A Case Study About Facebook Usage for Visually Impaired in Android Platform

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ABSTRACT
Prior research shows that visually impaired people have difficulty in accessing Facebook. There are lots of research regarding this phenomena. However, the research in Android platforms is still rare. In this paper, research is done with the help of a visually impaired person. The researcher helped her to pass the steps required to complete the predetermined tasks in Facebook. Then the results are displayed in terms of points attributed to the steps, steps required to complete the task, if the research already had known it before…etc.

CCS CONCEPTS
• Human-centered computing -> HCI design and evaluation methods

KEYWORDS
Visually impaired; accessibility; usability; Facebook;

INTRODUCTION
Social media networks (SNS) are the most visited websites in the world. As of October 2018 [18], the social networks by number of monthly active users are;

Facebook (2.234 billion), YouTube (1.9 billions), WhatsApp (1.500 billions), Facebook Messenger (1.300 billions), Instagram (1 billion). These numbers are expected to grow even further especially with the strong population increase in developing countries. Faster internet access and boost in mobile phone sales with economic development will inevitably consolidate this trend. Naturally, these numbers also include users with special needs. In today’s modern world it is an obligation to integrate them in all walks of life. In an increasingly equal and just society, they deserve to be treated as equal as possible compared to their respective peers. Accessibility of disabled users began to be a major issue in the last decade. Facebook founded its Accessibility Team in July of 2011.

The topic of this paper emerged from a bigger project that has 12 VI users about the social media usage of visually impaired users. It is conducted in Visually Impaired Association Headquarters. That's a place for blind people to come together and socialize. This work is examined and confirmed by the Ethical Committee of the University for ethical standards. This is done for any kind of experiments that require human interaction. The questionnaires and the detailed explanation of the project has been added to the authorization form. All the participants accepted to be part of the project. They accepted that they will not take any kind of benefits as a result of this study and they have the right to give up whenever they want. I read the conditions each time before we started our interviews and we started as soon as they accepted. Their acceptance speech are kept in my voice recorder device (Sony IC Recorder ICD-P110) with the other parts of the interviews. Sometimes I took video to see where they pressed. Few of them asked questions to clarify the things they wanted to know. I did not disclose their identity and I signed a paper that conditions me to obey the rules determined by the University Ethical Committee. However, it was not possible to find a good candidate. Some of them were not using Facebook for a long time. It was also a place they do not stay permanently. That’s why we found an another participant from the disabled section of the university. Most of the research made about visually challenged people’s use of social media occurs with iOS devices [3,5,6,8,9,10,15,16,17,19], Android devices [1,8] (just 1 in [8]) are so rare. There is a lack of research in Android devices despite they are widely used as well.
In this paper, we aim to test the accessibility of Facebook functions with the help of a visually impaired person. There are 6 tasks given to test her in Facebook Messenger. These are;

1. Change Language
2. Change Profile
3. Edit Username
4. Ignore Message From Someone
5. Unignore Message From Someone (It has to be from someone you ignored their message before)
6. Activate Status

Our participant is a female of 22 years old. She studies English Language Teaching (ELT) in the university that I conducted this research. She was prematurely born of 5.5 months. That made her visually impaired. She has %20 vision in one eye. Her other eye is slightly worse though she cannot remember the exact value. She has no difficulty in detecting light, colors, etc. She uses Facebook for almost 10 years in both English and in her native language. She does not recall using computer web browsers to access Facebook since 2016. She also uses Instagram. She never used Twitter. When she registered to Facebook the first time .She does not remember that she had a problem with CAPTCHA that existed those days. It did not in 2013,[4] but existed in 2012 [14] It supposed to be removed sometime around those years. She said she could see when she opens her eyes wide. However, she needs to come near a little bit like the VIP(visually impaired) who take photos[8]

**METHODOLOGY**

Before the interview and the scenario section that followed, we had already prepared a document (seen below) that includes the necessary steps to complete certain functions in Facebook. Those functions were determined beforehand. Unlike, the works [7,20] that have more basic operations like read and post, check in, create account, log into an account tested operations like ignore/unignore message, change language setting.

Think aloud observation method [12] was not chosen for this method. It was thought to affect the natural time the participant would spend in order to complete the tasks.

These are the tasks with the given percentages that are used to calculate the overall point for that task.

**How to change language in Messenger (from Android phone controls)**

1. Add language if it is not in the list. (5*10=50)
   Settings -> General Management -> Language and input -> Language -> Add Language.

   If it is already in the list.
   i. Click Edit. (%15)
   ii. Click arrows to move it at the top of the list. (%15)
   iii. Check Facebook for change. (%20)

**Social->Facebook**

1. How to change profile picture (DP) in Facebook messenger app.
   1. Click on “Add to your story” with the + icon. (%20)
   2. Take a photo or go to Gallery. (%20 for Gallery)
   3. Select the picture you want to add. (%20)
   4. Press “->” icon. (Your story icon) (%20)
   5. In the send to screen check the box to make it easy to share. (%20)

2. How to edit username in Facebook Messenger.
   1. In the Chats, click on my facebook profile picture. (%25)
   2. Click on Username under Profile section. (%25)
   3. Click on “Edit username”. (%25)
   4. In the Username section you can rewrite the already existing username. (%25)

3. How to ignore messages from someone(in messenger).
   1. In the Chats screen, click on a recent conversation to reach someone’s (either a friend or not) profile. (%40)
   2. Click on i(info) icon at the top right. (%10)
   3. Close to the bottom click on “ignore messages” (%40)
   4. Press “Ignore”. (%10)

4. How to unignore messages from someone?
   1. In People section, press “Add Contacts” icon at the top right corner. (%25)
   3. In Add controls, click on “Requests” with icon just below Add Contacts (one of the four icons right next to each other) (%25)
   4. In Message Requests, click “See all” to see filtered messages. (%25)

5. How to have secret conversation?
   1. In Chats, click on a conversation. (%40)
   2. Click on information icon at the top right corner. (%30)
   3. Click on “Go to secret conversation”. (%30)

6. How to activate Status.
   1. In Chats, click on your profile picture. (%25)
   2. In Me section, click on “Activate Status” under Profile. (%25)
   3. In Activate Status, turn off Activate Status. (%25)
   4. Click on “Turn off” in the message box. (%25)
Figure 1: While the participant of the experiment was trying to perform the duties according to the scenario.
RESULTS AND DISCUSSION

In Change Language task, the participants mixed the change language setting with the options of translating posts. That caused her to spend lots of time.

In Change Profile Picture Task, there was no problem despite she did not want to do it. She did not want her friends to see her with a different picture. She changed the picture back to normal as soon as she completed the task.

Edit Username was the most difficult task for her. That was mainly because there was no message that showed the username was changed. She had already done in 1 minute 51 seconds. However, at that she could not understand that she completed it. That was also because of the username she chose to change.

Normally (by default), username is in the form of; name.surname.number

She chose to make it in the form of

namesurname.number

She could not understand it because of her lack of vision and message. Even for a sighted person it might be difficult to do if he or she is not used to it.

She did not know about the operation so I told her how to do it.

She was not familiar with either ignore or unignore message. I had to explain step by step. The problem about ignore was mainly because she confused it with block operation. She also could not understand why that operation is used.

For unignore, she correctly guessed that it is about the people menu but 4 icons on the request made her confused.

Activate Status was the easiest for her because that’s the one she knew before. Moreover, she said that she used it regularly.

ACKNOWLEDGMENTS
CONCLUSION

In summary, the knowledge about the task played a positive role in the task completion time. The best times are achieved when knowledge about function and frequency of usage are combined. When there are lots of controls like unignore message this also can be a problem. If there is a similar function she remembered like in Language Settings, this might also be a problem. The most visible usability problem is the lack of message in the edit username. A message like “Your username is changed” will make it much easier to understand. It will significantly reduce the time required to complete the task.

REFERENCES


