School of Computer Science

MSc in Computing - Team Project

IceyFauxNews - User Evaluation Report

By

Abhimanyu Gangwar (D19123597)
Guanlong Lyu (D17129765)
Huayi Zhang (D18124007)
Yeo Bin Shin (D18130129)
Yujian Li (D18130270)
Zhe Zhang (D17129788)

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1. Proposed Hypothesis

Before the commencement of the user evaluation process, we finalized the suitable evaluation method to be applied and it was a combination of a survey questionnaire and the Cognitive Walkthrough method. According to Blackmon et. al. (2002), Cognitive Walkthrough is a theoretically-based usability evaluation method that has been proven effective in designing the applications with the support of goal-driven tasks that can be performed easily by the users. Thus, we prepared a survey questionnaire with altogether 15 questions and these questions were accompanied by various instructions for the tasks that were required to be performed by the users during the evaluation process. These instructions were concise and we were able to get them across to the users although some of them are not proficient in the English language.

Additionally, Blackmon et. al. (2002) also suggested the segregation of the whole website into several subsections and requesting the users to address them individually and we also emulated a similar process on our end by advising them to accomplish one task at a time before proceeding to the next within the questionnaire as supported by Blackmon et. al. (2002). We managed to observe a small group of users in-person and also provided minimal guidance while they attempted to accomplish the given tasks as well as navigating across the webpage whereas the majority of users completed all the tasks of their own accord. The following were the questions as well as the tasks' instructions within the questionnaire that we compiled in Google form and all users' responses were recorded successfully:

Q0. Which platform do you use to access IceyFauxNews??

Q1. What is your age?

Q2. How difficult is Task 1? (Read the full-text of news. Do not close the pop-up window and read another new article)

Q3. How difficult is the task "Sign Up"?

Q4. How difficult is the task "Logout"?

Q5. How difficult is the task "Login"?

Q6. How difficult are the tasks "Like/dislike, comment, share and save a news article"?

Q7. How difficult are the tasks "Reply and like/dislike a comment"?

Q8. How difficult is Task "Find your saved articles"?

Q9. How difficult is Task "Add your date of birth to profile and go back to home page"?

Q10. (Laptop user ONLY) How difficult is Task "On the homepage, mute any news source (e.g. BBC, CNN) and undo it."?

Q11. How difficult is Task "On the home page, filter news from one or more sources (e.g. The Guardian, CNN, BBC, Buzzfeed). "?

Q12. (Laptop user ONLY) After adding several news sources to the filter, how difficult is it to follow some of them?

Q13: After adding several news sources to the filter, how difficult is it to clear all filters?

Q14: Is there anything on the IceyFauxNews website that make you confused?

Q15: In your opinion, what does IceyFauxNews do?

2. Experimental Method

2.1 Overview

We conducted our experiments in two different approaches. The first approach was to compose text messages which included the links of the survey questionnaire which was compiled in Google Form along with the link of the web application and sent to the respective users who agreed to participate in the survey beforehand. We would have liked to conduct an in-person experiment with large user groups but due to the recent COVID-19 restriction, we were prohibited from doing so. Besides that, we conducted online meetings with several users to observe how they interact with the IceyFauxNews system and provide minimum guidance concerning the issues in performing the task. The second approach of conducting the experiments was to approach some users who happen to be the housemates within the same household physically and exercised the Cognitive Walkthrough method.

Ultimately, we strove to achieve uniformity in our web application's design. However, we realized some features performed better in specific devices or platforms such as the muting news sources feature. Thus, it is crucial to introduce the experimental conditions for the survey. To conform with this practice, we included several conditional questions or tasks that are relevant to those users which utilized the specific platform that the features worked best. By doing so, we were able to maintain the efficiency of the web application for a wider range of users.

There were two patterns identified by Lagun and Lalmas (2016) and we utilized them as the baselines for comparison purposes. The first pattern was that users usually spent most of their time towards the top of the page whereas the second pattern was that users tended to spend a significant amount of time at the bottom of the webpage, reading the article's comments as well as contributing comments to the respective news. These two patterns had very high dwell time.

2.2 Data Collection

We were able to gather both qualitative and quantitative data from our users' responses as the survey questionnaire consisted of a combination of subjective and objective questions. We reserved an open-ended question which was question 14 to encourage users to provide feedback on elements of the web application that they identified as out of place or confusing. The results of the survey questionnaire would be elicited and tabulated as shown under subsection 2.4. The data would be correlated to the hypothesis as they were elicited simultaneously while the users attempted to accomplish the task and determined the levels of difficulties in accomplishing the stated tasks.

2.3 Selected Subjects

According to Patwardhan and Yang (2013), online news readers in the U.S. appear to be younger (41% of them were between the ages of 18-34) as compared to conventional newspaper readers (only 23% in the same age category) in the year 2001. However, according to Gottfried and Shearer (2017), there was a rise in the consumption of online news across the demographic groups in the U.S. in the year 2016. There was an increase of 6% among those ages between 50-64 (35% in 2017 vs. 29% in early 2016). Thus, we deduced that our focused subjects should be within the age range of 18 – 30 and probably 46 – 60.

2.4 Data Analysis

Results

There were altogether 25 responses collected from the users. The results were elicited and populated under the following tables together with the number of responses for each choice:

Q0	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13
Chrome on laptop.		Very easy	1	1	1	1	1	1	1	3	1	Easy	Very easy
Chrome on laptop.		Fine	2	3	3	1	2	3	2	4	4	Fine	Very easy
Chrome on laptop.		Easy	1	1	1	2	2	3	3	3	3	I don't understand the task.	I don't understand the task.
Chrome on laptop.		Easy	1	1	1	1	3	2	3	4	2	Easy	Very easy

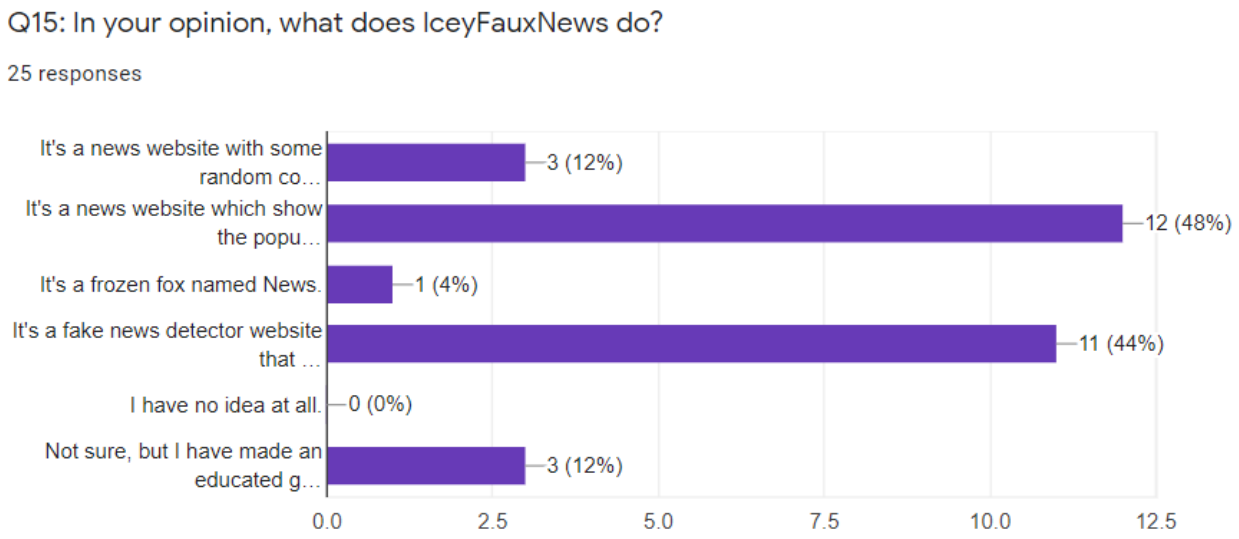
Firefox on laptop.	18 - 30	Easy	2	2	2	3	3	4	4	2	2	Easy	Fine
Chrome on laptop.	18 - 30	Fine	2	3	1	2	2	1	3	3	2	Fine	Easy
Chrome on laptop.	18 - 30	Very easy	2	1	2	2	3	2	2	2	2	Fine	Fine
Edge on laptop.	18 - 30	Fine	4	3	3	2	2	3	2	2	3	Fine	Easy
Chrome on laptop.	31 - 45	Very easy	1	1	1	1	1	1	2	1	1	Very easy	Very easy
Chrome on laptop.	18 - 30	Easy	3	1	1	3	2	2	3	3	2	Easy	Easy
iPhone 11	18 - 30	Very easy	2	2	1	2	2	2	2	2	2		Easy
Chrome on laptop.	18 - 30	Fine	2	1	2	2	2	2	3	2		Easy	Easy
iPhone XR	18 - 30	Easy	1	1	1	1	1	1	1	5	1	Fine	Very easy
iPhone	18 - 30	Fine	3	2	1	1	1	1	1		1		Very easy
Chrome on laptop.	18 - 30	Very easy	3	1	3	1	1	1	1	1	1	Very easy	Very easy
iPhone	18 - 30	Easy	4	1	4	1	1	1	1	1	1		Easy
iPhone	18 - 30	Very easy	1	1	1	1	2	1	1		1		Very easy
iPad Pro 2017 10.5inch	18 - 30	Easy	1	2	1	1	2	2	1		3		Fine
iPhone11 pro max	18 - 30	Fine	3	3	3	2	3	3	3	3	3	Fine	Fine
Chrome on laptop.	18 - 30	Fine	1	1	1	3	2	2	3	3	3	Fine	Fine
Chrome on laptop.	46 - 60	Very easy	1	1	1	1		1	1	1	1	Very easy	Very easy
Chrome on laptop.	31 - 45	Fine	1	1	1	1	1	2	2	5	1	Easy	Easy
Chrome on laptop.	31 - 45	Very easy	1	1	1	1	2	3		2	2	Easy	Easy
Iphone X	18 - 30	Easy	2	2	2	3	3	1	2	4	1		Easy
Firefox on laptop.	18 - 30	Easy	2	2	2	2	2	2	2	2	2	Easy	Easy

Table 1: Tabulated responses for Question 0 – 13.

Q14: Is there anything on the IceyFauxNews website that make you confused?
No

No the website is quite easy to understand
No
1. Login/Register should be accessible on single click as similar to logout. 2. Multiple login sessions are allowed from different devices and are working independently. 3. Overall design elements can be enhanced. Rest I think this website looks pretty useful for news lovers.
I don’t know how to mute news sources and on iPhone using safari when I try to log in I get the same “suggested password” option as if I was registering
Where did the name come from
1. The navigation bar of the web page is not obvious and a little bit narrow, so the name of the website is easily overlooked. 2. Log in/ register function: not easy to find out, I didn't konw what it is for before I clicked it. 3. News sources function: If there are different channels will be better. (sports, economy, military, sports, etc.) and if the news sources are not in a list, for example If they are sorted by first letter or sorted by A-Z, it will be easier to navigate. 4.I really like the interaction when I look through one particular news, I think if there is a description beside the red/green circle to tell the user what's the numbers' meaning will be easyer to understand. 5. The shape of the news in the homepage: If only leave the titles will be easier for users to catch the point? Because of the difference lengths of the content which make the shapes of the news are different, slightly discordant.
The website is very clear and complete in my opinion, simple and very easy to handle
No not at all
no
No, everything is good enough!
what is the signifiance of the circle with a number (progress)?
After reading news on the pop up, as i have scrolled down.. I clicked on the next news and it shows the very bottom of the news. It should auto scroll back to where the news begin to ensure a smoother UX. The time of the news is only shown half.
The filter functions
none

Tabulated responses for Question 14.



Responses of the users for Question 15.

Based on our findings, 56% of our participating users tested the web application through Chrome web browser on the laptop and this was the highest value among all the participating users. In the context of the age group, most of our participating users fell under the age group of 18 – 30 as its percentage was 81%. On the other hand, we also have participating users who belonged to the age group of 31 – 45 which met the requirements of our target user groups.

There were altogether 44% of participating users who found that the registration task was very easy to be accomplished. Besides that, the logout task was very easy to be accomplished too, achieving a percentage of 60%. We were also pleased to know that the login task was equally easy to be accomplished too, topping the chart with 60% too. As part of the cognitive walkthrough method, we categorized the tasks such as like/dislike, comment, share and save news article under the same roof and the percentage of users who accomplished the task very easily was 52% which is more than half of the remaining percentage. However, in the context of the reply and like/dislike comment task, many participating users identified it as a fairly easy task to be accomplished as the percentage was 50%. Find saved articles task was fairly easy to be accomplished too with the percentage of "very easy" rating topped 40%. The percentage of participating users identified the "add the date of birth to the profile page and return to homepage" task were similar for both "very easy" and "easy" ratings.

It seemed that the "muting news sources and undo them" task was quite challenging for most of the participating users with the values spread across the whole rating scale. Besides that, we were able to view evenly spread readings of the rating scales for the "on homepage, filter news from one or more sources" task. Lots of users also found that it was fairly easy to deal with the news sources' filtration feature.

Most of the users were partially correct about the main purpose of the web application as they considered it as a news aggregator site but in fact, it was a news portal aggregator with the functionality to detect the authenticity of the news.

2.5 Practical Setup

As mentioned in the earlier section, we decided to conduct the experiments by taking two different approaches. The first approach was regarding the sending of text messages to request the participating users to complete the survey questionnaire whereas the second approach was to meet the participating users personally and physically and conduct the experiments through the Cognitive Walkthrough method.

In the context of the second approach, it is undisputed that every task within the Cognitive Walkthrough method was required to be accomplished online. The instructions were appended beside each question within the questionnaire. However, should the participating users had any doubts or inquiries, we were more than happy to clarify them especially those participating users who are not well-versed in the English language. In the context of the type of environment for conducting the experiments, we preferred it to be serene and bright so that the participating users were able to put all their attention into the specified tasks with minimal distractions. We advised the participating users to open the survey questionnaire on another device, not on the test device to ease the interpolation processes. Initially, we also compiled a checklist for the Cognitive Walkthrough method's tasks but decided to consolidate all of them within one file to facilitate the evaluation processes.

3. Conclusions

We were contented with the overall survey and would not opt for a different approach to evaluate participating users' performances in accomplishing the tasks. We planned to conduct this form of evaluation frequently so that we were able to receive more feedback from the participating users concerning future enhancements. Through the evaluation processes, we were able to achieve hierarchical or gradual improvements for the web application. One of the major takeaways of these evaluation processes was that the muting of news sources feature was only supported under the desktop view, not the mobile view. Besides that, some participating users with keen eyes for details noticed the scrolling feature of the web application does not operate as expected and the issue persists at the moment. In a nutshell, incremental improvements can be achieved easily with the integration of user evaluation processes in the software development lifecycle.

4. References

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