

Improve User Experience in Website Design

A Reflection of Two HCI Experiments

Lingpeng Xiao u6358055

Abstract

This report summarizes, describes, and analyzes two Psychology experiments: Mood & Attentional Control Experiment and the Attitudes towards Uncertainty Survey. The reflection on these two experiments will be used to find the relationship between web design and human-computer interaction. Finally, this report describes some useful advice to make websites more user-friendly and easier to display key messages to users.

Introduction

A good web design can effectively help a company survive in the fierce market competition. The success of an e-commerce website mainly depends on the ease of use of the system, the quality of information and services, the quality of website design, and the user's experience (Flavian, Gurrea & Orús, 2009). In this report, I will summarize, describe and analyze two Psychology experiments that are strongly related to web development. These two experiments are Mood & Attentional Control Experiment and the Attitudes Towards Uncertainty Survey. After that, I will provide my perspectives about improving web design by applying proper attention controls and reducing the uncertain content on websites based on my experience and reflection on these experiments. By applying these strategies, web designers may be able to improve the overall user experience and effectively gather users' feedback.

Experiment 1: Mood & Attentional Control Experiment

Summary

This is an online experiment, the objective of this project is to examine the correlation between trait anxiety and the ability to control spatial attention. There are three sections in this experiment. The first section of this experiment is mainly used to know the participants' current feelings, it contains many single-choice questions which have the four choices. Most of the questions are one-sentence questions, such as "I feel inadequate", "I am content", etc. The second section focuses on the participants' frequency of making minor mistakes over the past six months, such as missing the signposts on the road and forgetting where the phone is. It still contains single-choice questions but with different choices. The last task is a Useful Field of View (UFOV) test, which is a measurement of spatial attention. It has a box, an image of a trunk, and an image of a car, every time the system will randomly display an image in the box and another image that is outside of the box in a short time. I was first asked to declare which object was in the box and the position of another image. As the process goes on, the display time will be shorter and shorter and almost like a flash at the end. Also, there will be interfering images on the screen at the last several tests which makes this test much harder.

Experience

Before I attended this experiment, I was a bit nervous as I have never participated in any Psychological experiment before. After I read the clear instructions on the first page, my worries were released. I found some parts of the questions confused me in the later experiment process. The last section made me feel very interested (UFOV) since it was my first time participating in an experiment that is more like a game rather than serious work. In general, I enjoyed the experience of attending this experiment, even the last few tests were challenging for me.

Comment

The overall structure of this experiment process is logical and clear. On the first page, the detailed instructions include the researcher, general outline, privacy notice, and where to search for help. This made me feel trustworthy and reliable. It first asked about my current feeling and current situation within six months in the beginning and then started the Useful Field of View experiment. By comparing my response to the previous questions and my performance in the test, they are able

to find the relationship between trait anxiety and the ability to control spatial attention. However, I also faced a problem in the personal situation questionnaire of this experiment, that is there probably are some duplicate questions. For example, I was separately asked if I am nervous/jittery/tense/strained in the first section (Image 1&2), these questions made me feel very confused. As a non-native English speaker, I think these three words share the same meaning. Therefore, I was doubting myself if these questions were made like this or if these words actually mean a different degree of nervousness. Then I spent a bit of time searching for the result. However, I eventually didn't figure it out, so I left the same answer to these questions.

I feel nervous

☐ Not at all

☐ Somewhat

☒ Moderately so

☐ Very much so

I am jittery

☐ Not at all

☐ Somewhat

☐ Moderately so

☐ Very much so

(Image 1: Nervous and Jittery)

I am tense

☐ Not at all

☒ Somewhat

☐ Moderately so

☐ Very much so

I feel strained

☐ Not at all

☐ Somewhat

☐ Moderately so

☐ Very much so

(Image 2: Tense and Strained)

Experiment 2: Attitudes Towards Uncertainty Survey

Summary

This experiment is also online. The objective of this study is to investigate the various factors that may impact individuals' decision-making processes when faced with uncertainty. It involves posing several inquiries regarding one's attitude towards uncertainty. This research involves an internet-based qualitative questionnaire that encompasses 15 diverse situations related to health. I was assigned one scenario that is two doctors who have similar credit give me a diametrically opposed diagnosis to my test result. I was requested to envision myself experiencing it and share my emotional, cognitive, and behavioral responses and attitudes toward the given scenario.

Experience

Before I participated in this experiment, I felt very excited since the first experiment was attractive to me. While I felt a bit less interested when I saw the content of the experiment. I felt the scenario and questions are easy to understand and the number of questions is proper. But these questions are like mini-essay writing tests that reminded me of the hard period back when I was preparing for the IELTS test. During the experiment, I felt a bit regrettable when I found I might input some incorrect content but cannot go back to edit it.

Comment

In this experiment, the questions were still related to the aim, and all the related instructions are clearly declared. The key advantage of this experiment is it includes feedback sections that asked me to reply to the difficulty of the previous questions. I think this part is helpful for experiment designers to understand the participants feeling and then improve their experiment process. On the other hand, there are still a few details that can be improved. On the first page of the questionnaire, I was asked to insert my feelings for at least 100 words which is the compulsory requirement for moving to the next page. However, I actually don't have many feelings besides confusion and worry. So, I discussed how I think of that case as the reason for those feelings. While, when I moved to the next page, I found that the first question asks me to write another mini-essay to talk about my thinking in that scenario, which is already covered by my previous answer. Then I realized that I might have misunderstood the previous question, so I planned to go back and edit my answer. The problem is, there is only the "go next" button on the page as well as the browser, so I was not able to modify my previous answers.

Comparison of the two Experiments

These two experiments both have a clear and detailed instruction page in the beginning, which reveals the aim, researcher list, experiment description, privacy guidelines, and possible side effects and solutions. This makes the experiment more reliable and eases my worry before attending it. Furthermore, the connection between different sections is close and most questions

make sense to me. However, both of these two experiments slightly lack user-friendly design conceptions, those issues caused some inconvenience to me when I was participating in the experiment.

Relevance of user-participation experiments to web design and development

The most significant inspiration that I received is how to improve user-friendliness on websites. First, it's better to avoid using duplicate content which may make users feel confused. If repeated content is necessary, some related examples are required for helping users better understand the meanings behind them. Secondly, when designing the interaction and the data-gathering sections of a website, it's necessary to make sure users are able to redo or edit their previous input. Especially for those multi-page questionnaires, users may get inspired by the other content of the questionnaire or come up with some new ideas, then want to modify their previous input. Providing the "go back" option helps users to provide better content (Thrash et al., 2014). Thirdly, it's helpful to give users "freedom" when we are asking them for feedback or reflection. For example, on the feedback page of my assignment project, I asked users if they had any advice for my project. If I set that it's compulsory to fill something in this box, some users who think our website is good and don't have any suggestions may feel annoyed and then give up submitting their feedback or write in some unrelated information. These strategies are not only for the user's convenience but also for the web developer or the business organization to collect the required data efficiently and correctly.

Besides, from the Useful Field of View test, I also learned how to improve the layout of website components to emphasize the key messages. In the test, I always noticed the image inside the box at first. Therefore, some special designs such as eye-catching colors or larger font sizes (Image 3) may make the key messages can be easily found. Also, I noticed that it was hard for me to find the images when the interfering images existed. Hence, it may be better to make the background simple and clear when displaying the key messages.



(Image 3: Example of showing key message by change font size and color)

Reference List

Flavian, Gurrea, R., & Orús, C. (2009). Web design: a key factor for the website success. *Journal of Systems and Information Technology*, 11(2), 168–184.
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