESTING SESSIONS TOOK PLACE IN THE STUDENT'S HOME AND PLACE OF EMPLOYMENT.

WHEN WE TESTED?

USER TESTING TOOK PLACE FROM OCTOBER 19 THROUGH NOVEMBER 13, 2013.

HOW?

THE FORMAT USED WAS 1-ON-1 USABILITY TEST SESSIONS. ALL SESSIONS TOOK 60 MINUTES OR LESS TO COMPLETE.

Experimental setup:

For all user testing, an interviewer and observer were present. The observer gathered notes on the user's reactions, facial and verbal expressions etc. All users were asked to implement the Think-Aloud strategy throughout the session to provide further information. The interviewer clarified the tasks that were given to the user, guide them through tasks if necessary, and prompt users to think-aloud when they were stumped. Live video recording of all user testing sessions was also taken to provide the team with a holistic view of user actions.

The following equipment was used for all desktop user testing sessions:

- WINDOWS BASED LAPTOP COMPUTER
- BROWSER: GOOGLE CHROME
- CAMTASIA STUDIO 8 FOR VIDEO AND AUDIO RECORDING

The list below consists of equipment used for mobile testing sessions:

- ANDROID SMARTPHONE (NEXUS 4, GALAXY S2)
- MOBIZEN AND MYPHONEEXPLORER APP AND DESKTOP (WINDOWS) CLIENT FOR SHARING THE MOBILE SCREEN.
- THE PHONE WAS CONNECTED TO A LAPTOP USING A USB CABLE FOR STREAMING CONTENT ONTO THE PC SCREEN.
- CAMTASIA STUDIO 8 FOR VIDEO AND AUDIO RECORDING

Users were asked to complete various tasks such as uploading photos, creating an album, deleting multiple photos, changing privacy settings etc. A complete list of all tasks used for the mobile and desktop version of Flickr can be found in the appendix. In addition, users were asked to complete a post-task and post-test questionnaire. These forms can also be found in the appendix.

User task completion was divided into four categories: completed with no assistance, completed with assistance, partial complete and incomplete/gave up. These categories were used to illustrate the levels of success with each task on both platforms.

Severity Rating System:

Throughout this evaluation, four severity levels were identified to represent the magnitude of impact that an issue can have and how soon necessary corrective measures should be taken to rectify the issue.

- *Low: potential problems exist but can be ignored*
- *Average: problem exists and should be fixed, but not necessarily immediately*
- *High: serious issue and needs to be fixed as soon as possible*
- *Critical: problem has severe impact and should be fixed right away*

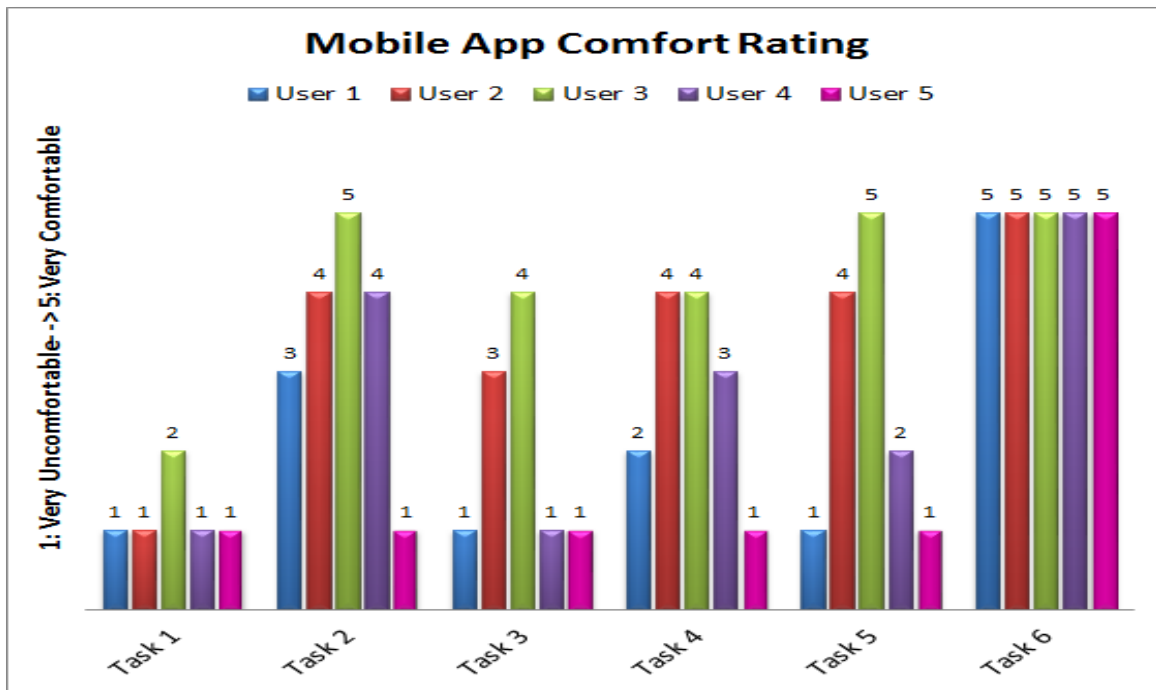# II. User Testing Results For Common Tasks

QUANTITATIVE RESULTS:

Figure 1: Comfort rating for tasks performed on the Mobile app
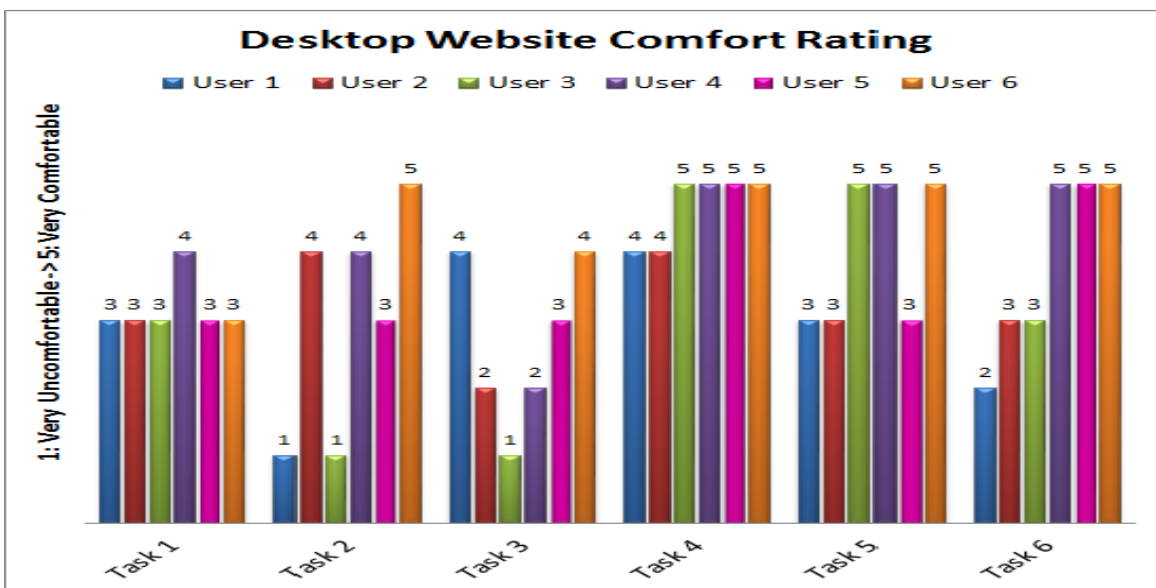

Figure 2: Comfort rating for tasks performed on the Desktop Website

The graphs above contrast the user comfort rating for tasks performed on the mobile and on the desktop website. This comfort rating was from the user's perspective and it was irrespective of whether the task was completed or not. Six tasks were common to both the platforms and have been compared in the above graphs to better understand the difference in comfort level from the user's perspective. The comfort rating scores were obtained from the "post-task questionnaires", filled in by each participant at the end of each task. From the graphs above, it is evident that the overall comfort rating for tasks performed on the desktop website was *much higher* than that when performed on the mobile app. This clearly suggests that the website interface is much more usable than the android mobile app version.
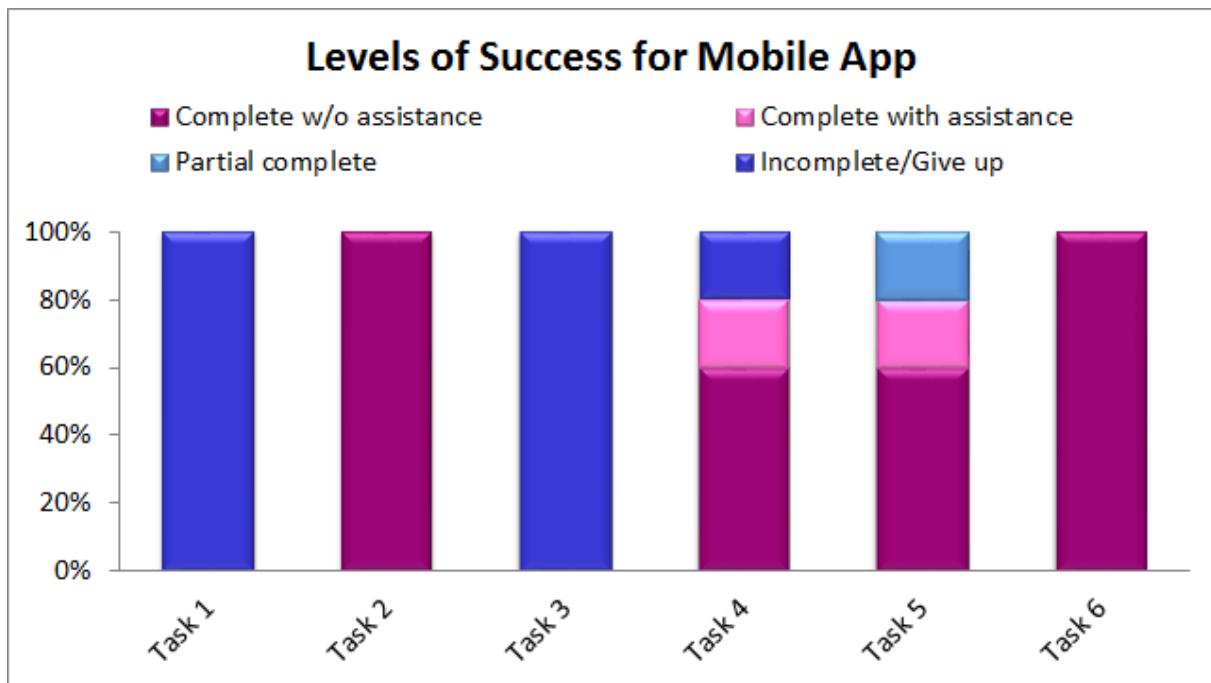

Figure 3: Graph indicating level of success (completion) for tasks performed on the mobile app.
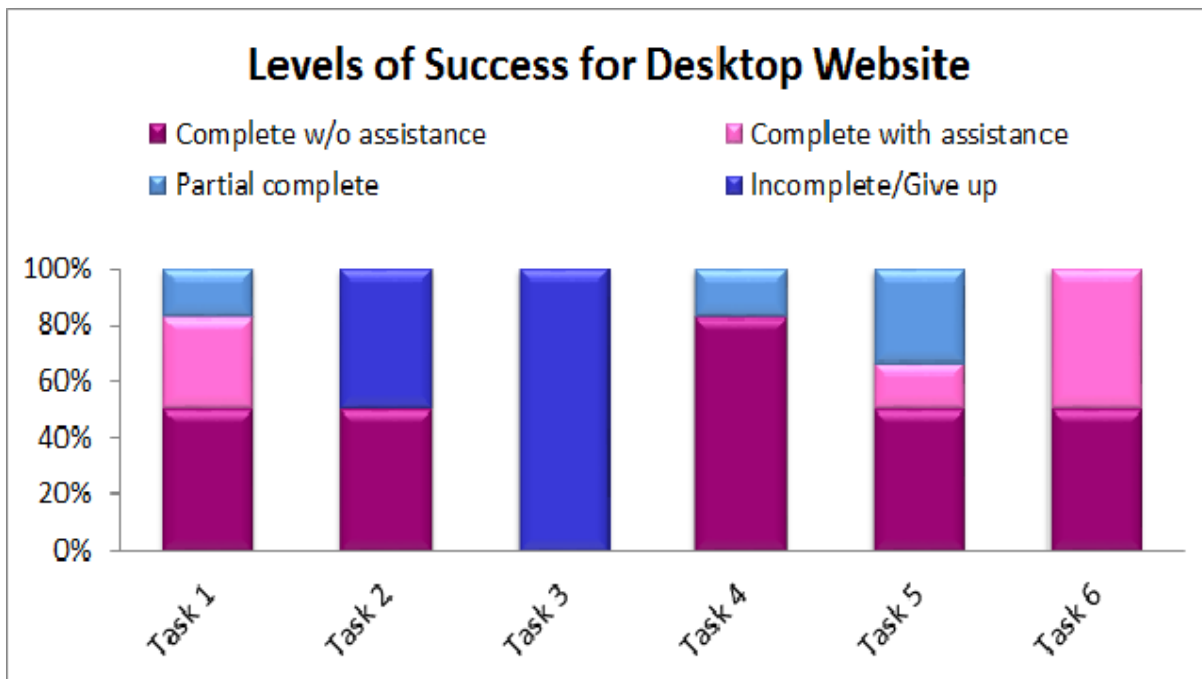
Figure 4:   Graph indicating level of success (completion) for tasks performed on the desktop website.

Figure 3 and 4 above indicate the level of success (completion) for each task performed on the mobile app and the desktop website. This was from the evaluator's perspective irrespective of how long it took for the task to be completed or not (since time-on-task was not taken into consideration). A task was marked either complete without any assistance from the facilitator or with partial assistance or partially complete or incomplete altogether, if the users failed to perform the task or had a false impression of task completion. These were recorded by the observing team members during the user testing sessions. The graphs offer a better visual understanding of how the task completion ratings compared over the two platforms.

It can be seen that tasks were more easily completed when performed on the desktop website (only 1 task was incomplete by all the users while others were 'somewhat' complete) than the mobile app (where most tasks were incomplete or required assistance).

QUALITATIVE ANALYSIS:

A. **Task Title:** *Album Creation and Uploading Photographs*

Task Description: "You are interested in being able to showcase some of your recently captured photographs. Create an album (give it a name of your choice) and insert ten photographs in this album."

Issue: Confusion between 'sets' and 'albums'.
Platform: Mobile and Desktop
Severity Rating: **Critical**

User Quotes and Expectations:

- *"I have no idea what I am doing here..."*
- *"Am not sure how to make an album..."*
- *"Calling albums, 'Sets' is non-intuitive. What is the difference between Sets and Groups?"*

- Most users were misled by fields named "title" and "description" and felt that by giving a title, they were in fact grouping all photos into an album.
- They were looking for the term album or some kind of help to tell them if 'sets' meant album.
- Users expected to be given an option to create an album/set immediately after uploading photos.
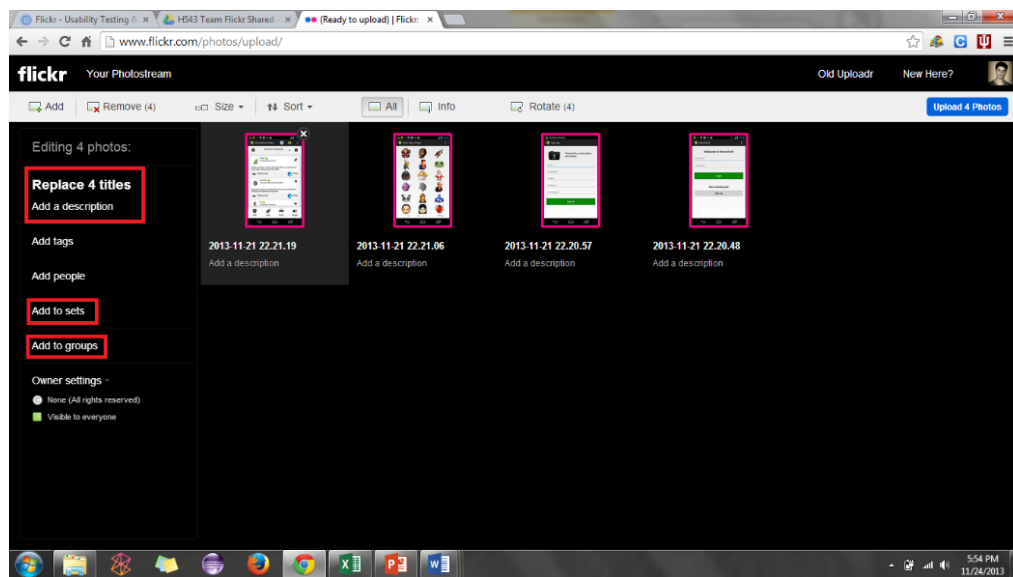

Figure 5: Snapshot from the website, indicating the confusion due to the terminology used.

Issue: Lack of clear hierarchy. Creating set option is under edit option and it is a 4 step process.
Platform: Mobile
Severity Rating: Critical

User Quotes and Expectations:

- *"I am unable to create or find how to create a new set"*
- *"This is too much work to just create a Set!"*

- Users expected to be able to create a new Set in the Sets screen. Some tried clicking the image in the middle hoping to create a new set.
- Having the "new set" option under edit for each individual photograph was not intuitive.
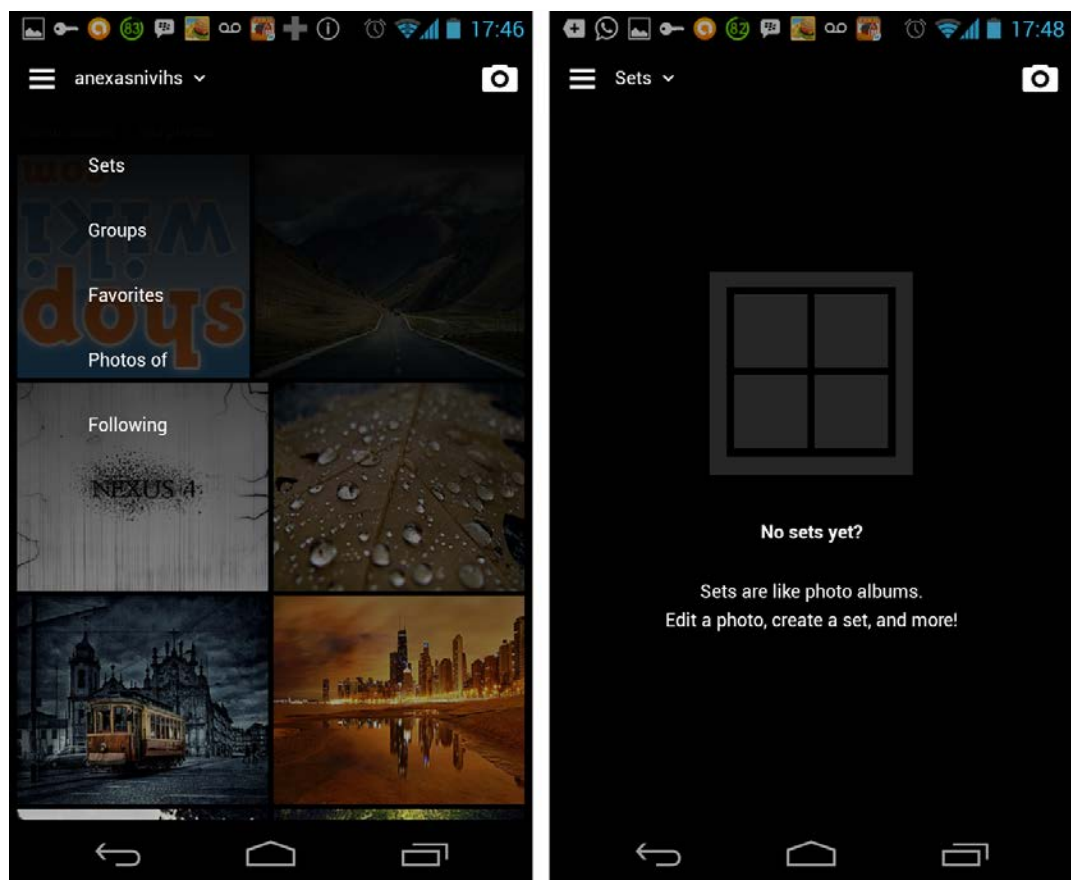

Figure 6: Users expected to be able to create new sets on the "Sets" page but it was view-only.
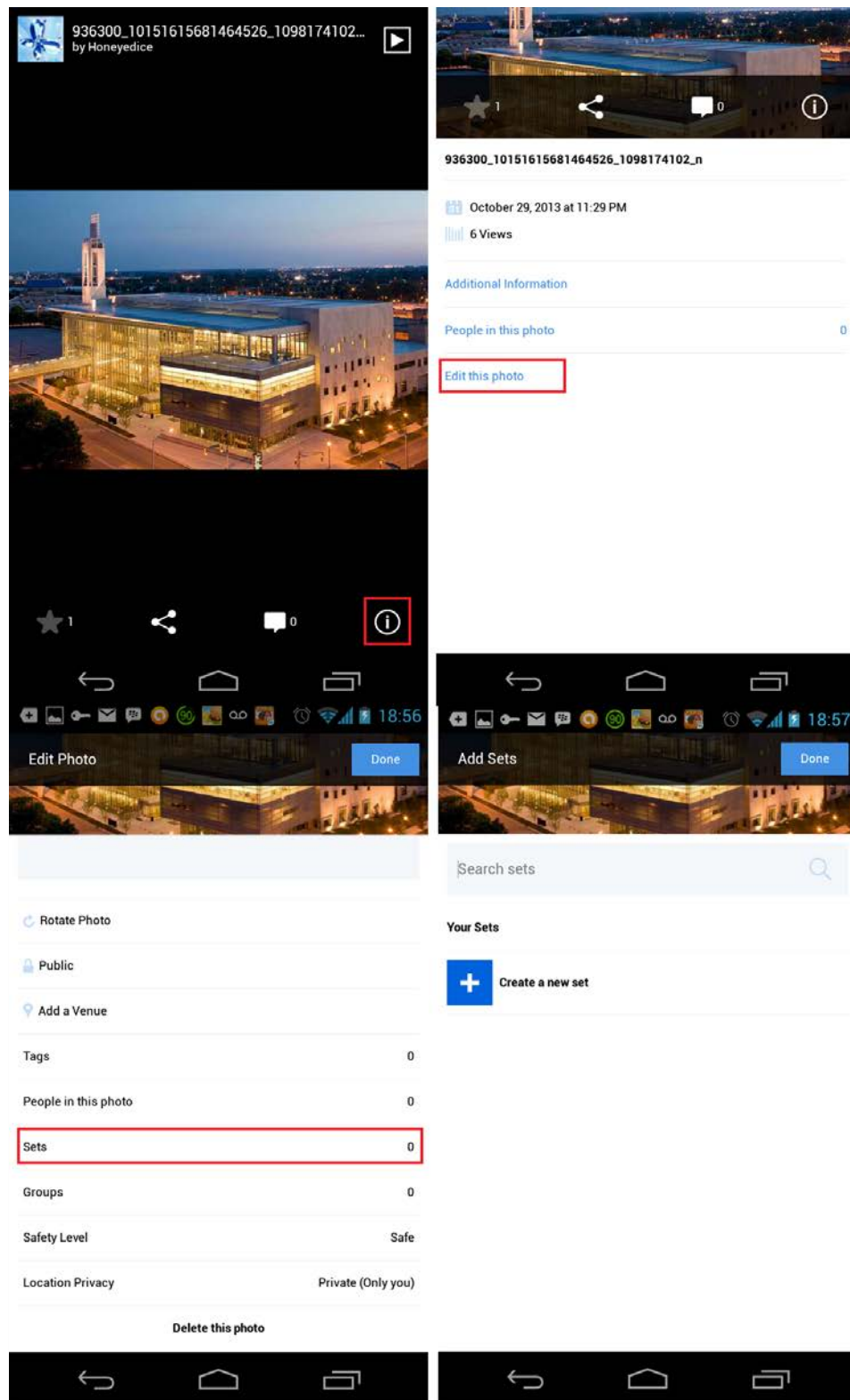
Figure 7: Snapshots indicating the four step process involved in creating a new step.

Issue: Upload photos option is under camera icon.
Platform: Mobile
Severity Rating: High

User Quotes and Expectations:

- *"This app is already making me impatient, I just can't find the upload option!"*
- *"Use of the camera icon is unclear to me. I would expect 'upload' to be shown by a clear label/button".*
- *"I thought that the icon was for clicking photos and uploading them straight-away!"*

- Users commented that it didn't make sense to find the "upload" option under the camera icon, which usually suggests clicking a photograph. Such grouping of features was unintuitive.
- Most users did not expect to find the upload option under the camera icon. They though the icon would enable them to capture live photos.
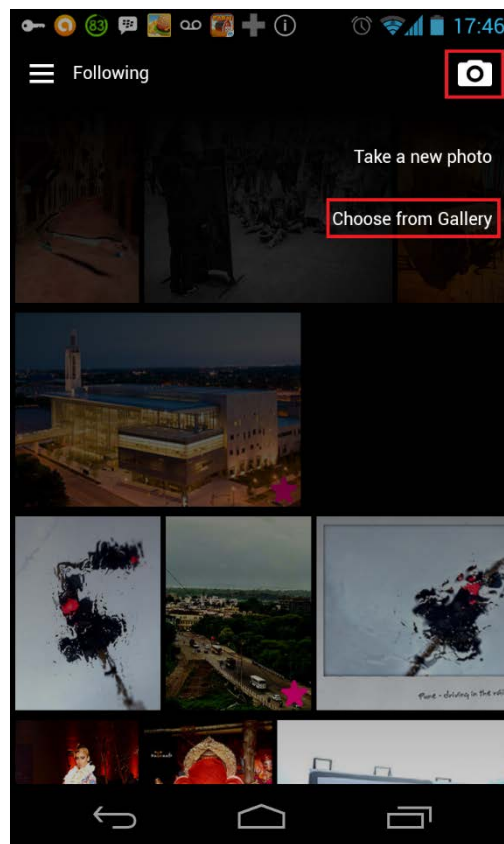

Figure 8: Upload option is placed under the camera icon.

Issue: Lack of progress and confirmation while uploading photographs.
Platform: Mobile
Severity Rating: Low

User Quotes and Expectations:

- *"I think I have uploaded the photos. There was no progress bar. I didn't even see any confirmation so I'm assuming it is done!"*

- Users commented that there was no way to know whether the photos were uploaded or not since they clicked 'Upload' and that's it. There was no confirmation box saying 'Photos uploaded successfully'.
- They also expected that once the photos were uploaded it would appear on the screen automatically (i.e. redirected to photostream) like in other apps or websites.

Issue: Accessibility problem
One of the users tested was red-green color blind and had trouble determining difference in contrast while selecting photographs to upload. (Each selected photo was highlighted using a pink color against a black background.)
Platform: Mobile
Severity Rating: Average

User Quotes and Expectations:

- *"I am not sure if the photos I selected have been uploaded."*
- *"I can't understand if the photo I just touched was selected. The color difference is unclear to me."*
- *"The pink color is difficult to make out against the overall black. I am red-green color blind, so some websites are difficult for me to navigate."*
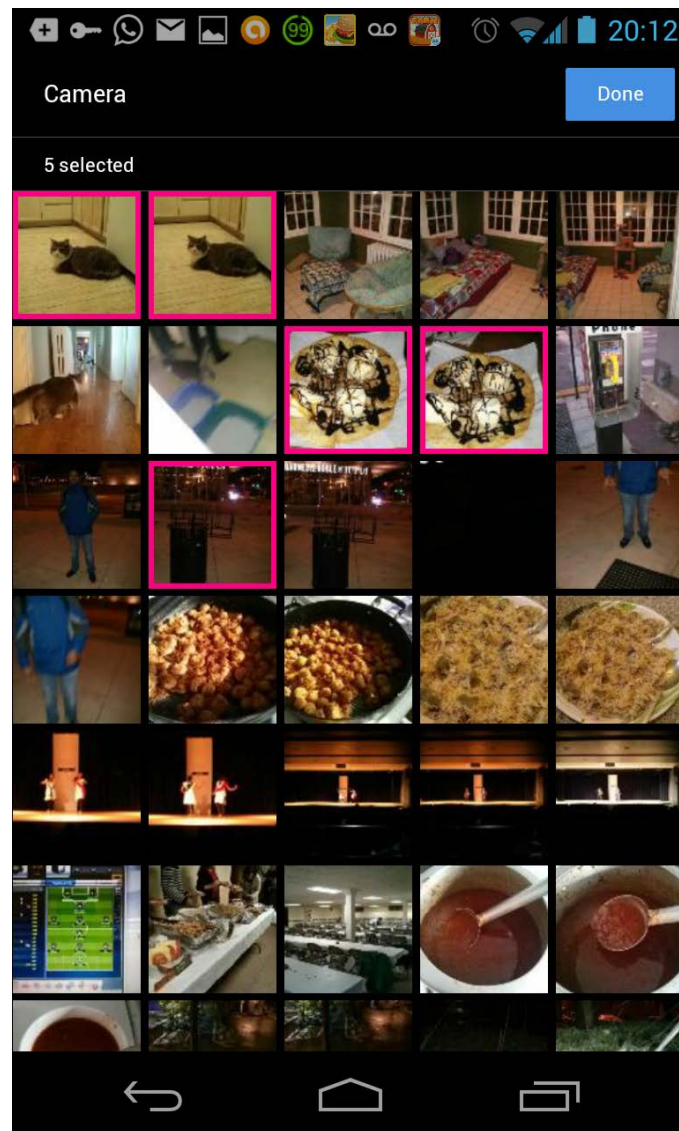
Figure 9: The color-blind user wasn't able to tell if the photos he touched had been selected.

Recommendations:

- Using the term Album instead of Sets should make it more understandable for users.
  Another alternative could be to provide some introductory video tour for newly registered users and indicating that Set in fact means Album.
- The "Sets" screen should have a provision for creating new sets and adding photos from gallery/photostream in the newly created set.
- There should be a prominent "Upload" button/label, directly visible and accessible at the top level of the menu hierarchy.

- There should be a progress bar or some feedback which tells the user that the photos are uploading or have been uploaded.
- The app should be made accessible to all by using an appropriate color scheme. It should also show which photos have been selected. For example on top it could say '3 Photos selected'!

Conclusion: As seen from all the above issues, this task was simple in its wordings yet difficult to perform, took a lot of time and was better done on the desktop than on mobile. This has also been indicated in the graphs above for Task 1. The comfort rating for mobile app was lesser than desktop website and level of success shows that no one could complete it on the mobile.

B. Task Title: *Create Custom Groups*

Task Description: "You want to showcase your talent to a reputed studio owner by showing your album to him. Provide a means to make the album you created in Task 1, available to this person [bansalm@iupui.edu] but restrict other Flickr members from accessing your album. [The studio owner must be the only person able to view your photographs]."

Issue: Inability to create custom groups.
Platform: Mobile and Desktop
Severity Rating: High

User Quotes and Expectations:

- *"It says 'Only You' here, that would mean just me. So maybe me and the person I share the link with can view the photos and no one else?"*

- Almost all users selected the "Only You" option within privacy settings as a solution to the task. They felt that this setting compounded with the sharing of photos via email would enable only that person to view the photos.
- Users were unable to understand what exactly Groups meant and how they could create a new custom group.
- In the app, some users expecting to find more sharing options under the "info" tab.
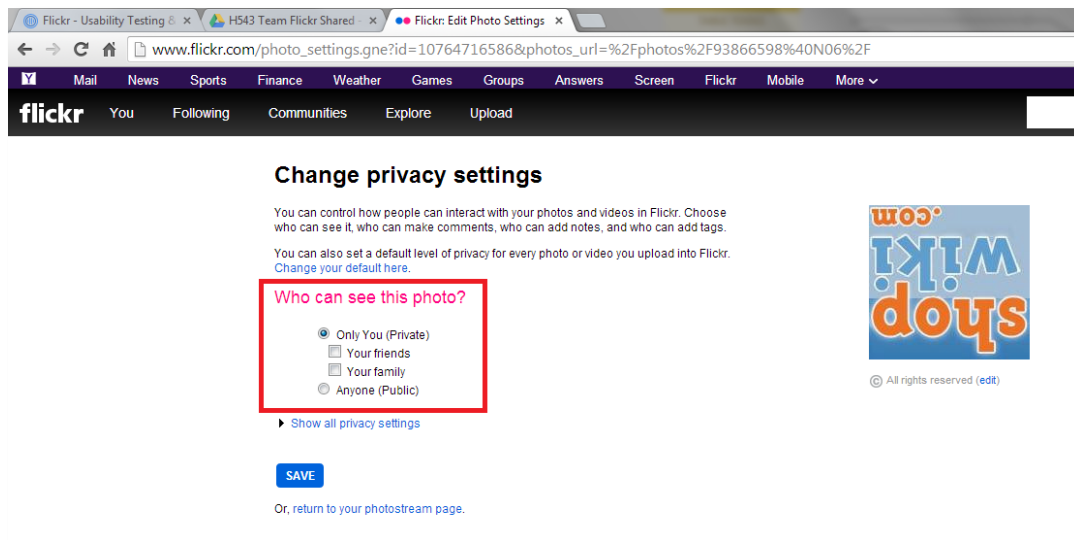
Figure 10: Only two groups, "friends" and "family" are permitted. Members cannot create new groups.

Recommendations:

- Availability of a feature to create custom groups and configure privacy settings for each group separately. Additional groups must be permitted in addition to "Family" and "Friends".

Conclusion: This task was confusing to many users. The comfort rating for mobile app was lesser than desktop website and level of success shows that no one could complete it on the mobile or desktop. This has also been shown in the graphs above for Task 3.

C. Task Title: *Deleting Multiple Photos*

Task Description: "You decide that some of the photos that you uploaded in your album are not that great and should be eliminated. Discard any three photos from your recently created album."

Issue: Difficulty in deleting multiple photos simultaneously.
Platform: Mobile and Desktop
Severity Rating: High

User Quotes and Expectations:

- *"I would expect to press the SHIFT/CTRL key and select multiple photos but that's not happening."*
- *"I do not know what 'Batch Organize' means but I would give that a try!"*

- Most users were able to delete multiple photos one by one but not all together. When asked to do so, most of them were clueless about how to delete multiple photos simultaneously.
- Some users managed to reach "Batch Organize" but via the Sets menu and felt that they only had the option of deleting the entire set as a whole and not a select few photographs.
- In the mobile app, users tried finding ways for selecting multiple photos but failed to do so. Photos could only be deleted one at a time.

Issue: Lack of clear hierarchy. Delete option is under edit option and not easily visible. It is a 3 step process to delete a photo.
Platform: Mobile
Severity Rating: High

User Quotes and Expectations:

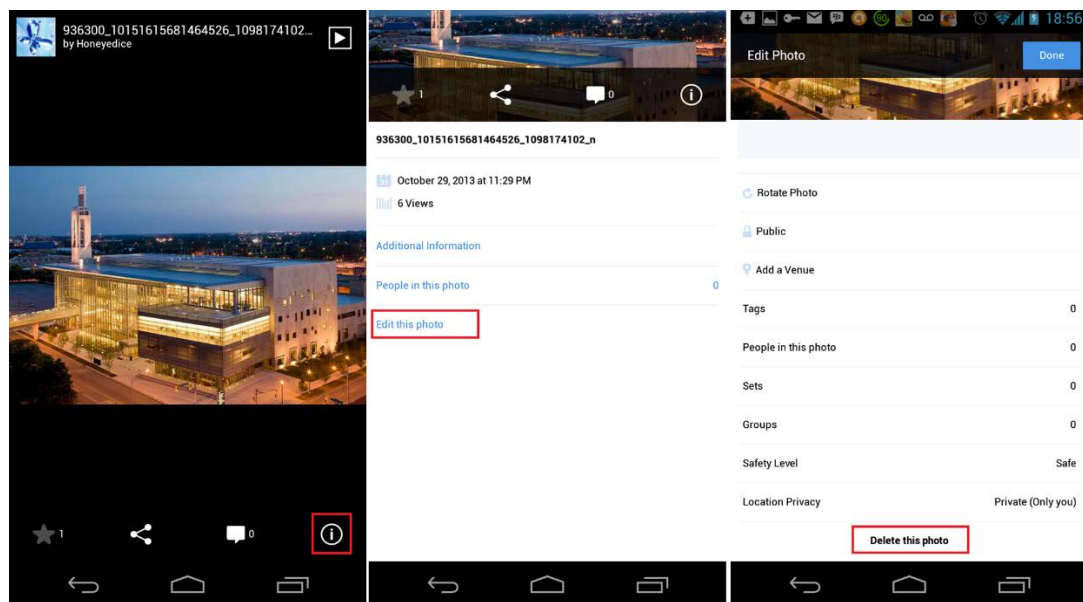- *"Delete should have been in Red and in bolder text!"*

Figure 11: Snapshots show the 3-step process involved in deleting a photo within the app. Photos cannot be deleted simultaneously.

Recommendations:

- Many other image and video hosting websites maintain consistency in certain functions such as deletion of items by making the task as identical as possible to similar regular functions users perform daily. For example, in Picasa, multiple images can be simply selected holding the "CTRL" key and then pressing the "DELETE" key removes the selected images; this is analogous to deleting files on your local file system. Flickr makes use of batch operations in its organizer which should be significantly simplified for user convenience.
- Users would have liked to have a delete tab in the main sub-menu instead of under edit.
  The delete option should be present at the first menu level itself and be displayed in red, indicating the severity of the operation.

Conclusion: This task was easy to understand yet took a lot of time because of its complicated nature. The comfort rating for mobile app was more or less same as the desktop website and level of success shows that this task required assistance for the mobile as well as the desktop. This has been indicated in the graphs above for Task 5.

D. **Task Title:** *Sharing a photo*

Task Description: "Make the album created in Task 1 available to any four people. (You may select the investigators involved in this research)"

Issue: Lack of tooltips and visual hints to identify unfamiliar icons.
Platform: Desktop and Mobile
Severity Rating: Average

User Quotes and Expectations:

- *"I can't find the Share option on the screen."*
- *"Oh, this is the Share button, they should have some kind of hints when I place the mouse over the icon".*
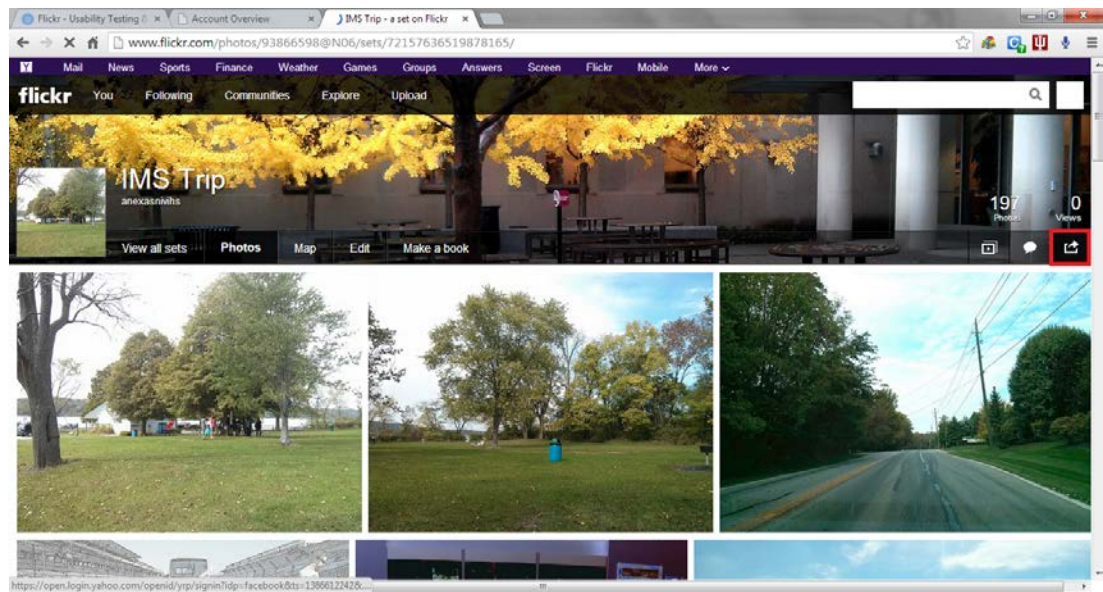
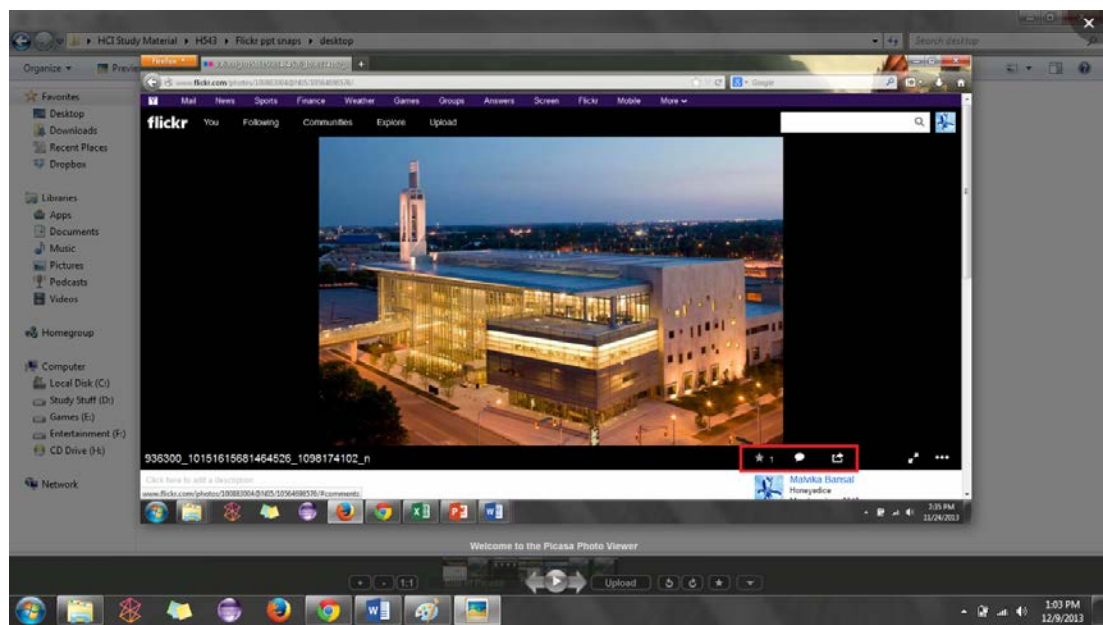**Figure 12: The share icon is highlighted in the snapshot. There is no tooltip on mouse hover.**

Figure 13: No tooltips on mouse hover over the highlighted icons.

Figure 14: The beta version for viewing images makes use of tooltips on mouse hover and has an improved interface.

Recommendations:

- The beta interface for viewing images in expanded mode showcases an improved interface with the use of tooltips and better organized content. However, many icons on the outer pages still suffer from the lack of tooltips or visual hints. These should be provided.
- On the mobile interface, labels can be used in addition to the icons so that users who are unfamiliar with the icons can still identify them using the labels.

Conclusion: The comfort rating was comparatively higher than the other tasks for both platforms and level of success shows that people who used the mobile app knew the share symbol and therefore could complete this task easily than people who tested the desktop website. This has been indicated in the graphs above for Task 2. Also, the task was more easily performed on the beta version than the original website interface.

E. Task Title: *"Faving" a photo and Commenting on it*

Task Description: "You have received a link to an album on Flickr from your friend. He/she wants to share their photographs with you. View this entire album and appreciate their effort by leaving a remark and a visual cue that suggests that the photo appealed to you in particular."

Issue: Lack of tooltips or visual feedback.
Platform: Desktop
Severity Rating: Low

User Quotes and Expectations:

- **"**I am looking for something similar to a "like" or "+1" button but cannot find it."
- "I see these three icons but I would expect to see some hint when I take my mouse over them, just to be sure. I don't really click unfamiliar icons or buttons."
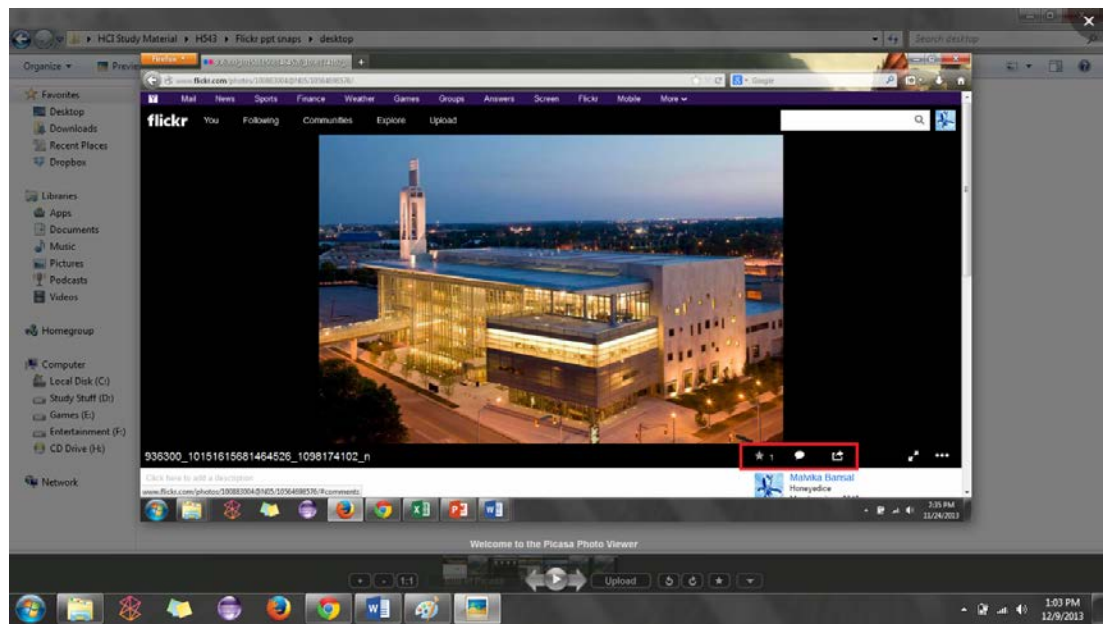

Figure 15: No tooltips on mouse hover over the highlighted icons.

Figure 16: The beta version makes use of tooltips on mouse hover.

Recommendations:

- The beta interface for viewing images in expanded mode showcases an improved interface with the use of tooltips and better organized content. However, many icons on the outer pages still suffer from the lack of tooltips or visual hints. These should be provided.
- On the mobile interface, labels can be used in addition to the icons so that users who are unfamiliar with the icons can still identify them using the labels.

Conclusion: This task was very simple and users knew what was expected of them. A few users still had a little problem completing this task on mobile app as shown in the graphs above for Task 4. Also, from the graphs shown below it is clear that users were able to perform the tasks much more easily on the new beta desktop interface than the old interface.
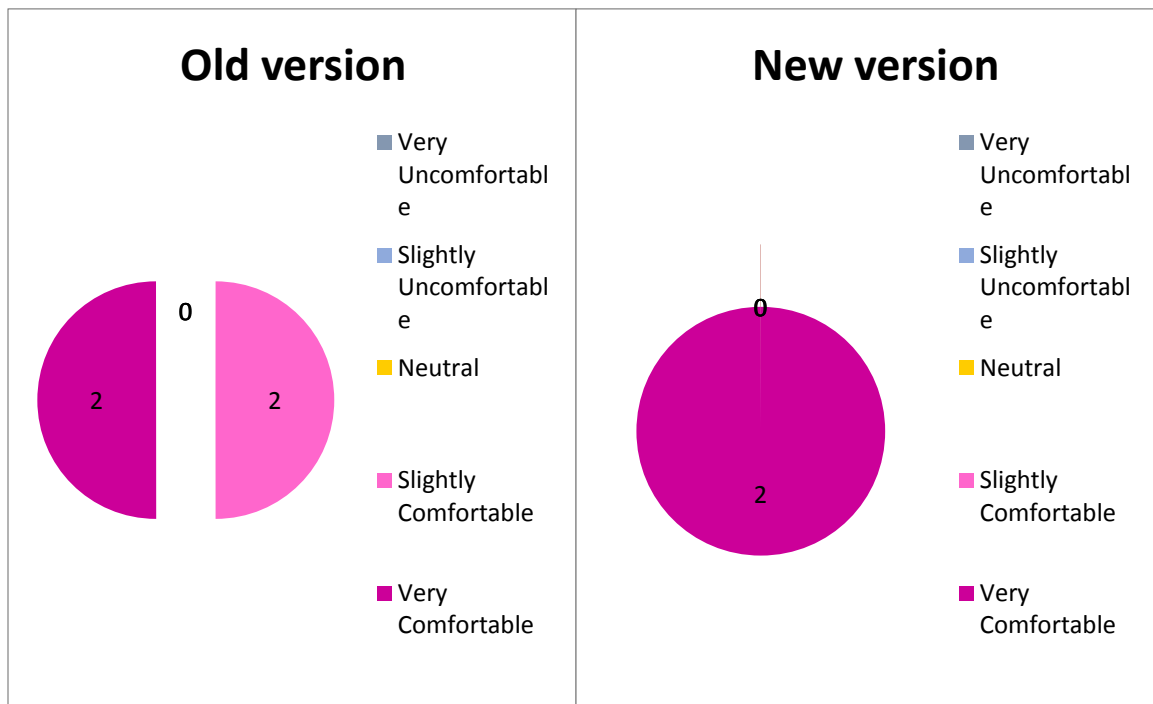
F. Task Title: *Enlarging a photo and going Back to Photostream*

Task Description: "View photos by enlarging them and then go back to the page you came from without pressing browser back button or any keyboard back buttons."

Issue: Lack of tooltips or visual feedback.
Platform: Desktop
Severity Rating: Low

User Quotes and Expectations:

- "I would expect to see some back arrow at the top itself instead of having to scroll all the way down."
- "I don't really understand how to go back if I can't use the browser button, can't find anything here yet."
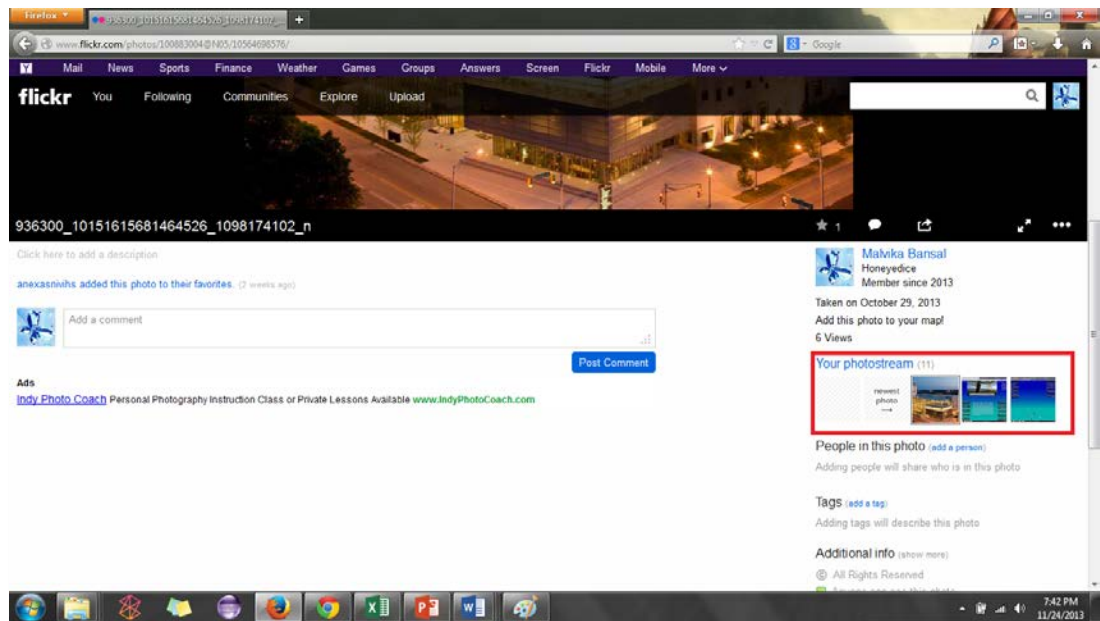
Figure 17: Users must scroll down and click the title of the stream/album to navigate back.

Figure 18: The new beta interface makes the link to the album/stream more easily accessible.

Recommendations:

- A more visible and easily accessible icon or label can be provided to navigate back to the album/stream being currently viewed. The new beta interface takes care of this to an extent that it provides displays the title of the stream to the right, where it is more easily noticeable than that in the previous interface.

Conclusion: This task was easily performed on the mobile app than on the old desktop website as shown in the graphs above for Task 6. But from the graphs shown below it is clear that users were able to perform the tasks much more easily on the new beta desktop interface than the old interface.
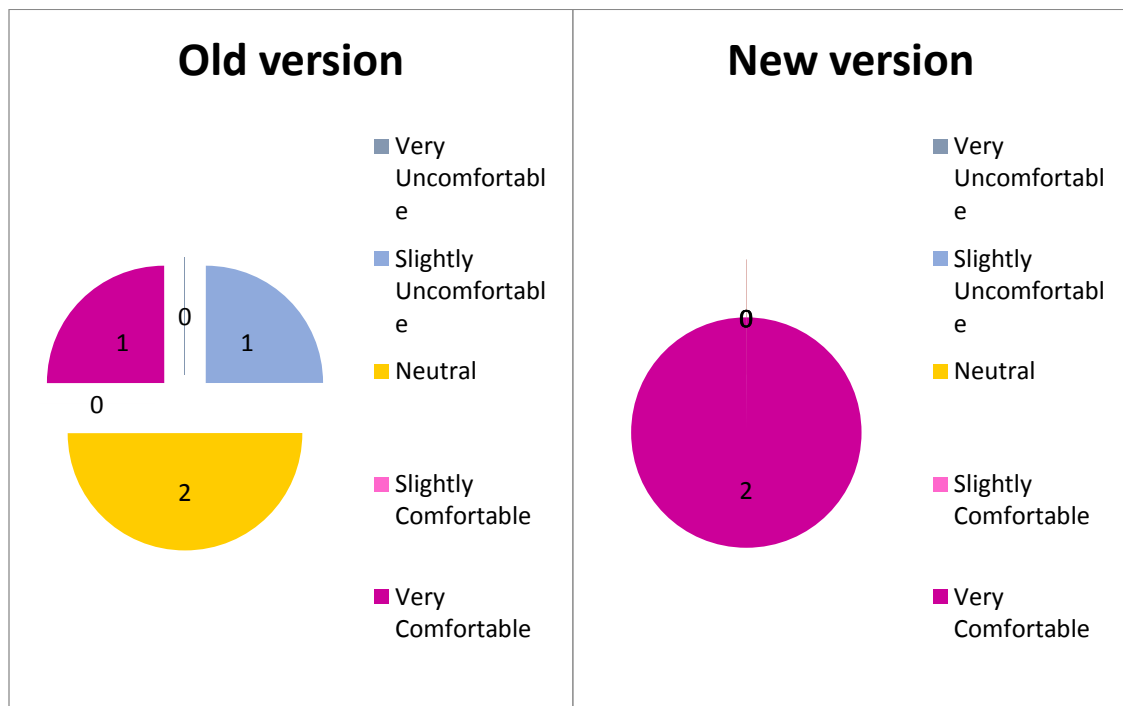
III. User Testing Results For Unique Tasks

A. Tasks for Android Mobile App

QUANTITATIVE RESULTS:
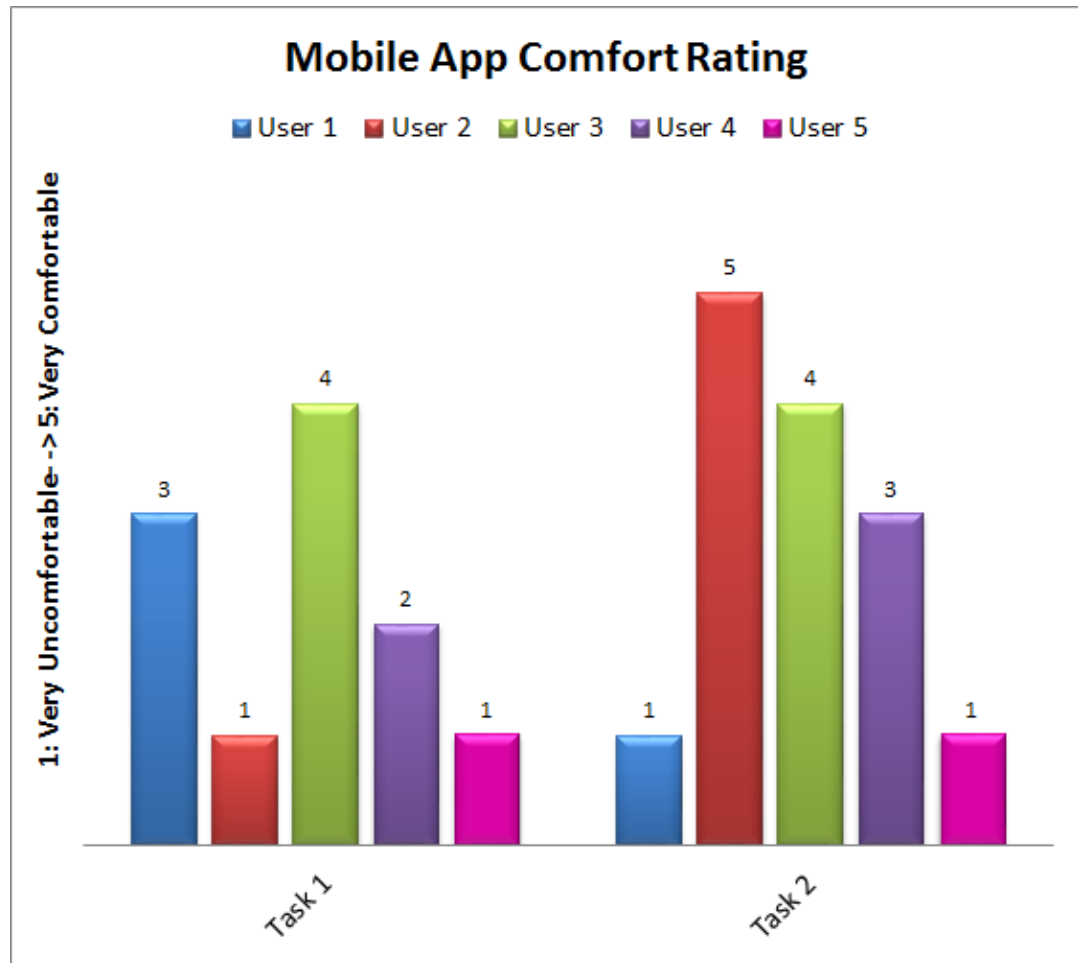
Figure 19: Graph showing the comfort rating scores for tasks performed only on the mobile app.

The above graph shows the comfort rating for two tasks that were specifically performed on the mobile app. The comfort rating scores were marked by the users on a post-task questionnaire at the end of each task. The graph helps understand how comfortable users were performing these tasks on the mobile app. (5 users were chosen to perform tasks on the mobile)
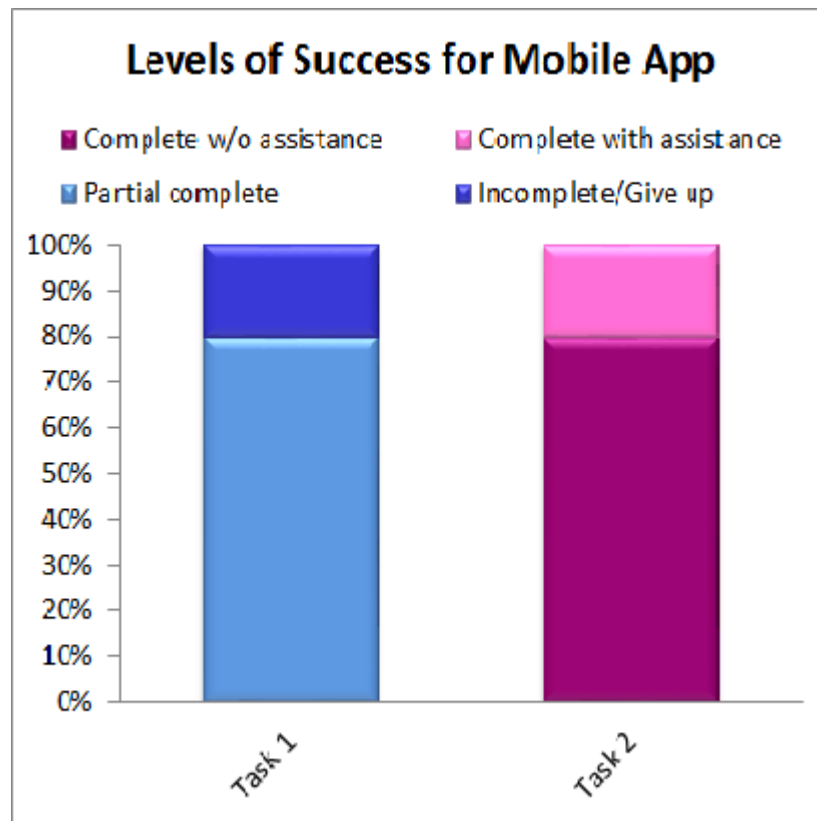
Figure 20: Graph indicating level of success (completion) for tasks performed only on the mobile app.

The graph above shows the level of completion (success rate) for each of the tasks performed specifically on the mobile app. A task was marked either complete without any assistance from the facilitator or with partial assistance or partially complete or incomplete altogether, if the users failed to perform the task or had a false impression of task completion. These were recorded by the observing team members during the user testing sessions.

QUALITATIVE ANALYSIS:

1. **Task Title:** *Sign Out from Flickr App*

   Task Description: "Close your account securely and shut the Flickr application."

   Issue: Misplaced menu item. Sign out option was under menu->settings->sign out.
   Severity Rating: High

User Quotes and Expectations:

- *"Placing the Sign-out button under Settings doesn't make sense. It would have been far simpler to have it in the main menu."*
- *"Sign Out is not a setting. It clearly needs to be on the main screen or at least in the menu item."*

- Only one user approved of "sign out" being placed under settings saying that it is more common to do so nowadays.

Figure 21: Figure shows the placement of the "Sign out" option under Settings in the side menu panel.
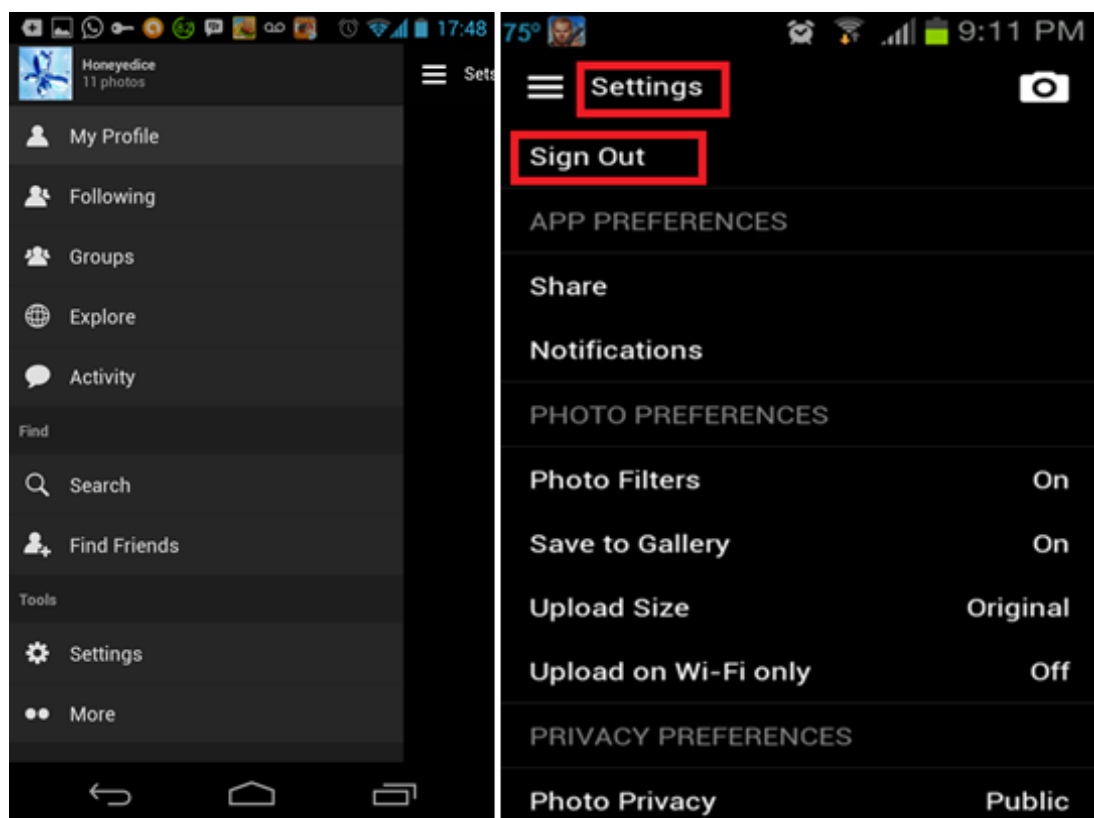
Recommendations:

- The "Sign Out" option should be placed one level above with all the other menu options seen on the side panel initially.

Conclusion: Users searched a little and then finally were able to complete this task with or without assistance. This has been shown in the graphs above for Task 2.

2. **Task Title:** *Apply Effects on Photo*

    Task Description: "Modify one photo in the album. Change its orientation and add an effect to it."

    Issue: Unable to apply filters and other effects once photo has been uploaded.
    Severity Rating: Low

    User Quotes and Expectations:

    - *"I can't seem to find any option to apply effects to this photo."*
    - *"I recall being given the option to apply some filters when I first uploaded the photos. But I can't find the same option now."*

    Recommendations:

    - The mobile app only allows users to apply filters while the photos are being uploaded for the first time. There should be a provision to apply the same filters once photos have been uploaded.

    Conclusion: Users were able to rotate the photo easily but unable to apply effects. One of them recalled having seen that option during upload of photos but couldn't find it again. This task was therefore partially completed by most users. This has also been indicated in the graphs above for Task 1.

B.   Tasks for Desktop Website

QUANTITATIVE RESULTS:
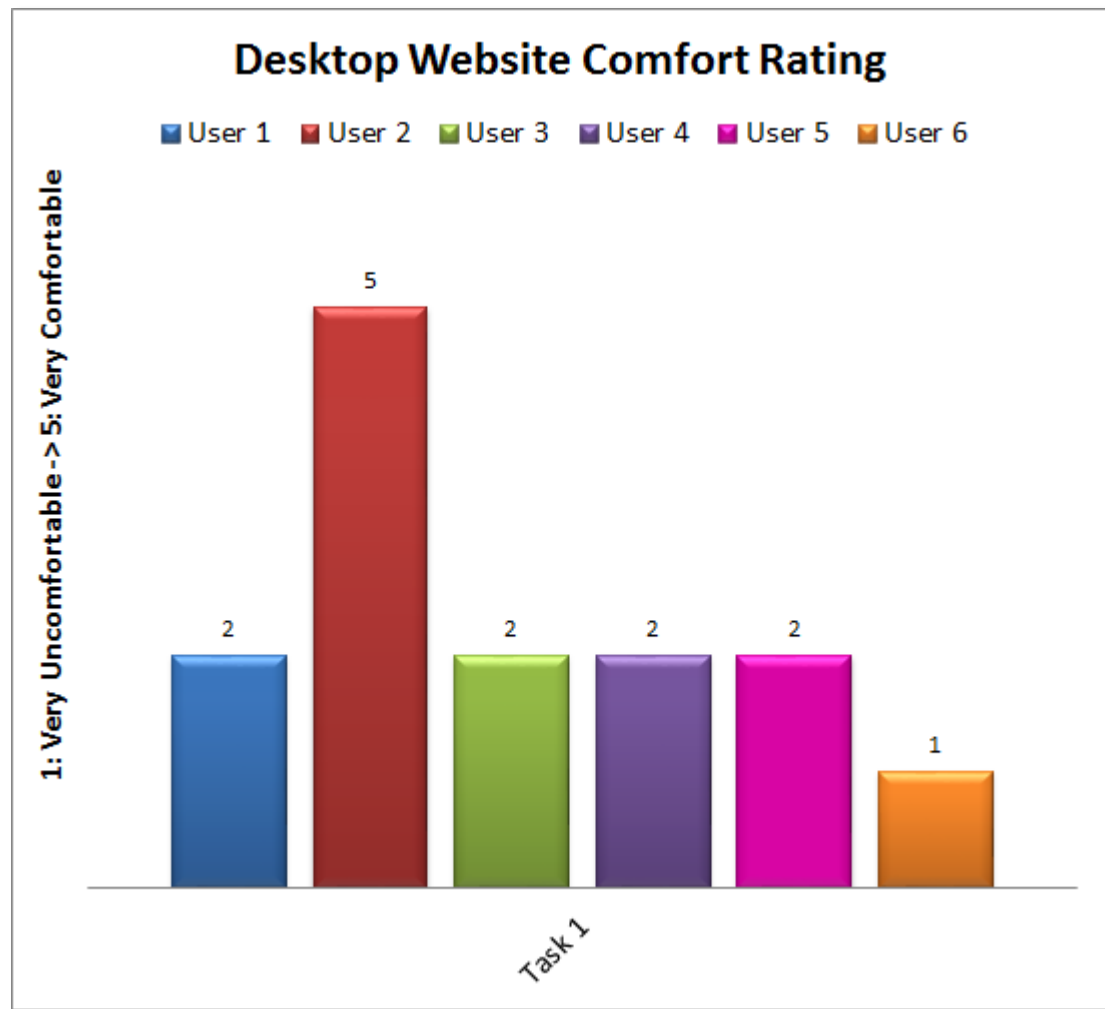
Figure 22: Graph showing the comfort rating scores obtained from different users for the task performed only on the desktop website.

The graph above shows the comfort rating scores for the one task that was performed only on the desktop website. The scores have been obtained from six users who performed this task in addition to other tasks on the desktop website and the overall score indicates that the task wasn't comfortable or clear enough.
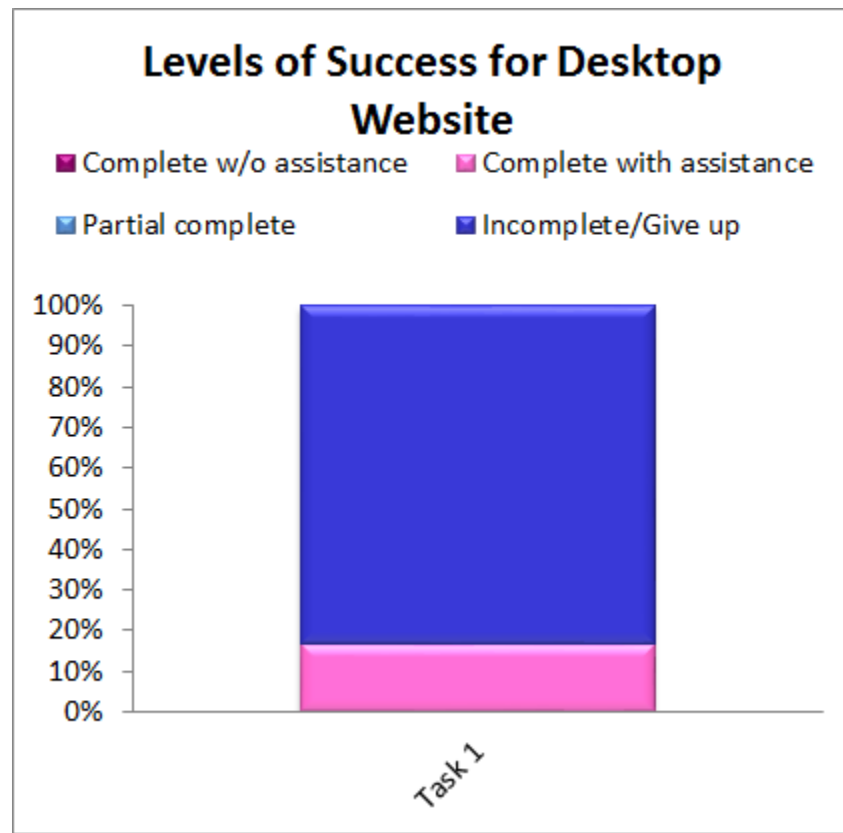
Figure 23: Graph indicating the level of completion (success) ratings for the task performed only on the desktop website.

The graph above shows the level of completion (success) rating for the task that was performed only on the desktop website. The graph clearly shows that most users failed to complete the task. Only 1 user actually found the option to change the piracy settings with a little assistance from the interviewer.

QUALITATIVE ANALYSIS:

Task Title: *Set Copyright Settings*

Task Description: "You want to protect your photographs from piracy. How will you make sure that no one can steal your photographs?"

Issue: Unable to find the copyright settings. Also most of the users confused 'piracy' with 'privacy'.
Severity Rating: Average

User Quotes and Expectations:

- *"I am unable to find where I can set settings so that my photos are secure."*
- *"I am not sure if my privacy settings are good enough for this task and protecting my photos"*
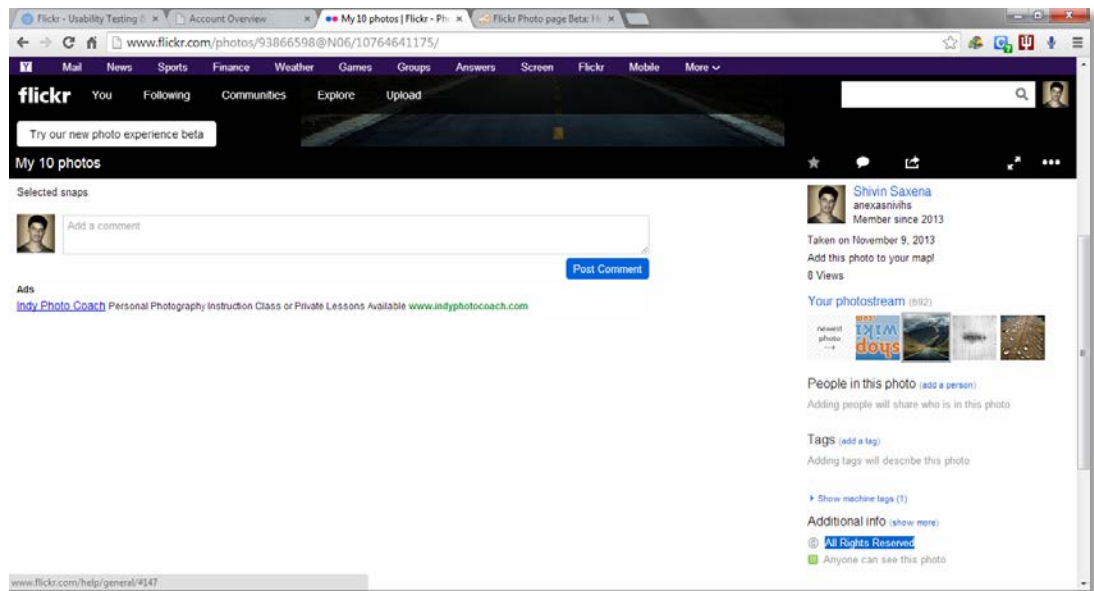
Figure 24: Users must scroll down to set the copyright settings for each photo, as shown in the snapshot.

Recommendation:

- Instead of having to scroll down for each photo, this setting can be grouped with other privacy settings, thus grouping similar tasks together and making it easier for users to find and use the feature.

Conclusion: This task was confusing to the users because of its wordings. Only 1 user could complete this task with assistance giving it a comfort rating of 5 while all others got frustrated and gave up giving it lower comfort rating. This has been indicated in the graph above for Task 1.

IV.   Comparing Expert Review and User Testing Analysis

Expert Review	User Testing
Understanding the functionality of icons is unavailable without clicking them	Lack of Tooltips or visual feedback (common task)
Unable to navigate from current photo (viewed in expanded mode) to corresponding photo stream/gallery.	Navigation back to the photostream is hidden and requires users to scroll down (desktop task)
Deleting multiple photos was a time-consuming and cumbersome task.	Difficulty in deleting multiple photos simultaneously (common task)
Lack of customizing options make sharing with a particular user group, while maintaining desired level of privacy, impossible.	Inability to create custom groups (common task)
Distinction between "Sets" and "Collection" is unclear	Confusion between "Sets' and "Albums" (common task)
Signing out of Flickr using the mobile app is unclear.	Misplaced menu items, such as, "sign out" under settings (mobile task)
Photos can be edited in the desktop version of the website but not within the mobile app.	Unable to apply filters and other effects once photo has been uploaded (mobile task)

Overall, User Testing phase confirmed the anticipated issues discovered in both Cognitive Walkthrough and Heuristic Evaluation especially for the issues with high severity. However, there are few exceptions. Those exceptions might be attributable to the fact that User Testing was restricted to specific tasks, whereas, Expert Review was more comprehensive in exploring the interface as a whole. A good example of this is the issue of: "*double tabs at the top left part of each page, top is for Yahoo and the one beneath it is for Flickr*". This issue was discovered in Heuristic Evaluation and violated Aesthetic and Minimalist Design. Another example from Cognitive Walkthrough uncovered issue is the: "*ambiguous functionality of the search box*". Both issues were never brought up or noticed in User Testing.

Further controversy is, the phase of Expert Review, revealed numerous issues in the desktop platform. Nevertheless, for the mobile application, only few problematic areas were found. That might be due to familiarity of the team members with the Flickr interface and the terminology used, like: "Sets" which led to overlooking it as a major issue. While in reality, using the term "Sets" to refer to albums created confusion and hindered accomplishing the task of creating albums for participants who were recruited to test the mobile application.

Appendix

APPENDIX A: TESTING MATERIALS USED

1. Testing Script

INTRODUCTION

To do by evaluator: Web browser should be open to Google. Open and keep Flickr's Home Page in another tab.

Hi, *<participant's name>*. My name is *<evaluator's name>*, and I'm going to be walking you through this session today. Before we begin, I have some information for you, and I'm going to read it to make sure that I cover everything. You probably already have a good idea of why we asked you here, but let me go over it again briefly. We're asking people to try using a Web site that we're evaluating so we can see whether it works as intended. The session should take about *<estimated time>*. The first thing I want to make clear right away is that we're testing the site, not you. You can't do anything wrong here. In fact, this is probably the one place today where you don't have to worry about making mistakes. As you use the site, I'm going to ask you as much as possible to try to think out loud: to say what you're looking at, what you're trying to do, and what you're thinking. This will be a big help to us. Also, please don't worry that you're going to hurt our feelings. We're doing this to improve the site, so we need to hear your honest reactions.

If you have any questions as we go along, just ask them. I may not be able to answer them right away, since we're interested in how people do when they don't have someone sitting next to them to help. But if you still have any questions when we're done I'll try to answer them then. And if you need to take a break at any point, just let me know. You may have noticed the microphone. With your permission, we're going to record what happens on the screen and our conversation. The recording will only be used to help us figure out how to improve the site, and it won't be seen by anyone except the people working on this project. And it helps me, because I don't have to take as many notes. If you would, I'm going to ask you to sign a simple permission form for us. It just says that we have your permission to record you, and that the recording will only be seen by the people working on the project.

To do by evaluator: Give them an informed consent form and a pen

To do by evaluator: While they sign it, start the screen recorder

WARM UP QUESTIONS

Do you have any questions so far?

OK. Before we look at the site, I'd like to ask you just a few quick questions.

- First, what's your occupation? What do you do all day?
- Now, roughly how many hours a week altogether would you say you spend using the Internet, including Web browsing and email, at work and at home?
- What kinds of sites are you looking at when you browse the Web?
- Do you have any favorite Web sites?
- Do you use your mobile for Web browsing and visit the same sites as above?

OK, great. We're done with the questions, and we can start looking at things.

USER TASKS

To do by evaluator: Click on the site's Home page.

First, I'm going to ask you to look at this page and tell me what you make of it: what strikes you about it, whose site you think it is, what you can do here, and what it's for. Just look around and do a little narrative. You can scroll if you want to, but don't click on anything yet.

To do by evaluator: Allow this to continue for three or four minutes, at most.

Thanks. Now I'm going to ask you to try doing some specific tasks. I'm going to read each one out loud and give you a printed copy. And again, as much as possible, it will

help us if you can try to think out loud as you go along. *<Write your user specific brief here>*

To do by evaluator: Hand the participant the task sheet, and read it aloud.

To do by evaluator: Allow the user to proceed until you don't feel like it's producing any value or the user becomes very frustrated.

To do by evaluator: Take down running notes.

To do by evaluator: Repeat for each task or until time runs out.

CONCLUSION

Thanks, that was very helpful. As the last part of this session I would request you to fill a brief feedback questionnaire which would help us improve upon our current usability strategy.

To do by evaluator: Hand the participant the post test questionnaire and a pen.

Do you have any questions for me, now that we're done?

To do by evaluator: Stop the screen recorder and save the file.

To do by evaluator: Thank them and escort them out.

2. Informed Consent Form

Please read and sign this form before you proceed to the usability testing session.

In this usability test:
- You will be asked to perform certain tasks on an existing website.
- We will also conduct a simultaneous interview with you as you interact with the website.
- The testing session will be recorded on video and your responses/comments will also be recorded on paper by one of the investigators.
- There are no substantial benefits and rewards for your participation in this test. Additionally, there are probably no risks to you.

Participation in this usability study is voluntary. All information will remain strictly confidential. The descriptions, recordings and findings will only be shared amongst persons directly involved within this study and may be used to help improve the website/app. However, at no time will your name or any other identification be used. You can withdraw your consent to the experiment and stop participation at any time.

If you have any questions after today, please contact *<evaluator's name> <evaluator's email id>*.

I have read and understood the information on this form and had all of my questions answered.

_____   _____

      Participant's Signature   **Date**

_____   _____

      Usability Consultant's Signature   **Date**

3. **Task Sheets for Mobile and Desktop**

TASKSHEET

Participant Number: _____

Inspection App Name: Flickr _____

Evaluator's Name: _____

Date: _____

TASK NO.	TASK DESCRIPTION
1	You are interested in being able to showcase some of your recently captured photographs. Create an album (give it a name of your choice) and insert ten photographs in this album.
2	Make the album created in Task 1 available to any four people. (You may select the investigators involved in this research for this task)
3	You want to showcase your talent to a reputed studio owner by showing your album to him. Provide a means to make the album you created in Task 1, available to this person [bansalm@iupui.edu] but restrict other Flickr members from accessing your album. [The studio owner must be the only person able to view your photographs].
4	View your friend's album and appreciate their effort by leaving a remark and a visual cue that suggests that the photo appealed to you in particular.
5	You decide that some of the photos that you uploaded in your album are not that great and should be eliminated. Discard any three photos from your recently created album.
6	Modify one photo in the album. Change its orientation and add an effect to it.
7	View photos by enlarging them and then go back to the page you came from.
8	Close your account securely and shut the Flickr application.

TASKSHEET

Participant Number: _____

Inspection Site
Name: Flickr
_____

Evaluator's Name: _____

Date: _____

Task No.	Task Description
1	You are interested in being able to showcase some of your recently captured photographs. Create an album (give it a name of your choice) and insert ten photographs in this album.
2	You want to protect your photographs from piracy. How will you make sure that no one can steal your photographs?
3	Make the album created in Task 1 available to any four people. (You may select the investigators involved in this research)
4	You want to showcase your talent to a reputed studio owner by showing your album to him. Provide a means to make the album you created in Task 1, available to this person (bansalm@iupui.edu) but restrict other Flickr members from accessing your album. [The studio owner must be the only person able to view your photographs].
5	You have received a link to an album on Flickr from your friend. He/she wants to share their photographs with you. View this entire album and appreciate their effort by leaving a remark and a visual cue that suggests that the photo appealed to you in particular.
6	You decide that some of the photos that you uploaded in your album are not that great and should be eliminated. Discard any five photos from your recently created album.
7	View photos by enlarging them and then go back to the page you came from.

4. Post Task Questionnaire

Task 1 Comfort Rating:

	1	2	3	4	5	
Very Uncomfortable	●	●	●	●	●	Very Comfortable

Task 2 Comfort Rating:

	1	2	3	4	5	
Very Uncomfortable	●	●	●	●	●	Very Comfortable

Task 3 Comfort Rating:

	1	2	3	4	5	
Very Uncomfortable	●	●	●	●	●	Very Comfortable

Task 4 Comfort Rating:

	1	2	3	4	5	
Very Uncomfortable	●	●	●	●	●	Very Comfortable

Task 5 Comfort Rating:

	1	2	3	4	5	
Very Uncomfortable	●	●	●	●	●	Very Comfortable

Task 6 Comfort Rating:

	1	2	3	4	5	
Very Uncomfortable	●	●	●	●	●	Very Comfortable

Task 7 Comfort Rating:

	1	2	3	4	5	
Very Uncomfortable	●	●	●	●	●	Very Comfortable

Task 8 Comfort Rating:

	1	2	3	4	5	
Very Uncomfortable	●	●	●	●	●	Very Comfortable

5. **Post Test Questionnaire**

I think that I would like to use this website/app frequently.

	1	2	3	4	5	
Strongly Disagree	●	●	●	●	●	Strongly Agree

I found the website/app unnecessarily complex.

	1	2	3	4	5	
Strongly Disagree	●	●	●	●	●	Strongly Agree

I thought the website/app was easy to use.

	1	2	3	4	5	
Strongly Disagree	●	●	●	●	●	Strongly Agree

I think that I would need the support of a technical person to be able to use this website/app.

	1	2	3	4	5	
Strongly Disagree	●	●	●	●	●	Strongly Agree

I found the various functions in this website/app were well integrated.

	1	2	3	4	5	
Strongly Disagree	●	●	●	●	●	Strongly Agree

I thought there was too much inconsistency in this website/app.

	1	2	3	4	5	
Strongly Disagree	●	●	●	●	●	Strongly Agree

I would imagine that most people would learn to use this website/app very quickly.

1   2   3   4   5

Strongly Disagree ● ● ● ● ● Strongly Agree
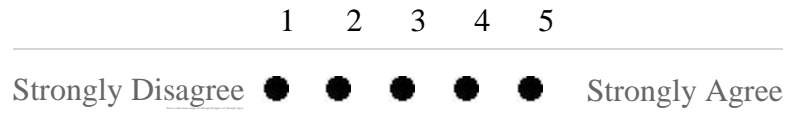
I found the website/app very cumbersome to use.

1   2   3   4   5

Strongly Disagree ● ● ● ● ● Strongly Agree
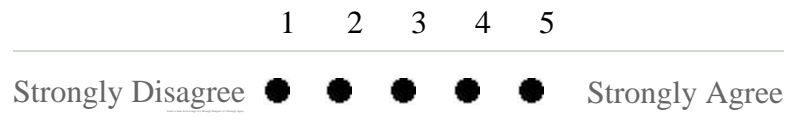
I felt very confident using the website/app.

1   2   3   4   5

Strongly Disagree ● ● ● ● ● Strongly Agree
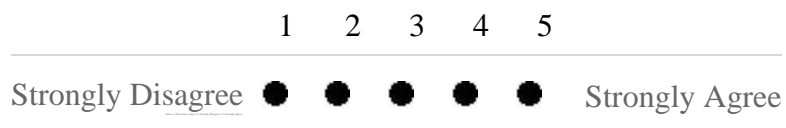
I needed to learn a lot of things before I could get going with this website/app.

1   2   3   4   5

Strongly Disagree ● ● ● ● ● Strongly Agree
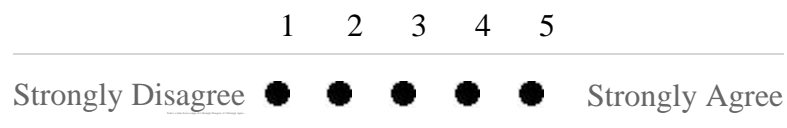
APPENDIX B: POST TASK AND POST TEST RESPONSES RECEIVED

POST TASK RESPONSE

Mobile/Desktop	Task 1	Task 2	Task 3	Task 4	Task 5	Task 6	Task 7	Task 8
Desktop (old)-User 1	3	2	1	4	4	3	2	N/A
Desktop (old)-User 2	3	5	4	2	4	3	3	N/A
Desktop (old)-User 3	3	2	1	1	5	5	3	N/A
Desktop (old)-User 4	4	2	4	2	5	5	5	N/A
Mobile-User 5	1	3	1	2	1	3	5	1
Mobile-User 8	1	4	3	4	4	1	5	5
Mobile-User 9	2	5	4	4	5	4	5	4
Mobile-User 10	1	4	1	3	2	2	5	3
Mobile-User 11	1	1	1	1	1	1	5	1
Desktop (new)-User 6	5	3	3	5	5	5	5	N/A
Desktop (new)-User 7	3	1	5	4	5	5	5	N/A

POST TEST RESPONSE

User No. (Desktop/Mobile)	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
User 1 (D)	3	5	2	4	1	5	1	5	1	5
User 2 (D)	3	2	4	1	4	1	4	1	4	4
User 3 (D)	3	2	3	2	2	4	2	3	4	1
User 4 (D)	4	2	5	1	4	1	5	1	3	1
User 5 (M)	1	5	1	5	1	4	1	5	2	4
User 6 (D)	4	2	4	2	4	1	4	2	4	2
User 8 (M)	3	5	3	4	2	1	4	3	2	4
User 9 (M)	1	5	2	4	1	1	1	5	2	5
User 10 (M)	1	4	2	2	2	3	1	4	1	4
User 11 (M)	2	5	3	4	1	3	1	5	1	4
User 7 (D)	4	5	3	4	3	5	4	4	3	4

Following website was used to calculate and interpret the SUS score.

http://www.measuringusability.com/sus.php

APPENDIX C: USER TESTING SESSION SCREENSHOTS