Correlation of user evaluations and attentional breadth to web design and development

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Abstract:

User evaluation is a vital part of interactive computer systems development, without it the development would most likely fail. Those user evaluations experiments are explored and discussed within this report. Which was written to give an insight into the world of user evaluation testing and what defines a good experiment. This report involves the analysis of two experiments, the first being an exploration of the mechanisms of dynamic re-scaling of visual attentional focus and the second being a user evaluation on the usability of e-readers. Then the comparison of the two experiments occurs. Lastly how each of the experiments relates to the field of web design and development is explored.

Introduction:

The two experiments discussed in the report explore two different subjects. The first experiment explores the mechanisms of dynamic re-scaling of visual attentional focus. In essence how changing the size of visual elements affects ours focus on that element. The second experiment discusses the usability of the different e-readers in a set budget. The goal of this report is to analysis each experiment and explore it in three categories; summaries the experiment, describe the experience and discuss the strengths and weaknesses of the experiment. Then compare the two experiments to each other. Then look at the relevance of the experiments to web design and development. Each of the experiments do a have relevance to web design and development. Experiment one's relation is that it could gives insights on to user attention with re-sizing objects. Experiment two's relation is that it gives insights into usability and user evaluations.

First Experiment

The purpose of this experiment was to investigate the mechanism of dynamic re-scaling of visual attentional focus. With the focus on the relationship between perceptual benefits that individuals obtained from adopting a given attentional breadth. Which refers to how big or small the focus of you attention is, like how large is the object/thing you are focusing on. In the experiment I was presented with hierarchical letters, which are big letters made up of smaller letters, See Figure 1 for an example.

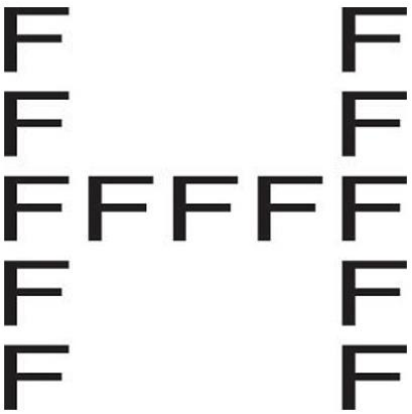

Figure 1

The experiment was broken into three blocks containing numerous tasks. Each task I had to press either 'T' or 'H' on the keyboard. In block one I had to tell what letter the big

letter was constructed from either T or H. I was also shown some isolated letters which were just the single letters and I had to indicate which letter it was either T or H In the second block I was tasked with figuring if the big global letters were either T or H or if they were not T or H then what letters they were made up of, either T or H. In the third and final block it was a combination of the previous two blocks.

The task that I was given was a mainly an intellectual task because i was supposed to figure out what the letter was displayed on the screen. The experiment was not the most enjoyable experience because it was just the same task done repeatedly. This got quite mundane quickly. But there were breaks in between each block which helped break up the mundanity. The experiment was quite easy overall you just needed to stay focused for a while. It was not mechanically or intellectually hard it just required a good amount of focus because your responses need to be quick. I understood the task after the practice section before each block.

The strengths of the experiment were the simple nature of the experiment, the fact that the experiment was not too hard to complete and the adequate preparation of the user before they complete the actual experiment. Meaning the practices blocks were helpful. The weakness of the experiment was the mundane nature of the tasks.

I think that the experiment met the aims of the information sheet because the aim on the information sheet was to “investigate the mechanisms of dynamic re-scaling of visual attentional focus”. The experiment explored my focus when changing the size of the letters and how my reaction speed altered. The experiment was well conducted, because I knew what was coming and what to do, but I think it could have been improved by telling me how many tasks I had left in each block .I feel like the data collected was mostly reliable if they remove outliers. Cause the data they collected is the time between the letter appearing on the screen and the user pressing a key.

Second Experiment:

The purpose of this experiment was to evaluate the quality and usability of e-readers and how available they are within a certain budget. In this experiment the users were tasked with opening the user guide for their e-reader they were supplied with e-reader. Once the user guide is opened, they had to find a model number then a number to tell how long you have left to register the device. There was no manual, so the user must figure it out themselves. Then once the task was finished, they were asked to evaluate the device on a Likert scale which was: “V. good / Good / OK / Bad / V. bad. These were mapped to 5 / 4 / 3 / 2 / 1 for statistical analysis”.

The experiment involved both a mechanical and intellectual task, but it was mainly an intellectual one. It was mainly an intellectual task because you had to figure out how to use an e-reader and then find something in a book with no instructions. The experiment difficulty would have varied on the e-readers you were given because some e-readers were harder to use than others. But overall, the experiment didn’t seem too difficult. The experiment was easy to understand once it was had explained it, the only hard part was figuring out how to use the e-reader but that wasn’t too hard.

One of the strengths of the experiment was the fact that they ran the evaluation on each e-reader more than once, so this gives each e-reader a good number of evaluations, thus leading to better results. But this could also be a weakness as after the first e-reader the user have experience of using an e-reader. So, the task would be easier on the next e-reader due to them having experience now. I do feel the experiment meet their aims because their aim was to evaluate the e-reader in the quality and usability fields. The experiment explored the usability of the e-readers via making the users complete a task which was heavily based around usability. But I feel that the quality of the e-readers was not explored in the experiment due to no experiments being done on that aspect of the e-readers. I think the data collected was semi reliable due to the test being done in pairs, meaning the person that went first would have impacted the second person's opinion on the e-reader therefore the data is not super reliable. But other than that, the data is reliable.

Experiment Comparison:

For the two experiments I only participated in one of the experiments which was the first experiment about the mechanism of dynamic re-scaling of visual attentional focus. The second experiment I read a report about. One major difference was that the second experiment was in person while the one I participated in was online. This can affect the focus of the person in experiment cause in person they may be more focused caused of external pressure, while at home they are more relaxed. Another difference was that the second experiment was done in pairs while the first experiment is done independently. They also used different mediums to conduct the experiments, like an e-reader to a PC.

I felt fine taking part in the first experiment as there was little personal information given out about myself. It was not a complicated experiment, just time consuming but I went into knowing that. I feel that participating the second experiment would have been the same expect that they know what you look like and your name. But the second experiment did seem more challenging due to the problem solving that was required.

I cannot comment on how the second experiment was ran as I did not participate in it. But for the first experience I thought it was run well, as they gave me a large window of time to complete the experiment. The experiment was not too complicated to complete and overall ran well.

HCI and Web Design

The first experiment explored how user focus is affected by re-scaling visual elements. This experiment could give some insight on to whether the designer should use animation to re-size elements while the user is on the website. As this resizing could make the user lose focus and not enjoy the website as much. The design of the experiment of having a single element a white page, did show me that if you want the user to focus on a single thing make it stand out. Like have it be alone on the page. But I feel that this experiment will help HCI because it will give us more information about how re-sizing of elements affects users focus, which is vital for user attention.

The second experiment was a user-evaluation experiment in which the users evaluated an e-reader. This evaluation gives an example of what a user evaluation experiment could look like in the web design space. It also gives an insight on how important usability is user when using a new technology. This is applicable to the web design space because each time a user visits your page it is likely their first time visiting. Your webpage has roughly 54 seconds (Fitzgerald, 2022) before the users leaves. If the website has poor usability, then the user will leave your website and you will lose that user due to a bad experience. 88% will not return to the website after this bad experience(Sweor, 2022)

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