

AN EVALUATION OF IRANIAN ACADEMIC WEBSITES FOR ENHANCING EDUCATION AND RESEARCH

Kayvan Kaseb

University of Kurdistan
Kayvan.kaseb@ieee.org

Emad Khoshkhoo

University of Kurdistan
Emad.khoshkhoo@gmail.com

Farzan Badakhshan

University of Kurdistan
Farzan.badakhshan@ieee.org

Photograph
of
Presenter

Abstract

Nowadays, websites are considered as important tools in education and research. The importance of successful design and delivering of an academic website with a high degree and more effective quality is increasing every day. Unfortunately, although the importance of effective and high-quality websites for universities has been proven, numerous academic websites do not provide enough user satisfaction and quality, leading to a major negative effect on the popularity of the universities owning them. In addition, improving the quality of the home page increases website usability and accessibility. In this paper, a set of evaluating criteria has been defined for websites of Iran's top 14 universities. Based on their educational and website rankings, these universities have been evaluated based on the mentioned criteria.

Key words: Evaluation, Home Page, Academic Websites

Introduction

The Web is one of the greatest inventions of the 20th century and has quickly become an important factor in man's life. Simply, the Web is considered as a complicated information environment providing interactive relationship between man and machine. Websites consist of a set of services and information. These information and services include a wide range of applications including education; purchasing, entertainment, and commercial and industrial applications (Straub D. 2001), (Handaru J. 2008). However, many of today's websites do not possess an appropriate design and form and do not well perform the tasks assigned to them. This will reduce their attractiveness and ability to maintain their users. Studies have shown that in 60 percent of cases, people cannot find what they are looking for in websites (Nielsen, J. 2002). This leads to a large number of unwanted and repetitive website visits, causing time and energy loss.

Therefore, the importance of developing and delivering websites with a high degree of quality is rapidly increasing every day. Millions of websites exist today but only a small percentage of them possess a high value and rank and the ability to attract users. Developing a website requires attention and undergoing different designing and development courses in order to ensure that a website with the predefined purposes will be achieved.

Web site evaluation is the act of processing, collecting, and analyzing website quality. Based on it, the degree of which the website is able to reach its goals will be determined. Advantages of website evaluation include (Wood F.B. 2003):

- Improving design, navigation, and search
- Comparing website applicability to the applicability goals of the organization
- Detecting and improving performance and response time
- Estimating website features and performance
- Evaluating the relative importance of evaluation criteria
- More adapting the website to the needs of visitors
- Defining user groups that were not defined before.

To find information about a university, the first thing that comes to every person's mind is visiting their website. A website can help a university with increasing its credibility and assisting the university in achieving its educational purposes; in addition, academic websites provide valuable information for university professors, staff and students. Therefore, the main page of an academic website is the first preview of the whole university that a visitor gets. The main page is the key to connecting to the world and is the starting point for most visitors (Nielsen, J. 2002), (Mary M. H. 1997).

The main page of a website is considered as the most important page among other web pages and receives the most number of visits, thus evaluating academic website main pages for observing the essential elements for being successful academic websites can be crucial and effective in their quality (Mary M. H. 1997). The purpose of this study is to evaluate the home pages of academic websites to see whether or not they observe a set of principles for developing a standard home page, which have been considered as very important elements for website success. In this paper, a set of evaluating criteria has been defined. Based on it, websites of Iran's top 14 universities (based on their educational and website rankings) have been evaluated. The studied university websites are those of Sharif University of Technology, University of Tehran, Amirkabir University of Technology, Iran University of Science and Technology, Allameh Tabataba'i University, TarbiatModares University, Tehran University of Medical Sciences, ShahidBeheshti University, K.N.Toosi University, Ferdowsi University of Mashhad, University of Isfahan, Shiraz University, University of Tabriz, and Isfahan University of Technology.

1. Criteria and Discussion

In this section, eleven different evaluation criteria have been defined and the results of evaluating the studied websites have been discussed.

Multilingualism

One of the most important purposes of every academic website is achieving a desirable number of visitors. With respect to the wideness of web and its numerous users, if the website main page does not support multilingual features (especially the English language) it surely will not be appealing for millions of other users.

- All pages of the studied academic websites supported English as well as Persian.
- The main page of Tehran University of Medical Sciences was the only academic main page that supported three languages (Persian, English, and Arabic).

Search Box

Search box is one of the most important features that every academic website main page should contain. By benefiting from search box, many users will be able to save time during searching for information, for the searching process will lead the user directly to the desired information (Singh S. N. and Dalal N.P 1999). This feature should be simple and significant in the main page and should not appear as a link.

- Main page of all the academic websites except for those of Iran University of Science and Technology and Allameh Tabataba'i University contained search boxes.

Background Color

Colors are powerful elements in conveying feelings and attracting visitors, however, it should be noted that different background colors would create different impressions in the visitors. Light blue, gray or white colors are suggested for main page backgrounds. In addition, it is also better to use only one of the mentioned colors than using all three of them together (Vincent F. 1996).

- Main pages of the studied academic websites had only used white as their background color, except for website of University of Isfahan which had used two colors of light and dark blue.

Meta Tags

Description

Provides brief information of the page for search engines. After the advancement of Google, being followed by major search engines, this tag was used less for ranking; however, it is affective in attracting users and is still being used by small search engines.

Keyword

During the 90's, search engines used the contents of the keyword tag as an important factor in ranking websites, but between the years of 1997 and 2002, important search engines ceased to support this tag because websites had started to use it to deceive them. However, a number of lightweight search engines still use this tag and Yahoo still suggests using it. The appropriate number of phrases may not exceed 15.

- Main pages of all studied academic websites had benefited from Description and Keyword tags, except for Shiraz University website which used none.
- Main pages of Iran University of Science and Technology (51 phrases), Isfahan University of Technology (55 phrases), Shiraz University (48 phrases), University of Tehran (27 phrases) contained too many phrases. The rest of the studied websites had used less than 15 phrases in this tag.

RSS (Really Simple Syndication)

RSS is a standard and simple way of presenting content to visitors who are still interested in some website topics after leaving the website. Therefore, by using RSS, website users may access the latest news and information of the website much easier. In addition, academic websites may categorize their web content by using RSS and present their website news and information to users in a quick and standard format.

- The only studied websites that contained RSS were websites of Amirkabir University of Technology and Iran University of Science and Technology.

Number of images

A huge number of images on a website mean that the user has to spend a lot of time for visiting the website. It will also lead to user confusion (Duval and Main), (Sehwan Y. and Jongdae J 2005).

Images have no value for search engines and should only be used when needed and when they are compatible with page contents.

There should be no more than three images in the website main page (Sehwan Y. and Jongdae J 2005).

- The only academic website that had almost an appropriate number of images was the main page of TarbiatModares University.
- The rest of the studied academic websites had too many images in their main pages, leading to an increase in webpage size and therefore increasing the loading time.
- The main page of Sharif University of Technology, University of Tehran, and Ferdowsi University of Mashhad websites had the most number of images respectively.
- In the main page of University of Tehran website, a slideshow with a large number of images (41 images) had been used, leading to an enormous reduction in webpage loading speed.

Font Size and Font Style

There should be no more than one font size and one specific font style in a website main page, except for titles, creating a more comfortable surfing and a well designed website (Woodbeck).

- In the main pages of all studied websites except for those of Sharif University of Technology, K.N.Toosi University of Technology, Allameh Tabataba'i University, and ShahidBeheshti University, one font size had been used. The main pages of the mentioned universities contained two font sizes.
- Except for the main page of Amirkabir University of Technology and ShahidBeheshti University websites where two font styles were used, one font style had been used in the studied academic websites.

Multiple Headings

Just like newspapers and magazines that use titles to help readers, website main pages use specific tags in HTML. These tags not only assist users during reading website contents, but are affective in website structure and help search engines better understand webpage content and detect the important elements (Ekhaml).

- Except for Amirkabir University of Technology (h1, h3) and Ferdowsi University of Mashhad (h2) which used title tags in their website main page, other website main pages contained no title tags.

Main Page HTML Code Size

One of the important and affective factors in loading time is the web page HTML code size. HTML code size of a page should not exceed 50 kilobytes.

- Main page code size of Amirkabir University of Technology, Ferdowsi University of Mashhad, Iran University of Science and Technology, Isfahan University of Technology, Tehran University of Medical Sciences, and TarbiatModares University websites were less than 50 kilobytes, being appropriate in terms of page HTML code size.
- Main page code size of Sharif University of Technology, Shiraz University, K.N.Toosi University, University of Tehran, Allameh Tabataba'i University websites were between 50 and 100 kilobytes, being inappropriate in terms of page HTML code size.
- Main page code size of ShahidBeheshti University and University of Tabriz websites were about 100 kilobytes, being very inappropriate in terms of page HTML code size.

ALT Attribute

In addition to attractiveness, each image contains a message by which different viewers are impressed. If for any reason an image is not shown in the browser, a text could be substituted with the image by using the ALT attribute and transfer the web designer's message to the viewer. Search engines also use this feature. The following table shows the studied universities and whether or not they had observed using the ALT tag in their website main page.

Totally Observed	Mostly Observed	Mostly Not Observed	Not Observed At All
Iran University of Science and Technology	Amirkabir University of Technology	Sharif University of Technology	Shiraz University

-----	ShahidBeheshti University	Ferdowsi University of Mashhad	TarbiatModares University
-----	Isfahan University of Technology	University of Tabriz	University of Tehran
-----	-----	Tehran University of Medical Sciences	University of Isfahan
-----	-----	Allameh Tabataba'i University	K.N.Toosi University

Table 1. ALT Attribute

The Amount of Using Important Tags of div and table

Although these two tags are used for sorting content, div has more advantages than table, including less page code size, clearer code, faster loading, more flexibility and having more importance for search engines.

Using table Tag	Using div Tag
Allameh Tabataba'i University	Sharif University of Technology
Shahid Beheshti University	Isfahan University of Technology
TarbiatModares University	University of Tehran
Shiraz University	Ferdowsi University of Mashhad (mostly used div)
K.N.Toosi University of Technology	Amirkabir University of Technology
Iran University of Science and Technology	-----
University of Isfahan (mostly used table)	-----

Table 2. Using *div* and *table* Tags

- ✓ In main pages of University of University of Tabriz and Tehran University of Medical Sciences, table and div tags had been used almost equally.

Conclusion

The importance of a high-quality design and presenting an academic website with a high quality and more effectiveness is increasing day by day.

This paper was an attempt to evaluate the main pages of Iran's top 14 universities based on 10 evaluation criteria. These universities were selected based on their educational rankings and website quality and their main pages were processed, analyzed, and evaluated to determine whether or not they had observed the set of defined criteria. The results of this study could be helpful for improving the main pages of academics and enhancing their applicability and attracting users.

References

Straub D. and Watson, R. (2001). Research commentary: Transformational issues in Researching IS and net-enabled organizations. *Information Systems Research*, 12, 337-345.

Handaru J. and Dhanapal D. (2008), Website Accessibility Performance Evaluation in Malaysia, *International Symposium on Information Technology (ITSim)*.

Nielsen, J. (2002). Top Ten Guidelines For Homepage Usability. [Online] (updated May 12,2002) Available at: <http://www.useit.com/alertbox/20020512.html>

Mary M. H. (1997), "World Wide Web Site Design" (professional paper, Texas Woman's University.

Singh S. N. and Dalal N.P (1999). "Web Home Pages as Advertisements," *Communications of the ACM* (42:8), pp. 91-99.

Vincent F. (1996), "Web Pages That Suck: Learn Good Design by Looking a Bad Design," [http://www. Webpagesthatsuck.come/home.html](http://www.Webpagesthatsuck.come/home.html).

Duval and Main, "Building Home Pages," pp. 218-227.

Sehwan Y. and Jongdae J (2005), Investigation into the home page of the top 100 university websites, *Academy of Information and Management Sciences Journal*, Volume 8, Number 2.

Woodbeck, "Making the Web Work for You," pp. 40-45.

Ekhaml, "Make Your Presence Known on the Web! Tips for Writing and Publishing Web Documents," pp. 33-35

Wood F.B. (2003), "A Practical Approach to E- Government Web Evaluation", *Web – IEEE Computer Society*, 2003.