A Proposed Counseling attribute framework against game overuse

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Graphical abstract
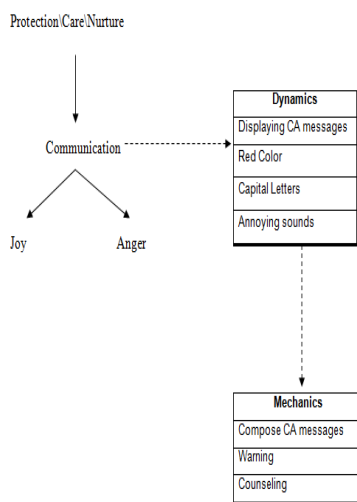
Abstract

In the past decade, online games problematic use such as excessive play and addiction have received tremendous attention not only from the media, but also from psychiatrists, psychologists, mental health associations and gamers alike. To address this issue, game developers have proposed to add warning messages about risk of overuse on the loading screens of certain online games. However, there is yet no evidence that such warning messages have made any serious impact on gamers. The current game design issues, proposed control measures against game overuse and game design frameworks were carefully examined. The objective of this paper is to propose a Counselling Attributes (CA) framework that will address the problematic and addictiveness of online games by adopting streaming counselling/warning messages at every 2 minutes in game design. This approach will increase the awareness of the problems online games posses more closely to gamers. As a result, excessive play, addiction and number of hours spent playing online games will drastically reduce.

Keywords: Counseling Attribute framework, Game design, Game control, MDA, the 6-11

1.0 INTRODUCTION

Multiple studies from various backgrounds have provided confirmation that about 7–11% of gamers seems having serious troubles to the extent of being called or labelled pathological gamers. For example, 8.5% in Singapore [1], 10.3% in China [2], 8% in Australia [3], 11.9% in Germany [4] and 7.5% in Taiwan [5]. Couple of players are known to have spent about 40, 60, and probably around 90 hours per gaming session [6]. Game developers are yet to come up with any social responsibility to deal with this social ill which is gradually creeping into the comfort zone of gamers. Researchers have warned that online game establishment should be responsible for the excessive and addictive usage of their respective products. In Asia, authorities have embarked on measures to frustrate the likely problematic influences of game play by restrictive usage [7]. There is fear that if online game companies are still unable to create limitations for its players as form of control measure, and videogames continues to grow in greater recognition, then Western governments may be forced to follow in the same line of its Asian counterparts [8]. The percentage of online gamers who continue to develop problems and/or turn into addicts may be relatively stable but as online videogames become increasingly better, and more numbers of persons become more aware of them, the addictive level is most likely going to increase [9]. Against this background, it is rather better at the moment to take appropriate steps in addressing the excessiveness and addictiveness of online game with game developers and producers. Thus, the main purpose of this study is to propose a framework which adopts CA

in game design as a correcting measure to excessive play and addiction, since counseling is a major tool in dealing with various human disorders. The role of CA in the model is to alert the gamer about the dangers of excessive and addictive gaming by streaming counseling and/or warning messages at the bottom center of the game's environment during game play.

This paper is divided into three main parts. The first section focuses on online game current control measures which discuss previous steps taken by various countries, researchers and game developers in addressing the issue of game control. The second section illustrates the issues associated with game design in terms of the need for developers as well as publishers to have a critical review of the structural contents of games. Finally, a highlight on the proposed framework that could help addresses the problems of online game excessive play and addiction. Although, the focus of this study is not to stop people from playing online games but to reduce the signs of negative effect that is cultivated as a result of playing online games excessively.

2.0 CURRENT CONTROL MEASURES ON ONLINE GAMES

Various countries' government policies and researchers have suggested that online videogame organizations should endeavour to take social responsibility seriously due to severe problematical usage of their respective games [9]. Contrasting the gambling industry with a long history of mandatory governmental regulation and in which Social Responsibility has turned into a critical problem [10], [11], the online videogame industry has, by and large to date, eluded governmental action. However, there are some secluded instances of governmental interference. To restrain problematic online video gaming, Chinese government regularly shut down Internet cafes and has established laws to reduce the hours of gaming [12]. Thailand's authorities prohibited Grand Theft Auto 4 when a student killed a taxi driver while trying to experiment a scene from the game 'to see if such action can be reproduced in real life as in the game' [13]. Similarly, the Australian classification board rejected the original version of Fallout 3 due to the high level of realistic drug use thus imposing on its developer Bethesda Softworks to develop a censored edition [14]. Manhunt 2 by Take-Two Interactive was initially refused rating in the UK, Italy, and Ireland, but accepted as Adult Only (AO) rating in the USA [15]. However, after censoring the game by blurring that portion during the game's executions and removing the scoring system rewarding players for mostly brutal killings, the edited version was changed to Matured (M) rating in the USA by the Entertainment Software Rating Board (ESRB) [16]. In the United States of America, purchase of 'Mature' (M) or 'Adults Only'

(AO) rated games to kids turned a serious concern to government officials, and resulted to the introduction of Video Games Ratings Enforcement Act by the United States House of Representatives requiring an identification check for M and AO rated game purchases [17]. Most game publishers have resulted getting their controversial games rated by voluntary rating systems [9]. Acknowledging this fact, similar to the warning health messages on tobacco and alcohol packaging, cautionary messages about risk of game excessiveness have suddenly started appearing on the booting screens of popular Massively Multiplayer Online Role Playing Game (MMORPGs). Contesting examples include: *World of Warcraft–'Take everything in moderation (even World of Warcraft)' and 'Bring your friends to Azeroth, but don't forget to go outside of Azeroth with them as well'; Final Fantasy XI– 'we have no desire to see your real life suffer as a consequence. Don't forget your family, your friends, your school, or your work'.* Despite these warning messages by game developers, cases of game overuse still remain highly uncontrollable in the society [18], [19], [20], [21], [22]. In the recent times, a Malaysian game addict died of heart attack after playing online game for 15 straight hours [23].

3.0 ONLINE GAMES DESIGN ISSUES

The MMORPG genre is one of the fastest growing and most popular in the videogame industry. MMORPGs are an Internet-only, dynamic and highly interactive computer-gaming experience with a fully developed multiplayer universe and an advanced and detailed visual and auditory world [24]. While conventional videogames have an ending, or may become boring and repetitive, MMORPGs are an inexhaustible system of goals and success in which the character becomes stronger and richer by moving to new levels while accumulating treasures, power and weaponry [9]. Online video game companies have gradually began to face criticism as a result of the addictive and problematic nature of using some online game products and their violent content [8], preceding research suggested that conscientious videogame operators should endeavor to limit impaired personality control over behavior, which might be a cause for addiction, by adhering to a three-step strategy of integrating good game design with efficient gamers' care polices, and referral services [30]. As a starting point, online videogame developers and publishers should critically consider the structural contents of the game design, for instance, character development, rapid absorption rate, and multi-player features, making online games addictive and/or problematic for a number of gamers [31], [32], [33]. For instance, long quests should be condensed to reduce the amount of time spent to obtain a particular prized item. Blizzard Entertainment, the publisher of World of

Warcraft, commenced some down-tuning of hardcore game-play systems that influenced extreme gaming [9]. In response to a 2010 BBC Panorama documentary on videogame addiction, Blizzard told Panorama in a statement: 'Our games are designed to be fun but like all forms of entertainment, day-to-day life should always take precedence. World of Warcraft contains practical tools that assist players and parents in monitoring playing time' [34]. One way of limiting harm on game players is for game designers to encourage design alteration on time confines as gamers program and plan in accordance to the in-game episode durations [9]. For instance, long quests should be cut short, the required experience points desired to attain the subsequent rank should be reduced, spawns can be timed to be frequently appearing, giving gamers better possibility of getting particularly required stuff and by hasting up the processes of complicated task, gamers can end the game much faster following finishing their tasks. Apply such modification to MMORPGs will demonstrate that game publishers are taking social responsibility very seriously and that they are not solely interested in the revenue [9]. Furthermore, implementing such changes would show that the MMORPG industry is engaging at the transactional level of CSR [25]. The objective of this paper is to harness the true solution to the problematic and addictiveness of online game players. Although, researchers have suggested solutions [9] such as shortening length of games, minimizing the games points required to attain the subsequent level, frequent appearance of spawns by increasing the process of difficult task. However government policies have stressed on shortening the duration of play or compelling developer to sensor certain aspects of games before they are allowed. But game developers are yet to come up with any substantial solutions except short warning messages about the risk of overuse appearing on the loading screens of popular MMORPGs. In order to address this issue, this paper is proposing adopting Counseling Attribute framework in online game design to alert gamers about the dangers of excessive and addictive gaming. Such alerts or warnings are expected to help the gamer in becoming conscious of the time spent during gaming. This could help in reducing excessive play, addiction and also the consciousness of the time spent in playing online game. Yousafzai [9] has clearly pointed out that the general game design process could be re-examined. Hence, there is a need to examine existing game design frameworks:

4.0 GAME DESIGN FRAMEWOKRS

In determining the counseling attribute framework, the existing MDA and the 6-11 frameworks popularly used by game designers and developers were examined. The counseling attribute is developed based on the attributes from both frameworks as discussed below.

4.1 MDA Framework

Two game design frameworks (MDA and The 6-11) were examined in this research to determine the counseling attribute framework. Firstly, Mechanics Dynamics and Aesthetics (MDA) Framework was developed by Hunicke, LeBlanc & Zubek (2004) and is regarded as the most popular among game developers. The framework formalizes the consumption of games by breaking them into their distinct components as Rules, System and Fun. It also divided the design process into three major parts as Mechanics, Dynamics and Aesthetics [35]. MDA further categorized "fun" as sensation, fantasy, narrative, challenge, fellowship, discovery, expression and submission. However, the aesthetics component that creates the respective player experience in a game is usually a combination of "fun". Every game chases several aesthetic objectives, through various levels [35]. The MDA concepts are defined as follows;

- Mechanics: the rules (actions) gamers manipulate to be able to play a game.
- Dynamics: the actions that manifest after manipulating the rules (Mechanics)
- Aesthetics: the emotional result evoked in the player which normally lead to a "fun" experience [35]

MDA [35] classify "fun" in games into 8 different gaming experiences as shown in Table 1.

Table 1 Game classification

	Fun	Experience
1	Sensation	Sense-pleasure
2	Fantasy	Make-believe
3	Narrative	Drama
4	Challenge	Obstacle course
5	Fellowship	Social framework
6	Discovery	Uncharted territory
7	Expression	Self-discovery
8	Submission	Pastime

For MDA game design framework, some Aesthetics components are combined to develop games that create good player experience. Looking at games like Charades, Quake, the Sims and Final Fantasy each combined different Aesthetics components in their respective design:

- Charades: Fellowship, Expression, Challenge.
- Quake: Challenge, Sensation, Competition, Fantasy.
- The Sims: Discovery, Fantasy, Expression, Narrative.
- Final Fantasy: Fantasy, Narrative, Expression, Discovery, Challenge, Submission [35].

4.2　The 6-11 Framework

Secondly, the 6-11 framework developed by Dillon in 2010 described the game design process as MDA but the classic difference is the provision of a new taxonomy for game aesthetics by making it easier to relate to game dynamics. This should result to a clearer and easier understanding picture of why a game is fun and how players emotional experience develop throughout the game process. The framework specifically focuses on the six emotions and eleven instincts as described by Dillon [36]. In particular, the six emotions are:

- Fear: one among the mainly familiar emotions in games nowadays. Appreciation to the latest technologies about how easily now possible to represent pragmatic surroundings and location that allow fear to be easily triggered: remember all the current survival horror games or dungeon explorations in RPG games as numerous examples.
- Anger: Represent a powerful emotion commonly used as a motivational feature to replay a game or to precede in the story in correcting any mistakes that bad guy does.
- Joy/Happiness: Possibly, one among the most significant emotions for having a fun gaming experience. Normally it is an outcome of the player success in some mission and being compensated by means of power ups, story advancements and so on.
- Pride: rewarding players and making them feel good for their achievements is an important inspirational dynamic for encouraging them to get further better and progress in the game to face even more difficult challenges.
- Sadness: Despite being an emotion that doesn't seem to match with the concept of "fun", game designer and developers have always been fascinated by it as a way to reach new artistic heights and feel more difficult and mature themes.
- Excitement: most games worth playing should achieve this and it ought to happen naturally as an end result of effectively triggering other emotions and/or instincts.

While the eleven core instincts taken into considerations are:

- Survival (Fight or Flight): this is the most primary and primitive of all instincts, it is triggered when someone likes another living creature, or faced with a real life danger. Based on the circumstances, the brain will instantaneously decide whether to face the threat and fight for our life or avoid it by through possible way of escaping. This is widely used in many modern videogames.

- Self Identification: It is normal for persons to tend to admire flourishing individuals or elegant fictional characters and obviously start to imagine of taking up their character.
- Collecting: This is a physically powerful instinct that could link to diverse emotions that has always be generally used in games.
- Greed: often gamers have intention to go beyond a simple "collection" and start amasses much more than actually needed just for the sake of it. Whether we are talking about real valuable items or just goods and resources we need to build our virtual empire in a strategy game, a greedy instinct is likely to surface very early in our gaming habits.
- Protection/Care/Nurture: arguably the "best" instinct of all: the one that pushes every parent to love their children and everybody to feel the urge for caring and helping those in need.
- Aggressiveness: the other part that normally lead to aggression when coupled with greed or anger. It is implemented in numerous games.
- Revenge: a further powerful instinct acting as a inspirational force normally used in games to progress the storyline or rationalize why we need to exterminate some bad guy.
- Competition: deeply linked with the social aspects of our psyche and one of most important instinct in relation to gaming, e.g. leader boards. Without it, games would lose much of their appeal.
- Communication: the necessity for communicating ideas, thoughts, or just gossip, was one of the most influential for human evolution and it can be utilized to immense effect in games too, while seeking information by talking to a non-playing character (NPC) or while sharing experiences with other players in chartrooms and forums.
- Exploration / Curiosity: Every human discovery, whether of a scientific or geographical nature, have been made complemented to these instincts that always pushed us towards the unknown.
- Colour Appreciation: scenes and environments full of vibrant colours naturally attract us, including the more and more detailed and colourful graphics we see in modern games.

The 6-11 framework portray how emotion and instinct relate with each other to build a network or sequence that should generally end up with "Joy" and/or "Excitement" providing players with a meaningful and fun experience [36]. This framework has been utilized in game development and previous research works [36], [37], [38], [39], [40]. Although, MDA framework is largely well know and used by game developers, researchers and scholars but it will be necessary to consider the integration of the 6-11 and MDA frameworks in realising this research objective. Both MDA and the 6-11 elaborates more on the aesthetics or fun experience of the player during the game process which is of major concern

in this research. However, the 6-11 framework has described the aesthetics process more in detail and in a clearer manner for easy understanding and implementation. For example, in the Charades game, it is rather difficult to describe Fellowship, Expression and Challenge of MDA than the emotions and instincts described by the 6-11 framework.

5.0 THE PROPOSED COUNSELING ATTRIBUTE IN GAME

Counselling Attribute in game can be explained better based on the 6-11 and MDA frameworks. The aesthetics experience of the player is always the major focus of the game developers, leading to developing games that will immerse the player in their games [41]. The general focus of the Counselling Attribute framework is to enable emotions and instincts to interact with each other to develop a network or sequence that will generally end up with "Joy" and/or "Excitement", providing players with a significant fun experience [36]. The instinct "Protection/Care/Nurture" is the deciding factor applied in the Counselling Attributes (CA) framework to take care of the player's excessive and addictive gaming habit. Its initiative is to "*push every parent to love their children and every person to feel the impulse for caring and helping those in need*"[36]. This research will take advantage of the "Protection/Care/Nurture" instinct to initiate the Counselling Agent through "Communication" instinct by communicating "Composed CA messages" to be displayed on the bottom center of the screen during the game process, to remind players of the consequences of excessive and addictive gaming habit.

The design of the counseling attributes includes two sections as player and agent. Both sections are integrated together in the game to produce the desired result. Player and agent as well as its contents expresses the various aspects of the game's mechanics. Conceptual design of counseling attributes integrates various disciplines such as Psychologists, game designers and developers. The design concept consists of two aspects described as player and agent. Although, player is further divided into pop up dialog and banner, but agent and pop up dialog aspect of player should stream pop ups messages, while banner originating from player display banner messages during the course of the game. Pop ups and banner messages of player should be stored in the player database while the pop ups message of the agent are stored in the agent database.

The "Curiosity" instinct will motivate the player to find and read the counseling attribute messages in the form of pop up dialog, streamed during game play at every 20 seconds. These pop up dialog will be generated by the mechanics in the form of counseling or warning messages displayed at the bottom center of the gaming environment. The

dynamics represents reading the pop up dialogs that could result to thoughts adjustment in the player. Change in thoughts could lead to positive emotional change associated with the pessimistic emotions generated from dreadful thoughts in a normal game. Positive emotional change is expected to reverse the detrimental behavior associated with the dreadful thoughts acquired from playing the normal game. As these changes begin to take place, excessive gaming and addiction could be corrected leading to players awareness in limiting their gaming time. The final result is excitement to the player, his/her family and friends.

5.1 Counseling Attribute Framework (Player)

The following expresses the player's Counseling Attribute Framework in a first person shooter game. When the player enters the gaming pleasant environment, "Curiosity" instinct initiates exploring and roaming in the environment by moving around and operating (walking, and opening/unlocking hidden passages). Also, finding and reading the Counseling Attribute messages. A sudden encounter with a dangerous monster will initiate the "Survival" instinct. Survival is either by fighting or escaping. Fighting requires aiming, shooting, striking, blocking or casting a spell. Escaping will require the player to start running, hiding or jumping away from the monster which ends up with "Excitement" emotion as described in Figure 1 below.
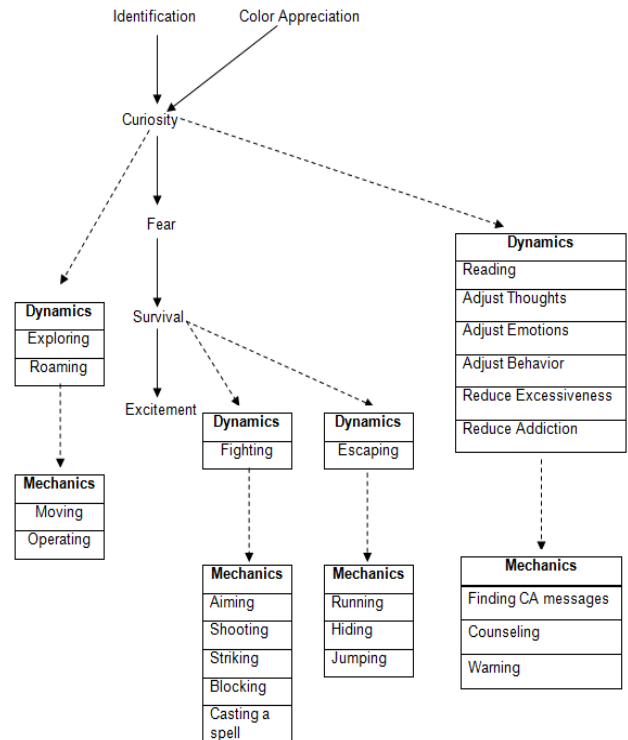

Figure 1 First person shooter game [36]

5.2 Counseling Attribute Framework (Agent)

The agent is the second part of the framework whose responsibility is to take care of the player's well being. Excessive gaming is addressed by the agent through pop up dialog control. However, if the player stops gaming within 30 minutes of play, the agent ends up with "Joy" emotions. After 30 minutes of play and the player refuses to stop, the agent notices excessiveness and "Anger" emotion is triggered to action through "Protection/Care/Nurture" instinct.

Figure 2 represent the Counseling Agent with two instincts (Protection/Care/Nurture & Communication) and two emotions (i.e., Joy and Anger). Its Mechanics initiates the messages that are rendered by its Dynamics. The Aesthetics generated on the player through the "Communication" instinct ends up with Joy or Anger. The "Protection/Care/Nurture" instinct whose responsibilities is to identify problematic or excessive play, triggers the "communication" instinct to initiate sending more frequent, angry or irritating messages in the form of pop up dialog. Such messages as counseling or warning in nature are composed by the agent's mechanics as shown in Figure 3 above. The messages which are streamed at the bottom center of the gaming environment becomes more frequent at every 15 seconds in red color, capital letters with annoying sounds are aimed at driving the player to stop gaming. This action is expected to activate the thoughts, emotions and the behavior response to stop.
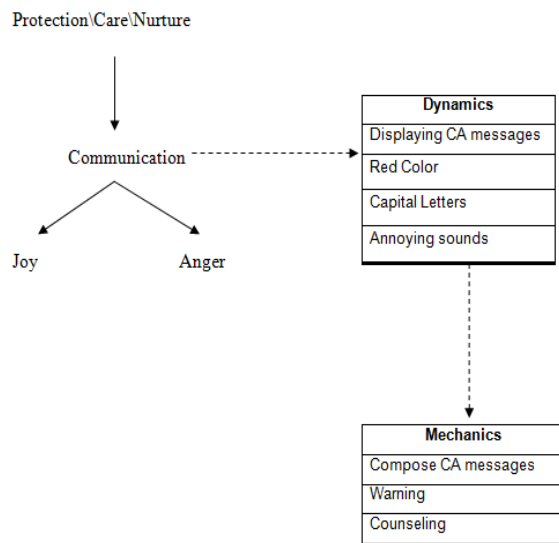

Figure 2 First person shooter game (Agent)

6.0 CONCLUSION

Game developers despite adding warning messages at the loading screen of certain games seems not to make any contributing impact to the expected social responsibility of controversial industries. The effects of online games excessive play and addiction are enormous. Although, authorities of various countries have tried to adopt diverse measures against online game overuse, while game developers have adopted warning messages about risk of overuse which seems not to be making the desired impact. Researchers have advised for developers to make design changes. Despite different approaches to deal with these challenges, cases of game overuse still remain highly uncontrollable in the society. Hence the proposed solution of incorporating Counseling Attribute framework in game design could be viewed as an alternative solution to cub the menace of excessive play and addiction. This research which is presently in its implementation stage is based on integrating counseling in game design, by taking the advantage of counseling as a major tool to correcting various human disorders. The future work of this research is to evaluate the framework which is one of the research objectives. A quantitative experiment will be carried out on two different groups. First group will play the game with Counselling Attributes while the second group will play the game without Counselling Attributes. The result of both analyses will be compared with the optimal content for warning messages for decision making and problematic gambling reduction [42]. The game addiction scale for adolescent [43] will be used to evaluate excessive and addictive gaming as the research respondents will be adolescents.

Acknowledgement

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