

Usability Testing on PTSS Conference Management System

Ruziana Mohamad Rasli^{1,*}, Mime Azrina Jaafar¹ and Hafizah Abdullah Ali²

¹Department of Information Technology and Communication, Politeknik Tuanku Syed Sirajuddin, Pauh Putra, Perlis, Malaysia

²Department of Design and Visual Communication, Politeknik Tuanku Syed Sirajuddin, Pauh Putra, Perlis, Malaysia

*Corresponding author: adiana1984@yahoo.com

Abstract

PTSS Conference Management System (CMS) is a system that had been developed to cater and manage the registration, submission and reviews of conference paper being submitted to CIE-TVET Conferences. In order to have a high-quality system, a usability testing is needed to check on the effectiveness and interactivity of the elements in the system. This paper focuses on three types of elements which is the layout of the system, the navigation controls and the functionalities of the system. A questionnaire with 15 questions were given to 123 respondents whom had used the system. Based on the questionnaire, the majority of the results generated shows that this system provides a good structured interfaces which is easy for the user to use and the navigation of the system are also points to the correct intended pages. Lastly, the functionalities of the system also work perfectly based on the feedback being gathered from the respondents. In the future, different types of usability testing should be compared and analyzed in order to have better feedback from the respondents.

Keywords: - Usability testing, conference management system, effectiveness, questionnaire

1. Introduction

With the implementation of new norm due to Covid-19 pandemic issues, more and more system and websites are actively used nowadays. Users are implementing system and websites to ease their daily companies' process and activities. Therefore, usability testing is important in any website or system design. This is because it is significant to have an effective user experience in any website or system that had been developed (Thorngate and Hoden, 2016). Not only that, Thorngate and Hoden (2016) added usability testing can also help in investigating the connection between users and the usability of the website or system user interface.

As stated by Korableva et al. (2019), the percentage of the completion online course are around 7-20% basically due to user dissatisfaction with the interface design. Therefore, to solve the issues in incompleteness of the system, there is a need for a high-quality design and minimization of the flaws of the system which can be achieved by evaluating the user experience.

2. Related Works

There are a number of techniques that can be used to investigate users' satisfaction on the system or website's interface (Korableva et al., 2019). This section described on related works on usability testing on various types of system or websites.

Thorngate and Hoden (2016) focuses on three key user options in evaluating the LibGuides 2

website interface. These key user interfaces are number of columns, placement of navigations menu and visual integration. Based on these key user interfaces, it can be concluded that two-column layout is more preferable than one or three columns layout. In terms of navigation, left-hand navigation placement outperforms the top navigation placement based on the evaluation. Lastly, for the visual integration, most participants prefer having the LibGuides to be integrated with the library website. However, there are several suggestions such as on the interface framing like header, footer and sidebar of the library's website must have more navigation options and consistent experience to avoid cluttered layout.

Korableva et al. (2019) analyze two platform which is Open Edu and Coursera based on its interfaces. In this study, Korableva et al. (2019) uses UMUX-Lite, SUS questionnaires, Testbirds Company's approach and the ISO. Here, user's perception and satisfaction of the online interface on both platforms were analyzed based on a questionnaire given to 60 respondents aged between 18 to 35 years old.

Holmes et al. (2019), proposed a usability testing on a Chatbot in healthcare called WeightMentor to assess conversational user interface. As stated by Holmes et al. (2019) testing usability of chatbot differs than testing a system or website due to the fact that in developing a system, the major focus is on user interface while in chatbot, the major focus is on conversation modelling. In Holmes's et al. (2019)

study, three elements were evaluated which is completion times, usability issues and differential between pre-task and pro-task answers. A total of 30 participants (healthy adult) were given the questionnaire to evaluate the usability of the WeightMentor chatbot. Based on the feedback gathered by the questionnaire, the chatbot has a high degree of usability, however, there are several issues such as approximately 26 subjects are required to identify almost all the usability issues and the users become optimal is they use the chatbot more than once. As a conclusion, usability testing is really needed to maximize the proficiency of the chatbot.

Another research that uses usability testing in their research is Dharmayanti et al. (2018). Dharmayanti uses Goal Directed Design method to checked on the flow of an application called Comrades to describe problems experience by users of the application. By implementing this method, user can easily find the purpose of the usage in Comrades application and came out with a better recommendation. Five users were interviewed based on the user interface and user experience in using Comrades application. The result generated shows that the usability testing can help to improve the quality, appearance and usage of the new application as compared to the older Comrades application.

3. Methodology

PTSS Conference Management System (CMS) is a system used by CIE-TVET conferences in order to cater and manage the registration, submission and reviews of conference paper being submitted which can be displayed in Figure 1 and Figure 2.



Figure 1: Main interface of the system



Figure 2: Main function of the system

To test the usability of PTSS Conference Management System (CMS), a questionnaire was given with a total of 15 questions that asked on the navigation of the system, the amount of information in the system and the layout of the system. Listed in Table 1 shows all the questions that are included in the survey.

Table 1: Question on usability of PTSS Conference Management System (CMS).

Question 1: Web page is clean and not cluttered with text and graphics
Question 2: The width of a page less than the width of the browser window to avoid horizontal scrolling.
Question 3: Use of fewer colours
Question 4: Italicized words are rarely used.
Question 5: Text or the links or buttons self-explained and descriptive.
Question 6: When linking to another page in related Web site, it links to the exact page.
Question 7: Pages contain interactive link.
Question 8: Navigation controls located in the same location on each page.
Question 9: It visible and easy to find.
Question 10: Use of online form is helpful
Question 11: Online form help user to registered
Question 12: Online form has enough information needed.
Question 13: Online form located at the right area.
Question 14: It is easy to send submission
Question 15: It is easy to send revision

Each of these questions were given four scale which is Weak, Fair, Good and Excellent. The survey is then given to 124 respondents between 7th of September 2020 to 1st of October 2020. Based on the feedbacks gathered from the respondents, the following section discusses on the feedbacks that had been gathered.

4. Result and Analysis

Figure 3 to Figure 17 shows the distribution on answered gathered. The following section discusses on respondents’ feedbacks.

The first question of the survey asked the respondents whether the interfaces of the system are clean from any unwanted and cluttered text and graphics. Majority of the respondents (87 respondents) provided good while 33 respondents answered excellent and 3 respondents stated fair for the interface of the system. From Figure 3 is can be concluded that the interface of the system provides a clean interface which suits user’s needs since there is no negative feedback been gathered from the survey.

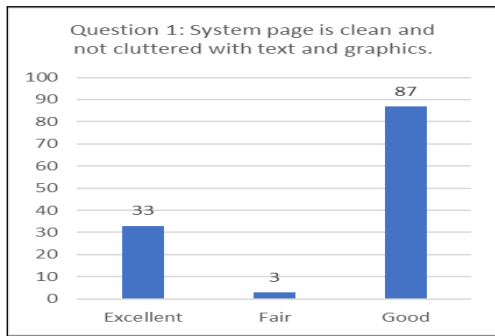


Figure 3: Question 1: system page is clean and not cluttered with text and graphics

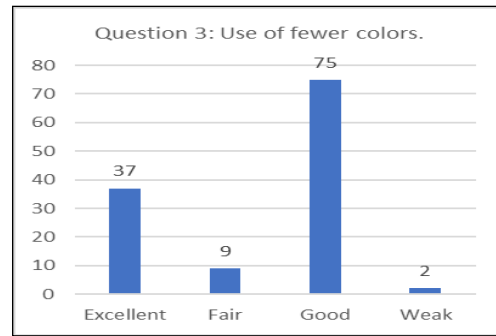


Figure 5: Question 3: use fewer colors

For the second question, the respondents were asked if the layout width is suitable for their device since the width is important to avoid horizontal scrolling by the user. Around 71.54% (88 respondents) provides good responds while 24.39% (30 respondents) provides excellent responds and lastly 4.1% provides fair responds. There is no weak respond gathered in Question 2. It can be stated that the system layout is correct and it provides users with a good layout.

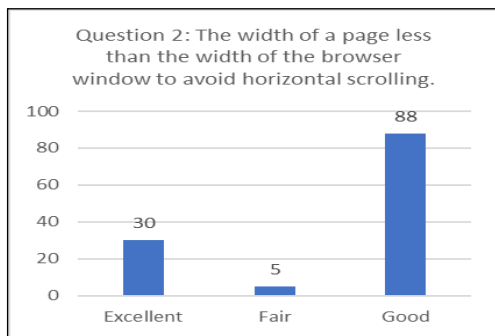


Figure 4: Question 2: the width of a page less that the width of the browser window to avoid horizontal scrolling

The third question asked the respondents whether it is suitable that the interface of the system uses fewer color. Similar to the previous question, majority of the respondents (60.98%) states that it is good to use fewer colors in the interface followed by 37 respondents (30.08%) who stated excellent, 9 respondents (7.3%) stated fair and lastly 2 respondents (1.6%) stated weak which means 2 respondents does not like fewer colors in the interface.

For the fourth question, the respondents were asked whether the usage of italicized words are suitable to be rarely used in the system interface. 84 respondents stated that it is good to rarely used italicized word while 30 respondents stated that is it excellent to rarely used italicized words.

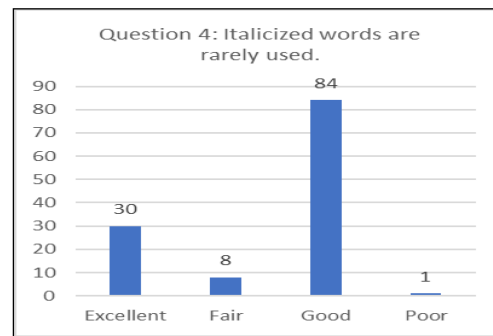


Figure 6: Question 4: italicized words are rarely used

In question 5, the respondents were asked whether the text, links or buttons are self-explained and descriptive. In this question there are four responds were gathered which is weak, fair, good and excellent. Majority of the respondents stated that it is good that the text, links and button self-explained and descriptive while 35 respondents stated it is excellent. 6 respondents stated fair and lastly 1 respondent stated that the text, links or button is not self-explained and descriptive.

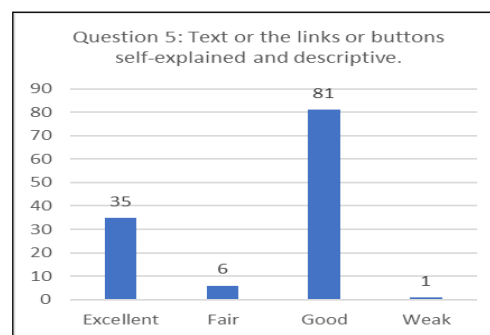


Figure 7: Question 5: text or the links or buttons self-explained and descriptive

Question 6 asked the respondents if the navigation of the page will link to the correct intended page. The respondents gave positive feedback with 40 stated excellent and 79 stated good for the navigation on link between one page to another while only 4 respondents stated fair.

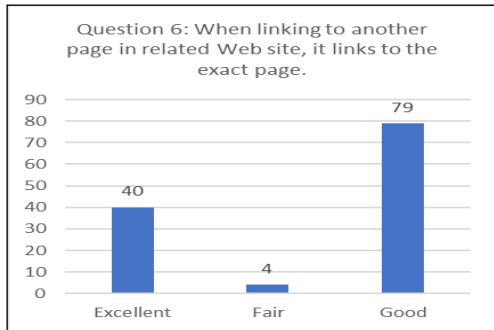


Figure 8: Question 6: when linking to another page in related web site, it links to the exact page

The layout and font are not only being asked in the survey, but the interactivity of the link is also asked. Respondents were given time to use the system and based on the respondent gives their feedback on the interactivity on the system. 71 respondents stated fair followed by 37 respondents stated excellent and lastly only 15 respondents stated fair. There is no weak responds gathered in this question.

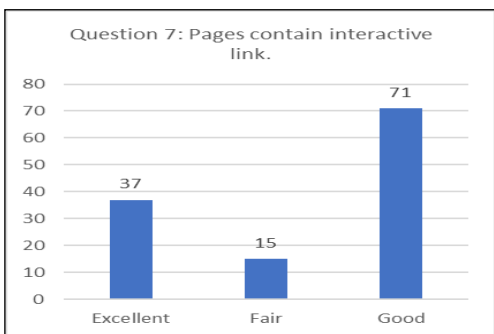


Figure 9: Question 7: page contain interactive link

Question 8 asked the respondents whether the navigation control such as menu and button are located in the same location on each page of the system for easy navigation. 80 respondents provide good feedback while 37 respondents provide excellent feedback and lastly 6 respondents provide fair feedback. This positive feedback is good since basically, in any system, the navigation control must be within each page and must be located easily for user to use it.

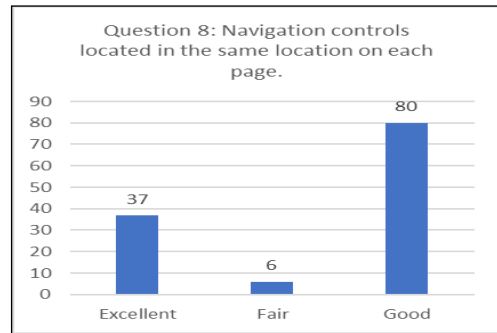


Figure 10: Question 8: navigation controls located in the same location on each page

Question 9 is related to question 8 which asked the respondents related to the navigation control. In question 9, respondents were asked whether the navigation control is within the same page while question 9 asked whether the navigation control is visible and easy to find. The feedbacks are positive with 67 stated good and 48 stated excellent. Only 8 respondents stated fair and there are no weak responds gathered from the respondents.

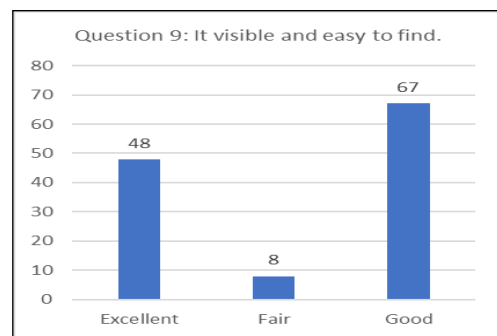


Figure 11: Question 9: it is visible and easy to find

The system that had been developed is a conference management system which includes online form that the user can use to fill up their conference paper submission. Therefore question 10 asked whether the usage of online form had helped the user to ease their process. 75 respondents provided good while 46 provided excellent and another 2 respondents provided fair as its responds. Here, it can be seen that the online form helped users in doing their activities in the system.

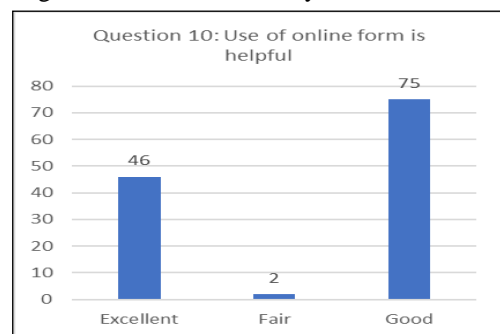


Figure 12: Question 10: the use of online form is helpful

The system that had been developed also provides users with registration form. In order for the user to use the system, they need to register their personal information first. By having the registration functions, question 11 were asked to the users. 73 respondents stated good and 44 respondents provides excellent which proves that the online form can help users in registering their personal information.

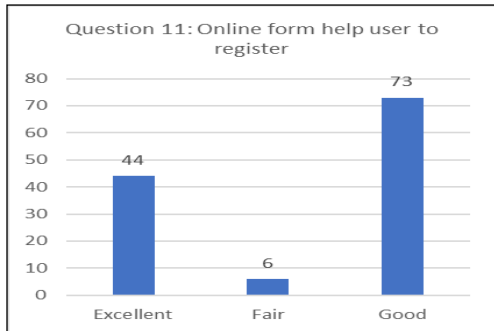


Figure 13: Question 11: online form help user to register

Question 12 and 13 still under online form function. In Question 13, respondents were asked whether the online form has enough information for the user to fill up their related information. 66 respondents stated good, 46 respondents stated excellent while 11 respondents stated fair. It can be seen that this system provides a good online form with enough information in it.

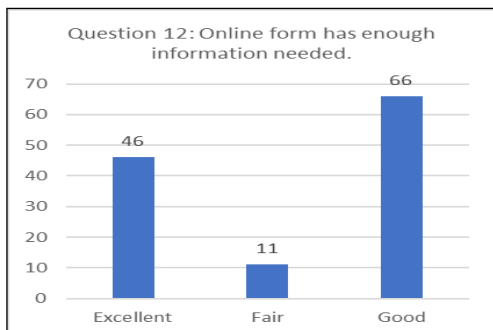


Figure 14: Question 12: online form has enough information needed

In Question 13, respondents were asked if the online form are located in the right area. In this question there are four types of respondents which is 72 respondents stated good, 43 respondents stated excellent, 7 respondents stated fair and lastly 1 respondent stated weak.

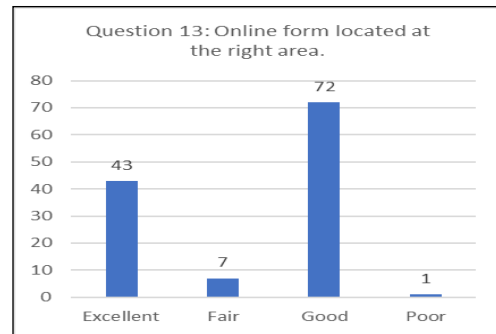


Figure 15: Question 13: online form located at the right area

In the system that had been developed, there is function to send submission on papers in the system. Question 14 were asked on whether the submission function is easy to be find in the system. 66 respondents provided good while 51 respondents provided excellent and another 6 respondents provided fair. Here, it can be seen that the submission process is easy to be done in the system.

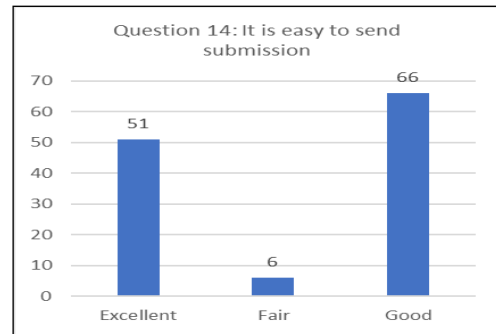


Figure 16: Question 14: it is easy to send submission

The last question asked regarding the revision function. In this system, there are three types of users which is the administrator, the reviewer and the participant of the conference. Once the participants submitted the paper, there will be reviewer allocated to each of the conference paper. Therefore, this reviewer will check on the paper and revised on the content of the paper. Therefore, the participants can have a look on the revised comments and change based on the comments. Based on this function, 67 respondents stated good, 39 respondents stated excellent, 4 respondents stated fair while there are about 13 missing values from the respondents' feedback. Although there are missing values, the majority of the respondent still give positive feedback on the revision function in the system.

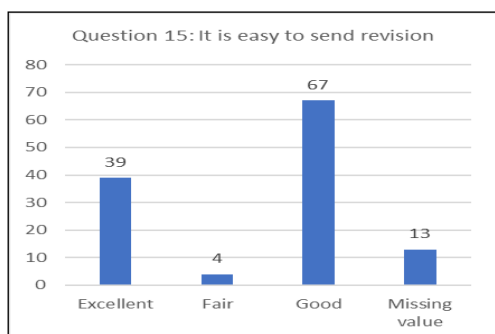


Figure 17: Question 15: it is easy to send revision

5. Conclusion

This main objective of this paper is to test the usability of PTSS Conference Management System among three types of users which is the administrator who manages the system, the participants who will register their personal information and submit their paper and lastly reviewer who will review that paper that had been submitted to the conference. Based on the feedback gathered from 123 respondents who had used the system, the results are promising where the system fulfils all the requirements of the users. Not only the layout of the system is structurally located, the colors, the functions and also the navigations are easily being located and used by the users. In the future, different types of usability testing should be

compared and analyzed in order to have better feedback from the respondents.

References

- Dharmayanti, D., Bachtiar, A. M., & Wibawa, A. P. (2018, August). Analysis of user interface and user experience on comrades application. In *IOP Conference Series: Materials Science and Engineering* (Vol. 407, No. 1, p. 012127). IOP Publishing.
- Holmes, S., Moorhead, A., Bond, R., Zheng, H., Coates, V., & McTear, M. (2019, September). Usability testing of a healthcare chatbot: Can we use conventional methods to assess conversational user interfaces?. In *Proceedings of the 31st European Conference on Cognitive Ergonomics* (pp. 207-214).
- Korableva, O. N., Durand, T., Kalimullina, O. V., & Stepanova, I. (2019, January). Usability Testing of MOOC: Identifying User Interface Problems. In *ICEIS (2)* (pp. 468-475).
- Thorngate, S., & Hoden, A. (2017). Exploratory usability testing of user interface options in LibGuides 2. *College & Research Libraries*, 78(6), 844.