International Journal of Technology and Human Interaction
Volume 16 • Issue 1 • January-March 2020

Evaluating Usability and Content Accessibility for e-Learning Websites in the Middle East

Mustafa Hammad, Mutah University, Mu'tah, Jordan
Mohammad Alnabhan, Mutah University, Mu'tah, Jordan
Iyad Abu Doush, American University of Kuwait, Salmiya, Kuwait
Gheed Mufied Alsalem, University of Jordan, Amman, Jordan
Fatima Abdalla Al-Alem, Jordan University of Science and Technology, Irbid, Jordan
Mouhammd Mahmoud Al-awadi, Mutah University, Mu'tah, Jordan

ABSTRACT

Quality has become a fundamental requirement for success and sustainability of websites. This study discusses the evaluation of some e-Learning websites as one of the main sources of information to administrators, students and teachers in the educational systems. This article investigates the quality of e-learning websites in the Middle East in term of usability and content accessibility. Eleven websites from eleven countries were selected for this study. Evaluations process is done based on different web diagnostic tools and measures. The experimental results show several issues on usability and content accessibility of the selected e-learning websites. Many usability problems with respect of speed and number of broken links were found. Moreover, the design of the selected websites is not fit with the content accessibility standards.

KEYWORDS

Broken Links, Content Accessibility, e-Learning, Middle East, Usability, W3C, Webpage, Website Quality, Website

INTRODUCTION

Nowadays, it is necessary that the teacher uses modern educational methods to achieve the best level of education. The teacher's role has changed from cued information into the guider and the facilitator of the learning process, and students search for information and results by themselves. The web technology has played a significant role in all aspects of daily life including the education process. Therefore, educational institutions use electronic learning management system, which is currently known as the e-learning systems. Such systems help to create an effective educational learning process and enhance the ability of searching and learning knowledge through the Internet. However, to ensure accessing information, procedures and services easily, websites must be designed and developed with basic standards of websites quality, which include accessibility and usability.

The term of website's accessibility refers to the possibility of the arrival of all the users to the resources that were published on the Internet. So that anyone can access the information and services provided through the web pages. Recent researchers studied the accessibility of websites to point out

DOI: 10.4018/IJTHI.2020010104

Copyright © 2020, IGI Global. Copying or distributing in print or electronic forms without written permission of IGI Global is prohibited.

different recommendations on overcome such problem, such as (Alahmadi & Drew, 2016), (Baptista, Martins, Gonçalves, & Branco, 2016) and (Tashtoush, Ala'F, & Al-Sarhan, 2016). The inaccessibility of a website can take different forms, such as external links to other sites or the inability of navigation to the home page from other pages on the site (Alahmadi & Drew, 2016) (Tashtoush, Ala'F, & Al-Sarhan, 2016).

The World Wide Web Consortium (W3C) (W3C-WAI, 2005) is a network aimed at design standards for all internet users, regardless the used devices and software as well as their language, culture, location, or geographical condition. To facilitate the access of websites according to the W3C standards, and regardless of any special needs of users on the Internet, there is a need to apply a set of standards properly, so that the failure of one of these criteria will threaten accessibility.

In order to make the web more accessible W3C-Web Accessibility Initiative (WAI) (Henry, Abou-Zahra, & Brewer, 2014, April) provides a set of recommendations which allow developers to include attributes which make their Web sites easier to use by different people.

The Web Accessibility Initiative developed a set of guidelines that should be applied by the website's designers on the Internet when publishing information on the Internet, which guarantees universal access to resources available on the network. The guidelines are grouped in a series of recommendations known as WCAG (Web Content Accessibility Guidelines) (Robbins, 2006). These guidelines can be applied when developing a website to ensure its accessibility.

Usability means the ability of the website to provide consistent performance for efficiency, as well as the possibility to adapt to the user. Usability includes ease of finding information and browsing in the site in addition to ease of finding location from search engines and the availability of intelligent search methods within the website. Therefore, a website usability is a description based on several criteria, such as efficient to use, ease of learning, ease of remember, low usage error rate and pleasant to use.

Nielson in (Nielson, Usability Engineering, 1994) (Nielson, Designing Web Usability, 2000) proposed a set of guidelines for usability called Nielson usability guidelines. These guidelines became very famous and are used on many website quality studies, such as (Marrall, Burmeister, & Dillon, 2016), (Kaur, Kaur, & Kaur, 2016), (Alsabhen, 2016) and (Johnston & Brandsma, 2015).

This paper evaluates the usability and the content accessibility for eleven e-learning websites from eleven different countries in the Middle East. We used Nielson usability guideline for usability evaluation based on uploading speed, main page size, and number of broken links. For website content accessibility evaluation, WCAG guidelines are used. Websites metrics are measured using automatic evaluation tools. The rest of this paper reviews some of the major work carried out to evaluate the quality of websites based on accessibility and usability, discusses the proposed methodology, and demonstrates the experimental results of evaluating eleven e-learning websites from eleven countries in the Middle East.

RELATED WORK

Many research works are directed towards evaluating the accessibility and usability of web sites from different categories. The work in (Rico, 2008) focused on answering the question: Does applying the website quality development methods affect the website quality? Four properties of agile methods (iterative development, customer feedback, well- structured teams and flexibility) relate to website evaluation factors (website design, privacy and security, fulfillment and reliability, and customer services). To measure website quality, the eTialQ model was used with regard to the four sub factors mentioned above. A survey is used to collect the data from 250 websites. The use of customer feedback and iterative development has resulted in higher website quality. The author's results proved that 68% of customers prefer agile models rather than traditional, he designed, in his work, a conceptual model and survey tool for agile systems.

7 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage: www.igi-global.com/article/evaluating-usability-and-content-accessibility-for-e-learning-websites-in-the-middle-east/239531

Related Content

Water Quality Prediction of Nainital Lake, Uttarakhand, India Using Artificial Neural Network Models
Manisha Koranga, Pushpa Pant, Tarun Kumar, R. P. Pant, Ashutosh Kumar Bhattand Durgesh Pant (2022). *Artificial Intelligence for Societal Development and Global Well-Being (pp. 241-257).*
www.irma-international.org/chapter/water-quality-prediction-of-nainital-lake-uttarakhand-india-using-artificial-neural-network-models/309199

On Design and Development of QLIFEX: An Expert System for Social Area
Irena Atanasova (2015). *International Journal of Applied Behavioral Economics (pp. 16-35).*
www.irma-international.org/article/on-design-and-development-of-qlifex/122504

Social Media for Promoting Grassroots Political Movements and Social Change
Amir Manzoor (2016). *Handbook of Research on the Societal Impact of Digital Media (pp. 609-637).*
www.irma-international.org/chapter/social-media-for-promoting-grassroots-political-movements-and-social-change/136690

A Novel Strategy for Managing User's Locations in PCS Networks Based on a Novel Hot Spots Topology
Ahmed I. Saleh (2011). *International Journal of Information Communication Technologies and Human Development (pp. 41-76).*
www.irma-international.org/article/novel-strategy-managing-user-locations/51570

Learning Management System Use to Increase Mathematics Knowledge and Skills in Puerto Rico

Angel M. Ojeda-Castro, Philip Murray-Finleyand José Sánchez-Villafañe (2017). *International Journal of Technology and Human Interaction (pp. 89-100).*

www.irma-international.org/article/learning-management-system-use-to-increase-mathematics-knowledge-and-skills-in-puerto-rico/177221