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Gamespace Principles: Basic Approaches for Studying Visual Grammar and Game Literacy

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Abstract: This paper proposes a new theoretical framework or visual grammar for analysing visual aspects of digital 3D games, and for understanding more deeply the notion of Visual Digital Game Literacy. The framework focuses on the development of a visual grammar by drawing on the digital literacy framework developed by Buckingham. It supplements and extends this framework by offering a more detailed account of how visual principles and elements in games can be analysed. In developing this visual grammar we draw theoretically on existing approaches within: the arts, history, film study, semiotics, multimodal analysis, and game studies. We illustrate the theoretical and analytical framework by analysing samples of screenshots and video clips collected from the online game “World of Warcraft” (WoW) where we have conducted our online research. The research data is supplemented by ethnographic data (observation and interviews) collected during a game workshop where students, studying to become game designers, developed a number of games. The visual digital literacy framework we propose consists of five main major components: Gamespace Principles, Interpretation, Style, Experiences and Practices. For the purpose of this paper we emphasise the gamespace principles dimension, which focuses on the analysis of the visual elements and principles. The framework will open for new ways of conducting in-depth analysis of the basic elements of 3D games, as a means of better understanding visual digital media and game literacy. This can prove relevant for researchers and game designers (or those studying to become game designers), as it can provide better conceptual and analytic tools for understanding the meaning of visual elements and principles in games. Furthermore, it is of relevance to researchers and educators as to understand how learners posses or can develop broader critical media literacies and visual digital literacies in education.

Keywords: Visual digital literacy, video games, visual grammar, gamespace principles

Introduction

“Media literacy” or “Digital literacy” has become critical issues within education in terms of supporting learners in developing critical, media literacies. Some of the broader questions these debates raise in terms of media or digital literacy within education are: how can digital media support the development of critical, media literacies, and how do learners perceive and conceive media content and construct meaning. Buckingham (2006) raises critical questions in relation to digital media and proposes a digital literacy framework for understanding and analyzing critical media literacy in education – both in relation to games and other digital media. The framework consists of four essential components, which have been further developed on basis of existing definitions of media literacy: *representation, language, production and audience* [1]. Buckingham (2006) argues that these four essential components can be used as a general framework for producing more specific categories such as web literacy or gaming literacy. Therefore we argue that games can provide one

fruitful educational arena for understanding of how we can analyse and design for the development of critical, media or digital literacies – and more specifically a visual digital game literacy. The main purposes of this paper are: to develop a better theoretical and analytical understanding of the ‘visual grammar’ of games, and to understand how the ‘visual grammar’ might contribute to our understandings of the broader notions of critical digital and media literacies – and more specifically a digital visual game literacy. We investigate the role of visual design in online games by focusing on “World of Warcraft (WoW)”. We analyse a video gaming sequence recorded in WoW ([the video link](#)), as to develop and analyse the role of visual elements in semiotic domains. Semiotic domains Gee (2003) understands as ‘an area or set of activities where people think, act, and value in certain ways’ that recruits one or more modalities (words, images, movement, sound, etc.) [2]. To develop the theoretical and analytic notion of ‘visual grammar’ in online games, we draw on multi-disciplinary methods and consult existing analytic frameworks, including multimodal analysis, the grammar of visual design [3], media discourse analysis and semiotics.

1. The Principles Approach for Reading Games Literacy

Since video games studies were established, many approaches were employed to analyse this new media. Buckingham proposes the framework of digital literacy, and Church (2006) suggests the ‘Formal Abstract Design Tools (FADT)’ to create a framework for a vocabulary in video game [4]. While these approaches are valuable for broader analytic purposes, the more detailed aspects of visual grammar or language have not been explored to the same degree. The theoretical framework which we propose in this paper was developed based on online gaming research and a game workshop. This paper will focus on Buckingham’s idea of ‘language’ to understand the more detailed ‘grammar’ of various forms of communication. The framework is a basic analytical tool to interpret a complex of sign and includes five components: *gamescape principles*, *interpretation*, *style*, *experiences and practices*. For the purpose of this paper, we only go deeper into one of the dimensions (gamescape principles). We only briefly explain the other dimensions, but relate to them in our analysis and presentation of the Gamescape Principles. By *Gamescape principles*, we mean the principle of designed elements in a game landscape or gamescape [5]. It consists of the ‘Principle of Visual Elements’: line, shape, form, color, space, texture, and sound, and the ‘Visual Principles’: balance, emphasis, movement or rhythm, dynamics, and perspective. Both principles create meaning together through a game content and storyline via designed elements. *Interpretation* is the representational meaning of games’ designed elements. These elements are aligned by composition in the game landscape. The interpretation of (visual) designed elements in the video games needs gamescape principles to analyse it as a semiotic structure. *Style* , is the artistic of interpretation in video game genre. It is the whole meaning of the interpretation from game objects, visual principles, practices, and other. *Experiences*, are the emotional experiences and knowledge which a gameplayer respond to the visual elements of game objects and a sense of presence. *Practices*, concern the game activities and interaction which a gameplayer and game objects interact with each other. This includes the participation among game players in both virtual and physical world. This paper will focus on the notion of ‘gamescape principles’.

2. Applying Gamescape Principles as the Basic Analytical Tools

2.1 Classify Games Objects Component and Composition as of Visual Grammar

One way of beginning analysis of a video game (games) is by analyzing the visual objects in games as screenshots and video clips of gaming situations. Leeuwen and Kress (2006) suggested that three-dimensional objects can be placed on a continuum which allows for viewer reading, depending on the position of the viewer relative to the object. We can interpret its meaning at a certain position. Admittedly, it can be useful to analyze objects as belonging to different layers in the visual composition. The screenshot (Fig.1) is shot in third person perspective at the high angle view of a long shot. When classifying the system of objects in the gamescape, it is an advantage to apply fundamental theory from art history and film studies. To classify game objects we can view the gamescape as composed of layers. The screenshot shows us at least three layers of game objects; frontal, middle, and background layer. These layers refer generally the area of game objects position in landscape which uncertainly fix in the game world; it is always dynamic and changing all the time when player moves an avatar or camera position. Therefore, layer is as a reference position in the gamescape.

2.2 Analysis of the Visual Elements in Games

We can classify the visual elements in the video game by employing the ‘gamescape principles’ term to define the visual elements and visual principles. We can analyze lines, shapes, forms, colors, space, textures, and sounds as the basic form of visual design which creates visual meanings or visual experiences as visual learning for players. This analysis proposes the basic initial tools to study and understand visual digital games literacy.

In screenshot (Fig.1) we can see how a Line draws the shape of game objects as floor plan, table, trees, building and other things via contour lines or edges. The Line also creates the Style and signifies the energy of game objects as artistic forms at the base of building and at the main front doors which build from the thick and sharp curved, diagonal and jagged lines. It communicates the feeling of magic power and strong energy of atmosphere in this building area. Thus, lines create the form and shape. The contour line (edge) describes and separates floor plane shapes and builds the space around it. The game player can define each game object by using the contrasting areas which draws from edges or contour lines. For instance, the tree shape is an organic shape in the middle layer, which is separated from the building behind via the contour line.

The texture in Wow’s game imitates the visual texture from the physical world for creating an illusion of reality. It is a low modality with a rough quality which is not enough to dedicate a real texture because the limitation of technical capacity. So, it has to work with other visual elements for creating illusion of reality with higher modality like color, line, shape and other. Texture creates the feeling of depth dimension in game world.

Space and dimension in WoW work with the terms of spacing -third dimension relevant to size, position, and perspective, create the perspective illusion of real space from the dimension of semiotic. The third space allows the player to walk-through, fly-through, swim and dive in the gamescape. The third dimension works with the gravity as a game mechanic; it makes the game more real as the physical world. It engages player to feel realistic in the games as games immersion, it creates the sense of feeling of “being there” or self-presence [6]. The game subjects in the middle layer and background layer also establish the depth dimension of space from overlapping effect. A vanishing point as Figure 1 also forms an eye line and leads the player or viewer to go to the gate through inside the building.

Thus, the third space in three-dimension games makes it different from the two- dimension and other media genre, it gives the authority of power to players interacting and doing things as imagination which they can't do in the physical world.



Figure 1 the three layers of game landscape

Sound and game reaction are very important factors to create the feeling of the third dimension and the perception of reality. When the player is running or walking in a game, the sound of the foot step and movement of camera (shake in the first perspective) imitate the feeling from physical world to game world (as Gee (2007) claims the effective thinking is more like running a simulation than it is about forming abstract generalizations cut off from experiential realities). Sound in WoW consists of dialogue, background music, and sound effects: creatures' sound, footsteps, fighting, etc. that constitute the illusion of game atmosphere. The basic cinema sound design technique was implemented to design sound in video games. It creates the sense of immersion as Zehnder and Lipscomb (2006) state that music in video game can serve crucial functions in the technical, aesthetic, and emotional experience to enhance a sense of presence, an emotional signifier, and the sense of aesthetic continuity [7].

Color is one of semiotic domains because it can immerse gameplayer experiences by signified meaning through perception depending on games culture and context. The role of colour in the modality of three-dimensional visual communication as Leeuwen & Kress (2006) argue, also resembles that of the two-dimensional visuals. When applying color in game, game designers are concerned with the game theme and context. As Saunders and Novak discuss a general rule, the number of colors to use in an interface is the minimum number required to achieve the design goal. Using more colors lessens the visual impact of each and thus reduces the overall effect of colors [8]. Considering the color in the Wow's screenshot, it is the warm color which consists of red, yellow, and orange for adding in the theme as the highest modality. The aesthetic of color builds images which transmit feelings of strength, power, and excitement. Therefore, with limitation of texture, color in WoW has to work with shape and form to create the game environment and the imagination landscape, where we will see trees of WoW in color shade and tint without leaf texture. Color also helps creating theme in each game atmosphere areas.

3.4 Visual Principles as Grammatical Integrating Visual Elements

Visual elements are working under the grammar of visual principles: balance, emphasis, movement or rhythm, dynamics, and perspective. Moreover, visual principles are related among themselves and working together. Designing different aesthetics theme in each Wow's game spaces, game designers consider to control visual elements via the visual principle such as color, composition, spacing, etc. For instance, the perspective, one of the visual principles, relates with a way of how to design color, shape and space in a particular game area, so that it will create a different sense of presence. The third-dimensional perspective (TPP) as designing of player position creates immersion in the game world of player perception through the first person perspective (FPP). In the WoW game, player can select and switch between two perspective views. TPP creates the feeling of power to control an avatar as the high angle view point, on the other hand FPP that player immerse to the game world. In FPP, players interact directly with game subjects from their own eyes rather look through the camera. They experience from their game-eyes an effective thinking; any actions which they did or were done can be felt from their eyes such as eyes (camera) shaking while they run or attack. In this sense, eyes are perceived and active from game's interaction.

3. Discussion and Conclusion

As a result of analysis by using the new visual digital grammar approach as the initial framework (*gamescape principles, interpretation, style, experiences and practices*), it provides a level of analysis that can help us understand more about the visual elements of video games e.g. how they might afford immersion through the use of Line, Spaces, Texture, Colour, and Sound, and also help us understand better the notion of critical game literacy. While e.g. Buckingham's notion of 'language' seems to include some of the same analytic concepts we have explored (e.g. a visual grammar), he does not flesh out in detail how games can be approached at a more detailed level of analysis (nor is this his intention or purpose), we therefore understand the more concrete analytical tools and concepts we have presented in this paper, as underpinning and supporting broader and more general notions of critical digital literacy.

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