UNIVERSITI TEKNOLOGI MARA

USABILITY EVALUATION OF FINGER-BASED INTERACTION USING TOUCH SCREEN MOBILE PHONES: AN EMPIRICAL STUDY

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Dissertation submitted in partial fulfillment of the requirements
for the degree of
Master of Science (Information Technology)

Faculty of Computer and Mathematical Sciences

November 2010

Candidate's Declaration

I declare that the work in this thesis was carried out in accordance with the regulations of Universiti Teknologi MARA. It is original and is the result of my own work, unless otherwise indicated or acknowledged as referenced work. This thesis has not been submitted to any other academic institution or non-academic institution for any other degree or qualification.

In the event that my thesis be found to violate the conditions mentioned above, I voluntarily waive the right of conferment of my degree and agree to be subjected to the disciplinary rules and regulations of Universiti Teknologi MARA.

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ABSTRACT

Nowadays, mobile technologies have definitely become an essential part of our personal life. The use of mobile phones with touch screen has become a phenomenon among mobile consumers today, especially among teenagers and young adults. As a result, new interaction techniques which are based on the nature of touch were born. User experience is also important to ensure the success of marketing products such as mobile phones (Tobias and Spiegel, 2009). Hence, this study attempts to explore how users actually interact with touch screen mobile phones using their fingers. We have conducted two experiments to observe and evaluate the user's finger interaction with touch screen mobile devices. The first experiment's results have indicated various problems through observation. Therefore, we developed a set of written instructions to help the users to interact better with such devices based from our observation. Another experiment was conducted to measure the effectiveness of the proposed instructions in terms of task completion time and errors occurred. The results of our study indicate that there were only minor improvements in terms of the participants' performance. As a conclusion, it is important for mobile phone designers to include user experience factors into their design. This is because a design can directly influence the user experience itself, which is vital for the success of their product.

Keywords: Usability, user experience, usability testing, finger interaction, touch screen, mobile applications.

ACKNOWLEDGEMENT

Immeasurable gratitude to the Allah S.W.T. for giving me an opportunity to undertake and complete this research. This research would not have been possible without the guidance and support of many people. Firstly, I would like to express my deepest gratitude and sincere appreciation to my supervisor, Dr. Fariza Hanis Abdul Razak, for her precious time, guidance, comments, support and encouragement. I would also like to thank my parents for their motivation and endless support for the betterment of this project.

Special thanks to all the respondents for all their contribution towards this research, which has also provided me with valuable experience and knowledge. Finally, I would like to extend my gratitude to all my friends for their support and contributions in making this research a success.

Thank you.

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