Designing Intuitive Web Pages for E- learning

Titilola Obilade M.B;B.S., M.P.H,

Learning Sciences and Technologies, Virginia Polytechnic Institute & State University,
Blacksburg,Va,24060

Introduction

This research paper is about designing intuitive web pages for e-learning . There are numerous frameworks for e-learning. I have looked at the different frameworks for e-learning and they all possess a common thread; there is a desire on the part of the facilitator to reduce the separation between the instructor and the learners. However, the blending of facilitator and learners and learners with other learners depends on the personality type of learners as well as the design of the web pages. This paper is about designing intuitive web pages.

Today, many people can get a template and design web pages. However, the question is how many of these web pages are intuitive to the user and in the case of e-learning, how many of these pages can the learner safely surf through easily without getting frustrated at some design on the web pages? If the designer has knowledge about the learners, the web pages should be intuitive. There are numerous frameworks for e-learning but these frameworks are not explicit on how to make the web pages intuitive.

In this paper, I would be discussing the factors the designer should consider in designing intuitive web pages for e-learning. These factors are:

❑ The Human Cognitive Information Processing
❑ Affordance
❑ Constraints
❑ Natural Mapping
❑ Pattern Recognition
❑ Screen Design and Display
❑ Text Design

Affordance

In order for the designer to make use of the affordances, constraints and natural mappings in designing web pages, he/she must be aware of the way the human processes attention and memory i.e **The Human Cognitive Information Processing**. Affordance is a physical feature that allows the user to use what the product is intended for (Gibson, 1977, 1979; Norman, 1988, 1998; Ware, 2003; Norman, 2007a, 2007b, Şahin, Çakmak, Doğar, Uğur, & Üçoluk, 2007; Norman, 2011; Kaptelinin & Nardi, 2012).

Gibson, described affordance as a relational capacity of the product to the user and to the environment (Gibson, 1977, 1979; Kaptelinin & Nardi, 2012).

The handle to the door of the Virginia Tech Newman Library is an affordance. Image by Titilola Obilade, 2012

According to Gibson's definition, the affordance can be present on the product without the user being aware of its presence. Norman, on the other hand defined affordance as the perceived use of the design of the product by the user. He called this the perceived affordance (Norman, 1988, 1992, 1993, 1998, 2007a, 2011).

Constraints

As affordances are present in the product for the user to be able to use the product easily, constraints are intentionally put by the designer to limit the number of wrong alternatives that the user may take in trying to use the product. The constraints limit the wrong turns the user might take in using the affordance and thereby directs the user to make the right turn or the right use of the product (Norman, 1988).
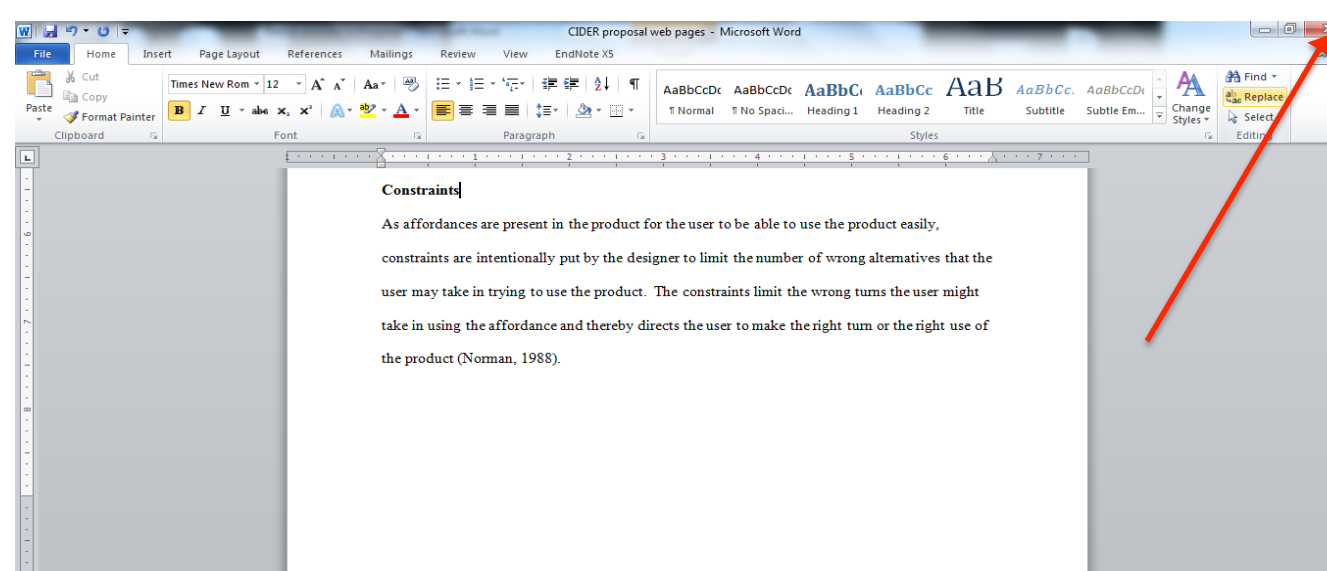
Screen Shot of a Microsoft Document that shows *X* for exiting from the page. Image Source: Titilola Obilade, 2013

Natural Mapping

Mapping is the relationship between the control and the action displayed from clicking on the control. *Natural mapping* is defined as "the ability of a system to map its controls to changes in the mediated environment in a natural and predictable manner" (Steuer, 2006, pg. 15). Natural Mapping is the relation between the control and the action that is intuitive to the user (Norman, 2002; Norman, 1988). In gaming, controls that are similarly situated in a human body are easy to navigate (Skalski,

The playstation 2 Analog controller has similarities to a steering wheel. Image Source: Amazon.com

Text Design

A sans serif font should be used instead of a serif font because they are easier to read. If the text would be displayed on a regular monitor, a font size of 24 point and 32 to 36 point should be used (Hartley, 1996; Simonson et al., 2009). Sans serif fonts do not have finishing strokes at the end while text with serif has finishing strokes at the end. Capital letters take up more space than lower case letters. While television uses a centering text display, a left justified text is preferable for web pages (Simonson et al., 2009).

AaBbCc –Times New Roman

AABBCC-ENGRAVERS MT

Times New Roman text is a sans serif font and Engravers MT is a serif font.

Attention and Text

Kintsch, Kozimsky, Streby, McKoon and Keenan (2005) showed that participants were able to recall from text that was uncluttered than from texts that were cluttered. Studies have also shown that when participants are given cues like topics related are put together, or text are put in bold print or in uppercase letters, the participants were more apt to recall the content in the text better (Glynn & DiVesta, 1979). After analyzing some K-12 textbooks, Ambruster and Anderson (1988) concluded that content area textbooks were user-friendly because of the structure, coherence, and audience appropriateness of the text. McKnight et al. (1996) suggested that web designers should not design web pages like printed books are designed. They pointed out that web users already have a model of how printed books are organized and web designers should design web pages that would support hypertext.

Pattern Recognition, Screen Design &Display

Pattern recognition is "the process whereby environmental stimuli are recognized as exemplars of concepts and principles already in memory" (Driscoll, 2000, p.84).

Front cover of the journal, Pattern Recognition. Note the P and the R on the blue background

Salvador Dali. "The Slave Market with Disappearing Bust of Voltaire" Do you see an oversized head or two nuns standing side by side? Adapted from *Human Information Processing* by P. H. Lindsay and D. A. Norman, 1977, (p.15). Academic Press: New York, N Y.

Gestalt theory explained how humans were able to perceive the environmental stimuli even without having a complete image of the stimuli. Gestalt is a German word that means a shape or form. Gestalt theory is how people perceive a whole picture from the many parts and pieces of what they see (Winn & Snider, 1996). The perception by the learner is faster and easier if the learner knows what to look for i.e the perceptual organization of the learner.

Visual Mnemonics for spelling Business. Image from Google Images