Usability Testing of Multilingual Educational Websites

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Abstract: The main aim behind conducting the usability testing is to search and find out the problems or errors and usability bugs in the interface. Generally, multilingual websites in Saudi Arabia are available in Arabic and English languages. To check the consistency of two interfaces in these two languages, we conducted the usability test of both the versions. We considered King Faisal University (KFU) website as a case study. In this paper, we report the errors on the basis of certain testing techniques including, Usability Survey, Interviews and Think Aloud method and Techsmith's MORAE, automated software to conduct the usability tests.

Keywords: Usability Testing; Multilingual Websites; Human Computer Interaction; www

1. Introduction

The importance of World Wide Web does not need any introduction. Day by day, new designs and user friendly websites are launched. New techniques, frameworks, models of development are being proposed resulting in increased demand of web developers and web users. A recent aspect of WWW is its localization, making sites accessible not only for global audience but also to those who speak their ethnic languages, increasing the usability of these websites. This concept is now gaining importance but still this issue is waiting for fruitful research and research outcomes. In [8] a web survey has been made to assess the Usability of Multilingual Websites, in which target users have been divided into ethnic and international users.

The translation of Multilingual Websites from one language to another in order to provide the same set of services to culturally different target audience affect its usability. The degree of the effect depends on the distance in the cultural context of multilingual users. Hence, the most conspicuous factor determining the success of any multilingual website is the incorporation of cultural context that integrates its target audience. International users of a website tend to be more remote in terms of culture than users of different ethnicities. In [8] Multilingual Usability Testing (MUST) methodology has been proposed for usability testing of multilingual websites based on three aspects. These aspects are on Design, Content and Target Audience. All these are equally important for testing the usability. In this paper, we report design issues for multilingual websites and particularly the King Faisal University website.

2. Methodology.

The usability testing of KFU website has been conducted by keeping some important and major issues up front. These issues are the

1. Use of Banner System
2. Black Board Learning Management System
3. Email system
4. Student Services
5. Users Remarks and Comments
6. Checking some non-working or useless Links/ Button(s) and
7. Search tasks

For all these issues, both Arabic and English versions of the KFU website, has been taken for the tests. In fact, Non-Arabic speaking users were recruited separately as participants for testing the usability of English version. Two to five participants were taken to perform the same task to ensure the consistency and validity of the tests. Data for conducting the test were collected from following three major sources:

a) Online Survey: We received one hundred filled questionnaires online.
b) Audio Recording using Techsmith MORAE Manager Software: Twenty five participants were recruited, to record their tasks and actions during their work in the Website.

Table 1. Lists the details of these recordings.

Project No.	Recording Projects	No. of Recordings
01	LMS System	02
02	Email System Tasks	03
03	Useless Links Tasks	01
04	View marks as Grades	03
05	Search Based Tasks	05
06	Banner System Tasks	07
07	Non Arabic Teacher's Tasks	03

Table 1: Recording details

c) Audio recording based on meetings/discussion: Two recordings have been collected from ten participants. In each meeting there were five participants/experts, resulting in the total numbers of participants recruited for think aloud as ten.

3. The Analysis of data and findings

In this section we report the findings and observations by participants from each recording for usability testing.

a) Learning Management System: Two participants were asked to sign in the Black Board (BB) System and submit an assignment. The following observation was recorded

➤ One participant succeeded in performing all desired tasks, but he followed a long path to reach the BB homepage and Submission of Assignment.

➤ Another participant followed the same path and at last reached the BB LMS front page, but he couldn't sign in and also stayed at that page for a long time to try different username and password options. Participant exit from the page by going back to the deanship page. However, the system did not provide any error message.

b) Email System of KFU: Two participants were asked to sign in the email System and check mails. The following observation was recorded

➤ Participants opened the KFU website; they selected the Email link and found log in menu easily. After the participants entered their respective User ID's and Password and clicked on the Log in button, the KFU website failed to produce the required page. Figure 1 shows the error, "you are not authorized to view the page". Both the participants exit from this current location after spending some time there.
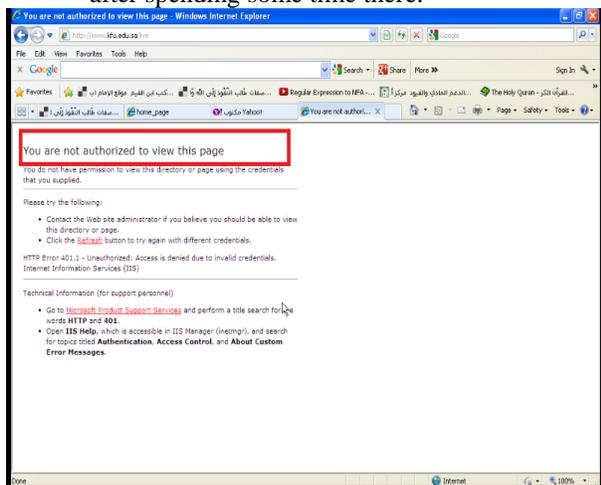

Figure 1: Error message in Email Page

c) Useless/Meaningless Links on KFU Website: In this category, think aloud session were recorded from expert users including graduating students, who were asked to identify useless links and check for the missing information or data.

➤ Participant tried to perform the "Semester Evaluation". However, after signing in the participant could not perform evaluation process as the links inside the window are not working.

➤ Another useless link was found when the participant signed in the Banner system, and dragged the mouse over "give your opinion" link. The following message appeared "there is no more surveys available".

➤ Another observation in this category is that participant selected the timetable for a particular semester, and as a result, another college's timetable was displayed instead of his desired college. In addition, the participant tried to check the information about a particular semester and subject. However, the "semester information" of another college appeared. The participant failed completely to correct the information.

➤ The participant clicked on "Final Grades" link. The participant being a regular student with no outstanding due or courses was unable to know the reason after reading the following message "There are no marks available under your record".

d) Viewing Marks as Grades: In this category three participants were asked to view their grades with respect to their marks.

➤ One of the participants signed in the banner successfully; however, no information was displayed after he clicked on the Final Grades link, to check his grades. The participant then selected a link "student academic services", with the assumption that this may lead him to see his grades, but he concluded that his selection was absolutely wrong. Finally, the participant selected an option "view student information" and then "semester information", to reach his goal but he was unable to find any information matching his request. The participant clicked Back button to go back to the previous pages. Figure 2 show this result. In addition, while performing all these tasks, being a non-Arab, the participant had to translate these pages into English Language as shown in figure 3.

➤ The second participant opened the deanship of registration page easily, but he spent considerable time to find the exact link. In

addition, he too was unable to find any useful information. He also spent lot of time in finding an appropriate link to reach his goal.
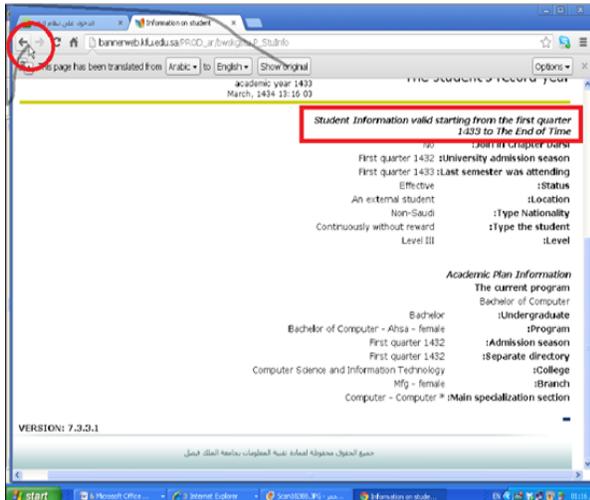
➢

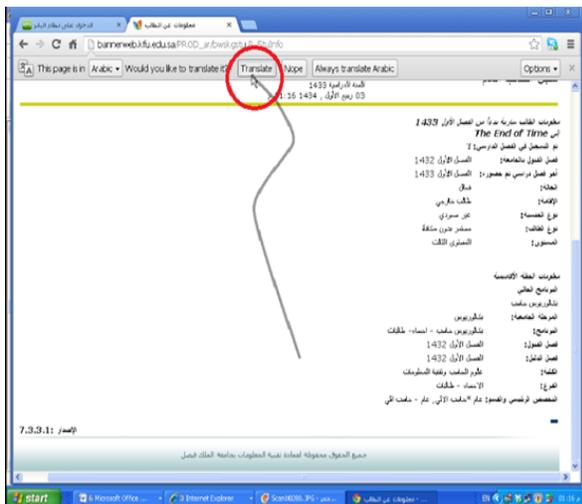Figure 2: Undesired Semester's Info and Participant's exit.

Figure 3: Translation required.

➢ The third participant accessed the Student Services and Academic Record pages easily, then he logged in to view the record, and at the end viewed marks as grades. In performing all these tasks, he did not feel any difficulty.

e) Search based Tasks: Six participants were selected to search for "Registration", "Course Registration Number (CRN)", "College Website", and "Academic Plan" links.

➢ Al the participants opened the KFU website easily.

➢ The first participant was successful in finding the Registration link but he failed to open the CRN link, because he followed a wrong path. This participant was successful to check the news from college website and academic plan easily.

➢ The second participant, being an experienced long term user, successfully completed all these tasks. However, it was noticed that he found the CRN link in an unusual way

➢ The third participant also successfully opened the KFU website, and Deanship of Registration. But the participant spent much time in opening the CRN. He seemed to be confused in selection of links and icons. All other tasks were done successfully.

➢ The fourth participant followed the right track and successfully opened the KFU website, Deanship of Registration, and opening and printing the Academic Plan. However, he failed to open CRN link.

➢ The fifth participant also failed in searching and opening the CRN link. Participant successfully reached to the Registration link but instead of selecting CRN, he selected Academic Schedule. Al other tasks were done successfully.

➢ The sixth participant could complete only two tasks that is opening the News link from college site and opening and printing the Academic Plan. He too faced lot of difficulty for the CRN link.

f) Banner System of KFU: Seven participants including a non-Arab were assigned the following four tasks. Opening Student Timetable, Checking final grades Marks, Register for a course, and log out.

➢ The first participant was a non-Arab user. The participant was able to complete only one task of checking final marks successfully. But he took lot of time in searching, finding and reaching to the Final Grades link. However, he couldn't find anything because of missing information under the link. He was unable to open and view timetable even though he spent unexpectedly long time to do so. This participant also faced difficulties in searching and reaching to the Registration link, and was thereby unable to perform registration task. Most of the pages are available in Arabic language only, which forced the participant to translate these pages into English language. At the end participant was unable to recognize the logout link and therefore, closed the browser for a safe exit.

➤ The second participant completed all the given tasks with success. The participant followed the right path and opened the timetable successfully. The participant checked his marks without any difficulty. The participant successfully opened the Registration page but couldn't register because there was no information under this link. The participant also logged out from the Banner System successfully.

➤ The third participant spent more than one minute in searching out the timetable. However, the timetable of an undesired college appeared. The task of checking marks was performed without any extra efforts but with the error message there is no result available under your record from the system. The participant found registration link easily but found no useful data there. Finally, the participant signed out safely and properly.

➤ The fourth participant easily reached to the marks link but no useful information was found. In addition, he too got an undesired timetable displayed. The participant did not attempt to perform the registration task, for unknown reason. However, he exited from the Banner System safely.

➤ The fifth participant also did not perform registration task, but he was able to perform all other tasks successfully.

➤ The last participant spent almost half a minute in finding out the timetable and again an undesired timetable was displayed. The participant checked his marks and also signed out from the Banner System successfully. He too was able to go to registration link easily but as with others no useful data or information was displayed

g)   Non-Arab Users: The following tasks were assigned two non-Arab users. a) Use of Banner System to update information and check personal timetable. And b) Signing in Banner System to get salary certificate and sign in to the Black Board Learning Management System (BB LMS)

➤ The first participant successfully opened the email page but he was unable to update his profile even though he spent almost 70 seconds on the link. Later on, he was able to locate the main Banner page easily and tried to login using his username and password. But he failed repeatedly and invalid login information was displayed each time. Finally. The participant clicked the help link but again the page was missing. Since the participant was unable to login the banner

system hence he could not perform Registration and Checking Timetable tasks.

➤ The second participant opened the KFU website easily. Later on, this participant was also assigned the task of entering in the Banner System of KFU and performs Registration. He too was unable to login the banner system and perform registration and the message appeared this time was the system cannot find the path specified. The participant opened the web page of Faculty Affairs and tried to download the Certificate without Salary in English. An error message appeared in Arabic. Finally, the participant successfully opened the deanship of learning management system webpage but it took almost 50 seconds to locate BBLMS but he did not made an attempt to login.

4. Survey Analysis

As we mentioned a survey has been distributed among KFU students and staff, non-Arabic speaking staff and students were also targeted. The following hypothesis are investigated and analyzed:

1. The visibility of buttons, links, icons and text is not effective or sufficient.
2. KFU website is not a user friendly (not adequate).
3. It is difficult to open both English and Arabic text with ease.
4. It is difficult to remain safe from error while using KFU website.
5. Tracks and paths of different actions that reach to the goal are not clear.
6. The process of retrieving data/ information from KFU website is very slow.
7. In the website of KFU, there are many useless links, button texts, data/ information etc. are present.
8. There is no suggestion based system in the KFU website.
9. Mostly there is no written guidance/ manual or any virtual tour for the user.

The teaching staffs of the KFU were examined to test the adequacy of the KFU English version website. The values of chi square test statistics were more than 0.05 when examining the links performance. This suggests that the results were not significant and we can conclude the following regarding the links used in the English version of the KFU web site:

o The text, name of links, checkboxes, etc. were not in human friendly language.
o Links labels did not match destination pages titles or header.

o Links, buttons, etc. were misleading.

Table 2: No. of teaching staff

Statistics

		Text/or names of links, buttons, checkboxes etc is in human friendly language	Link labels match destination page titles or headers.	Links/buttons etc lead user to his/her required position/locatio n.	Color choices allow for easy readability.	If needed, a FAQ is available.	If necessary, a search function is readily available.
N	Valid	25	24	24	24	24	23
	Missing	0	1	1	1	1	2

Examining the information presented in this website also show that the teaching staffs were not satisfied with the website color choices, the available FAQ and search function. To clarify this result the chi square test statistics was conducted. The results were more than 0.05 and suggest that the color choices did not allow for easy readability, the FAQ and the search function were not always available.

5. Discussions & Conclusion

Keeping the above results of our analysis into consideration the following is observed.

➢ It is not clear for the users to access Black Board LMS from the homepage of KFU Website.

➢ In Banner System, failure in signing in, Student Services pages and few other locations, error messages do not exist and if they exist, they do not convey the exact message.

➢ The website is unable to prompt user, if he/she enters wrong data/information.

➢ The website is unable to suggest an alternative action, in case there is any login failure or reopen the log in window to correct or renter the login information.

➢ Safe exit from the website is not possible; instead, upon failure in Sign-in participant has either an option to move back to the email page or an option to close the browser window.

➢ Useful text contents are not hyperlinked. These contents are built for students and teachers but they are not working.

➢ Information is missing at many places, e.g. Banner System BB LMS, Email System, and Semester Activities etc.

➢ Some pages of Banner System are available in Arabic and not in English. .

➢ A long text based link to access the CRN is actually confusing. An icon, button or useful

link to access the CRN may solve the problem. In fact, many text based links are closely related to each other and are hence confusing and misleading the users.

➢ Error messages are not meaningful and information/data for certain links are missing or misplaced.

➢ Web link names are not linked with the appropriate or most suitable webpage. And at various places the link names are ambiguous, thereby confusing users. This is an example of poor storyboarding. Undesired data or information in the form of wrong time table displaced.

➢ The interface of entrance and exit page of Banner System can be identified uniquely. But this testing proved that although the users can log in due to the frequency of use but sometime exit point is not clear.

➢ Many pages of Banner System are not available in English, forcing non-Arabic users to look for some alternative or translation software.

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