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Educational Websites Usability Evaluation

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Abstract: The recent worldwide growth in the number and size of educational and other web applications has made website usability evaluation and in fact, web quality assurance topical issues in human-computer interaction. This resaerch adopts a user-centered approach to evaluate the usability of two Federal Nigerian Universities' websites (www.unical.edu.ng and www.uniport.edu.ng) in the oil rich Niger Delta of the country by applying the user testing technique and using performance measurement as metric. Data collected from the tasks completion time were statistically analyzed for usability criteria of effectiveness, efficiency and satisfaction. Results indicated that www.unical.edu.ng was significantly more effective and efficient, while www.uniport.edu.ng received more satisfaction in terms of user interface design. Feedbacks obtained from users through questionnaires enhanced the design-evaluate-redesign cycle and were included in the recommendations to the universities' web developers to help amend poorly developed interfaces and contents.

Key words: Usability evaluation, user-centered approach, human-computer, interaction, performance measurement, user testing

INTRODUCTION

The Internet has rapidly become the medium of choice for educational institutions wishing to utilize information technology to achieve business and organizational objectives. The websites may have a perfect hardware and software blend, follow every engineering standards and measurements, but may not be usable especially, if they are designed without having the users in mind. Thus, a good user interface design is imperative for a positive human-computer interaction.

Usability is the extent to which specific users can use a product (software, website) to their satisfaction in order to effectively and efficiently achieve specific goals in a specific context of use. It addresses, the relationship between tools and their users. It is a quality attribute (Boehm *et al*., 1973), a critical factor in interactive software systems (Shneiderman, 1992; Constantine and Lockwood, 1999), offering important cost savings and revenue increases (Chrusch, 2000; Donahue, 2001; Nielson, 2003).

When users are able to do what they need to do quickly, they are less likely to make errors, more likely to be satisfied with the service and more likely to return to the site (Nielson, 1993; Rubin, 1994). The key to improving site usability and promoting positive user experiences lies in systematically identifying and correcting problems users have or may potentially have in interacting with a site.

The websites www.unical.edu.ng and www.uniport.edu.ng are the official websites of the University of Calabar and the University of Port Harcourt, respectively. These sites provide access to web-based information to prospective and potential students and staff. Apart from the publication of general interest information, these websites allow students and staff to apply online, answer surveys, register for e-learning sessions, get lecture notes, browse the library catalogs, send and receive e-mails, check academic results and print documents.

Applying usability testing as an evaluation paradigm with a website in a controlled computer laboratory involves making users carry out set tasks to help obtain quantitative and statistically validated data (Hix and Hartson, 1993). Siegel (2003) advocates that users'

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opinion on the websites' usability goals and user experience goals collected by administering questionnaires be used as feedback into the design to increase their persuasion for sites use. Results on performance measures or errors and findings provided a benchmark for future versions through a redesign by the university web developers.

Since, the evaluation methods applied so far have not yielded desired results in the perspective of users, the focus of this research is to evaluate the two institutional websites by involving users in tasks to indicate the extent to which such interactive systems are effective, efficient, satisfying and may be error tolerant, aesthetically pleasing as well as easy to learn and remember to use by users.

USER-CENTERED USABILITY EVALUATION

Usability evaluation is a part of the usability engineering process (Nielson, 1993). Shackle (1991) is the major developer of the operational approach of usability definition. He defined usability as the artifact's capability, in human functional terms, to be used easily, effectively and satisfactorily by specific users, performing specific tasks, in specific environments. The essence of the operational definition is that it explicitly places usability at the level of the interaction between users and the artifact. This takes it beyond the typical features-based definitions common in the field. Furthermore, in setting criteria for assessing usability, this approach better supports the evaluation of any tool and the subsequent interpretation of the test results. Usability therefore, refers not to a set of interface features, but to a context-dependent measure of human-computer interaction. Trained usability experts study the behavior and responses of users by applying a variety of evaluation methods and report the findings so that designers can apply the results to improve the product or site.

There are generally 3 types of usability evaluation methods: Testing, Inspection and Inquiry. The methods differ depending on the source used for the evaluation. This source can be users, usability experts or models. In usability testing approach, representative users research on typical tasks using the system and the evaluators use the results to see how the user interface supports the users to do their tasks. Testing methods include coaching method, retrospective testing, performance measurement, shadowing method, remote testing, question-asking protocol, think aloud protocol, co-discovery learning and teaching method. In usability inspection approach, usability specialists examine usability-related aspects of a user interface. Commonly used inspection methods are cognitive walkthrough, heuristic evaluation, pluralistic walkthrough, consistency inspection, standards inspection, feature inspection and perspective-based inspection. Inspection techniques do not provide possible solutions to the usability problem. Moreover, it is difficult to summarize the findings from multiple evaluators as they report problems differently and at different levels. There is also, the issue of severity. Not all usability problems are equal. One question is how accurately these inspection methods predict problems that real user encounter? An early study found that heuristic reviews were better predictors than cognitive walkthroughs and guideline based evaluations. This was compared to results from laboratory usability tests. However, none of these methods found more than 50% of the problems discovered in laboratory testing. In usability inquiry approach, usability evaluators obtain information about users' likes, dislikes, needs and understanding of the system by talking to them, observing them using the sites in real work (not for the purpose of usability testing), or letting them answer questions verbally or in written form. Inquiry methods include field observations, focus groups, interviews, logging actual use, proactive field study, questionnaires. GOMS (consists of Goals, Operators, Methods and Selection rules) is a family of techniques for modeling and describing human task performance. However, a model such as the GOMS model can be used only for evaluating the efficiency of the procedural aspect of usability but cannot evaluate potential errors due to screen design or terminology.

Usability has 5 attributes: learnability, efficiency, memorability, errors and user satisfaction. Depending on the type of application one attribute might be more critical than another. For example, if the software will be used infrequently then, it is essential that users can easily remember the actions necessary for desired tasks. If the application is time critical then efficiency will be critical along with the prevention of errors (effectiveness).

In website evaluation, web specific usability need to be identified, since, the usability of websites differs from the usability of other software products or tools in the order of importance of the usability issues (Gray and Salzman, 1998; Nielson, 1993). The most fundamental usability method to acquire direct information on how people use technology and challenges faced is usability testing (Nielson, 1993). User-centered evaluations are accomplished by identifying representative users, representative tasks and developing a procedure for capturing the problems that users have in trying to apply a particular software product in accomplishing these tasks.

Many of today's computer systems and websites are a user-centered design for that same reason as feedback

from users is irreplaceable (Dumas and Redish, 1993; Nielson and Mack, 1993). Usability testing results in the discovery of mistakes that users make when using an interface (Dillon, 2001; Nielson, 1994). The outcome of good usability is a greater likelihood of user acceptance. User acceptance is often the difference between a product's success or failure in the marketplace. Users can often reject a well-engineered product with great functionality if they are unable to understand, learn and easily use that product. Usability depends on a number of factors including how well the functionality fits user needs, how well the flow through the application fits user tasks and how well the response of the application fits user expectations.

As researchers and practitioners call for increased accountability from designers in terms of meeting the needs of all users (Shneiderman, 1992, 2000; Hix and Hartson, 1993), it is crucial that individuals from every discipline become aware of the value of user testing for improving the usability of information interfaces. There is no doubt that user testing demonstrations can be an extremely powerful way of illustrating the potential benefits of usability analysis to a wide variety of observers.

THE EFFICACY OF USER TESTING AND PERFORMANCE MEASUREMENT

The past 2 decades have seen great advances in the willingness of most organizations to concede the value of usability engineering for improving their products. The overall usability of websites, for example, continues to improve as a direct result of more attention being paid to user testing by design companies (Nielson, 2000). Nevertheless, misconceptions about the value of user testing persist and consumers still contend daily with poorly designed and unusable interfaces (Shneiderman, 2000). Even today, many need to be convinced of the value of user testing for improving interfaces (Donahue, 2001; Chrusch, 2000). Experimental user testing methods often rely on non-portable, proprietary hardware or particular physical surroundings (Rowley, 1994; Wixon and Ramey, 1994). Every stage in user testing can be time consuming and expensive. Nielsen and Mark (1994) estimate that conducting one user test, including evaluating the interface, planning the test, coming up with representative tasks, administering those tasks, evaluating the results and making design recommendations, could consume at least 50 h; for many usability engineers, conducting user tests quickly means limiting the testing process to three days (Bruce, 1996). The chief advantage of user-centered evaluation is the involvement of users. Results are based on actually seeing what aspects of the user interface cause problems for representative users.

The evaluations can be formative or summative. Formative evaluations are used to obtain information used in design. This kind of evaluation obtains user feedback for early concepts or designs of software products. Formative evaluations are typically more informal in that the goal is to collect information to be used for design as opposed to collecting measures of usability. The primary source of data in formative evaluations is verbal data from the user. The evaluations usually focus on a small portion of the user interface, involve relatively few user-participants and have less formal reporting mechanisms than summative evaluations. The debriefing or post-evaluation interview is an excellent source of information in formative evaluations.

On the other hand, summative evaluations are usability evaluations that document the effectiveness, efficiency and user satisfaction of a product at the end of the development cycle and this is the type we conducted using the University of Uyo computer laboratory. Summative evaluations are more formal evaluations conducted to document the usability characteristics of a software product. These evaluations involve a number of users. The recommendation is 5-7 users per cell, where a cell represents a class of end-users. For example, if a product is being design for both home and small business users, then representatives of users of each type must be included in the evaluation. If both adults and teenagers will be using the home product, then representatives from both groups need to be included as evaluation participants. Good experimental design is essential to summative evaluation. The metrics of efficiency, effectiveness and user satisfaction are typically used and the design of evaluation must include the measures and collection methodology. Tasks used in the evaluation usually represent core functionality of the software but may also include new or improved functionality.

Usability laboratories are used in some companies to conduct the evaluations. In organized environments, laboratories are usually outfitted with audio and video recoding equipment to record what the user is doing on the computer. The computer screen, the user's hand motions and the facial expression of the user are usually captured on video. In addition, logging software is used to capture keystrokes to determine what the user is typing and what menu items are selected. Many laboratories are designed with rooms for the user as well as for observers. These rooms can be separated by one-way glass or the video from the user's computer can be piped into a separate room where managers and developers can

observe the testing. Remote usability labs are also sold. These consist of audio and video recording equipment bundled conveniently to allow usability engineers to travel to users, rather than having users come to them. Digital video software is now available for recording and is greatly facilitating user-centered evaluations. In a usability lab, the complete interaction is normally video recorded for subsequent analysis of transactions, navigation, problem handling etc. However, more informal approaches are also possible (Dillon, 2001). Some user-based tests are unstructured, involving the user and the evaluator jointly interacting with the system to gain agreement on what works and what is problematic with the design. Such participative approaches can be very useful for exploring interface options.

Usability evaluation has always tried to make the context-of-use as realistic as possible. Interruptions and other demands for attention do not and cannot, occur during usability evaluation conditions. As such, these evaluations represent the best case condition. If the software is not usable in the laboratory, it will certainly not be usable in real-world use.

From the user's perspective, usability is important because it can make the difference between performing a task accurately and completely or not and enjoying the process or being frustrated. From the developer's perspective, usability is important because it can mean the difference between the success or failure of a system. From a management point of view, software with poor usability can reduce the productivity of the workforce to a level of performance worse than without the system. In all cases, lack of usability can cost time and effort and can greatly determine the success or failure of a system. Given a choice, people will tend to buy systems that are more user-friendly.

The key principle for maximizing usability is to employ iterative design, which progressively refines the design through evaluation from the early stages of design (Bass *et al*., 2001; Rubin, 1994; Rowley, 1994). The evaluation steps enable the designers and developers to incorporate user and client feedback until the system reaches an acceptable level of usability. However, a system in use can still be subjected to usability evaluation to see what aspects of the user interface need redesign for improvement. The preferred method to achieve a high level of usability is to test actual users on a working system. There are many ways to determine who the primary users are, how they work and what tasks they must accomplish. Usability testing yields both qualitative and quantitative data that can be used to continuously improve the quality of the product.

Our performance measurement was based on the time to complete a defined task. This was the direct quantitative measure implemented in the evaluation. Volunteer user testers were selected from the representative of prospective and potential users. During each session, records were taken of the sites evaluated, the tasks developed for each test, the number of tasks actually administered during the test, the number of tasks completed by the user testers, the usability flaws uncovered in each site and design recommendations made by the evaluator. In addition, informal feedback was gathered from the participants in each demonstration by asking the site representatives, the volunteer user testers and the audience whether they thought that the results of each evaluation represented valid usability problems that typical users might face. This feedback about the relevance of the usability flaws uncovered by the method helped validate the potential of the method as a demonstration tool. At a minimum, the method requires an evaluator, one representative from the organization that owns the website being tested, one or two user testers and an audience. The four distinct roles played by the participants are defined below: evaluator refers to the trained usability expert, who runs the user-testing demonstration. In some cases, there may be 2 evaluators; the macro-level evaluator and the micro-level evaluator; the former is responsible for developing and administering representative tasks, while the latter is responsible for guiding the volunteer user testers through the user testing process. Site representative refers to the person representing the organization responsible for the site being evaluated. Site representatives need to be present when their sites are evaluated. Audience refers to the observers of the user testing demonstrations, who also serves as potential volunteer user testers. Volunteer User Testers refers to the individuals who have volunteered to perform a representative task or scenario, which a typical visitor to the site might naturally attempt to accomplish; there can be 1 or 2 volunteer user testers in each evaluation.

Participants selected for this study came from the following groups: students, lecturers and staff. All participants have at least a secondary school education and are either pursuing or have completed an advanced degree. Participants are intellectually curious and proactive when it comes to finding information. Participants have some experience with the information superhighway and with web searching (Appendix A for the pre-test questionnaire). The measures used as a means of evaluating the sites visited by the users are as:

Performance:

- Time to complete a task.
- Count of incomplete tasks.
- Participants comments and/or mannerisms.

Preference:

- Usefulness of the navigation terms applied.
- Stated preferences.

The following usability parameters (criteria) were used in carrying out the evaluation.

Efficiency: It is the degree to which the user can achieve the goal of interacting with the site in a direct and timely manner with accuracy. It answers the question of how long it takes users to complete basic tasks.

Effectiveness: This is how much the site supports users to accomplish their tasks with intended results (i.e., without errors) as well as give users easy ways to recover from any errors they do make. It indicates how many mistakes people make (and if they were fatal or recoverable with the right information).

Satisfaction: This is how much the site catches the attention of the users, how it captures their emotional responses and attitudinal preferences. It explains how the user feels about the tasks completed. Whether, he/she is confident or stressed and would recommend this system to a friend.

The performance test consisted of a series of tasks that the participants carried out while being observed by the evaluator. During the performance test, the monitor made notes on elapsed time and participants errors. The set of tasks the participants completed for each of the websites are:

- Locate the university historical perspective/about the school.
- Locate the university postgraduate school.
- Locate the university fees schedule for undergraduate.
- Locate faculty of science.
- Locate the university alumni.

The blank columns on (Table 1) indicate participants' non-performance of task 2 on www.unical.edu.ng and task 5 on both sites due to site contents unavailability and absence of links to navigate. For instance, www.unical.edu.ng has Alumni and Postgraduate school as orphan pages since they are yet to be developed. The average time to complete tasks on each site is shown on Table 1 indicating that the same tasks were performed faster on www.unical.edu.ng than on www.uniport.edu.ng. Figure 1 indicates a graphical representation of the tasks completion time on each site. This also indicates that usability goals of effectiveness and efficiency were highly obtained from www.unical.edu.ng, thereby leading to greater user satisfaction.

Table 1: Average time to complete tasks on each site

	Task average (sec)					Total average
Institution	1	2	3	4	5	(sec)
Unical	8.74	-	14.45	8.98	-	10.72
Uniport	12.30	11.64	20.39	15.33	-	14.92

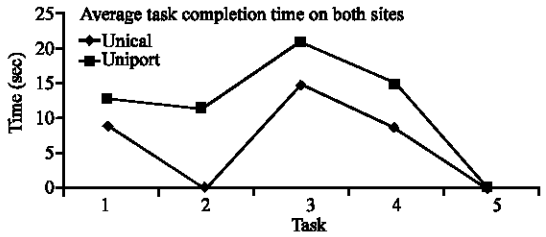

Fig. 1: A line graph showing average tasks completion time on both sites

It will be difficult for an expert examining a prototype to predict user satisfaction, for example, or for a user to reliably estimate her own efficiency from an interface specification, hence, the need for more than one type of evaluation method. Further data on user satisfaction were collected by means of questionnaire presented to the subject at the completion of the usability evaluation (Appendix B for the post-test questionnaire). The method is chosen because studies had found that questionnaire data can be both reliable and valid for the assessment of user satisfaction with websites or computer-based applications (Kirakowski and Cierlik, 1998). However, usability can be difficult to measure as users' reactions can vary by region and ethnic or cultural background.

RESULTS AND DISCUSSION

A pre survey was carried out to determine the participants that will be used in the conduct of the study. The participants were carefully selected to ensure that the testing is properly done.

A total of 28 users volunteered for the study which comprise 18 males and 10 females as represented in Table 2.

From Table 3, 20(71.43%) of the participants were between 16-25 years of age and 14(50.00%) of them were males, while 6(21.43%) were females. Out of the 5 participants within the age ranges of 26-35, 1(3.57%) was male, while 4(14.29%) were females. Again only 2(7.14%) male participants and 1(3.57%) male participants were within the age ranges of 36-45 and 45-above, respectively. There were no female participants in those age ranges.

Table 2: Sex distribution of the participants

Sex	Frequency	(%)	Valid (%)	Cumulative (%)
Male	18	64.29	64.29	64.29
Female	10	35.71	35.71	100.00
Total	28	100.00	100.00	

Table 3: Age distribution by sex of the participants

Age range (years)	Frequency	(%)	Cumulative (%)	Male (%)	Female (%)
16-25	20	71.43	71.43	14(50.00)	6(21.43)
26-35	5	17.86	89.29	1(3.57)	4(14.29)
36-45	2	7.14	96.43	2(7.14)	-
45-above	1	3.57	100.00	1(3.57)	-
Total	28	100.00		18	10

From Table 4, 53.57% of the participants used for the user testing were male undergraduate students, while 25% were female undergraduate students. 10.71% were male postgraduate students, while 3.57% were female postgraduate students. Finally, there was no male staff, while 7.14% of the staff were female.

From Table 5, most of the participants have more than 3 years experience with using the computer and up to 3 years experience with using the Internet. Similarly, Table 6 indicates that 50% of the participants surf the Internet for up to 3 h.

The questionnaire used for the test was based on a 5 points likert scale of strongly agreed, agreed, disagreed, strongly disagreed and neutral (i.e., I don't know or undecided). This was to get both demographic data and feedback from users on areas of improvements from the sites evaluated. The study conducted indicates that most users (60.71%) agreed that www.unical.edu.ng was more attractive than www.uniport.edu.ng. The users considered screen layout, content, aesthetics, graphics, links, terminologies, consistency, ease of use, task completion rate, etc. Their opinions are as shown in Table 7.

Most users were of the opinion that www.unical.edu.ng contains information that will be useful but they realized that some of the links had no page content, since they were yet to be developed. However, www.uniport.edu.ng had most of its links developed but placed menus and messages in hidden locations where users will have to pass through 3-4 links in order to locate an item. They were, therefore, frustrated most of the time.

A large number of the participants (60.71% strongly agreed and 21.43% agreed) were of the positive opinion that information on unical site was easier to find, tasks quickly completed and that it was aesthetically pleasing and clear from the home page what the purpose of the site is.

Usability problems users encountered

Terminology: Wrong uses of words that do not meet conventional terminologies were encountered. For instance, www.uniport.edu.ng used old students for returning students. Old students mean Alumni and will cause confusion.

Table 4: Status distribution of the participants by sex

Status	Frequency	(%)	Cumulative (%)	Male (%)	Female (%)
Undergraduate	22	78.57	78.57	15(53.57)	7(25.00)
Postgraduate	4	14.29	92.86	3(10.71)	1(3.57)
Staff	2	7.14	100.00	-	2(7.14)
Total	28	100.00		18	10

Table 5: Participants' experience in using Computers and the Internet

		Years			
Using	Never	<1	1-3	>3	Total
Computer	0	2	8	18	28
Internet	0	2	14	12	28

Table 6: Number of hours participants spend weekly on the Internet

No. of hours used	Frequency	(%)	Cumulative (%)
<1	4	14.29	14.29
1-3	14	50.00	64.29
>3	10	35.71	100.00
Total	28	100.00	

Table 7: Users preference to site attractiveness

Likert scale	Frequency	(%)	Cumulative (%)
Strongly agreed	17	60.71	21.43
Agreed	6	21.43	82.14
Disagreed	2	7.14	89.28
Strongly disagreed	1	3.57	92.85
Neutral (undecided)	2	7.14	100.00
Total	28	100.00	

Orphan pages: Yet to be developed links were encountered on www.unical.edu.ng. Examples are library, alumni, etc.

FAQs: Both sites had no provision for frequently asked questions for users.

Absence of date of last update: Both sites did not contain information with regards to date of last update of site contents.

Absence of feedback mechanism for users: While, www.unical.edu.ng had an undeveloped feedback mechanism, there was none in www.uniport.edu.ng. A feedback mechanism is expected to ensure communication between site and user, between lecturers and students, etc.

Recommended solutions to the usability problems: Although, more institutions are grasping the importance of user experience, many are slow to actively improve it. If it takes employees a long time to learn and use the corporate Intranet, it may cut down on productivity and increase training costs. If the interface for an institution's web-based procurement system, staff/student online application, or e-learning session registration is difficult to understand, incorrect orders and entries will be placed at a potentially substantial cost to the employer. These and other pitfalls contribute to poor user experiences and

lead to a negative impact on business. We therefore, made the following recommendations to the universities web developers to consider in their redesign of the sites.

- Display space of the website should not be divided into many small sections in order to give comfortable reading experience to the users. This implies that the number of frames used should be minimal.
- Users need not scroll left and right to read the content of the website because that will cause reading difficulty. Provide sufficient navigational aids to help users move around in the website.
- The website should contain no orphan page. Every page should contain at least a link up to the home page and some indication of current page location, such as a site map or menu.
- The placement and content of site map or menu should be consistent so that users can easily recognize them and identify the targeted link.
- Users should be able to easily differentiate links that have been visited and those that have not. Standard link colors (red for visited links and blue for not visited links) should be used.
- Information should be up-to-date. Outdated pages should be replaced.
- Download time should not exceed 15 sec as users do not want to wait too long to download a file or access a page.
- Users should be allowed to use back button to bring them to the previous page. Pressing back button accounts for 30-37% of all navigational acts.
- The website should respond according to users' expectation. This includes the standard use of Graphical User Interface (GUI) widgets such as radio buttons for selecting one among many options.
- Reduce elements that look like web advertising as too many advertisements will irritate users.
- Use meaningful words to describe the destination page of a hyperlink. This will save the users' time by not going to unnecessary pages.
- The website design, including page layout, use of colors and placement of page elements, should be consistent to give users a standard look and feel of the website and attract their attention rather than distracting them.

CONCLUSION

In this study, we considered a user-centered approach for the evaluation of two universities' websites. But of what use are fancifully designed sites if the discipline necessary for their successful implementation is lacking? What goes around eventually comes around. Just as the 'software crisis' was the resultant effect of unacceptable software engineering practices, so also is there a price to pay if we keep ignoring web interface usability, especially in the perspective of users. Our approach proved that www.unical.edu.ng was significantly more effective and efficient due its ability to allow easy performance of tasks, fast download, well organized and easy to read content, interactive and attractive user interface, while www.uniport.edu.ng received more satisfaction from users due to its minimal background coloring.

APPENDIX A

Pre-test questions for the websites usability evaluation

Please fill out this short survey and tick where applicable.

Background Information

1.	Gender:	Male ( )			Female ( )
2.	Age range:	16-25 ( )	26-35 ( )	36-45 ( )	46-above ( )
3.	University st atus:	Undergraduate ( )	Postgraduate ( )	Teaching staff ( )	Non-teaching staff ( )
4.	Department: _____				
5.	Level of study (students only): _____				

Experience in Computer and Internet Use

6.	How long have you used the computer:			
	Never ( )	<1year ( )	1-3 years ( )	>3years ( )
7.	How much experience do you have browsing on the Internet:			
	Never ( )	<1year ( )	1-3 years ( )	>3 years ( )
8.	How often do you browse:			
	Never ( )	Daily ( )	Weekly ( )	Monthly ( )
9.	How many hours per week do you expend gathering information from the Internet:			
	<1 h ( )	1-3 h ( )	>3 h	
10.	How often do you use any of these websites:			
	Never ( )	Daily ( )	Weekly ( )	Monthly ( )
11.	For what purpose do you use each of these websites:			
	To apply online ( )	To answer surveys ( )	To register for e-learning sessions ( )	To get lecture notes ( )
	To browse the library catalog ( )	To check academic results ( )	To send and receive e-mails ( )	To send fees payment information( )
	others ( )			

APPENDIX B

Post-test questions for the websites usability evaluation

Please indicate the extent to which you agree or disagree with the following statements.

SA-Strongly agreed A-Agreed N-Neutral D-Disagreed SD-Strongly Disagreed

		Unical					Uniport				
S/N	Question	SA	A	N	D	SD	SA	A	N	D	SD
1.	The site design is very attractive.										
2.	The navigation is very easy to find and use.										
3.	The website loads very fast.										
4.	The texts are easy to read.										
5.	The use of color and placement of page elements is consistent and give a standard look and feel.										
6.	I find it very easy to complete tasks or achieve goals successfully.										
7.	I often encounter error (due to orphan pages) when opening some pages										
8.	The page layout of the website, placement and content of site map or menu is consistent and easily recognized.										
9.	The site contains scrolling text, marquees, or constant running animations.										
10.	The terminology used conforms to the institution.										
11.	It is very obvious from the home page what the purpose of the website is.										
12.	Graphic objects on the web page download very easily/ or alternative texts appear to give a clue of the expected objects.										
13.	In all, I rate the website Okay.										

14. Which of these websites do you prefer: _____

15. If there were things you could change on the websites, what could they be:

(i) _____

(ii) _____

(iii) _____

(iv) _____

(v) _____

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