Increased Popularity Through Compliance with Usability Guidelines in E-Learning Web Sites

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ABSTRACT

This article identifies and measures correlations between compliance with usability guidelines and the popularity of a Web site. A sample of e-learning Web sites was reviewed and their usability scored using a Web-based evaluation system developed during the study. This usability score was then tested against five different ranking systems using Spearman’s Rank correlation. The results of these tests show a strong correlation between compliance with usability guidelines and Web site popularity. The five ranking systems also showed positive correlations to each other and to the usability of the sites. The conclusion drawn from these results is that compliance with usability guidelines could be a way to achieve higher Web site popularity and visitor numbers.

Keywords: E-Learning, Electronic Learning, Usability, Web-Based Learning, Web Site Design, Web Site Development

INTRODUCTION

We have often suggested to clients and students that usability is an essential part of any Web site development and that compliance to usability guidelines could be a pathway towards a more popular site. Yet many times these suggestions have been ignored, or in the least respondents have not considered usability studies to be important to their project. Due to a lack of previous research which examines the relationship between usability and popularity, convincing developers to invest resources into usability studies has been difficult. This research aims to answer the question: is there a positive relationship between compliance with usability guidelines and Web site popularity, and if so how strong and relevant is this relationship? Other questions addressed consider what usability guidelines should be adopted and how popularity can best be measured. The findings of this study are intended to create a foundation for further investigation into the effect of

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compliance with usability guidelines on Web site popularity.

The scope and objectives of this research are:

- To identify academically established—industry recognized Web site usability guidelines.
- To measure the compliance with these guidelines in e-learning Web sites. The population of this study has been narrowed down from all Web sites to e-learning Web sites, with the intention that the representation of the findings in one industry is transferable to others.
- To measure the correlation between compliance with usability guidelines and the popularity of a Web site. An assumption has been made that members of a group of Web sites within a particular educational subject area, that is, English or Math, have the same chance as each other of becoming popular.
- To identify and measure correlations between compliance with usability guidelines and five Web site ranking systems.

The first section of this article reviews previous literature surrounding the fields of usability and Web site popularity. The method section follows on from the literature review and provides a detailed description of how this research was conducted. This is followed by the results and conclusions sections which include a discussion about what the findings could signify and what work still needs to be done.

**PREVIOUS USABILITY AND POPULARITY RESEARCH**

**Overview**

Tools and methods that may be used to prove a correlation between usability and Web site popularity have been reviewed. The tools concerned include established Web site design usability guidelines and software for testing compliance to such guidelines. Suggested methods, as an alternative to tools, for testing compliance are also discussed and accompanied with a review of methods for measuring Web site popularity.

**Usability**

**What is Usability?**

Usability is a well-established concept and is precisely defined by the widely accepted ISO9241 standard (Petrie & Kheir, 2007). Part 11 of ISO9241 defines usability as the effectiveness, efficiency and satisfaction with which specified users achieve specified goals in particular environments (ISO, 1998). In this context effectiveness refers to the accuracy and completeness of the tasks, efficiency considers the resources expended in completing the tasks, and satisfaction means the comfort and acceptability of the system to its users. Prior to the development and widespread acceptance of ISO9241, perhaps the most commonly cited definition of usability was that of Jakob Nielsen who broke usability into five areas: learnability, efficiency, memorability, errors, and satisfaction (1993).

It is important, for the purpose of this study, to clarify the separation between usability and accessibility. While there are many similarities between usability and accessibility guidelines, the two fields are not the same. However, accessibility could be considered a subset of usability, since usability implies accessibility (Brajnik, 2000). If a Web site is usable by all users then it must be accessible. Brajnik also shows that the contrary is not necessarily true, that is, problems that may affect the usability of a page may not affect the accessibility. Likewise, a article produced in partnership with the National Cancer Institute makes an attempt, as the title suggests, at “Bridging the Gap: Between Accessibility and Usability” (Theofanos & Redish, 2003). Further reinforcing the subset theory, Theofanos and Redish note “meeting the required accessibility standards does not,
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