Evaluating the Usability of Alwaraq’s Digital Library Interface

Ramadan Elaiess
Dept. of library and information science
University of Benghazi, Libya
ramelaiess@gmail.com

Abstract

Usability of digital library is considered to be an important phase of any digital library projects. This research paper is framed in the evaluation of Alwaraq’s digital library which is available on the Internet at http://www.alwaraq.net. Based on related studies, a set of fourteen items covering efficiency, effectiveness, visual appearance, and learnability have been developed to evaluate the Alwaraq’s digital library interface. Twenty seven undergraduate students from the department of library and information science at the University of Benghazi participated in completing the Likert scales questionnaire. The main finding of the study indicated that Alwaraq's digital library level of usability was not up to the standard, in particular regarding visual appearance and efficiency.

Key words: Digital libraries, Usability test, Interface design, Digital library evaluation

1. Introduction:

Digital libraries can provide cost effective information retrieval system, provide library materials to the largest possible audience, and can simplify the process of library search, material lookup, and typical library functions (Malkawi, 2007). In the last four years, the digital library paradigm received considerable interest from scientists from various areas (universities, arts, libraries, industries, etc.). The emerging term Digital Library is the result of information proliferation and technological advances. Witten (2006) states that “digital libraries can assist human development by providing a mechanism for distributing information on priorities and materials that addresses specific community problem besides benefit from methods of information distribution”.
It is worth mentioning in this context that there are also several information resources available on the web through subject gateways and virtual libraries. Chowdhury (2004) has pointed to several subject gateways that are very useful if information professionals involved in building the local digital library choose the appropriate one and make it accessible to their users by pointing to the website from their own page.

According to Vrana (2005) digital libraries are complex information systems consisting of many components depending on each other in their operation in order for the whole system to work perfectly. To achieve the flawless operation of digital libraries, their developers must adhere to certain standards and plan smartly each phase of digital library development. Users expect usable and easy to use information systems adapted to their needs and preferences. That is the reason for considering usability and evaluation in general. As to who should evaluate digital libraries, users of digital libraries should have their voices heard. After all, the ultimate goal of the development of digital libraries is to serve users and to facilitate their effective use of information and services. (Iris.2006)

Alwaraq digital library was established in 2000 with the aim to provide electronic resources related to Arab and Islamic heritage to the Arab readers in general and to academics and students in particular. The main purpose of Alwaraq digital library is to disseminate knowledge and expand the Arab heritage to target end users by using information technology. Alwaraq's digital library contain considerable numbers of electronic books in Arabic language as well as audio and visual objects.

2. Methodology:

According to Saracevic, (2008) usability testing refers to a process that employs people as testing participants who are representative of the target audience in order to evaluate the degree to which a product meets specific usability criteria. Buchanan (2009) states that usability and usefulness can be readily combined, and that questionnaire and observation are valid multi-method approaches. For Alwaraq's digital library a usability–centered approach was applied to assess user perceptions as to the ease of use of the digital library. Usability in this context is about choosing useful functionalities. Usable means useful, easy to use, and appreciated by users. The evaluation of the Alwaraq's digital library was aimed at discovering the following:
• Ease of use.
• Quality of user experiences
• User satisfaction
• Necessary changes

The objectives of this evaluation is to assist in answering the following questions:

1. What are the problems facing library patrons in using Alwaraq's digital library?

2. To what extent was Alwaraq's digital library interface efficient in assisting users to get the most from it?

3. Evaluation plan:

This study used a questionnaire-based methodology. A questionnaire was developed after reviewing and analyzing several digital library usability testing studies that used questionnaires to collect data. Four axis of usability were identified as indicated by: Alasem, 2013.

Fourteen questions were drawn from these four axis, and responses were recorded using Likert- scales with end points ranging from (1) strongly disagree to (5) strongly agree. The following table shows the four axes with their items. Alasem (2013)

Efficiency
- Alwaraq digital library is easy to use.
- Alwaraq digital library responded without errors.
- Alwaraq digital library responded quickly.
- Alwaraq digital library is well designed in terms of helping users to find what they want.
  ▪ Effectiveness
- Information located in the homepage is easy found.
- Generally, tasks can be completed easily.
- Overall, I’m satisfied using Alwaraq digital library.
- The search facility provided in the Alwaraq digital library is effective.
  ▪ Visual appearance
- The menu functions is well organized.
- Color, graphics, and icons have been used appropriately.
3.1. Evaluation Instrument:

A survey questionnaire was used as the primary method of getting user feedback during the experiments and a Likert scale was used to measure usability criteria and participants were asked to evaluate Alwaraq's digital library interface. This was the main method used to elicit their opinion during the experiment. The questionnaire was assessed in terms of its layout design, wording of questions, and some modifications were made as a result.

3.2. Likert scales:

The Likert scales technique presents a set of attitude statements (Babbie, 2005). According to the Sage dictionary of social research methods (2006), a Likert scale is a summated rating scale used for measuring attitudes. Likert scales present users with a statement and they are asked to register their level of agreement or disagreement with the statement. Participants were asked to express agreement or disagreement on a five-point scale. A five-point scale was preferred to seven or nine point scales as it made the analysis of participant opinion simpler and allowed trends in the results to be more easily identified. Each degree of agreement is given a numerical value from one to five where a higher value corresponds to more familiarity. A total numerical value can be calculated from all the responses received. Figure: 1 depicts Likert scale taken from user questionnaire.
3.3. Administering the scale:

In order to capture the perceptions of respondents with respect to the features that they evaluated each question required the respondent to rate each feature on a response scale. For instance, they could rate each item on a 1 to 5 response scale where in the first question:

1. = very poor
2. = poor
3. = barely acceptable
4. = good
5. = very good

4. Evaluation Procedures:

Twenty seven students from the department of library and information science at the university of Benghazi participated in this study. With regards to internal validity, which is concerned about the verification that items listed in the four Axis are based on the study’s objective, were considered. Accordingly, the fourteen items questionnaire was developed and reviewed based on the related literature. External validity, which is concerned about to what extend the condition of the test is somewhat similar to the real world was of concern and the test was carried out in the department's lab where the students usually use it to access the Internet and use applications of information technology.

In the test, students were requested to freely search the Alwaraq's digital library for a period of between 55 and 60 minutes and then to answer the sets of questions. It was assumed that through this exercise, the participants got general understanding of this digital library. From the 37 questionnaires which were distributed to participants, 27 questionnaires were completed representing a response rate of (73%).
5. Findings and discussion:

It would be rather difficult to extract any conclusion from this numbers, but it gives a general idea on how to compare those questions that were graded either below or above this number.

Overall, a mean value of participants of all fourteen items was 2.48. and the mean value for the four axis were 2.40, 2.85, 2.00 and 2.65 respectively for efficiency, effectiveness, visual appearance and learnability. Items regarding visual appearance were found to be low with a mean value of 2.00, so the digital library interface failed to provide an appropriate good level of visual appearance.

The features with a poor grade reflect some design problems. The grades given to font size, font type and clear and readable text may reflect some problems that need to be fixed and improved.

References


Vrana, R. 2005. The importance of usability in development of digital libraries. [online]


Follow us on: *IRJLIS*, *Facebook*, *Twitter*