Usability Analysis of an Academic Faculty Website: A Case Study of the Selected University

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Abstract. Website constitutes a pivotal element in an academic institution. It is useful to provide academic information for stakeholder requirements like final scores, academic calendar, scholarship, student competition, etc. This paper presents an investigation about the level of usability of the website at the selected faculty of the university in Indonesia based on 5 dimensions, namely learnability, efficiency, memorability, error, and satisfaction. It is noteworthy that the faculty should supply the information in detail and accurately. However, as a matter of fact, few of a faculty website in some certain universities sometimes experiencing matters for the user. Thus, it is crucial to do the analysis of the usability of the website at the faculty level. A qualitative study was conducted by distributing some Likert-scale questionnaire to stakeholders that consisted of students, academic staff, student’s parents, and lecturers. The questionnaire contains 25 statements divided into five groups of elements by referring five dimensions above with each group having 5 questions or statements. The non-parametric statistic was conducted to test the hypothesis. The result of this study shows that the website of the selected faculty is classified into a moderate level with 68% of usability grade. Thus, this study recommends that the faculty improve its website in the layout of menu, content, add some features to ease login and increase usability level.

1. Introduction

Website constitutes a pivotal element in an academic institution. It is useful to provide academic information for stakeholder requirement like final scores, academic calendar, scholarship, student competition, etc. Meanwhile, website is also used as a media to promote university educational qualification and recognition [1] [2]. A good website should meet the user needs such as easy access and ease of getting information [3]. To find out whether a website is good or not, it is necessary to measure its usability level.

A preliminary study has been conducted to stakeholder of the website. It reveals that intensity level in using the selected academic website is 50% of the respondents occasionally accessing the website, 42% of respondents infrequently accessing the website and 7.5% of respondents oftentimes accessing the website. This finding pops up a question why the stakeholder does not frequently access such website. Thus, it is important to test the academic faculty website in the selected university about its usability level.

The objective of this study is to analyze the usability level of the academic website of the selected university as a case study based on its learnability, efficiency, error, memorability and satisfaction.
2. Research Method

2.1. Usability Analysis Method

Usability is a measure that describes the level of ease of use of some product with learnability, efficiency, error, memorability and satisfaction as the parameter [4] [5] [6]. Academic websites are said to be usable if the users feel satisfied after using the website; find them easy to learn the process for finding certain information in the website; users can find the information they want quickly and with a minimum error; and the contents of the website meet user’s needs [7][8].

The testing was done by giving respondents a series of tasks that they must do on the website being tested. This test aims to form opinions from respondents about the particular website to help them when filling out the questionnaire. The test contains some tasks related to menus and features provided by the website. Once the respondent completed the tasks, they would be given a Likert-scale questionnaire. The data from the questionnaire would be used to measure the usability level of the website by calculating its mode value. The mode value is analysed to find the usability level of the website. To support the results of the analysis, interviews were conducted with respondents to find out their difficulties when using this website.

2.2. Survey

The survey was conducted by distributing questionnaires to stakeholders consisting of students, lecturer, student’s parents and faculty’s staff, and by interviewing them about their complaints related to the particular website. This survey aims to identify the intensity level of access for respondents to the faculty’s website and to test the usability level of the website. The first survey contains questions about the intensity of accessing the website under study; what device they mostly used to access the website; and what information that they wanted to find on the website. The second survey is to test hypothesis by asking about the use of the website.

2.3. Apparatus

The tools used to support this experiment are:

- Likert-scale questionnaire
  Likert-Scale is a type of questionnaire that uses a number of statements to measure individual behaviour by responding to 5 choice points on each item statement. The choice is a strongly agree, an agree, a quite agree, a disagree, and a strongly disagree [9] [10]. The questionnaire consists of 25 statements divided into five group of elements, which can be seen on TABLE I.

- Laptop with a stable internet connection was required to do the test.
- Stopwatch was used to calculate loading and downloading time
- Stationary was used to write the results of interviews.
- Microsoft Excel 2013 software was used to process the data.

| Table 1. List of the questionnaire statement |
|---|
| **Elements** | **Statements** | **Elements** |
| **Learnability** | The texts on the website are easy to understand. | I rarely find errors that occur on the website. |
| | The information that I am looking for can be found easily based on the menu available on the main page of the website without using the search feature. | I always find the information I'm looking for on this website. |
| | The search feature can be found easily. | The search feature works well. |
| Elements | Statements                                                                 | Elements                                                                 |
|----------|----------------------------------------------------------------------------|--------------------------------------------------------------------------|
|          | I don't need technical assistance when using this website.                 | All links on this website work well.                                     |
|          | The menu functions of this website are easy to understand.                 | The website provides procedures for correcting errors that I have         |
| Efficieny| The loading time needed to access this website is quite fast.              | encountered                                                             |
|          | With the search feature, I can find the information I want quickly.       | I rarely find errors that occur on the website.                          |
|          | Without the search feature, I can find the information I want quickly.    | I always find the information I'm looking for on this website.            |
|          | The time needed to download a file from this website is fast.              | The search feature works well.                                           |
|          | This website can be opened at any time.                                   | All links on this website work well.                                     |
|          |                                                                           | The website provides procedures for correcting errors that I have         |
| Memorability | I can memorize how to use this website easily.                           | encountered                                                             |
|          | The symbols on this website are easy to remember                          | The appearance of this website is attractive.                            |
|          | The functions of the menus of this website are easy to remember.          | I will visit this website often.                                         |
|          | The address of this website is easy to remember.                          | I feel comfortable with the menu layout of this website.                 |
|          | I can remember the step that must be taken to get the information I want  | I feel comfortable with the colors of this website.                      |
|          | easily.                                                                   | I am satisfied with the information I got from this website.             |

2.4. Design of Experiment
The usability testing was done in campus by assigning participant to complete the tasks. 30 subjects participated in this experiment. When conducting the test, the participant was allowed to tell their opinion of the website and the researcher recorded it. The tests were carried out using a laptop provided and with no time limit. Layout design of the test room is presented in Fig. 1, while the homepage of the website under study can be seen in Fig. 2
2.5. **Task**

The followings tasks were to complete by the respondents:

- Find the information regarding the profile of this faculty (history, vision and mission, and organization structure).
- Find the information about this faculty study program and the facility.
- Find information about what innovations the faculty is doing.
- Find the information regarding the academic services such as test scores, academic calendar, exam schedule, submission of academic leave and thesis.
- Find information about this faculty partner.

2.6. **Procedure of experiment**

Participants were explained about the purpose of an experiment and a task done. Subsequently, participants were instructed to operate the computer and login to open the website and to complete the tasks. After that, the participants were asked to fill the Likert-scale questionnaire provided via Google Forms. Then, the participants were interviewed to find out the difficulties that they felt during the test.

2.7. **Statistical Analysis**

The data obtained using the Likert-scale questionnaire will be processed using Microsoft Excel software by calculating its mode value. Mode is the number or value that appears most often in a set of data, which can be used to define the meaning of those data [10] [11]. Thus an descriptive analysis is done.
3. Result and Discussion

3.1. Result of The Survey

Fig. 3 shows the result of the intensity level survey. It shows that 7% of respondents frequently access the website, 50% occasionally access the website, 43% infrequently access the website, and no respondent never access the website. It means that almost no users are attracted to open this website gaining some information required.

Table 2 presents the summary of interview, which contains complaints about the website. The first complaint is about the menu layout of the test score portal and online mail because the menu is not on the main menu of the website. Also, it does not appear when we firstly open the website and on the search feature which confused the respondents. The second complaint is about the fact that not all test scores are available on the menu. Some courses' test scores can be clicked and seen, while some cannot. The third complaint is related to the sixth complaint. Since the academic calendar is located on the announcement menu, it made it difficult for the users to find it without the search feature because the announcement menu cannot be clicked easily. For the fourth complaint, the respondent thought that the username and password for logging in are the same as another core feature of the university. As for the fifth complaint, there are 3 menus on the main menu that contain blank pages when opened. No information can be found on those 3 menus.

Table 2. Summary of interview

| No | Complaint                                                                 | Percentage of Respondent |
|----|---------------------------------------------------------------------------|--------------------------|
| 1  | Menu Layout of Test Score Portal and Online Mail                          | 57% (17)                 |
| 2  | Some test score are not available.                                        | 100% (30)                |
| 3  | It’s difficult to find information such as academic calendar & exam schedule without using the Search feature. | 80% (24)                 |
| 4  | Difficult to login into the Online Mail feature.                          | 73% (22)                 |
| 5  | There are still 3 links containing empty content.                         | 100% (30)                |
| 6  | Announcement menu cannot be clicked.                                      | 100% (30)                |
3.2. Usability Analysis Result

Fig. 4 presents the mode value of usability attributes of this website. They are learnability, efficiency, memorability, error, and satisfaction. Learnability attribute has mode value of 4, which means the respondent agree with the statements related. The text and the menu of the website are easy to understand because they use a word that represent the function of the menus. For efficiency attribute, it has mode value of 3 or average. The loading and downloading time for the website is fast, but there is some information that cannot be found quickly without search feature, such as academic calendar.

Memorability attribute has mode value of 3, which means that the memorability level of this website is on average. Some information can be easily found, while some others are not such as exam schedule. Exam schedule information can be found on announcement menu, but the menu cannot be clicked and the respondent must find another way to reach the menu. For error attribute, it has mode value of 3 or average. There are still broken links or empty content on the website. Also, the search feature does not display all information on the website such as test score. As for satisfaction attribute, it has mode value of 3. It means that the respondent satisfaction level is still on average. Although the respondent like the interface of the website, they do not like the menu layout of score portal feature. Also, the respondents felt that the information on the website was incomplete.

Based on the explanation above, this website is not entirely easy to use and not all information is easy to find. Thus, the usability of this website is still on moderate level-3.

4. Conclusion

This study concluded that the usability level of this website is still on moderate level-3. Therefore, some features need improvements such as menu layout, empty content and incomplete information.

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