

Usability Test of the Instagram Application

COM 560

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Abstract

In this study we examined the usability of the Instagram application for the iPhone. In order to measure and understand users' experience with the application we gave users various scenarios and watched as they navigated through the application and completed given tasks for the first time. To quantify our results we gave users a survey to answer upon completion of our study. Our results gave us insights about the application, especially in regard to the difficulty users experienced when using the search function and connecting to the iPhone library. Based on observation and user response, we concluded that commenting and following others were the easiest tasks. Also, during our analysis we found that there were some limitations to our study that could have impacted our results. We included improvements that could refine our study in the future. Lastly, from observing and analyzing our results there are several recommendations that we would propose for the Instagram interface.

Introduction

The rise of social networking sites along with the increase in Smartphone ownership over the last half decade has fed the growth of instant photo sharing. Social networking sites provide the platform for sharing photos and Smartphones provide the tool, capturing photos at any moment. The iPhone was the first Smartphone to take the camera feature and add significant improvements such as pixel quality.

Increases in the quality of the camera function on these phones have led to increased usage of the function. Now, in addition to text-only updates to social media networks, individuals can easily share photos. While the camera function on cellphones has advanced significantly from the earliest models, there remains a divide in photo quality between photos taken on a Smartphone and photos taken with a handheld digital camera. For example, the iPhone camera doesn't allow for adjustment in shutter speed or aperture, and its smaller sensor produces photos of a lower quality than photos taken with more advanced digital cameras. Another result of these limitations is a decrease in photo quality in low-light scenarios.

In order to address the limitations of the iPhone camera, Kevin Systrom and Mike Krieger created the Instagram application for any iPhone, iPod Touch, or iPad running iOS 3.1.2 or higher¹. Instagram is a photo sharing application and social network that can be downloaded onto the iPhone from the App Store. On their website², the corporation lists three reasons for the development of the app. The first was because Smartphone photos are low-quality. The second was to provide one program from which users can post a photo to multiple platforms instantly. The third reason was to establish a fast and efficient way to share photos. With these goals in

¹ <http://www.crunchbase.com/company/instagram>

² <http://instagram.com/about/>

mind, the intended environment for use of this application is anywhere that the user takes an interesting photo.

The app is targeted at individuals interested in sharing photos across social networking platforms. The widespread success of the app has expanded this target audience to include larger organizations and corporations as well. According to Alexa.com³, the audience snapshot is composed mostly of college-educated females between the ages of 25 and 34 who have no children and browse the site from work. The modern design, and social connectivity of the application suggest that the audience snapshot is in fact the intended audience.

Interface Overview

The application is available for free and users must create an account to use the application. Upon logging in for the first time, new users are prompted to search for ‘friends’ to follow by accessing information from other social networks they belong to such as Facebook or Twitter. After a user initially configures their profile, they are directed to the feed, which shows friends’ activity on Instagram. On the feed users can browse their friends’ photos by scrolling from most recent to oldest entries. Under each photo on the feed users can view a description of the photo, as well as any comments that have been made by other users. Users have the option to comment on or ‘like’ their friends’ photos.

Instagram’s main menu gives users six different navigation icons listed from left to right across the bottom of the iPhone screen. The options are Feed, Popular, Share, News, and Profile (these are also accompanied by a small icon). As with any iPhone application, Instagram operates on touch navigation.

³ <http://www.alexa.com/siteinfo/instagr.am>

As previously discussed, the Feed button directs the user to a page compiling the recent activity of those the user is following. To the right of the Feed option is “Popular,” which showcases the most popular photos on the Instagram network. Like the Feed, the Popular section hosts photos for users to browse. The difference however, is that these photos are not friends of the user, but instead a collection of the most commented and ‘liked’ photos on the Instagram network. Rather than the horizontal scroll layout with one photo per row, photos in this section are displayed in thumbnails four across and five down. Users can view more photos by scrolling down. In order to see photo details, users must click on the thumbnail and the comments and likes will be displayed.

The centered Share option is the most prominent navigational component on the application. It is shaped differently and larger than the other navigation buttons. Upon clicking the Share button on the main menu, the user’s camera is turned on and the user is presented with several options. The user can adjust the flash, adjust the focus, add a filter and add a border before taking a photo. Alternatively, the user can select a photo from their library and alter their previously taken photos by adding a filter and/or a border.

After users have adjusted the photo they can either select the photo by clicking a green check mark or disregard the photo by clicking a red X. If the user selects the photo, he or she is taken to a new screen where it is possible to add a caption, add a location, and share to one or more of the following social networks: Twitter, Facebook, Flickr, Tumblr, Foursquare, and Posterous. Users also have the option to share their pictures via e-mail.

To the right of the Share button in the navigation menu is the News button. When users enter the News section they are brought to a screen that allows them to choose to view their own personal activity and the activity of those that they are following by clicking either the

‘Following’ or the ‘You’ button at the top of the screen. Clicking on the ‘You’ button reveals recent friend activity. Clicking the ‘Following’ button takes the user to a screen similar to the Feed in which individuals can view the activity of the accounts that they are following. This screen differs from the feed because personal activity is not listed. Instead of personal activity, the screen provides detailed activity from accounts that the user is following such as any recent photos that were added, liked or commented on, as well as any recent following activity.

The last button on the central navigation is Profile, which is the farthest to the right on the navigation menu. The profile section has a lot of functionality embedded in it and provides users with options to find friends, view their photos, and edit account settings. In the Profile section, users can search Instagram for friends and other users they want to follow. The Profile section is also where users can access and edit their profile and change privacy settings.

Aspects Evaluated

In this usability study we chose to evaluate users’ ability to take, manipulate, and share their photos through social media channels, as well as connect with friends and organizations on Instagram. We focused on these types of user activities, because the main objectives of the Instagram application are to enhance photos, network, and share with others. In order to evaluate these broad categories, participants were given specific tasks to gauge their comprehension of the interface. In order to evaluate the intuitive nature of the interface, none of the participants had prior knowledge of the Instagram application and how to use it. With these goals in mind we developed and conducted a usability test of the Instagram application.

Methods

Ten participants voluntarily took part in the study, testing the usability of the Instagram interface. The power users that participated ranged in age from 21 to 28. And the non-power

users ranged from 55 to 59. Five males and five females participated. All participants owned an iPhone and had never before used the Instagram application. The volunteers were not compensated for their participation in this study (see appendix 3).

The participants included two non-power users and eight power users. The power users were closely representative of the intended user for the application. The intended user of the Instagram application is estimated to be an iPhone owner in his or her 20s or 30s who is active on social media.

The study was conducted in multiple locations. Each location included a window and chairs for both the participant and the researchers. The study was conducted in private space though others were sometimes audible and/or visible nearby.

Data collection was based on observation and a follow-up survey. No complimentary technology tools were used on data collection. Participants were encouraged to speak out loud about their thought processes while completing the tasks. Researchers took note of users' actions, questions, and time taken to complete tasks. Participants used an iPhone equipped with the Instagram application and a laptop to evaluate their experience upon the completion of the study. While participants were using the Instagram application, the researchers were actively taking notes and evaluating their experience with the application. Participants' task completion was evaluated by either successful completion or unsuccessful completion of the scenarios. If the user was able to complete the task (regardless of the time) they were considered to have passed. If the user gave up on a task, they were considered to have failed.

Four scenarios were set up to test various aspects of the application. In the first scenario, the participant was asked to take a picture, retrieve it and share it on Instagram. In the second scenario, the user was asked to apply a filter to a photo that they already had in their iPhone

library. In each scenario participants were asked to apply a filter, add a caption and post the photo to a predetermined Twitter account. Both scenarios were aimed at understanding the strengths and weaknesses in the usability of altering a photo and posting it to a social network. The similarity of the tasks allowed us to examine the potential of a learning curve in task completion.

The third and fourth tasks were aimed at testing a user's ability to interact with the Instagram social network. Users cannot only post pictures to social networking sites like Facebook and Twitter, but they can also create and update their own Instagram profile. Users were asked to search for a friend, navigate to their photos, and post a comment. The fourth scenario was to search for an organization (NBCNews) on Instagram and follow its account. Connecting with an organization is a less popular but growing aspect of the application. We sought to analyze whether usability plays a role in why connecting with an organization is less popular. Scenario three and four were set up to shed light on Instagram's search functionality as well as navigate through Instagram's social network.

Procedure

Because the objective of the study was to determine the interface usability of Instagram, 10 participants were asked to complete tasks on the iPhone application. The research team consisted of four people. In each usability test, two researchers were present; one took notes while the other administered the instructions.

After greeting the participants, the researcher explained what would take place with a prepared script (appendix 1). Each participant signed a consent form (appendix 2) and agreed to take part in the study. The researcher read aloud instructions for completing tasks within four scenarios, pausing between each to give the participant time to follow along. The participant

was asked to speak his or her thoughts aloud in order to help the researcher as they observed and took notes. Occasionally, the researcher requested clarification about the participant's reaction to the tasks, doing their best to avoid interfering with the participant's workflow.

Participants were told to navigate to the Instagram application on the iPhone, open it, and log into a specified account (testcomm). They were given approximately 30 seconds to familiarize themselves with the application. Once this time was up, the first scenario was explained to the participant. In the scenario, he or she saw something interesting outside the window, and wanted to take a picture of it. Participants were instructed to complete the following tasks: to take a picture of the most interesting thing outside the window, apply a filter, add a caption, and share it on Twitter.

The next scenario given to the participants asked them to decide to share a photo that they had previously taken from their iPhone library. The researcher instructed them to perform the tasks of selecting a photo from their iPhone library, applying a filter, adding a caption, and also posting this photo to Twitter.

Once this was completed, the researcher moved onto the next scenario. In this third scenario, the participant decided that they wanted to follow a friend they knew was already a member of Instagram. The participant was given instructions to search for their friend (bison32), follow them, look through photos that they had posted, and comment on one of them. Once these tasks were completed the participant was given a final scenario. This fourth scenario was that the participant was interested in following a news organization on Instagram to get up to date photos of newsworthy events. The participants were instructed to search for NBCNews and to begin following their account. Upon completion, they were asked to log out.

As the participants worked, a researcher noted when the participants had trouble completing a task (e.g. they spent more time on a certain task or appeared puzzled). The also timed the entire task-completion portion of the test.

When the participant announced they were finished, the researcher asked him or her to take a survey on a nearby computer. The 17-question survey (appendix 4) asked the participants for specific details about themselves as well as to recall some specifics about completing the tasks on Instagram. The survey collected data regarding demographics as well as perceptions about the application's ease of use.

When the participants had completed the survey they were thanked and dismissed.

Results

To analyze the observations and results collected, we looked at quantitative data from our survey results and timing of the task completions, in addition to qualitative data from our observations. This quantitative and qualitative data provided us with participant characteristics and usability data.

In the survey, we asked questions to establish a basic profile of the user. Nine out of 10 of our participants use iPhone applications several times a day. The remaining user reported using iPhone applications once a day. All of our participants report sharing photos from their iPhone. Eight participants reported sharing photos from their iPhone once a week. One participant reported sharing photos once a day and one participant reported sharing photos once a month. The platforms for sharing included Facebook, Twitter, text message and email. Facebook, Twitter, and Text were referenced the most as the platform for photo sharing. Each platform was mentioned by five users. E-mail was referenced by two users (see appendix 3).

In order to understand the participant's experience with the Instagram application, we used a scale from 1-5 with one being the hardest and five being the easiest. We had participants rank the overall difficulty of navigating and completing all tasks on the Instagram application, and we had participants rank the difficulty level of parts of the experience. Users rated their experience with taking a picture and uploading it to Twitter, retrieving a picture from the iPhone library and uploading it to Twitter, searching for accounts, commenting on picture and following an account.

For the overall difficulty of navigating the application, 20% of users rated the difficulty at a two, 50% of users rated the difficulty at a three, 20% of users rated the difficulty at a four, and 10% of users rated the difficulty at a five. The majority of participants were in the middle with the difficulty level of navigating the Instagram application. Four out of the 10 said that they would not use the application again.

The easiest task for participants was commenting on photos. The ratings broke down as follows: 20% at a three, 20% at a four, and 60% at a five. Searching for accounts was the task that the most users rated from one to three on the difficulty scale. For those rating, 40% were at a one, 10% at a two, 40% at a three.

In conducting the usability testing, we noticed that participants had the most difficulty with navigating the application. Qualitative survey results support this observation. Participants noted that the application was not intuitive and the navigation and layout don't align with the navigation and layout that more familiar social networking sites use. We also observed that there was a significant learning curve in the completion of tasks based on time taken to complete the tasks. The first task took much longer to complete than the remaining tasks.

Limitations

We ran into a number of issues along the way that could have affected the precision of our data. There are various ways the study could be reorganized for improvement.

One limitation was relying on human observation. Since screen-capturing software is not available for the iPhone we could not record and play back participants' navigation through the application. Instead, we had to rely on our observations and notes from the experience. The touch-based iPhone screen enables quick navigation. At times, testers had trouble keeping up. The inability to go back and reflect on users' mistakes or expressions during the testing process limited the results. While researchers tried to record facial expressions, questions asked, and navigation through the application, it was impossible to completely capture all aspects of the users' experience with the application. Bias could have occurred because most testing participants knew the researchers personally.

Additionally, some inconsistency was discovered with the preparation of the Instagram application from one participant to the next. The application was not always reset to default settings, which could have skewed results, especially with regard to the time it took to complete task, and general ease of use reported by participants.

Another imperfection of our study was the testing environment. Most of the testing took place in a classroom while other people were walking in and out. We questioned if this impacted the time it took users to complete the tasks.

The variety of participants limited the results of the study. Only two of the 10 tested were not power users. The majority of the participants were close in age. The basic problem was inconsistency. Without either a variety of participants or intentionally similar test subjects, it was difficult to make substantial conclusions.

Improvements

Improvements could be made to avoid these issues. During the first few tests we ran, we realized where we could have better quantified data. We didn't have enough consistent observation recording techniques to assist in quantifying data. Many problems were only observed qualitatively. If we were to run the test again it would be useful to count how many questions each participant asked. It would also be helpful to time the completion of each task separately. The survey itself could also help quantify more data. It might have proved useful to ask about social media use, for example. Language in the survey directions could also be improved. Many participants chose the same difficulty ranking for several tasks; we were intending they use a different rank for each task.

If the test were conducted again, a separate account could be created for each participant to log into so that each time a new participant took part in our study he or she would be tested with the application's original settings. Ideally the study could take place in a more controlled testing environment so that distractions would be limited.

Finally, it would be better to choose subjects based on intended outcome for the study. If the goal of the research is to see how a specific user-base fares with the application, then the participants should only be in that user-base. If the goal is to compare how certain demographics used the application, then subjects should have been carefully chosen evenly from among the respective demographics. In other words, results will be more conclusive if participants are chosen more mindfully.

With these changes, the test would show clearer data and the study would be more successful.

Recommendations

After completing this study, our research group came up with three key recommendations to improve the Instagram interface. These are based on users' experiences as well as observations that were recorded while watching participants in the study. Most significantly, we would recommend a reorganization of the navigation. The Instagram application revolves around its navigation, so having a clear navigation is essential. Many users were not able to find what they were looking for because the navigation terminology and structure was not consistent. Second, we recommend implementing a homescreen that users can always return to. There currently isn't a place for users to look at their profile, news feed and search tab at the same time. A homescreen would eliminate confusion, benefiting users by lessening frustration. Finally, we recommend graphically reconsidering the icons. Some icons don't effectively communicate their function, whereas icons are absent in the social media sections. These easily-recognized icons serve as a reference tool, especially for power users. Having clearer icons would only further simplify things for the user. We believe that these three suggestions would significantly improve Instagram and make the user's experience much more successful.

Appendix 1: Instagram Usability Test Script

Thank you for agreeing to take part in our study. My name is _____. May I have your signature on this consent form, please? Thanks.

During the rest of the session, I'll be working from a script to ensure that my instructions to everyone who participates in the study are the same.

I am here to learn about how iPhone owners use the Instagram application.

During this session, I will ask you to use the app to do a few things and will observe you while you do them. As you do these things, please try to do whatever you would normally do.

Please try to think out loud about what you are doing. Just tell me whatever is going through your mind. Please know that we are not testing you, and there is no such thing as a wrong answer. Your doing this helps us understand what works or doesn't work about the app.

I am an independent researcher who had nothing to do with the design of the app you are about to try out. So please be honest in your feedback—I need to know exactly what you think, not what you think I want to hear.

The whole session will take about 30 minutes.

Do you have any questions before we start?

Now we are ready to begin. Please navigate to the “Instagram” application on the iPhone. Once you have found the app, open it and log in using the following user information:

Username: testcomm

Password: testcomm

After you have successfully logged in take a moment to familiarize yourself with the home screen and navigate as you please. (Give users 30 seconds to browse before giving them the following instructions)

home screen

Now that you are familiar with the application please return to the home screen of Instagram and perform the following tasks.

You have just seen something unusual outside the window and want to share your experience with friends on the social networking site Twitter. Take a picture of your encounter (the most interesting thing you see through the window), apply a filter of your choice, add a caption and post it to this Twitter account:

After posting this photo you realize you took a photo last week on your iPhone which you want to share. Find the photo you want to share from the iPhone photo library, apply a filter, caption and post it to the same Twitter account.

Now, after posting the picture you are interested to see the photos your friend Brittany is posting. Navigate to your friend's account, look through her posted pictures and post a comment to a photo of your choice.

Friend's Username: bison32

After browsing your friend's photos you decide you are interested in following NBCNews on Instagram. Find NBC News's account on Instagram and begin following their photos.

Upon completing the final task please log out of your Instagram account.

Thank you for completing the task portion of the study. Now in order to understand your experience with the application a little better, I am going to ask you a few questions. Please remember that there are no right or wrong answers to these questions and your answers should reflect your experience. So please be honest in your feedback— I need to know exactly what you think, not what you think I want to hear.

Appendix 2: INFORMED CONSENT FORM

Elon University

Title of Project: **COM560A Group Research Projects for Class**

Principal Investigator: Qian Xu
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Co-Investigators: Brittany Ison, Kate Keeler, Anne McNulty and Kelli Yoder

1. Purpose of the Study: The purpose of this study is to gather information about Elon students' and Elon community members' uses and evaluation on a number of various media interfaces in their daily life. The study has been designed as part of a graduate course project in interactive media strategies (COM560A) and will therefore reflect a number of different research questions being examined by multiple subgroups of students. This project is designed to give practical experience to students in usability test for communication media. This project will look into the uses and effects of communication media on users.
2. Procedures to be followed: You will be asked to first interact with some media and then answer a few questions raised by the student researchers or fill out an questionnaire.
3. Discomforts and Risks: There are no risks in participating in this research beyond those experienced in everyday life.
4. Benefits: There are two potential benefits to participation: (a) You might learn more about yourself by participating in this study. You might have a better understanding of how important communication is to you; and (b) This research might provide a better understanding of how use of media affects college students. This information could help plan programs and make student services better.
5. Duration: It will take about 30 minutes to complete the study.
6. Statement of Confidentiality: Only the person in charge and the student researchers will know your identity. All data related to this study will only be accessible to the principal investigator and the student investigators for this study and will be kept in locked closets and/or secured computers of the investigator and student investigator desks, in Elon university offices.
7. Right to Ask Questions: You can ask questions about this research. Contact Qian Xu at 336-278-6454 with questions. You can also call this number if you have concerns about this research, or if you feel that you have encountered any problem in the study.

8. Compensation: There is no compensation involved in this study.
9. Voluntary Participation: You do not have to participate in this research. You can end your participation at any time by telling the person in charge. You do not have to answer any questions you do not want to answer. Refusal to take part in or withdrawing from this study will involve no penalty or loss of benefits you would receive otherwise.

You must be 18 years of age or older to consent to participate in this research study. If you consent to participate in this research study and to the terms above, please sign your name and indicate the date below.

You will be given a copy of this consent form to keep for your records.

Participant Signature

Date

Investigator Signature

Date

Appendix 3: Instagram Usability Test Participant Characteristics

Age:	Had iPhone since...	How often do you use iPhone applications?	Share photos on iPhone?	What application do you use?	How often?
59	2008	several times a day	Yes	email or text	once a week
54	2008	several times a day	Yes	text or email	once a week
28	2 months ago	several times a day	Yes	Twitter, Facebook, text message	once a week
27	2008	several times a day	Yes	Facebook	once a week
26	2007	several times a day	Yes	Twitter, Facebook	once a week
25	2009	several times a day	Yes	Facebook	once a month
25	2009	several times a day	Yes	iPhone mms messaging	once a day
22	2009	several times a day	Yes	Twitter	once a week
21	2011	several times a day	Yes	text messaging, Twitter	once a week
21	2011	once a day	Yes	to Facebook/Twitter	once a week

Appendix 4: Instagram Usability Survey

How old are you? _____

What year did you get your iPhone? _____

How often do you use iPhone applications?

- a. several times a day
- b. once a day
- c. once a week
- d. once a month
- e. never

Have you ever shared photos from your iPhone? yes/no

If you do, what application(s) do you use? _____

How often do do you share photos from your iPhone?

- a. several times a day
- b. once a day
- c. once a week
- d. once a month
- e. never

The following question should be answered on a scale of 1-5. With 5 being the best experience and 1 being the worst experience.

Overall, how easy was it to navigate and complete tasks on the Instagram application?

Very difficult 1 2 3 4 5 Very easy

Please rank the following tasks from easiest to most difficult:

- a. Taking a picture and uploading it to Twitter
- b. Retrieving a picture from the iPhone Library and uploading it to Twitter
- c. Searching for accounts
- d. Commenting on pictures
- e. Following an account
- f. Other

Why were the two most difficult tasks difficult?

Would you use Instagram again? yes/no

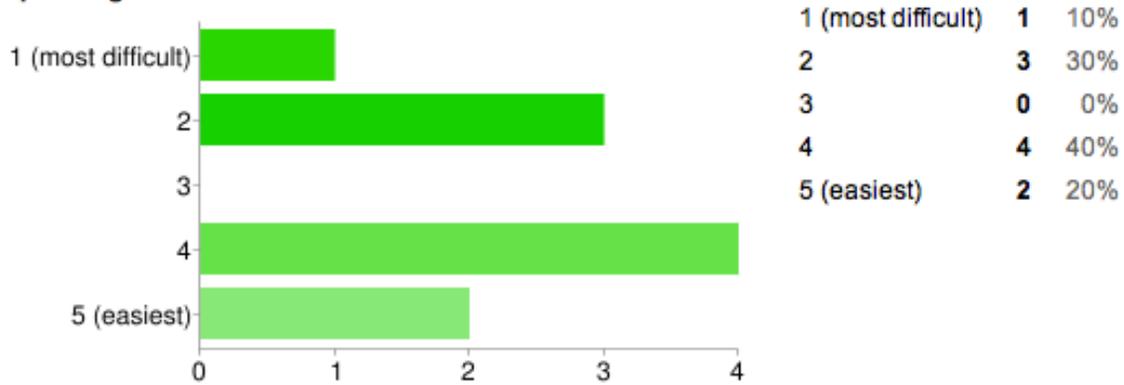
What is the primary reason for using or not using it again? Please explain why/why not?

Google survey link:

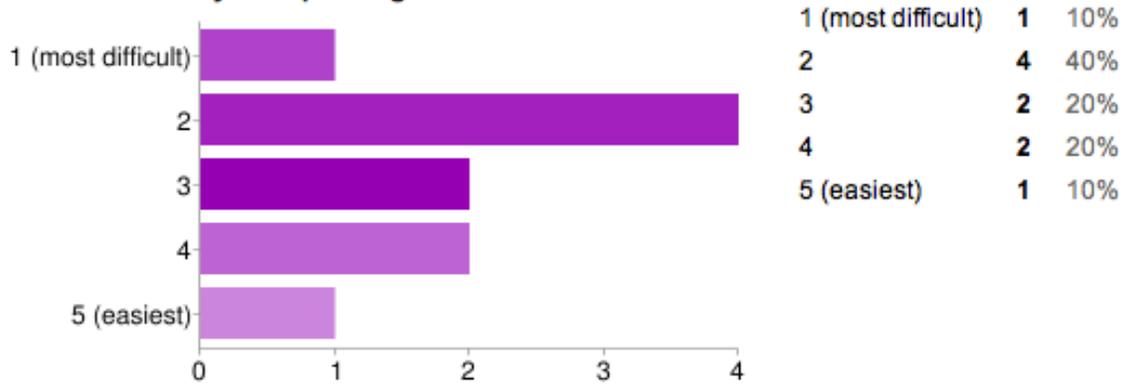
<https://docs.google.com/spreadsheet/viewform?formkey=dEVpS3ZmMEtScW9hc3UzV3lJUjRWeHc6MA>

Appendix 5 – Results

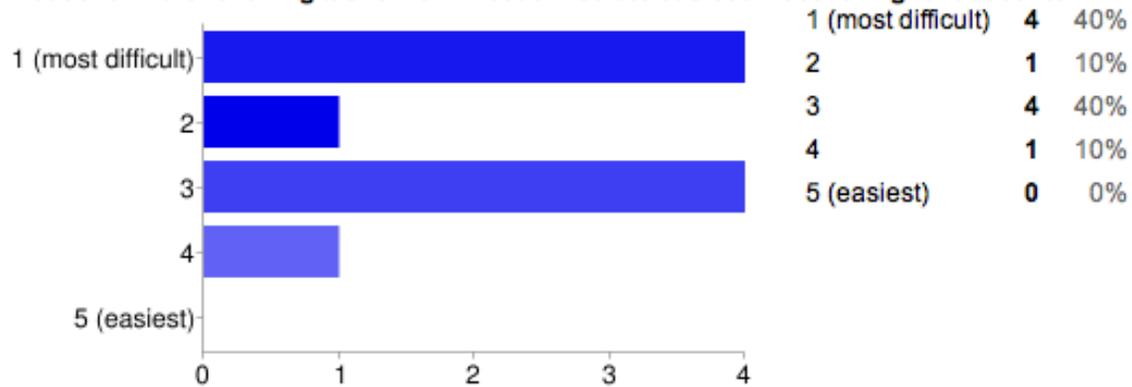
Please rank the following tasks from most difficult to easiest: - Taking a picture and uploading it to Twitter



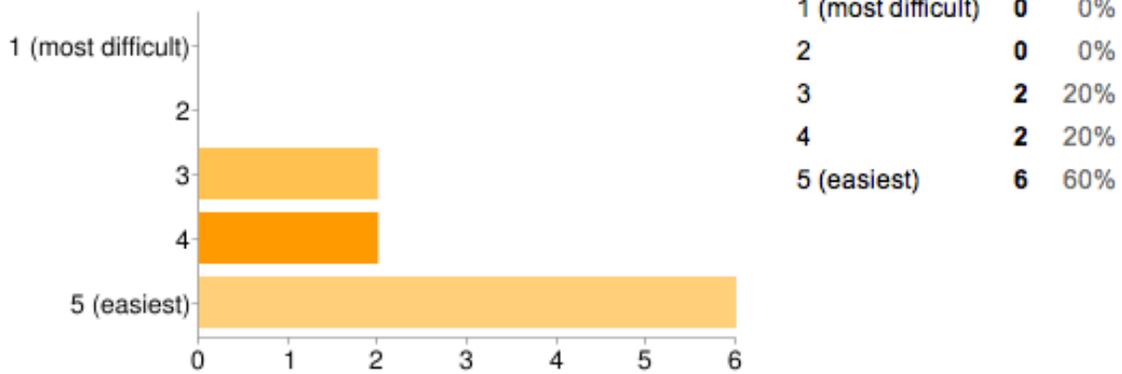
Please rank the following tasks from most difficult to easiest: - Retrieving a picture from the iPhone Library and uploading it to Twitter



Please rank the following tasks from most difficult to easiest: - Searching for accounts



Please rank the following tasks from most difficult to easiest: - Commenting on pictures



Please rank the following tasks from most difficult to easiest: - Following an account

