Chapter 10
Mobile Accessibility in Touchscreen Devices: Implications from a Pilot Study with Blind Users on iOS Applications in iPhone and iPad

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ABSTRACT

Mobile technology is a new frontier for accessibility. Although mobile developers need solid guidelines to provide accessible experiences, there is a limited number of empirical research on mobile accessibility of different mobile platforms that work through various assistive technologies. In this context, more information is needed to understand both usage patterns and hardware/software platforms to guide decisions to meet the needs of people with disabilities who use mobile devices. This study, which is a pilot study of a long-term research, evaluates the accessibility of selected built-in and third party iOS applications in the iPhone and iPad through an extensive accessibility test with two blind users who are novice users of touchscreen mobile devices. This qualitative study is based on a multi-method approach, which consists of a background questionnaire, task observation, and a structured debriefing interview. The study also employs observation methods of data collection in order to gain better insight in mobile accessibility. The participants are demanded to execute three different tasks on each platform by using VoiceOver, which is the built-in screen reader in iOS. The participants are observed during the task executions and

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INTRODUCTION

Nowadays, it is evident that mobile devices especially the ones with touch screens have become a major part of our daily communication. Mobile devices are also popular among disabled users as well. Mobile devices can be made accessible to users with different disabilities through the integration of some features in operating system, and installation of third party applications such as screen readers and magnifiers. However, touchscreens are becoming ubiquitous in mobile devices and users who have either visual or dexterity disabilities (or both) may have difficulties using standard touchscreen technology.

In this context, there has been an increasing but limited awareness in the area of mobile accessibility. The “Web Content Accessibility Guidelines (WCAG)” remains a useful standard for creating accessible experiences and there are initiatives who try to generate mobile best practices. However, there is still a significant need to define mobile accessibility guidelines as in the case of WCAG. Besides, there are only a limited number of empirical researches on mobile accessibility of different mobile platforms that work through various assistive technologies.

This study, which is a pilot study of a long-term research on mobile accessibility, aims to contribute to relevant literature. For this purpose, this study focused on evaluating the accessibility of some selected built-in and third party iOS applications in iPhone and iPad through an extensive accessibility test. The test, which is based on a multi-method approach, was carried out with two blind users used touchscreen mobile devices for the first time in their life. The study also investigated how VoiceOver, which is the official built-in screen reader in iOS supported blind users. The remainder of this paper consists of a review of relevant literature. Afterwards, the methodology of the study will be explained followed by a discussion of the results and conclusion.

THEORETICAL BACKGROUND

Disabled People and Information Society

Thanks to Internet we’re living in a society in which information is accessed easily wherever or whenever you are. But especially people with disabilities still have significant problems to access these information resources on the web.

Redish et al. (2003) defined web as a very critical medium for vision-impaired users as it provided autonomy for these people. The universal access to the information is set as a long-term research target by many researchers. Stephanidis [2] defined “the universal access to information” paradigm as a long-term research target. For Story (1998) “universal design” or “design for all” are terms, which symbolize this effort to ensure the accessibility of information for all people in society. Korn et al. (2009) also presented the concept of AEGIS Integrating Project. This project aimed to constitute a breakthrough in the “eInclusion” area through the development of an “Open Accessibility Framework,” which will constitute an open resource for pre-built user-interface components, developer’s tools, software applications, and the run-time environment.