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Exploring User Experience from an Emotional Context When Designing Immersive Games for Education

Menerokai Pengalaman Pengguna dari Konteks Emosi Semasa Merekabentuk Permainan Imersif untuk Pendidikan

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Abstract

In the past decade, the science of learning has taken on a fresh approach through the conceptual incorporation video games. Educational games are now regarded as an effective method to engage the present generation of constantly distracted youths. However, the reality is that many educational games fail to achieve their intended goals as they lack the fun and engagement aspects that is so prevalent in video games. Among the reasons, are that educational games fail to engage the learners. Hence, there is a need for a discourse in the enhancement of engagement aspects in educational games through the understanding of emotional context in user experience (UX). This paper aims to investigate the methods of harnessing emotional-based UX practices from experienced and successful video game designers to make educational games more engaging. Six experienced game designers were interviewed, and the recordings transcribed on verbatim basis to allow for analysis. The outputs of the interview narration were mapped on to UX from an emotional context, explicitly for the design of immersive and engaging gameplay. The findings revealed that UX within the context of game development is a crucial element in creating engaging educational games. The crafting of a good UX allows the game to create an emotional link that learners will experience at various milestones within the game. This link allows for the gameplay experience to effectively control a learners' emotional state within the game through an immersive game experience. The use of UX can create a strong engagement factor within the game by allowing the players to be absorbed in the game world. In conclusion, to enhance the effectiveness of educational games, game designers should manipulate the learners' emotion by offering an active role in the narrative structure development of the games; and provoking decision-making scenarios within the game world.

Keywords: UX, immersive design, emotion design, game design, engagement.

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Abstrak

Dalam dekad yang lalu, sains pembelajaran telah menerokai pendekatan baru melalui penggabungan konsep permainan video. Permainan pendidikan kini difahami sebagai kaedah yang berkesan untuk memenuhi perhatian generasi para pemuda. Namun, kenyataan sebenar adalah kebanyakan permainan pendidikan gagal mencapai tujuan yang diharapkan kerana permainan tersebut tidak melibatkan aspek yang begitu lazim dalam permainan video iaitu dari segi pandangan keseronokan. Antara sebabnya ialah permainan pendidikan gagal melibatkan pelajar. Justeru, terdapat keperluan secara pembicaraan dan penukaran idea secara lisan untuk meningkatkan aspek penglibatan dalam permainan pendidikan melalui pemahaman konteks emosi pengalaman pengguna (UX). Kertas penyelidikan ini bertujuan untuk menyiasat kaedah yang memanfaatkan amalan UX berdasarkan emosi dari pandangan profesional pereka permainan video yang berpengalaman dan telah berjaya untuk menjadikan permainan pendidikan lebih menarik. Enam pereka permainan berpengalaman diwawancarai, dan rakaman ditranskrip berdasarkan kata demi kata untuk membolehkan analisis. Hasil narasi wawancara dipetakan ke UX dari konteks emosi, secara eksplisit dalam reka bentuk permainan yang menarik dan menarik. Hasil kajian menunjukkan bahawa UX dalam konteks pembangunan permainan adalah elemen penting dalam pembentukkan permainan pendidikan yang menarik. Penyusunan UX yang baik membolehkan permainan membuat pautan emosi yang sebenar yang akan dialami pelajar pada setiap langkah dalam permainan. Pautan ini juga membolehkan pengalaman permainan terkawal secara berkesan keatas emosi pelajar dalam permainan melalui pengalaman permainan yang mendalam. Penggunaan UX dapat mewujudkan faktor keterlibatan yang lebih berkesan dalam permainan dengan membiarkan para pemain diserap dalam dunia permainan. Kesimpulannya, untuk meningkatkan keberkesanan permainan pendidikan, pereka permainan harus dengan teliti, memanipulasi emosi pelajar dengan menawarkan peranan aktif dalam struktur naratif permainan; dan memprovokasi senario membuat keputusan dalam dunia permainan.

Kata Kunci: UX, reka bentuk imersif, reka bentuk emosi, reka bentuk permainan, penglibatan.

INTRODUCTION

Today's world is inundated with computing technology that has literally revolutionized the world we live in. In 1974, the world's first personal computer, the Altair was launched and in less than five decades, life without the technology of computing is now inconceivable. Most of society carry on their self some form of computing technology - the ubiquitous smartphone is one of them. In less than 50 years, computing technology has totally succeeded in altering society's way of life. More than ever before, our society is highly dependent on technology and this reliance in technology has changed the way people communicate socially, corporately and for entertainment purposes. A new form of computing technology is also evident, the world of immersive technology. Immersive technology is a term used to describe the blurring of the boundaries between the between the physical and virtual worlds which enables its users to experience a deeper sense of immersion into the technology provided (Lee, Chung, & Lee, 2013). According to Suh and Prophet (2018), immersive technology can be described as technology that incorporates a degree of sensory information to its users. Although immersive technology is mostly suggested as a broad-based term describing the virtual reality, augmented reality and mixed reality technology fields, it is argued that immersion has always been

associated with the realm of video games (Foxman, 2018; Suh & Prophet, 2018). Video games is after-all one of the most pervasive, influential, and engaging forms of entertainment utilizing computing and immersive technology.

VIDEO GAMES AND USER EXPERIENCES

The medium that is video games has also evolved tremendously over the past few decades. From its inception and origin in the late 50s, where a young nuclear physicist at the Brookhaven National Laboratory in New York invented the first electronic video game. Willy Higginbotham's use of the oscilloscope for his game paved the way for Steve Russell, a student from the Massachusetts Institute of Technology to programme the very first interactive computer game – 'Spacewars' in 1962 (Brookhaven National Laboratory, n.d; Genres, Renteria & Irwin, 2017; Marras & Gadia, 2019). Video games are no longer the manic button bashing, reflex-intensive arcade forms of video games entertainment that most of the older generations are familiar with anymore. Modern video games are now progressively getting more sophisticated with highly immersive worlds and near-photorealistic visual aesthetics (Hemenover & Bowman, 2018).

The video game industry has always been about innovation and pushing the boundaries of digital technology, with advances in new tactile devices, new visual experiences, and virtual technology in the works. As the society gets more and more reliant on their digital devices and spend progressively more time on it, game developers are looking at ways to improve the game experiences to connect more with their audiences and thus, generate a higher revenue stream for their studios. As more and more consumers are picking up a controller or downloading games in their digital devices these days, the video game industry shows no signs of slowing down. In fact, this just creates more demand for immersive entertainment (Beattie, 2020).

The rise and popularity of modern video games can be attributed now to a determined and common endeavor by game designers to develop games with more and more emotional impact (Hemenover & Bowman, 2018). One of the key methods of creating player immersion and engagement is through the ingenious utilization of the wide range of human emotions that players will experience during a particularly engaging gameplay session. The utilization of these range of emotions is crucial for keeping the player in a state of flow (Bontchev & Vassileva, 2016), a condition in which both a player's skill and the challenge is evenly matched so that the player attains a level of immersion and engagement in the activity and loses track of time (Starks, 2014). This phenomenon describes how players can attain a positive and engaging player experience by combining motivation and the level of achievement (Yee, 2007). Adding the emotional factor into the equation, if there is a method to control or manipulate a player's emotional state, game designers can then figure out how to possibly increase in player's attention, interest, and sense of satisfaction within the video game. In fact, the two most important questions game designers have to ask themselves are, why do people play games and what motivates them to do so (Crawford, 1984)? This boils down to two main facts - the game and the player.

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Aside from playing video games for purely entertainment purposes, players also play games for competitive and social reasons. Some people play games merely for the experience (Bopp, Mekler & Opwis, 2016). While this this may sound like an oversimplified explanation or conclusion, the reality is that video games are designed to illicit an emotional response from its players. The key then to an innovative and engaging game design is firstly to understand the player experience is, what constitutes it and how does it contribute to positive gameplay experience. According to Tan and Tan (2020), the primary aspect of game design is the identification of the game's contextual emotional experience. This is classified as UX which is then used to mold the game's thematic and aesthetic experience. In other words, it is the element that makes up the heartbeat of the game and governs the other host criteria such as the game's theme, concept, aesthetic direction, and narrative structure. As an emerging field in game development, UX is now increasingly causing more and more game development studios to focus towards a more player and experience-centric development approach (Mun, 2019; Player Research, 2017). The use of UX has assisted many game design teams to craft out better gameplay experiences for their players by leveraging and utilizing the understanding of psychology and human sciences. In fact, UX has been an instrumental factor in the creation of many award-winning games over the last few years such as The Last of Us, Clash Royale, and Final Fantasy XV (Player Research, 2017). UX has become a term that denotes the relationship between player and the video game as earlier postulated by Chris Crawford (Calvillo-Gámez et al, 2015). Video game players nowadays are a very multifaceted community that describes their experiences through multiple means from emotions to cognitive-based evaluations; to their gameplay motivations while engaging in video games (Komulainen et al., 2008; Takatalo et al., 2015).

Through the lens of game designers, the word experience in user experience infers the emotions that players experience when they play a game. Dependent on a multitude of factors, players can experience happiness, frustration, joy, anxiety, satisfaction, fear or disappointment; or a combination of two or more emotions while playing the game (Kohli, 2019). While UX may consider the many game-related aspects such as game system, play and psychology (Bernhaupt, 2010) consisting of elements such as cognition, emotion, perception, dynamics, narrative, mechanics, interface, and interaction; UX more importantly refers to ensuring that the game resonates with the players from a pure emotional experience sense. Hence, this revelation of UX can also be applied in the world of educational games. Educational games are an effective application of a formal and structured way to merge the immersive and entertaining aspects of video games and systemic learning into one (Tan & Tan, 2020). There are intricate shifts arising in the minds of the young generation thanks to the emergence of computing technology and in no small part, video games (Judd, 2018, Taipale, 2016). These complex changes have transformed the way the educational community has regarded the concept of learning through the application of video games and its immersive elements. There is now a pressing and emerging necessity to comprehend the intricacies of video games and the application of its immersive elements and concepts into instructional learning methods (Zhonggen, 2019). Therefore, this paper will investigate the emotional elements of UX and how it contributes to the immersive aspects of gameplay.

This paper will explore the attitude, experiences and understanding of game designers through a series of semi-structured interviews to answer the following research questions: (1) what are the factors that establishes UX in the context of game development? (2) what are the levels of emotion that are associated with the video game experience? (3) what elements of gameplay through UX that engages the emotional aspects of players?

RESEARCH METHODS

This exploratory study is aimed at finding out the link between UX approaches in game design and the emotional aspects that engages players. Upon discovering the factors of UX that constitute the game development process, study will then identify types of emotions that a player experiences during gameplay and the elements of gameplay through UX that can engage the emotional aspects of players. As a result, the study will determine a common practice in the utilization of UX in game design. This study identified six UX game design practitioners, forming their individual accounts of observation and units of analysis through a series of qualitative semi-structured interviews to realize the goals of this study.

Selection of Game Designers

The first unit of analysis is GD1, a 20-year industry veteran and one of the pioneer game designers in Malaysia. He was involved in the first massively multiplayer online (MMO) game in Malaysia as lead designer and is now a game design consultant for both government-led game initiatives and the private sector game studios.

The second unit of analysis is GD2, who worked as a lead UX designer for one of Japan's largest game studio. He was involved in an acclaimed action role-playing game released for the PlayStation 4 and Xbox One. The game was a huge success and had shipped five million units worldwide in both physical shipments and digital sales in 24-hours.

The third unit of analysis is GD3, a narrative writer and game designer with over 13 years of game design experience. He was the project lead for a PC game released in 2012 and a writer for two horror-themed mobile games. He is also a screenwriter for several production houses in Malaysia and the UK.

The fourth unit of analysis is GD4, the co-founder and game designer of a local indie studio. Over the past six years, the games developed by the studio has garnered over seven international awards, millions of downloads with and a growing Discord fanbase with more than 10,000 members. He also freelances as a game journalist, having written for several game portals around Southeast Asia.

The fifth unit of analysis is GD5, the co-founder and game designer of a small indie studio which caused quite a stir at the recent regional game awards in 2020. Their game, part of an anthology horror

series walked home with one-third of the awards in the ceremony and cemented their studio as the upcoming Malaysian indie studio to watch out for.

The sixth and final unit of analysis is GD6, a UX designer for a local game studio involved in a UK-based pop culture game and multiple award-winning mobile games. She is also the co-founder of Women in Games Hangout (WigOut) Malaysia and has been listed as part of GameIndustry.Biz's top 100 Gamechangers for 2020.

Semi-Structured Interview

An interview protocol was established to allow each interviewee to cultivate and articulate their own narratives and understanding of the questions. The semi-structured nature of the interview protocol also provided an opportunity for the interviewees to take control of the interview process beyond the structured interview questions to prevent any of the researchers' subjective biasness from the entering the analytical and findings stages. All six interviewees were free to express their thoughts, assertions, and experiences throughout the course of the interview. The interviewees were assumed and expected to have similar level of language ability, although the industry terminologies used differed slightly from interviewee to interviewee.

Four leading interview questions were arranged and validated through a process of face validation by two game designer who understood the subject matter and were able to evaluate if the questions posed to the interviewees was effective and met the demands of a qualitative study. Herewith the list of validated questions asked in each interview session:

- What is the definition of user experience in the context of game development?
- What constitutes user experience within the context of game development?
- How does UX create an engaging and robust video game experience?
- In what way does UX in games engages the emotional aspects of player experience?

The interview recordings were transcribed on verbatim basis to allow for coding for narration. The narration outputs were mapped on to an emotional context in UX, for the purpose of designing immersive and engaging educational games.

FINDINGS AND DISCUSSIONS

Definition of UX in the Context of Game Development

All the interviewees agreed that in any game design process, the first step is to have the user experience (UX) clearly defined. GD2 stated that the core principles of game design have its roots from the study of human behavior in the first place. According to GD6, UX is the experience the players go through when they play the game. It is the immersive aspect of the game, how the game feels. GD1 states that

UX is the entire journey the player must goes through and the experiences they will have from the moment the player thinks about the game until the very moment when they player completes it. According to GD1, "video games is now considered a human experience." That is the main reason why people play games. He adds "People are now recognizing games are vehicle for human experience and that is why UX becomes more important." GD2 unequivocally stated that user experience should be the number one step in the whole game design process. He went on to explain that UX is an emotional context of the whole game experience, and without the emotional context of the game, it will lose the human factor in the game. According to Hemenover and Bowman (2018); and Hromek and Roffey (2009), an experiential focused thought process is a critical component in building a robust and engaging game experience. Gameplay experiences in video games that are specifically linked to an emotional experience that have a tendency to endure in the player's consciousness. The same is applicable to how emotional learning through playing games can assist in knowledge retention. In that sense, it can be stated that UX is the heartbeat of the game, incorporating the entire thematic and aesthetic propagation of the game (Tan & Tan, 2020).

Constitution of UX in the Game Development Context

As stated in the earlier section, UX is based on human emotions. Video games have a potential and exceptional quality as an aggregator of human emotions. According to GD4, UX constitutes everything in the game development process. He adds, "If you look at games right, games are experiences. UX is the thing that makes it possible." GD3 concurred with his statement and added that UX is, "…anything that relates to the person's experience. Everything about the game is UX. In fact, the idea of doing UX actually came from the game industry. It was because people wanted to gamify and to bring the enjoyment of greater experiences." It is this need for experiences that is what gives UX its role in game development. The question is why do the players seek out this level of experiences?

According to Vansteenkiste et al. (2020), all humans have a fundamental psychological prerequisite operating perpetually in their lives. This motivation of needs was postulated by Abraham Maslow and his Hierarchy of Needs model. Displayed as a pyramid structure with hierarchical levels showing the progression of human needs with the bottom levels being the needs to be satisfied before moving on to the higher levels; and ultimately to self-actualization which sits at its apex (de Mézerville López, 2019). The bottom levels are considered as the physiological needs. These are purely biological requirements for human survival (McLeod, 2020) which if not met, the human body cannot function optimally. While functional needs take precedence, self-actualization which sits at the apex is considered the desire to attain fulfilment; and in order to attain fulfilment, one must consider the emotional aspect as well (Kohli, 2019). According to Ghatak and Singh (2019), self-actualization can be fulfilled through entertainment via the trinity of pleasure, amusement, and relaxation. Humans, being social animals by nature, have a constant yearning to be distracted from their own mortality and daily routine; and this is accomplished frequently through a myriad range of entertainment goals; and through that, a host of emotional responses.

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In his book, The Design of Everyday Things, Norman (2013) explains that there are three levels of design that while existing in separate dimensions, integrates together in influencing a user's emotional experience about a product. Baharom et al.'s (2014) Framework of Emotional Design for Games (Figure 1) which is an adaptation of Norman's emotional design concept, integrates that concept within the context of video games which explains the respondent's assertions that the secret to engaging video game stems on the manipulation of human emotions. There are basically three types of emotions at play:

i. Visceral-level emotions which translates into an automatic and arguably quick reflex aspect of an emotional bond that can be linked to appearances and first impressions. It is a superficial type of emotion geared at gaining the player's immediate attention. This type of emotion provides the player with a diversity of visual, tactile, and auditory experiences to induce an affective reaction in the player (Ng, 2018). In short, this is entire game experience as it plays out for the player.

ii. Behavioural-level emotions which translates into the enjoyment a player experiences in the game especially when the player is immersed in the gameplay experience. According to Tan (2019), the moment the game's rules, systems and goals takes a backseat to the experience of the game, it leads to what is known as a positive player engagement for sustained play. Based on the gameplay and UX design, if the player experiences a sense of empowerment and game immersion, it translates into them being drawn into the game thus creating an emotional sense of fulfilment. If the experience is broken, this will create a negative emotion in the players.

iii. Reflective-level emotions which is where the players experience the full force of the emotional responses. This is considered the highest form of emotional responses which considers the player's conscious thought processes and decision-making potential. The intention is the establishment of an emotional connection between the player and the game, lasting even after the completion of the game. According Baharom et al. (2014), this translates into an opportunity for game designers to implement an emotional link to tie in with the players' pride and ownership towards the entire game experience. In short, this is the post-game experience.

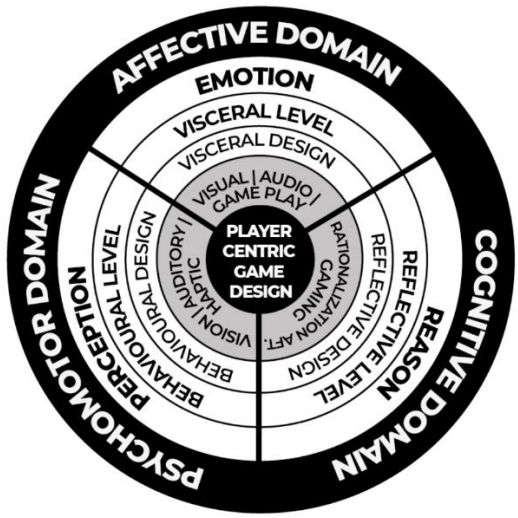

Figure 1: Framework of Emotional Design for Games (Baharom et. al., 2014).

These emotions at play are what GD5 termed as a package of stimuli provided by UX that a player will encounter during the gameplay. GD02 explains that UX is about crafting the moment the player experiences the game and to lead the player towards the emotional outcome and experience that they want the player to reach or react to. UX is about enhancing the whole game through the crafting of the game 'feel' or experience involving the pacing, music, visual aesthetics, and game mechanics into one synergistic game experience using the visceral and reflective emotional levels. Thus, UX is all about immersion through emotions – if the player does not buy into the crafted digital experience, then the illusion of being 'in' the game is lost. He further elaborates by stating, "a non-UX context for a city-building game could be – in this game you can put whatever buildings you want on the grass, you decide where the residential, commercial and industrial areas are and then you build the roads, ensuring that there are no traffic and the routes are all taken care of all while managing the populations' expectations and happiness and to ensure that there are no disasters (natural or man-made). While a UX-based context reads more like this - You are a rookie city mayor fresh out of Mayor School and you get to decide what happens in that city – from taking care of the happiness of your little loyal population to deciding where the best real estates are; and decide if you want to grow the city to unimaginable heights or bring in down in a blaze of glory." This creates the passive experience or emotions from the very start of the game. An emotional journey is experiential and the response to that experience builds a strong and meaningful stimulus; and experiences that are tied to intense feelings of emotions has the capacity to linger on in the memory as emotion has a significant impact on the cognitive processes in humans especially in the area of memory, perception, and attention (Tyng et al., 2017). That is the sort of lingering and lasting game experience that game designers should be striving for when designing new games. Players should remember the game, the experience and all the associated emotions during and after the gameplay session. That is why UX is so important in game design.

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Engaging and Robust Game Play Experience through UX

If emotions are commonly considered a key component of good UX and if the emotions that a player experiences during the game is essential for keeping the player immersed, then it is crucial to understand how to provoke these emotional responses. If a player emotional state could be controlled by within game, this action could lead to an increase in player's attention, engagement, and overall positive response in the game (Bontchev & Vassileva, 2016). The question is how to craft a guide for UX to be utilized as a tool capable to providing a wide variety of emotional experiences ranging from pain and poignancy to a meaningful experience like joy and euphoria.

According to GD1, at the end of the day, what a player really experiences in the game are feelings which are emotions. He adds, "Every action that a player makes, every situation encountered, even the way the players think or have been directed to think will effect that feeling. UX is the architect of that emotional roller coaster.". Thus, video games can provide players with the opportunity to immersed in the narrative structure and game world while making active decisions that affects the outcomes of the game. It is this illusion of reality that creates the level of immersion and thus, allowing the players to have an enhanced identification with their game characters they control through experiencing the levels of emotions ranging from euphoria to distress that their game characters are supposed to experience as well. In short, through the eyes of the character, games afford a meaningful experience for the players if the narrative is compelling and engaging enough.

How UX can Engage the Emotional Aspects of the Player Experience

GD5 explained about the game 'Journey' which was released in 2012 consisted of a player-controlled robed character travelling in a vast desert. The player can encounter other players in their journey to reach a distant mountain but are extremely limited in communication. The only form of communication is through an auditory chime found in dull pieces of cloth scattered throughout the game world. According to GD5, the UX of the game is for the player to feel a sense of powerlessness and insignificance while forging an emotional connection with themselves and other players encountered along the way. The music dynamically responds to all the player's actions and epitomizes the emotional arc throughout the game. He states that, "the scarf – it's a part of the whole experience, the UX. Take away the scarf and it would destroy the emotional build-up and illusion in the game because the scarf represents an essential narrative in the whole game experience. It is designed as a very subconscious thing." According to Bopp et al (2016), a video game can consist of interactive and non-interactive game elements that players can experience and will contribute to their emotional reaction. These elements are emotionally moving game experiences that are part of the narrative that is crafted as the player moves along the game. Emotional elements such as loss, character attachment, accountability, achievement, and atmosphere are the identified components that are experienced as the player 'lives' the experience or the game narrative.

i. An in-game loss is an instance when the character controlled by the player has died or a non-player character critical to the game expires. Loss can also be extended to a loss of an item, skill or even experience points gained in a role-playing game context. Loss creates either a fleeting or a longer lasting form of emotion especially if a large amount of time and effort are already invested in procuring the said items or points. Occurrences of in-game loss can be described as a memorable, unforgettable, or unique experience. According to Prasert Prasertvithyakarn, lead designer at Square Enix's Final Fantasy series (Wawro, 2017), "When Aerith died, I cried a lot."

ii. Character attachment is the feeling of bond or connection with the game character. This bond is the thing that augments the feeling of loss when the character dies. However, it is also got to do with the character growth and the stories that are attached to the character as it progresses through the game. It comes to the point that at varying stages, some players can be so emotionally involved as the player has identified themselves with the character (Bopp et al., 2016). People have this tendency to not only get attached emotionally to physical objects or beings, but they can also form an attachment to characters in media. That is why when a titular character in a movie is killed off, it may create an impact on the audiences. This is the concept of parasocial relationship, a long-term socio-emotional bond that players or viewers form with a persona (Bopp, 2019). This is similar to the psychological need of relatedness (Przybylski et al., 2010) which is the desire to feel as though we are significant and that we matter to others which translates into what the player (or character) does is significant and that their character matters – where the relationships that players form with their characters have become attachments through the feelings of a sense of liking, connection, and closeness (Oliver et al., 2016).

iii. Accountability is akin to having player agency where the game itself allows for the player to act as the player wants, to allow the player full control of their actions or an illusion of that. The term sandbox would be most appropriate here where the player does is free to engage in side-quests in no particular order, or simply exploring the game world at the player's own leisure. This creates a degree of relatively high autonomy in the player and creates a bond with the actual game world as the player's actions in the past can potentially affect the player's future progress and action. This is considered a persistent world with cause-and-effect implications and the emotions that are associated with it – regret, sadness, elation, wonder or surprise. This is a very human emotion that is related to the psychological need of autonomy (Przybylski et al., 2010) which is a sense of independence and the sense of having a certain degree of control over our lives. Humans crave for freedom and the loss of that autonomy creates a sense of imprisonment or slavery which can be construed as a form of punishment.

iv. Achievement is a particularly strong and moving emotion. The sense of accomplishment when finishing a particularly arduous level, quest, or task; or even the completion of the game itself brings a positive predominant surge of emotions ranging from happiness, pride,

amazement, to satisfaction and excitement. Przybylski et al. (2010) explained that the need to feel a sense of success and accomplishment is an innate desire in humans to seek control or mastery over a particular moment, skill, knowledge, or situation. This perpetual desire to feel or achieve a sense of growth or the desire to feel as though one has achieved, actualized, or realized a pre-determined goal is termed as the psychological need of competence.

v. Atmosphere is how the game aesthetics in terms of visuals, sound, music, or tactile feedback. At its most basic level, it may just exist as a direct in-game sensory experience in relation to the player's action recorded as sounds or visual imagery such as flashes of explosions and damage. At its highest level, it becomes an immersive part of a persistent game world where music, sound, and visual elements such as lighting, environment, colour and style can set the tone of the game. The aatmosphere has a profound impact on the player's experience of the game and can make players so emotionally moved solely by the games' aesthetics. Wan Hazmer, the lead designer for Final Fantasy XV stated in an interview that they wanted to create a large part of the game about travelling in the world. He asked this question, "What is one of the most current way of travelling romantically? And the answer is a road trip". Part of the beauty of the game was to then incorporate a photo album that documents that road trip. It was to evoke an emotional response in players by giving them room to tell their own stories and reinforcing those stories with systems through that photo album function. The AI that did it was very bad photographer at first, but it gets better and better. The whole concept of that UX is an emotional connection to the game (Dimitric, 2019).

These interactive and non-interactive game elements form the basis for the consideration of the crafting of UX from a narrative standpoint. It is important to note that narrative here does not predominantly mean storyline but rather the presentation of the game world as it unfolds or will unfold while promoting a set of values or a point of view. The narrative could, however, include the plot which is the series of events recorded in a chronological order deliberately arranged to reveal their dramatic, thematic, and emotional significance. The narrative could also just denote a geographical location, situation, or time to assist in initiating the main backdrop and mood for the game.

This paper posed three research questions (1) what are the factors that establishes UX in the context of game development? (2) what are the levels of emotion that are associated with the video game experience? (3) what elements of gameplay through UX that engages the emotional aspects of players? From the literature reviews and the interview findings, the author has concluded that the implementation of UX in a game design perspective is focused on the relationship between the player and the whole crafted and persistent game through an emotional experience. UX is something that should be implemented together at the conceptual stage of the game and must be consistent and present throughout the gameplay. As Steve Jobs so eloquently puts it during the WWD Conference in May 1997, "You have to start with the customer experience and work your way backwards to the technology." The principles UX works along the same path, it should start with crafting the whole player experience in mind before the work should begin in the game. From a game design perspective,

UX is the consistent and ever-present element throughout the game serving as an emotion-based player experience to influence the game qualities like immersion, fun, presence, involvement, engagement, and flow.

The factors that establish UX in the context of game development is the presence of a strong narrative element that functions as an active method to affect the choices the player makes in the games, the character development, the trials, and tribulations that the players encounter during gameplay or the achievement of specific milestones in the game. The narrative element can also be present as a passive background sensory element as well or in game design nomenclature – the mood of the game. Hence, the key is a good UX narrative is to ensure players can exercise choices that influence the outcomes of events either intentionally or unintentionally, actively, or passively as shown in Figure 2. Such meaningful choices are present in all good video games, although those choices can take quite different forms. Chess relies heavily on long-term strategy—the anticipation of what will happen far downstream when you take a move now. Role Playing games also relies on long-term strategy either in terms of the unfolding storyline or how you craft your character as the story progresses. The challenge is to anticipate consistently on the actions the players can take and the fundamental conflict of wrong choices that makes play engaging. These make up the elements of gameplay through UX that engages the emotional aspects of players. One of these is the concept flow which is an important factor in immersion and engaging game experience (Kuipers, Terlouw, Wartena, Van't Veer, Prins, & Pierie, 2017).

The concept of flow refers to a state where the player's skill and the activity or challenge embarked on is evenly harmonised, resulting in the player becoming totally immersed in the achieving the goal or overcoming the obstacles or challenges, and eventually losing track of time (Starks, 2014). An individual player immersed in the moment does so because they deem it worth doing even if there is no external reward. It is as though the player is caught up in the moment of gameplay even if there are any challenges that is thrown to the player (Ilies et al., 2017). In fact, it could also be highly attributed to these challenges or oppositions that causes this emotion journey that a player will experience. Video game experiences work best when there is an element of partial ambiguity between which actions will result in better or worse outcomes. The actions can have a desired outcome or an alternative outcome – both of which creates a form of emotional response.

Video games can lose their appeal when players either have no basis for distinguishing between choices (too much ambiguity), or when there is clearly only one choice that has any real merit (no ambiguity at all). Thus, the narrative is to ensure that there is a real emotional link that the players will experience at each step of the way within the game. That is how a game can effectively control a players' emotional state within the game. According to Baharom et al. (2014), emotions play a role to engage players towards the other structural elements of game design as postulated by Prensky (2001) such as rules, balance, outcome, and feedback, among others. Visceral-level emotions are oriented towards gaining the player's immediate attention within the game through a diversity of visual, tactile, and auditory experiences. Visceral emotions are integral for promoting emotional responses in

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gameplay, drives the players' physical game activity during the game playing process. Thus, a visceral emotion helps in reinforcing the game experience and is the type of emotion that is mostly associated with building a strong UX presence in the game.

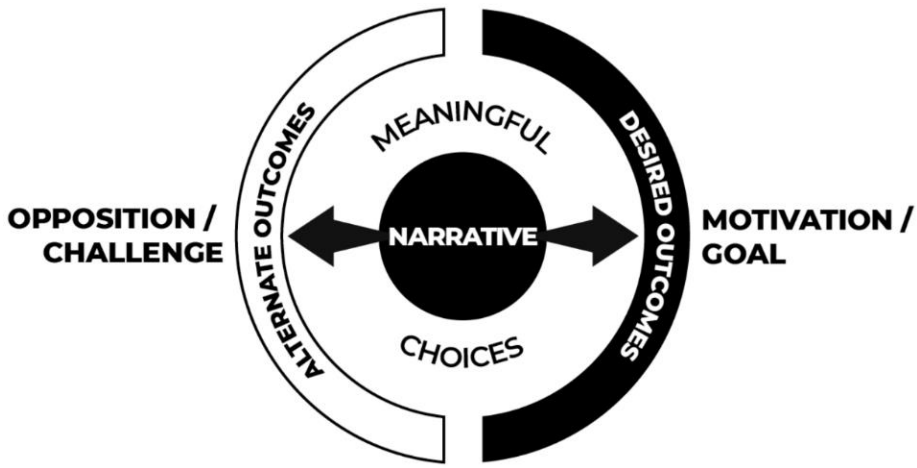

Figure 2: Narrative Outcomes from a UX Perspective

CONCLUSION

All the interviewees agreed that in any game design process, the first step is to have the user experience (UX) clearly It is evident that user experience within the context of game development is a crucial element in creating engaging video games. The same could be applied in ensuring that educational games are also as engaging and maintains the same level of immersion as video games. UX if implemented well focuses on the relationship between the player and the game experience - the active outcome of the game on the player through the use of emotions to create immersion and engagement. Thus, the implementation of UX design should also be the primary step in the modern educational game design process and the consideration of UX should be the very first step, one should take before delving into anything else. This research has explored the emotional dynamics of modern video game design, revealing the emotional power present in games and how emotions can influence the game experience. These emotional dynamics is an intentionally crafted experience by game designers and how much thought put into it is directly related to how engaging the video game could potentially be. Utilizing the role of emotion on visceral level is crucial in the game design process. Educational game designers should design educational games that take exploits the human biological process through psychological needs. By understanding how to craft UX in the preliminary stages of game design using a narrative approach and integrating the understanding of visceral-level emotions, the result is expected to complement an experience-centric game approach in order to produce engaging educational games. In addition to this research revelation and affirmation from experienced game designers on the effects of UX and literature review on the role of emotions in video games, the author has plans to come out

with a practical framework and a guiding principle on how to effectively produce a strong narrative element for UX using visceral-level emotional placeholders in the game design process as future research.

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