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Assessing and Testing the Usability of Student Portal

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Abstract. Recent research comparing usability assessment methods has been interpreted by some to imply that usability heuristic evaluation is no longer necessary because other techniques such as usability testing can find some usability problems more easily and cost-effective than heuristic evaluation. Usability testing is a technique used in user-centered interaction design to evaluate a product by testing it on users. Student portal service provides users with channels of information and resources needed for their studies this includes access to library service, course information, and materials. However, there are challenges that come with this development such as lack of effectiveness, efficiency, accuracy, and performance of the student portal service. This article provides information on usability assessment and testing on the student portal of University Utara Malaysia. The study was conducted using a 17 item questionnaire based on efficiency, effectiveness, performance, and accuracy of the student portal service. The result shows that more than 70% of the users are satisfied with student portal service and also agree to its efficiency and performance. This article will impact the designers and system developers by informing them about the views of a user on a performance of the portal and also give them the window for improvement.

INTRODUCTION

Usability is the characteristic of a product that describes its ease of use[1]. Usability testing is a method of gathering feedback about a product from potential users or people who have the same characteristics as potential users[2], to help product developers build products that more effectively satisfy the needs and desires of users[3].

Portal websites are sites that serve as a gateway to a large amount of information[4]. Portal web pages are often divided into subsections called portlets[5], or channels, and are accessible to both public and private audiences[6]. For example, Yahoo.com serves as a public point of access to a multitude of information ranging from news and weather to movie reviews and music[7]. Corporations and universities use private portal websites as secure points of access to employee or student information[8]. In higher education. Through this portal, university student may access academic information from their respective schools or department, class schedule, financial aid information and check grades, and students may access course materials, grades, and financial aid information[9]. One major benefit of a university portal at the institutional level is the ability to access all of this information using only a single sign-on.

While the idea of a single point of access for quick and easy access to critical academic information sounds idyllic, designers of such interfaces are faced with the challenges of presenting the material in a logical and usable manner[9]. This becomes especially challenging as access to more information becomes available and the size of the portal interface increases.

This article reports on the findings of a usability study of the university portal at Universiti Utara Malaysia. 20 users from mainly to faculties were asked to complete a series of basic search tasks. The task was carried out using

questionnaire, 14 questions were based on the performance and efficacy of the portal while three questions were based on accuracy and performance.

BACKGROUND

During the past decade, usability testing has become an integral component of Web design and development in various universities and institutions[10]. Within the past five years, university portals allowing some degree of personal customization have established a presence on a number of universities home pages[11]. This article reviews some basic models of usability testing and then examines how usability testing can be employed to inform the developers of University Utara Malaysia student's portal. A student portal is an online gateway where students can log into a school website to access important program information[12]. Student portals also contain information on courses offered, transcripts, email programs, timetables, exam schedules and department contact numbers. They may also offer links to useful Web resources, such as research tools and online journals[13]. There are many tools that are being used to build enterprise portals. In 2000, the uPortal open source project was initiated in an attempt to standardize the content and services provided[13]. This allowed educational institutions access to services and information and saves "content/service providers from redundant work in developing a user interface and navigation. In a recent review of 23 corporate and educational portals, Nielsen (2008) reports steady growth in portal usage, increased numbers of features offered, and increased collaboration within organizations[14].

This article reports on the findings of a usability study of the University Utara Malaysia student's portal. The testing was conducted during the 2017/2018 academic session. Users from colleges, groups, department, program, and experience were asked to complete a series of the basic questionnaire. The information from the respondents or users will be examined to evaluate the student's portal.

METHODOLOGY

This study was carried out at the University Utara Malaysia (UUM). Questionnaire method was used in eliciting information on the usability of the student portal. A 17 item questionnaire was distributed to 20 participants to capture their perceptions about the usability of the student portal. 100% of the participants use the student's portal. 15% were studying Bachelors students while 40% were postgraduate Master students and 45% were Ph.D. level. 12 out of the 20 participants were from the college of arts and sciences while the remaining 8 were the college of business. Also, 60% of the participant was male while 40% were females. 70% of the participants agree that the UUM student portal is easy to use while 25% neither agree nor disagree and 5% believe is difficult.

RESULTS AND DISCUSSION

The questionnaire adopted for this study is categorized into two parts, part one consist of 14 questions that focus on the efficiency and effectiveness of the portal was answered using yes, no or maybe as options for answers, yes is (1) no is (2) and maybe is (3) while the last three questions borders about the accuracy and performance of the portal standard rating 1-5 was adopted for this part (1) is very low and (5) is very high. Below are the statistics for this study;

TABLE 1. Result for UUM Student Portal

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
Q1	20	1	1	1.00	.000
Q2	20	1	3	2.20	.523
Q3	20	1	2	1.25	.444
Q4	20	1	2	1.85	.366
Q5	20	1	3	1.60	.940
Q6	20	1	3	1.50	.827
Q7	20	1	2	1.30	.470
Q8	20	1	3	1.55	.826
Q9	20	1	4	1.50	.761
Q10	20	1	3	1.60	.940
Q11	20	1	2	1.25	.444
Q12	20	1	3	1.90	1.021
Q13	20	1	2	1.05	.224
Q14	20	1	3	1.25	.639
QAP1	20	2	5	3.95	.887
QAP2	20	2	5	3.95	.887
QAP3	20	2	5	3.70	.865
Valid N (listwise)	20				

The participants responded to questionnaire item ‘1’ (Do you use UUM student portal), and their mean rating is 1 which means yes with a standard deviation of .000. This implies that all the 20 participants sampled for this article use the student portal. While Q2, Q3 which focus on the effectiveness of the portal was answered with mixed reaction. Q2 (is it difficult to log in) has 2.20 mean and .523 std deviation, this mean is 70% agree that the portal is not difficult. Q3 (have you ever use the UUM portal (to add or drop course) has 1.25 mean and .444 standard deviation, the tow items show positive response from participant

However, Q4 (is it difficult to add or drop a course using UUM student portal) was responded negatively with over 80% the response agree is difficult. With a mean of 1.85 standard deviations .366. Q5, Q6 asked whether the participants agree the UUM portal is effective, efficient, simple and satisfactory. The response was overwhelming yes in Q5 mean 1.60, standard deviation 940, while 26 mean is 1.50, standard deviation.827, Q7, Q8 focus on whether stated prefer using UUM online portal to evaluate lectures, and the responses were equally positive with 1.30 mean, and .470 standard deviation for Q7, while Q8 has 1.55 mean .826 standard deviation. Q9 to Q14 focus mainly on the functionalities of some operations associated with the portal such as checking financial status, usability and flexibility of the portal. However, the result was also convincingly positive with a minimum mean of 1.05 and standard deviation of 224 for Q13 and maximum of 1.05 mean and standard deviation 1.021 for Q12. The second part of the result which is QAP1/3 (Question on Accuracy and Performance) was responded using rating 1-5, QAP1 (Overall, how can you rate the performance of the UUM students portal (5) is very good (1) is very bad) shows that more than 50% of the respondents believe that the portal has optimal performance with mean 3.95 which is very high and standard deviation 887, while QAP2 (How can you measure the accuracy of UUM students portal (5) very good (1) very bad) also has the same mean with QAP1 3.95, standard deviation 887, then finally, QAP3 (How can you measure the friendliness and simplicity of UUM students portal (5) very good (1) very bad) more than 60% of respondents agree that the portal is simple and friendly with mean 3.70, standard deviation 8.65.

TABLE 2. Calculated Result

Task	Participants	Yes	No	Maybe	Remark
Difficult to login Portal	20	1	14	5	Good
Functionality					
Use portal to evaluate lecturer	20	14	6		Good
Prefer using portal to evaluate lecturer	20	13	3	4	Good
Portal is functional	20	13		6	Good
Efficiency					
use portal to add/drop course	20	15	5		Good
Difficult to add/drop course	20	3	17		Good
Portal is efficient	20	14	6		Good
Effectiveness					
Portal is easy to upload assignment	19	9		10	
Portal is easy to download course materials	19	18	1		Good
Portal is easy to access financial records	19	1			Good
Satisfaction					
Error using portal	19	14	5		Good
Are you satisfied using portal discussion forum	19	10	8	1	Good
Portal is satisfactory	19	14	1	4	Good

Performance						
		Very bad	Bad	Neutral	Good	Very Good
How would you rate the performance of the portal	20	0	1	5	8	6
How would you rate the accuracy of the portal	19	0	1	3	10	5
How would you measure the simplicity of the portal	19	0	2	5	9	3

The table above shows the perception of the participants on each item question with their rating. This however revealed that majority of participants are comfortable using the student portal for their day by day academic transaction. However a small percentage of the participants lament their negative view on the student portal during traffic season such as course registration or result check.

The findings indicate that some objectives were not achieved, thus a number of recommendations can be made to improve the portal's usability. The recommendations are made without full knowledge of the time and financial constraints placed on the product development team so communication between interdisciplinary team members is critical.

ERROR AND SATISFACTION

The prevalent problem identified in this article is the ability of the portal to handle mass amount of users during peak period such as registration, the capacity and scalability of the current portal is perceived by some users to be small, the ability of the portal to handle all users during registration is minimal, increasing the capacity and scalability of the portal to meet users satisfaction at all time is paramount[15].

Some of the problems identified would cause problems for users relying on assistive technology, however accessibility is a broad topic and is not covered in this report[16]. Although it is likely that a structured development process will improve usability for all classes of users, it is recommended that a formal accessibility evaluation is conducted at the earliest practicable stage[17]. In addition to an iterative process of interface development that incorporates a range of usability evaluations, portal utility must be addressed to ensure that the end product will be useful. It is envisaged that using these methods at an early stage will save considerable time and effort as problems are identified before they become too costly to remediate[18]. The overall aim of such analysis is to ensure that the interface is transparent, enabling users to access information quickly and accurately so that the portal is not a quagmire but a goldmine [19]. A poorly designed interface will cause problems for a large number of users with deleterious outcomes such as reduced levels of service and productivity. Portal project failure has the additional opportunity cost of wasted time and capital investment so it is essential to follow user centred design principles to ensure that this does not happen.

CONCLUSION

The objective of the article is to investigate the weaknesses attributed to student portal. Aiming to archive the goal the research was conducted using usability assessment and testing method. Questionnaire method was adopted for collecting both quantitative data and qualitative remarks, twenty users were involve in the survey and provided a comprehensive feedback. The experience reported on in this paper indicates that more than 20% of participant involve in this study are not overall satisfied with the portal service especially during registration period, while other users felt comfortable with the use of the portal and showed a preference for and a positive disposition and likeability to the use the portal. Recommendations have been suggested to improve the usability of the student portal and these recommendations can be evaluated by using the method of questionnaire to gather the views of students about study findings. One possible future area of investigation is to apply other usability methods to evaluate the usability of the UUM student portal. For example, testing and inquiry methods may be used, such as the asking-question protocol method [20], in which some participants could be asked to perform specific tasks and then ask them some questions relating to their interaction with the portal to allow the usability evaluator to understand their experience and their mental model of the system.

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