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**Bridging the digital divide:
libraries providing access for all?**

AN EVALUATION ON THE WEB PAGE NAVIGATION TOOLS IN UNIVERSITY LIBRARY WEB SITES IN TURKEY

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Abstract: *Web technologies and web pages are primary tools for dissemination of information all over the world today. Libraries are also using and adopting these technologies to reach their audiences. The effective usage of these technologies can be possible with user centered design. Web pages that have user centered design help users to find information without being lost in the web page. As a part of the web pages, navigation systems have a vital role in this context. Effective usage of navigation systems protect users from being lost in the web page. This study gives information about Turkish higher education institutions' library web pages and their navigation systems. This study also contains evaluations of these web pages from web usability framework.*

This study provides an insight about design of library web pages in terms of usability factors and navigation systems. Today many libraries are used web technologies effectively. There are many libraries that are using web pages and web 2.0 technologies for their audiences. This study in general meaning contains how user centered design can be done and how navigation systems effectively can be set for web pages of LIS institutions in Turkey higher education institutions sample.

Keywords: *Web Usability, Web Navigation Tools, University Libraries, Turkey.*

Introduction

Today, Web pages are primary tools for all kinds of institutions that are aimed to provide services on the web for audiences. Information seeking behavior of audiences and user centered designs of web pages are very important for these institutions. Web pages which designed according to user needs and user expectations are more useful than other web pages. These pages also meet information needs of audiences easier. Especially web navigation tools are important for usability of web pages because, these tools direct users to information that

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they are looking for in a web page. Well designed navigation systems within the web pages allow users access to right information in the shortest time. Many researches related to user studies on the web are propounded that users are expecting to find information while using the easiest and fastest way. These researches also put the fact that users are expecting to leave from the web page in the shortest time after finding information. So navigation systems have a major role for providing access to right information that users' need. Web pages and navigation systems of libraries whose goal is providing information services are very important in this context. Library web pages connect users to the library and library services such as searching catalog, providing access to databases, electronic reference services, and electronic circulation services. Navigation systems in library web pages are very efficient and important tools for the usage of these services by users. In this study library web pages of higher education institutions in Turkey evaluated in terms of navigation systems and usability factors that affect usage of web pages. The purpose of this study is providing an insight about navigation systems that are used for taking advantage of users from the services offered at these library web pages.

Definition of the Web Navigation

It is a set of methods that are used by users to access to information on a web page. In other words It is a set of activities that are carried out by users to meet their own information requirements on a particular web page (Farkas & Farkas, 2000). There are also many definitions in the literature about the web navigation. Web navigation systems and navigation tools are the most important factors that determine the usability of web page (Galitz, 2007).

It provides web site usability and web navigation systems are the essential tools for making a web page usable. Web usability has many definitions in the web literature. Two definitions about web usability are given below;

Usability;

“...is the degree to which something - software, hardware or anything else - is easy to use and a good fit for the people who use it” (UPA, 2009)

“...is a quality attribute that assesses how easy user interfaces are to use. The word "usability" also refers to methods for improving ease-of-use during the design process” (Nielsen, 2003).

Web Navigation systems have a major role for the usability of a web page. It deals with the designing process of the web page.

In the elements of the usability, Navigation system design takes the second phase after the visual design of web page and it facilitates user movements through the information architecture (Garrett, 2000).



Aims of The Web Navigation Tools

Web navigation tools that are found on a web page carry many aims for making the site usable.

These aims are;

- Providing access to the content of web page by using the shortest way

- Showing users...

 - which page they are visiting

 - which page they are coming from

 - what can they do on the web page by using the easiest way

According to these aims navigation systems are also described as a roadmap (Timberlake, 2007). Recent changes in human interactions with web pages made web navigation tools more important. Researches that are published in the literature show that Today, users are visiting the web page in a less than 5 seconds. and They tend to drop out as soon as possible after finding information that they need (Townes, 2007; Uçak & Çakmak, 2009 p.280). Navigation systems and search box of the web pages provide users access to the right information at the shortest time.

Web navigation problems about web sites web also researched in many studies that are about Internet problems and finding information on web pages in all over the world. One of these researches is GVU WWW Survey that was conducted in Europe and America continents in 1997. Results of this research revealed the fact that the most important problems are Privacy (30, 5 %), Censorship (24, 2 %), Navigation Problems (16,65%). In general overview of this

research, it is seen that the first two problems are about legislations and policies about publishing a web page that are changing for countries. The third one is about the design of the web page and about navigation in the web site (GVU's Eight WWW Survey, 1997; Keyrmin, 1997b).

Characteristics of Ideal Web Navigation Systems

Web pages carry many attributes in terms of navigation systems. These attributes makes web page more usable and easy to use with user friendly interface. Ideal web navigation system on the web page should be

- easy to access
- compatible with different web technologies and web browsers
- understandable menus and links
- understandable icons (if used)
- appear in the same place of the all pages of web site (Kyrnin, 1997a).

Types of Web Navigation Systems

There are many studies that are reviewed and classified web navigation systems One of these studies, grouped web navigation systems in three phases. These phases are Structural systems (Global Navigation Systems, Local Navigation Systems), Associative Systems (Contextual Navigation Systems, Footer Navigation, Quick Links, Adaptive Navigation) Utility Systems (Kalbach, 2007)

Another study that is grouped these systems in five phases and it was carried out by Galitz in 2007. These systems are almost similar with Kalbach's classification. According to Galitz (2007); web navigation systems consist of Global Navigation, Categorized Navigation, Embedded Links, Secondary Navigation, Content Lists (Galitz, 2007)

Global Navigation Systems

It is a whole of systems or menus that provide access to all important points of the web page under the general categories (Rosenfeld ve Morville ,2002;Timberlake,2002). This systems can be found in all pages of the web page. They Provide effective usage of the web site. They

present whole content of the web site to users. Global navigation systems show users which page they are visiting and which pages they can visit (Rosenfeld & Morville, 2002).

Global navigation systems also can show users which pages they visited in the web site with breadcrumb navigation systems (Powazek, 2006). These tools are generally horizontally designed under the banner of the web page. But they can be designed on the left or right sides of the web page vertically. But in terms of usability, it is suggested that they should be designed horizontally and found at the top of the page under the banner of web page (Galitz, 2007).

Local Navigation Systems

Consist of the links or submenus that provide detailed access to particular web page of the web site. It is a navigation system that created for organizing information on the web page under the determined categories (Timberlake, 2002). They can be designed on the left or right side of the web pages (Hasegawa, 2006). They can show diversity in all pages of the web site.

Contextual Navigation

These are the links that provide connection to the related pages. They are generally text form. And designed in the content of the web page.

Quick Links and Footer Navigation

Quick links provide access to web pages faster and easier by a drop-down menu (Kalbach, 2007). These links automatically direct users to the particular web page that they want to visit. Footer navigation, these systems are different from other navigation systems. They are designed in text format generally and they provide access to important points of web site. These systems help users to use web page easily. These systems are; Language tools, Site maps, Search box.

Breadcrumb Navigation Systems

Breadcrumb term comes from the story of Hansel and Gratel. Breadcrumb navigation systems inform users which page they are visiting and which path they used before coming to recent page.

There are many characteristics of breadcrumb navigation systems. These systems

Show users where they are in the web site

Provide users to returning back to visited pages.

Help to determining web site hierarchy.

Generally works as a secondary navigation system (Nielsen, 2007)

Methodology

In this study data were obtained from the library web pages of higher education institutions in Turkey. In the first stage of the study higher education institutions are grouped into two parts according to The Council of Higher Education (YÖK) universities classification.

In the second stage of the study, library web pages of higher education institutions in these groups were visited and their navigation systems were examined in terms of web usability factors. The data were collected as a result of the examinations of web pages and analyzed by using some statistical techniques with Statistical Package for the Social Sciences (SPSS) software.

Findings

In this study, first of all, domain names of university library web pages are analyzed. According to this analysis 50 of 94 state university libraries have a web page as a separate subdomain link. 16 State universities has a separate library web page although their links are integrated with university web site. 19 of 37 private universities have a web page as a separate subdomain link.

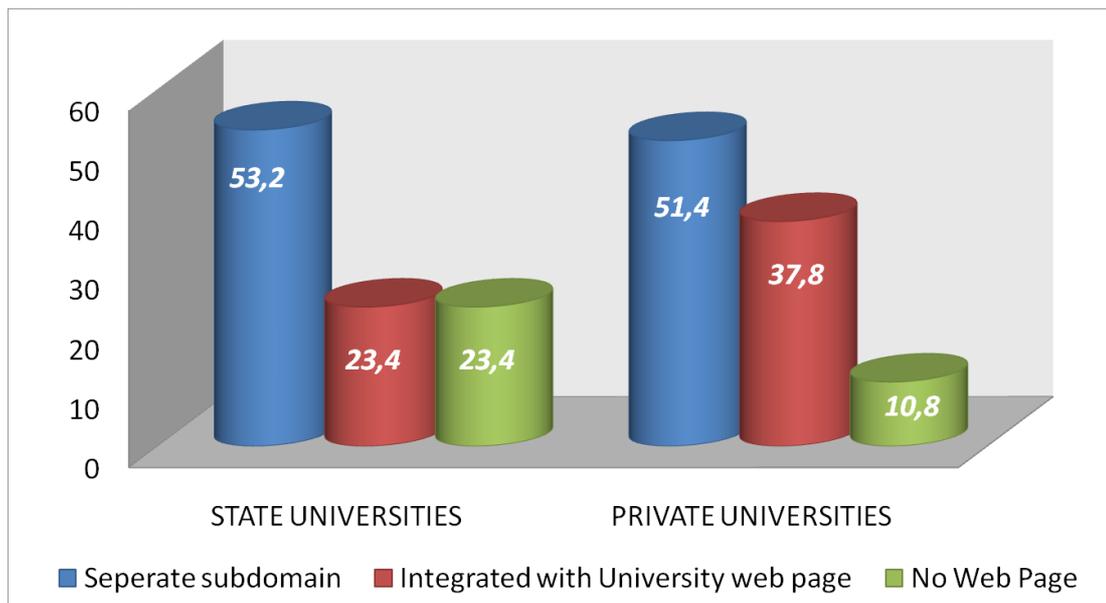


Figure -1 Domain Names of Web Pages of University Libraries

Global navigation systems of web sites of state university libraries are generally on the left side of the page (47%) and 31,8 % of the pages have a global navigation on the top of the page. On the other hand most of the private university library web pages have a global navigation on the top of the web page. It is also seen that, there are two global navigation systems on a single page (10,6%) in state university library web page.

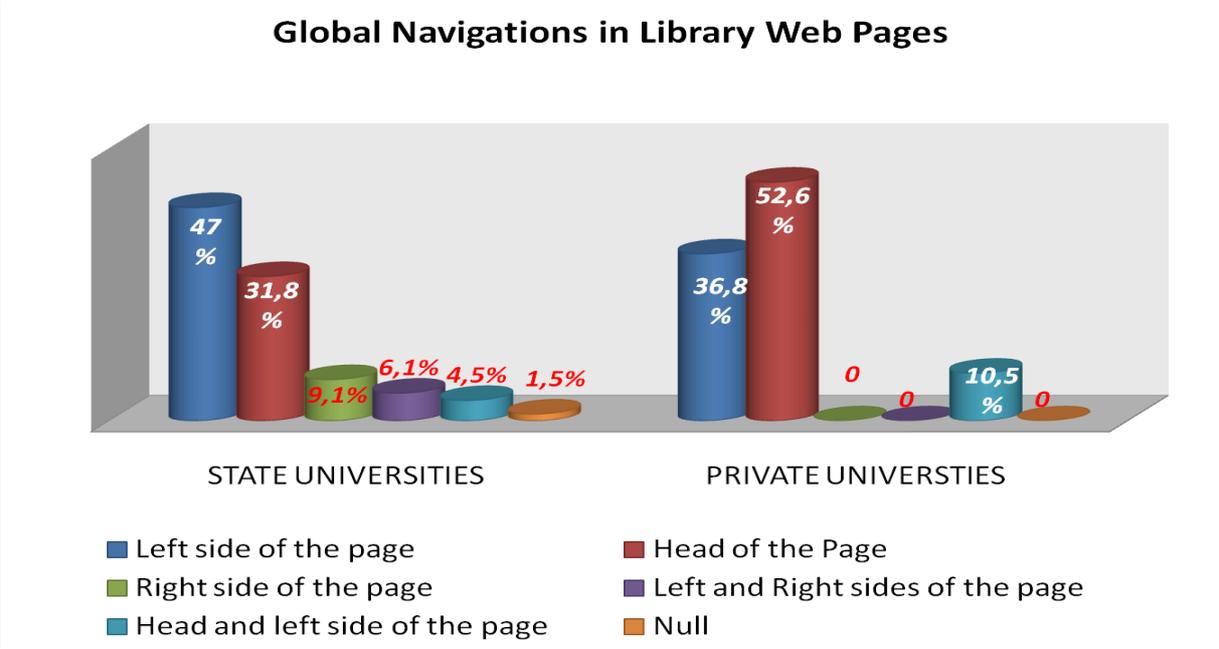


Figure -2 Global Navigation Systems

Local navigation menus of university library web pages generally insufficient and both university library web pages does not have a local navigation systems. It is also seen in figure 3 that most of the state university libraries have a local navigation systems (16,7%) on the left side of the page and most of the state university libraries have a local navigation systems (31,5%) on the right side of the web page.

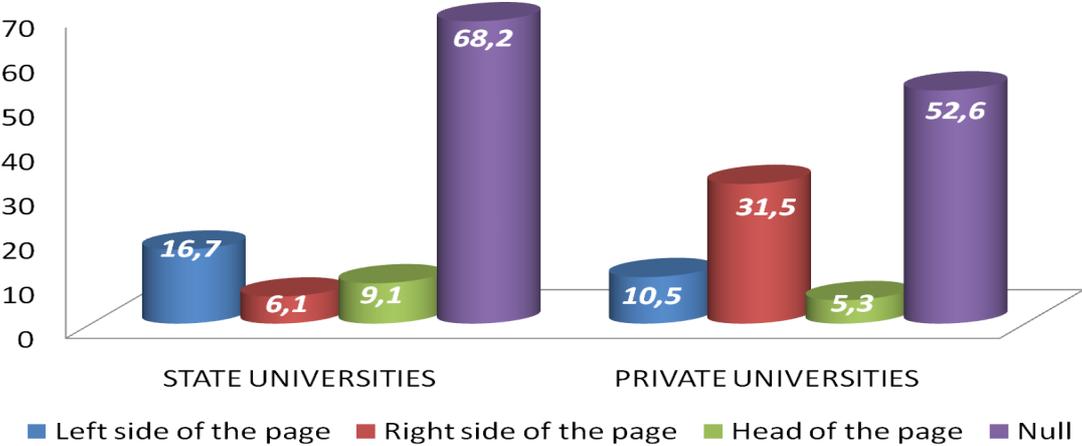


Figure-3 Local Navigation Systems

General Overview of State Universities

21,2% of state universities have a breadcrumb navigation, 27,3% of them have a site map as a utility navigation, 27,3% of them have a footer navigation, 38% of them have a top navigation, 47% of them have a search box or quick search capabilities on the homepage. 72,7% of them designed only Turkish language and They have an insufficient rate (9,1%) in terms of having RSS, XML and Web 2.0 technologies

General Overview of Private Universities

10,5% of state universities have a breadcrumb navigation, 21,1% of them have a site map as a utility navigation, 26,3% of them have a footer navigation, 73,7% of them have a top navigation 63,2% of them have a search box or quick search capabilities on the homepage. 94,7% of them designed Turkish and English language and They have a weak rate (31,6%) in terms of having RSS, XML and Web 2.0 technologies in navigation.

Results and Recommendations

Findings show that there are some inadequacies especially in state university library web pages in terms of web navigation systems. Most of the state university library web page consist of an only global navigation system, That is designed generally left side of the web page. Most of the web pages in state universities designed only Turkish language. Although these results there are many university library web pages are designed according to usability tests (METU, Gazi University, Hacettepe University Libraries).

On the other hand, Private universities that were analyzed in this study have also some weaknesses in terms of navigation systems. Although most of these web pages designed with English and Turkish languages , they are insufficient in terms of local navigation, breadcrumb navigation, sitemaps and footer navigation systems. According to these results, it can be suggested that these web pages in each university types should be developed in terms of usability factors, user behaviors and navigational systems. Developments should be carried out according to usability tests by using techniques like card sorting. This will be very helpful to create a usable menus and navigation systems for these web pages. These web pages also should develop their rss,xml and web 2.0 capabilities to reach users effectively.

References

- Barrett, P. (2008). *New facebook design confirms a drift to the right (nav)*. Retrieved December 12, 2009 from <http://fronttoback.org/2008/08/18/new-facebook-design-confirms-a-drift-to-the-right-nav/>
- Galitz, W. O. (2007). *The Essential guide to user interface design: An Introduction to GUI design principles and techniques*. Indianapolis: Wiley.
- Garrett, J.J. (2000). *The Elements of User Experience*. Retrieved December 28, 2008 from <http://www.jjg.net/elements/pdf/elements.pdf>
- GVU Eight WWW Survey*. (1997). *GVU's WWW*. Retrieved December 28, 2008 from http://www.cc.gatech.edu/gvu/user_surveys/survey-1997-10/graphs/general/Most_Import_Issue_Facing_the_Internet.html.
- Hasegawa, A. (March, 2006). *The 7 Types of navigation*. Presented at 7th Information Architecture Summit, Vancouver, Canada.
- Kalbach, J. (2007). *Designing web navigation*. Beijing: O'Reilly.
- Krebs, M. (2008). *Usability is much more than just design*. Retrieved December 12, 2009 from <http://blog.nothing.ch/en/2008/09/usability-ist-mehr-als-design/>
- Kyrnin, J. (1997a). *Designing effective web navigation*. Retrieved June 10, 2009 from <http://webdesign.about.com/cs/webnavigation/a/aaeffectivenav.htm>.
- Kyrnin, J. (1997b). *Navigating web pages*. Retrieved June 10, 2009 from <http://webdesign.about.com/cs/webnavigation/a/aanavigating.htm>.
- Nielsen, J. (2003). *Usability 101: introduction to usability*. Jakob Nielsen's Alertbox. Retrieved November 15, 2008 from <http://www.useit.com/alertbox/20030825.html>
- Powazek, D. (2006). Where am i?. *A List Apart*, 221. Retrieved June 12, 2009 from <http://www.alistapart.com/articles/whereami>.
- Rosenfeld, L. & Morville, P. (2002). *Information architecture for the web: Designing large-scale web sites*. (2nd Ed.) Sebastopol, CA: O'Reilly.
- Timberlake, S. (2007). *The Basics of navigation*. Retrieved June 10, 2009 from <http://www.efuse.com/Design/navigation.html>.
- Townes, F. (2007). *Website design aesthetics. Webcredible User Experience & Design*. Retrieved from November 22,2008 from <http://www.webcredible.co.uk/user-friendly-resources/web-credibility/website-design.shtml>
- Uçak, N. Ö. & Çakmak, T. (2009). Web sayfası kullanılabilirliğinin ölçülmesi: Hacettepe Üniversitesi Bilgi ve Belge Yönetimi Bölümü web sayfası örneği. *Türk Kütüphaneciliği*, 23(2), 278 – 298
- UPA. (2008). *UPA*. Retrieved November 9, 2008 from http://www.upassoc.org/usability_resources/about_usability/index.html