Evaluating Interactive Systems: An Exploration of User Experiences

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Abstract

User evaluations is an important part to judge whether an interactive computer system is well developed. In this report, two cases of evaluation experiment will be discussed. This report will also give analysis of user evaluation.

Introduction

Evaluating user interactions with computer systems is fundamental to determining the success of system design and development. In this report, I explore two distinct user evaluation experiments. The first experiment focuses on uses' evaluation on influence music has on emotion. The second experiment focuses on users' evaluation on navigation in eReader. Finally, this report compares two experiments and find out the influence and importance of evaluation in HCI.

First Experiment[1]

- **Summarize of the experiment**

The main purpose of this experiment is to explore the impact of different types of music and video clips on participants. To be specific, the importance is to find out which type of music can elicit strong emotion.

As a participant, I am asked to sit in front of a monitor, wearing an Emotiv EPOC headset device which can translate EEG signal. Then I am asked to hear six different styles of music,

including Brain Energizer, Serotonin Release Music with Alpha Waves, F. Chopin's 'Funeral March, J.S Bach's 'Air' from Suite for Orchestra No. 3 in D, Justin Bieber's 'Love Yourself, Ed Sheeran's 'Shape of You. After listening, I am asked to watch dozens of video clips. The lengths of video clip are from one second to four seconds. Also the video clips are the same width, height and converted to grayscale.

- **Describe the experience of taking part in the experiment**

Actually, as a participant in this experiment, what I am asked to do is mechanical task. The only thing I have to do is to listen to different types of music and video clips. No response is requested. Although this task is quite easy, I am still enjoying this experiment. I am totally clear what I have to do in this experiment and the only thing I should do is to enjoy beautiful music.

- **Comment on the strengths and weaknesses of the experiment.**

The experiment actually do not meet the aims that were stated in the Information Sheet. The best thing of the experiment is that Emotiv EPOC headset device is used. With this device, EEG signal can precisely defines participants' emotion. But relatively small sample size cannot ensure stability of results.

Second experiment[2]

- **Summarize of the experiment**

The main purpose of this experiment is to compare different types of eReaders and evaluate the quality of navigation. As a participant of this experiment, I am asked to form a team with another participant. I will then try to find a number in a specific document and register an account. My partner will act as a scribe. We will do these two different tasks alternatively.

- **Describe the experience of taking part in the experiment**

As a participant of this experiment, I think I am asked to be an intelligent participant. The task to operate an unfamiliar eReader requires our ability to observe, think, and act. And the task to act as a scribe requires our ability to watch and learn. So the task is quite hard. But I enjoy this task even if I may face with some challenges. But at the same time it is like playing a puzzle game.

- **Comment on the strengths and weaknesses of the experiment.**

The experiment actually do not meet the aims that were stated in the Information Sheet. This experiment is good because it takes participants' direct feeling of eReaders' navigation into consideration when evaluating. One of the most important thing of a product is user experience. But the wrong thing is about the way of collecting feelings. Firstly, some of the participants are experienced in using eReaders. So the difficulty of the task might be different to those who are experienced and those who are not. As a result, the consequence of the experiment is chaotic. Secondly, the criteria of evaluation is not precise. It make levels for participants' subjective feeling which is not that precise. It would be better if the criteria is based on the time consumed in finishing tasks.

Comparison of the Two Experiments

The two experiments both concentrate on participants' experience. One is about music and the other is about navigation. They both consider the acceptability of trying new things. Design concept of these two experiments is quite important in HCI. The result of experiment evaluation can tell whether the website is designed in a way that all the visitors can read it in a convenient and easy way. Learnability and familiarity principles determine how easily a novice user can learn to interact with a system. To achieve this, a system should be predictable.[3]

And a well designed evaluation experiment is a good way to realize learnability and familiarity.

Reference

[1]Rahman, J. S., Gedeon, T., Caldwell, S., & Jones, R. L. (2021, May). Can Binaural Beats Increase Your Focus? Exploring the Effects of Music in Participants' Conscious and Brain Activity Responses. In Extended Abstracts of the 2021 CHI Conference on Human Factors in Computing Systems (pp. 1-6).

[2]Gedeon, T.D. and Rampaul, U. (2015) "Popular eReaders," Computer Science Technical Report, CSTR-2015-14, Research School of Computer Science, Australian National University.

[3]Educative: Interactive Courses for Software Developers. (n.d.). Introduction to Human-Computer Interaction & Design Principles. [online] Available at: https://www.educative.io/blog/intro-human-computer-interaction#best.