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PLAYER-CENTRIC EMOTIONAL DESIGN FOR DIGITAL GAMES: AN EMPIRICAL EXPLORATION IN VISUAL AESTHETICS

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ABSTRACT

The study aims to identify attributes and characteristics of visual aesthetics in order to establish a set of guiding principles of visceral level player-centric emotional design for digital games. This study is important for graphic designers in the field of game design as it may resolve the issue of commercial failure encountered by game designers in the creative industry, particularly on matters related to visual aesthetics. To achieve the research aim, a mixed methods research design was selected, incorporating two phases of research, i.e. the exploratory phase and the confirmatory phase. The exploratory phase involved a qualitative approach to explore phenomena associated to visual aesthetics through semi structured interviews, conducted with five prominent game practitioners. The findings of exploratory phase were used to direct the development of questionnaire survey in the confirmatory phase. A total of 100 graphic design students from four Malaysia public universities took part in this study to confirm or refute the findings revealed in the exploratory phase. Quantitative analysis that involved non-parametric statistical tests, six attributes and twenty-four characteristics of visual aesthetics were confirmed. Only one characteristic was rejected. Besides, sixteen guiding principles of visceral level player-centric emotional design was established explicitly for digital games. The implication, the guiding principles can be applied in game graphic design process which contributing to the theory and practice of game design.

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REKA BENTUK EMOSI BERPUSATKAN PEMAIN UNTUK PERMAINAN DIGITAL: EKSPLORASI EMPIRIKAL DALAM ESTETIK VISUAL

ABSTRAK

Matlamat kajian ini ialah untuk mengenal pasti sifat dan ciri-ciri estetik visual untuk menghasilkan satu set prinsip panduan tahap viseral reka bentuk emosi bersentrikkan pemain untuk permainan digital. Kajian ini adalah penting kepada pereka grafik dalam bidang reka bentuk permainan dan mampu untuk menyelesaikan isu yang berkaitan dengan risiko kegagalan komersil dalam industri kreatif, terutamanya perkara yang berkaitan dengan estetik visual. Bagi mencapai matlamat kajian, reka bentuk kajian kaedah campuran telah dipilih dengan menggabungkan dua fasa kajian, iaitu fasa penerokaan dan fasa pengesahan. Fasa penerokaan melibatkan pendekatan kualitatif untuk meneroka fenomena yang berkaitan dengan estetik visual melalui temu bual separa berstruktur, yang dijalankan bersama lima orang pengamal permainan digital yang terkenal. Dapatan dari fasa penerokaan telah membawa kepada pembentukan kajian soal selidik dalam fasa pengesahan. Seramai 100 orang pelajar seni reka grafik yang menuntut di empat universiti awam tempatan telah mengambil bahagian sebagai responden untuk mengesahkan atau menolak dapatan dalam fasa penerokaan. Analisis kuantitatif yang melibatkan ujian statistik matriks tak berparameter, enam atribut dan dua puluh empat karakteristik estetik visual telah disahkan. Hanya satu karakteristik estetik visual ditolak. Selain itu, enam belas prinsip panduan berkenaan tahap viseral reka bentuk emosi yang bersentrikkan pemain telah dihasilkan khusus untuk permainan digital. Implikasinya, prinsip panduan tersebut boleh digunakan dalam proses reka bentuk grafik permainan yang menyumbang kepada teori dan amalan reka bentuk permainan.

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LIST OF ABBREVIATIONS

3D	*3 Dimensional*
APB	*All Points Bulletin*
HCI	*Human-computer interaction*
HP	*Hypothetical propositions*
Md	*Median*
MDA	*Mechanics, Dynamic and Aesthetics*
MMOG	*Massively Multiplayer Online Game*
SPSS	*Statistical Package for the Social Sciences*
UCD	*User-centered design*
UiTM	Universiti Teknologi MARA
UMP	Universiti Malaysia Pahang
UMS	Universiti Malaysia Sabah
UTM	Universiti Teknologi Malaysia

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CHAPTER 1

INTRODUCTION

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1.0 Overview

This thesis is concerned with the player-centric emotional design for digital games. The chapter starts by depicting the background of research, which includes the justification why game design was chosen as the subject of this study. The term ‘player-centric emotional design’ was coined to denote the branch of visual aesthetics in games, and as a subset of emotional design in psychology. The brief understanding of these key concepts in this chapter are essential to comprehend the problem statement in this study. This, in turn, directs the research aim and research questions. The significance of the study is discussed in order to predict the benefits of attaining the research aim for both game researchers and game practitioners. This chapter lists the operational definition of concepts associated to the subject of the study.

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1.1 Research background

The origin of this research arises largely from the opportunity given to expand the design capability in the Faculty of Art and Design, Universiti Teknologi MARA (Perak). The focus of the expansion is set on the field of graphic design, particularly in games.

Game design was chosen in this expansion because it includes ‘play’ as compared to other media, such as advertisement, animation, packaging, etc which involves neither players nor playing activity (Crawford, 1984). ‘Play’ in the game design serves as a mediator for interaction between players and games (Stockburger, 2006). Therefore, exploring how to design game visuals that encompasses ‘play’ is necessary for graphic designers in the field of game design. In this sense, the steps of designing for ‘play’ should be different as opposed to other media. Hence, this study would offer steps of creation for graphic designers to design graphics for games.

Game design is supposed to be player-centric in nature (Brathwaite & Schreiber, 2009). However, most of game designers tend to design games based on their personal taste, style and perspective, without considering the needs and desires of players (Sotamaa, 2007). The lack of consideration upon players’ desire would jeopardize the commercial value of the games, despite the high quality of game visuals. No doubt, the need to involve designers’ initial intention in games is unquestionable, but they should also consider the view point of players who are the decision makers in purchasing games as consumer products. Indeed, the player-centric

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design approach appears to fit the context of this research as contrasting to designer-centric approach.

Most designers are aware of the substance in designing products that could elicit consumers' emotional response (Karahanolu & Sener, 2009). The emotional response is a result from the biological process of human brain that consists three levels of brain processing: visceral level, the automatic and pre-wired layer; behavioural level, the level that controls daily behaviour; and reflective level, the contemplative part of brain (Norman, 2004). In consequence, this biological process has embarked the notion of emotional design that offers pleasure when consumers own and use a product. For this reason, emotional design would be useful for this study since players are attained for pleasure in games, while giving a chance for digital games to be succeed in commercial world (Trepte & Reinecke, 2011).

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1.2 Problem statement

There are thousands of digital games in the market, but not all of them are successful commercially. According to Nussenbaum (2004), the success rate of digital games is as low as 20%. Worse, the success rate would be driven by chance and luck. Nonetheless, most of the game practitioners do not see this phenomenon as a problem because some designer-centric approaches did yield fruitful outcomes. For example, CastleVille is a strategy game apps on facebook which produced by Zynga Inc has enormously popular to 15.8 Millions of players based on Monthly Active User (MAU) in July 2012 (Colby, 2013). According to Colby (2013), the gameplay design

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of CastleVille is merely designer-centric. This is based on the framework analysis of MDA (Mechanics, Dynamics and Aesthetics) which developed by Hunicke (2004).

The reason why CastleVille has been successful because players are motivated by numerous status updates in facebook made by other players who played the game. It drives them to join the other players to play that game. This reason shows that the designer-centric design is depending to the supplementary factor, not to the game design itself. Therefore, there is a need for research-proven design that would increase the success rate of digital games and avoid wasting design and development resources. The design approach should focus on the gap of knowledge that has been ignored by many designers, which includes the obligation to design good visual. This is necessary since players always engage to appealing game visuals (Schoenau-Fog, 2011).

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Another aspect that contributes to the low success rate of digital games is related to the issue of players' immersion (de Castell & Jenson, 2003). When players fail to immerse themselves in the a game world , they would neither enjoy nor engage with the games (Sweetser &Wyeth, 2005). For example, an action Massively Multiplayer Online Game (MMOG) named as All Points Bulletin or APB. This game was developed by Realtime Worlds Ltd and certainly failed to immerse players when the game development teams seem to ignore what players want in the design of games (Stuart, 2010). This is a typical designer-centric approach as opposed to player-centric design proposed in this doctoral study. As a result, the APB game server was shut down a few months after launching, leading to the closure of Realtime Worlds Ltd (Lahti, 2013).

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Ashes Cricket 2013 is another digital game that failed to deliver the quality expected by players (Weber, 2013). According to Weber (2013), the failure of Ashes Cricket 2013 was due to the mismatch between choice of game engine by the developer and the standard set by publisher, licensors and players. The disappointment of players were based on the glitches in the game, i.e. showing the cricket players like dancing around and throwing balls at all directions (Lee, 2013). Nevertheless, the game design process was indeed not an instance of player-centric approach as the developer seems to ignore feedbacks given by the players (Salter, 2014). This means, the involvement of players' experience were not in place, causing the failure of this digital game in the consumer market.

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1.3 Significance of the study

This study aims to contribute to the field of digital game design by resolving the issue encountered by game practitioners in the creative industry. Several novel concepts, i.e. the notion of player-centric emotional design approach are introduced in this game design process, in which the concepts will be expanded to form a set of guiding principles especially for graphic designers to use the approach. This could support them in identifying appropriate visual aesthetics in games that could stimulate players' immediate emotional response in game playing events. Consequently, the stimulation will enhance the chances of commercial success among digital games.

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1.4 Research objectives

Objective 1: To identify **attributes** of visual aesthetics in player-centric emotional design for digital games.

Objective 2: To identify **characteristics** of visual aesthetics in player-centric emotional design for digital games.

1.5 Research questions

As mentioned in the problem statement of this study, two research questions are formulated as below:

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- What are the characteristics of visual aesthetics in player-centric emotional design for digital games?

- What are the guiding principles of visceral level player-centric emotional design for digital games?

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1.6 Scope and limitation of the study

Four attributes of visual aesthetics were chosen to be the foci of this study: line, colour, space and texture. These four attributes are adapted from the basic initial tools for analyzing visual elements in games through the notion of visual digital game literacy. Visual digital game literacy is a theoretical framework or visual grammar to analyze visual aspect of 3D digital games through the gamescape principles analysis (Nobaew & Ryberg, 2011). According to Nobaew and Ryberg (2011), visual digital game literacy has indicates four visual elements: a) Line would help players to define shape, form and styles of game objects as well as a contrasting area in the game world, b) Color would immerse players' experiences since it can transmit players' feelings of strength, power, and excitement, c) Space would generate perspective illusion of real space which make players feel the presence in the game world, d) Texture could construct the illusion of reality which elicit players' feelings of the depth dimension while in the game world.

Therefore, the characteristics and the guiding principles of visceral level player-centric emotional design to be revealed through this study are tapered into those four visual elements. However, Nobaew and Ryberg (2011) stated that visual elements are supposed to function by the grammar of visual principles. By referring to visual principles in the notion of visual game design literacy created by Nobaew and Ryberg (2011), five visual principles, i.e. balance, emphasis, rhythm, dynamics and perspective has been set as the boundary of this study (see Figure 1.1). This means the process of designing visual elements in games must be linked with the rules of those visual principles. In fact, the design of color, shape and form in game design must be

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integrated with visual principles in order to create different sense of presence for the eyes of players (Nobaew & Ryberg, 2011).

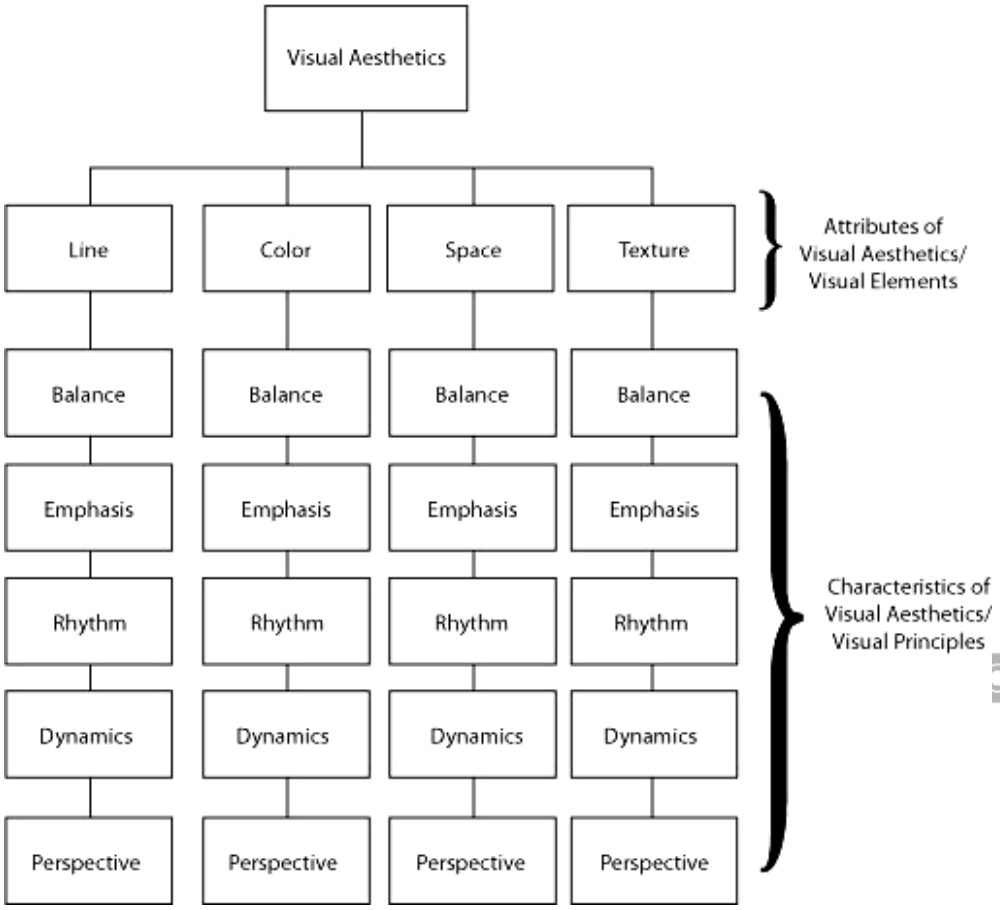

Figure 1.1. The inter-relation between the attributes, characteristics, visual elements and visual principles in visual aesthetics to be examined in this study

The scope of this study is shown in Figure 1.2 has covers the structural elements of games; the senses of perception in player-centric design; and the visceral level of emotional design. The focus of this research scope is the visual aesthetics formed through the intersection between the above mentioned coverage. In this sense, this study is neither an educational research nor a business research; instead it focuses on design research. Design research concerned with the systematic approach of

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