



**THE EFFECTIVENESS STUDY ON USER INTERFACE DESIGN
(UID) FOR LOCAL COSMETIC WEBSITE BY APPLYING
THEORIES OF AESTHETICS**

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**MASTER OF COMPUTER SCIENCE
(MULTIMEDIA COMPUTING)**

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Faculty of Information and Communication Technology

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**A report submitted
in fulfillment of the requirements for the degree of Master of Computer Science
(Multimedia Computing)**

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2016

DECLARATION

I declare that this report entitled “The Effectiveness Study On User Interface Design (UID) for Local Cosmetic Website by Applying Theories of Aesthetics” is the result of my own research except as cited in the references. The report has not been accepted for any degree and is not concurrently submitted in candidature of any other degree.

Signature :

Name : Mohammad Fariq Bin Mihaat

Date :

APPROVAL

I hereby declare that I have read this thesis and in my opinion this thesis is sufficient in term of scope and quality for the award of Master of Computer Science (Multimedia Computing)

Signature :

Supervisor Name : Dr. Mohd Hafiz Bin Zakaria

Date :

DEDICATION

I lovingly dedicate my report to my beloved grandmother and grandfather, Hajjah Salmah Bte Hj Ahmad and Haji Abd Hamid Bin Yatim who supported me, To my lovely and precious mother and father, Narizam Bte Abd Ghani and Mihaat Bin Abd Hamid who give me passion and strength with their smile and understanding, Unforgettable to my friends who always pray for my success and don't forget to my lovely and understanding advisor Dr. Hafiz Bin Zakaria who give me strength and fully support to finish my report. All of you are the most precious gift from ALLAH.

ABSTRACT

The aim of this research paper is to figure out user's feelings about Graphical User Interface design on websites by adopting aesthetic theories. Five aesthetic principles are illustrated in the literature study, which are golden section, dynamic symmetry, Gestalt laws, colour harmony and Goethe's colour theory. Qualitative research method is conducted as the way to explore user's behaviour and feelings. The researcher provides two websites, one of which is designed by breaking down all those five theories and another one is designed by following all the aesthetic principles.

Interviews are used as the method for collecting data from interviewees. The interviewees are selected from different department in Kolej Poly-Tech Mara Batu Pahat. Close-ended questionnaire and method is utilized by converting the interview conversation records to text-based data. Highlighting and marking the important and related data, and analysing do them the coding analysis by relating data to corresponding design theories.

The study found that the website design by applying aesthetic theories provided better visual effect and usability to user. It not only visually pleased the user, but also helped users accomplish specific task efficiently and accurately. It is also give satisfaction to user when they look the website.

ABSTRAK

Tujuan kertas kajian ini adalah untuk mengetahui perasaan pengguna mengenai grafik reka bentuk antara muka pengguna pada laman web dengan menggunakan pakai teori estetik. Lima prinsip estetik digambarkan dalam kajian literatur, yang terdiri daripada “Golden Section”, simetri dinamik, undang-undang Gestalt, keharmonian warna dan teori warna Goethe. Kaedah penyelidikan kualitatif dijalankan sebagai cara untuk meneroka tingkah laku pengguna dan perasaan. Pengkaji menyediakan dua laman web, salah satu yang direka dengan menggunakan kesemua lima teori estetik dan satu lagi menggunakan rekaan yang sedia ada.

Temubual digunakan sebagai kaedah untuk mengumpul data daripada ditemubual. Ditemubual dipilih dari jabatan yang berbeza di Kolej Poly-Tech Mara Batu Pahat. Kaedah “Close-ended” soal selidik digunakan dengan menukar rekod temubual perbualan kepada teks berasaskan data. Penandaan data penting dan berkaitan, dan melakukannya analisis pengekodan dengan menghubungkan data teori reka bentuk yang sepadan.

Kajian mendapati bahawa reka bentuk laman web dengan menggunakan teori estetik dikesan yang lebih baik visual dan kebolegunaan kepada pengguna. Ia bukan sahaja visual gembira pengguna, tetapi juga membantu pengguna menyelesaikan tugas tertentu dengan cekap dan tepat. Ianya juga memberi keselesaan kepada pengguna tatkala melihat laman web yang baru ini.

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CHAPTER 1

INTRODUCTION

1.1 Introduction

The purpose of this chapter is to provide the research background, problem statement, research objectives, limitation of study, research questions, and to state the significance of the thesis.

1.2 Research Background

Commonly, user interface design is ruled by (CLI) which is blocked by the user to perform concrete work on some directions. Some evolutionary interface made from 1973 until now. It is a great revolution in the interface that has benefited greatly from computer systems and software (Reimer, 2006). Any changes to the system and applications already in use to this day.

Graphical User Interface (GUI) is a method of applying graphics and icons that enable users to interact with the computer system and perform a few tricks. Based on Itanium (Gregor, M.D.). Parkinson (M.D.) claimed in his article "The Power of Visual Communication", he said that the description faster graphics than text descriptions of 60,000 times. The use of graphics and icons in an interface design easier to understand and very effectively to the user, but it is still inadequate to the needs of users over the years ahead.

The important role of visual aesthetics in interface design has been highlighted in many studies. Most studies found that an “aesthetically designed” interface is perceived as “better quality” than a less aesthetic interface. Such qualities include perceived ease of use (PEU), perceived usefulness (PU), trustworthiness, greater satisfaction, more interest, more enjoyment, etc. According to Davis, F. D. (1989) in the original version of Technology Acceptance Model (TAM), PEU and PU were identified as the main determinant for user acceptance and usage of information systems.

Further auxiliary can be found in Nazir, J., Naseem, N., & Khan, A. A. (2015) state the aesthetic theories deal with physical aspects of interface such as appearance of website, placement of different web components like button, navigation bars, text boxes and the utilization of color which cognate to elements and principles of visual design basic.

Some studies fixated on the layout, others on the colour cumulations, or simply on the graphical design of the interface and additionally referred to elements and principles of design fixating on visual design. Although these studies focused on different aspects of the interface, they all are similar in one aspect. All of them rely on subjective judgment to measure the aesthetics of the interface. At some point, Ngo, D. C. L., Teo, L. S. and Byrne, J. G. (2003) state subjective judgment is indeed an efficacious way to determine the aesthetics of an interface, an objective, automatable metric of screen design is an essential avail claimed in his article. "Modelling interface aesthetics."

While design procedures for usability and functionality already have some prevalent principles and time-tested practices of implementation, addressing the emotional level of perception with aesthetic implements when designing for perceived User Experience has not been explored to the same extent. Recent studies (Tractinsky N., Lavie T. 2003; Strebe, R. 2011; De Angeli, A., Sutcliffe, A., & Hartmann, J. 2006) support esse

of a certain relationship between interface aesthetics and User Experience.

1.3 Problem Statement

There is a lot of information out there about various interface design techniques and patterns we can use when crafting the user interfaces and websites, solutions to common problems and general usability recommendations. In Malaysia, there are netizens, or Internet user the ability to choose. It is bolstered by technology that is currently at the fingertips obviously. By using Preliminary Research to helps us to narrow our topic by finding out how much information is out there and, therefore, what is do-able within the page-limits we have been assigned. Besides, it helps us get an idea of which specific aspects of my topic that will want to do more detailed reading about. We have done to disseminated hundred surveys to my respondents and the inquiries of the polls are referring to the article and diary that I as of now read.

Based on preliminary research, 80 percent of my respondents agree that image, typography or font, color, product presentation, product information or contents and layout arrangement is an essential component in making a web interface plan. It is likewise confirmed by Stephen P. Anderson, Author, Speaker, Consultant interested in Psychology & Design, 2009, where he said that six is a vital elements and must be utilized by the web designer.

In addition, the results of preliminary research, we founded that many respondents said they are preferred to look at international cosmetic interface website compared local cosmetic interface design. This is because international cosmetic interface is more attractive design and sometime it will be impact for them to expend much time to see or explore the website.

Therefore, due to this problem, we was very keen to make further study in details about interface design by applying aesthetic theories for cosmetic product and the results of this study will be applied for local cosmetic interface design.

1.4 Research Objectives

The purpose of the exploratory study is to evaluate series of interfaces and their aesthetic features during specially designed experiment and test the possible feasibility of a more extensive study in future. The study is intended to show whether the interface design methods using theories of aesthetics of website interface design can bring better usability and Malaysian netizen needs as requirements. The influences of elements and principles in website design interface is used to enable the researcher to understand about the design of an interface.

This research is significantly to achieve these objectives:

1. To identify the gate in pattern of cosmetic website interface design.
2. To develop a new interface pattern that followed Malaysian netizen.
3. To measure the acceptance level of the new interface design pattern that creates towards Malaysian Netizen's perception.

Accumulated data will aim to avail to reveal if interface aesthetics have influence on users' positive perception of interface and correlation with interaction design concepts such as UX and usability. Set of preliminary design guidelines is to be developed after analysis of the accumulated experimental data and in case of validity of study hypothesis.

Hypothesis: User Experience is amended by aesthetically appealing user interfaces and there is a correlation subsisting between aesthetic value of interface layout and

interaction design qualities of Usability and User Experience.

1.5 Research Questions

To meet the objectives of this research paper, the following questions were addressed:

RQ1: Why local cosmetic website in Malaysia is not as impactful as international cosmetic website?

RQ2: What are the most important factors that influence the viewer to see the cosmetic website?

RQ3: How does the user feel about the web application whose user interface is designed by applying aesthetic theories?

1.6 Research Frameworks

ADDIE model methods will be used for the realization of this study. There have six categories on this model with are: Analysis, Design, Development, Implementation and Evaluation.

The type of research that will be used in this study is qualitative research and quantitative research. Research method will be divided in two phases. In first phase of study is Close-Ended questionnaires will be used to collect the information about viewer perception for design layout, text, color and content management of cosmetic interface design. Furthermore, the problems women face while interacting with cosmetic interface websites will be investigates.

In second phase of research the usability of interface websites will be evaluated with two methods of usability testing and user testing. At the end of second phase of research the usability test results of two usability-testing methods will be compared.

Expected result of research will be.

Research methodology builds on a specially designed experiment involving set of interview session, user’s verbal self-evaluation and questionnaires for further reflection on his experience. Literature review of similar experiments and previously done studies is chosen as secondary supportive tool.

Questionnaire and self-evaluation was culled as auxiliary methodology to accumulate data about user’s emotional experience and avail to quantify of perceived visual aesthetics. The study is divided to four sub-stages (Table 1.1). After performing the experiment and amassing all the indispensable data it will be processed by an interpretive statistical analysis and statistically germane correlations between UX and aesthetics were expected to be revealed.

Table 1.1 Design of the study and Research Methods

Research Problems	Research Questions	Research Objectives	Research Methodology
Malaysian netizen say they prefer to look at international cosmetic interface website compare local cosmetic interface design. This is because international cosmetic interface is more attractive	Why local cosmetic website in Malaysia is not as impactful as international cosmetic website?	To identify the gate in pattern of cosmetic website interface design.	Literature Review from journal, articles and quotation.
			Qualitative & Quantitative data analysis.

<p>design and sometime it will be impact for them to expend much time to see or explore the website. Therefore, due to this problem, researcher was very keen to make further study in details about interface design for cosmetic product and the results of this study will be applied for local cosmetic interface design by using the theories of aesthetic.</p>	<p>What are the most important factors that influence the viewer to see the cosmetic website?</p>	<p>To develop a new interface pattern that followed Malaysian netizen.</p>	<p>Design process: Storyboard and Prototyping.</p> <p>Close-Ended questionnaire</p> <p>Interview session will be conducted.</p>
	<p>How does the user feel about the web application whose user interface is designed by applying aesthetic theories?</p>	<p>To measure the acceptance level of the new interface design pattern that creates towards Malaysian Netizen's perception.</p>	<p>Qualitative & Quantitative data analysis.</p> <p>Respondents will be given a questionnaires and interview session will be conducted.</p>

1.7 Limitation of Study

This research is focusing on finding out user's feelings about the website interface design by applying the theories of aesthetic. The principles about screen layout design, element distribution and colour harmony on the website was covered.

The limited time for the research, the researcher could only provide two websites for this research, one aesthetic-based website and another non-aesthetic website which is the current website design and new website are designed by the researcher.

As the current evolution of websites, there is a large number of websites available on the Internet, that are used for different purposes and with various design styles. It is impossible for the research worker to show all kinds of websites with different themes in her research, since developing a fully aesthetic based website and a non-aesthetic website

for contrasting is time consuming.

In gain, another restriction in this study is the research people. All this research is done inside Kolej Poly-Tech MARA (KPTM) Batu Pahat focusing on the female workers.

CHAPTER 2

LITERATURE REVIEW

2.1 Aesthetics Philosophy

The words aesthetics is derived from the word of Greek αισθητική (pronounced “aisthitiki”), denotement, and “thing perceivable to the sense”. Cambridge's online dictionary (2011) defines aesthetics as “the formal study of art, especially in cognation to the conception of beauty”.

In HCI, the term aesthetic is defined in many ways:

- Beauty - Tractinsky, N., (2013)
- Visual appeal - Lindgaard, G. and Dudek, C. (2003)
- Visual appeal and appropriateness - Avery, C. (2005)
- An artistically beautiful or pleasing appearance - Lavie, T. and Tractinsky, N. (2004)
- The objective design aspects of a product, including form, tone, colour and texture - Sonderegger, A. and Sauer, J. (2010)
- Elements of an interaction design that are carefully orchestrated to enhance and heighten the learner experience - Miller, C. (2011)

“Aesthetics matter: alluring things work better” — states Don Norman (2002), pioneer of Human Computer Interaction field. — “Products designed for more relaxed, congenial occasions can enhance their usability through congenial, aesthetic design.”