



**PERCEIVED GRATIFICATIONS OF ONLINE GAMES: THE CASE OF “CANDY
CRUSH**

A Thesis

Submitted in partial fulfillment
of the requirements for the degree of
Master of Arts in Media Studies

By

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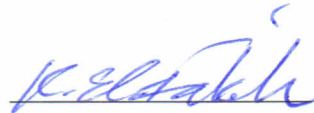
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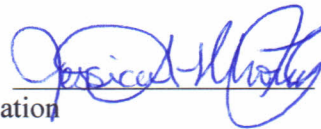
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Dedication

I dedicate this thesis to my parents, who have always pushed me high and have always wanted me to achieve excellence whatever I returned.

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Abstract

The purpose of this thesis was to study how individual psychological factors, including perceived gratifications, loneliness, and boredom, have a correlation with mobile social game uses and addiction. Notably, the study laid emphasis on the case of Candy Crush in particular to assess the possible relationships between the mentioned above variables.

The study covered high school students in the Maten region Lebanon. The sample size was 90 students, 30 students from three high schools based on purposive sampling, which is a non-probability sampling method. The findings of the study showed that boredom, loneliness, and perceived gratification are closely correlated to Candy Crush addiction.

Keywords: Candy Crush, Addiction, Boredom, Loneliness, Uses and Gratifications

Chapter One: Introduction

1.1 Background of the Study

Games have been an important part of all cultures. During the 40s and 50s in Lebanon, children used to play with each other, they played with marbles, and they even created physical games to entertain themselves (Sit, Lam & McKenzie, 2010). Comparing that with the games children play today, the concept of body movement and physical games almost disappeared in children play. According to Sit, Lam & McKenzie (2010), children today prefer to play online games rather than physical games.

According to China Internet Network Information Center (CINIC, 2014) wrote that the revolution of online gaming started in 1996 with the spread of the internet. The internet usage continued to grow to Europe and Eastern Asia. This wide spread of internet usage created new channels for almost all fields. CINIC (2014) reported that by 2012 the usage of the internet became viral. Everything converted into digital. Online shops existed, online schools, online libraries, and definitely online games. CINIC stated also that online gaming is one huge section in the digital era. Organizations are competing in becoming innovative in video-gaming and online gaming. The integration of 3D technology within online gaming brought online gaming into life. CINIC (2014) also emphasized that the integration of online games with mobile phones contributed to the success of online gaming. With that integration, gamers can now have their games with them wherever they go (CINIC, 2014). Sit, Lam & McKenzie (2010) stated that the innovation in online gaming and its resemblance to reality increases online game addiction. Jadia (2014) also said that making online game mobile, via downloading them on mobile phones contributed to online game addiction.

Considering all of the above, the factors that may lead to online addiction should be studied. It is essential to identify what makes high school students to become that much attracted to online gaming. The question becomes what factors influence them?

The purpose of this thesis is to study how individual psychological factors such as perceived gratifications, loneliness, and boredom are related to mobile social game. In order to study the relation between the above factors and social gaming, a mobile game application called Candy Crush will be studied in this thesis. Candy Crush was chosen because its players use the application everywhere, in the bus, at home, on campuses, and some students play it even in the classrooms. Therefore, the reasons of possible addiction to video games such as Candy Crush, Farmville, and Angry Birds can be explored especially that some players shop online for gaining lives.

This thesis attempts to understand how the excess of playing Candy Crush game may lead to possible addiction by identifying how psychological factors such as loneliness, boredom, and gratification contribute to this addiction.

1.2 Objectives of the Study

This thesis aims at studying the relationship between Candy Crush psychological factors including but not limited to perceived gratifications, loneliness, boredom, and isolation. The study focuses on the case of Candy Crush in particular to assess its possible relationships with the above mentioned variables. Candy Crush is used also for this study because its players are capable of using the gaming application everywhere since most of the games do not require internet connection.

1.3 Research Problem

Online and offline games are supposed to be used for fun and pleasure. With the rapidly expanding mobile services, gaming has turned into a portable social recreation (King, Delfabbro

& Griffiths, 2010). In the case of Candy Crush, players are simply required to match three candies of the same color. According to Sjöblom (2015), this qualifies the game to be very addictive as they gradually pass levels and gain satisfaction giving the brain small rewards. As such, many people might engage in the use of online games to escape loneliness and boredom. Jadia (2014) suggests that people will try to overcome boredom by seeking sensations that provide physiological and psychological stimulations which are rewarding. Therefore, online games can possibly provide the excitement to cope with the potential loneliness and boredom. Dealing with negative emotions such as boredom and loneliness has, however, been found to lead to gaming problems that include isolation, and anti-social behavior (Jadia, 2014).

1.4 The Need for the Study

This study is important for online gaming providers and users all alike. For the providers, the findings of the study will enable them to incorporate the socio-technical perspective of the effect of online gaming on the users. As for the users, they will understand the possible psychological effect that online gaming addiction may have on their lives.

Chapter Two: Literature Review

2.1 Introduction

This chapter reviews the literature related to the topic of playing Candy Crush through mobile phones. Playing Candy Crush has been a trend that is growing exponentially (Dockterman, 2013). Jadia (2014) wrote that Candy Crush is a game played on mobile devices (including mobile phones and tablets). Such mobile social games can be characterized as being movable, easy to use, less time to be spent on each round, and being able to facilitate social interaction. However, playing Candy Crush, or any other mobile game, is linked to a range of perceptual, cognitive, behavioral, affective and motivational impacts and sociability” (p14).

2.2 Features of Social Gaming

Peter Askelöf (2013) demonstrated that social features have great retention power, because they make the game an experience with friends. To make the research clear, the social gaming platforms are divided into two major categories: mobile social networks, Facebook and Line chat. Initially, “Facebook is one of the main social networks in the world. It has more than one billion unique users per month, in other words, more than 15% of all people on earth.

Furthermore, the invite friend feature is used to bring other users from social networks to inside the game. Usually, it is a feature used in games on social networks. This interactive gaming through social media causes communication and sociability to players and this gives motivation and achievement to convert the entertainment to addiction seeking achievement through wining stages (Bartholow & Anderson, 2012). “In 1950s, social and psychological factors, which were assumed to be the predictors of different media consumption, started to be investigated” (Wimmer & Dominick, 2009, p. 49). Mendelsohn (1964), for example, found “several psychological functions of radio listening including companionship, changing mood, and counteracting loneliness or boredom” (p. 63). In addition, in a television usage study,

Schramm, Lyle, and Parker (1961) “pointed out that predictors of Mobile Social Game Addiction, five social factors such as relationships with parents and peers would affect television usage among children” (p. 132). These studies and others conducted during this period reflected a change from the “traditional effects model” to a more “functionalist perspective” of mass media research (Ruggiero, 2000, p. 6). This section has shown the frequent obsession about social features and online gaming platforms, the next section illustrates and elucidates on the negative perspective of social video games.

2.3 Factors that Attract People to Online Games

A lot of people embrace online gaming because the innovation entertainment incorporates social aspects such as competition, cooperation and communication. Competition plays a very important role in online gaming as it does in most other social activities; the purpose of the concept is to grant player’s self-gratification. Xu (2014) considers competition, cooperation and social influence in online games as a vital determinant of enjoyment since it stimulates some sort of emotional reaction when a player wins or loses in a competitive situation.

Xu (2014) defines competition as “a process which develops by competitive actions performed by individuals or social entities in order to maintain their own interests to the disadvantage of others” (p. 23). Social competition in gaming can be divided in two: competition between people and competition between people and artificial intelligence. However, there is an observable difference between the two categories. According to Mandryk, Inkpen and Calvert (2006), online gamers experience increased physiological responses when they play against each other than when they play against an artificially controlled opponent. Similarly, Weibel et al. (2008) agree that online gamers would rather choose to engage another person in social competition over an intelligence-controlled opponent. The use of leader boards in many online game platforms encourages competition between players. The leader boards are defined by King

et al. (2010) as using player tracking systems to monitor a player's statistics and progress in the game in relation to other players.

In the same concept, Candy Crush essentially uses tracking systems to monitor the player levels and progress which tends to be a game of luck, where one's success is dependent on the array of colors you have randomly been given rather than your swiping skills. This implies that the reward schedule becomes unpredicted: players lose more often than they win, and they never know when the next conquest will come. Rather than discouraging users from playing, this actually makes the game even more alluring than if they won easily. This psychological strategy is referred to as a variable ratio schedule of reinforcement and is the same tactic applied in the slot machines; whereby, one can never predict when they are going to win, but they win, it is just often enough to keep one coming back for more. According to Ruggiero (2000)

Cooperation was considered as a factor that attracts players to online games. It could be a broader aspect of online gaming, but it contributes to gaming appeal. Along with the willful interaction between players, it also includes the subconscious influence players can have on one another. Players show cooperation and help the game to be more enjoyable by analyzing massively multiplayer online role-playing games. The online games that are based on huge virtual environments require social interaction among players to execute some tasks which will eventually have a collective reward to them all (p. 13-27).

Candy Crush effectively puts the user into "time out" after about five losses. This implies that you can never be totally gratified when playing and continuously leaves you wanting more. And by inhibiting players after a certain level, the game actually turns out to be even more rewarding when one is let back into Candyland. This is how Candy Crush makes its revenue, by letting you buy back into the game if you are enthusiastic to purchase extra lives.

Social influence also plays a major crucial part in cooperation particularly in online video games. Hsu et al. (2004) split up social influences in online gaming into social norms and critical mass. In online games, social norms are applicable much more than critical mass. Internalization, a distinct process of social norm is shown in Reference Group Theory, which claims that individuals look up to a group or leader and take on their values and goals as their own. It is worth noting that online games do operate as social hubs. This is because outside regular gameplay, players do interact with each other, get to know each other and if need be, offer each other the help needed to win an online game. This precise competition concept plays a very important role in online gaming as it does in most other social activities; the purpose of the concept is to grant player's self-gratification. Ghuman et al. (2012), explain that "353 players were asked about their social experiences with video games whereby, over 80% of them confirmed that they had become good friends with a person or people they met through online gaming" (p. 63). The researcher's statement appears to make sense simply because online games and online gaming platforms are an ultimate community of people.

So many questions abound as to why many people like playing online video games and spending hours on them instead of doing other things. In severe circumstances, teens have been cited to miss their classes just to complete a difficult level on a game (Miller, 2013). Well, experts in human behavior allude that different people would do the same thing but for different reasons. Psychologists such as Marco Lacoboni argue that perhaps the concept of "mirror neurons and saving the world" is linked to the reason why some people like online video games. The explanation for this sentiment is that there exist nerve cells in the human brain that are called mirror neurons. These neurons enable a player to put themselves in the shoes, feelings, experience and emotions of another. As such, by playing an online video game for example, the player experiences the same emotions the hero "he or she" is controlling in the game

experiences. In other words, when the hero saves the world the player feels like he or she has saved the world as well. For Candy Crush, it is harmless. In the case of Candy Crush, players would put themselves in the place of a hero and would want to reach high levels. One doesn't ever have to pay if you don't want to, and theoretically you can stop anytime you feel like. Another thing that could be drawing people to online games might be for the reasons of problem solving and self-esteem boosting. This phenomenon occurs in the sense that most games contain certain puzzles that boosts players' self-esteem when they solve them. Even games that contain no puzzles make people feel good about themselves as they master them. For Candy Crush, by letting players play up to a certain level, and then inhibiting them after a certain level, the game actually turns out to be even more rewarding when one is let back into Candyland. For the other, by defeating all other human players in an online game, one would always walk head high feeling superior to others and with an elevated self-esteem (Chen, 2014).

According to Ghuman et al. (2012) there are particularly two high ranking reasons as to why people may engage in online action games or fantasy movies; they include stress relief and redemption which are comprised in the Uses and Gratifications aspects. The argument is that "life is full of stressful events and one of the best things a person can do to defeat stress is to escape to another world for few hours. There could be a host of places to hide oneself but for some reasons, people in stressful situations seem to have found online games to be the best to live in a virtual world for some time while forgetting about all what's going on in the real world (Groner et al., 2007). Redemption on the other hand has it that when people fail to live up to their dreams they might escape to a fantasy world where they can get another chance to fulfill them" (Ghuman et al., 2012). The fantasy world for them of course is the online gaming platforms. In the same way, Candy Crush gives one some sort of redemption and takes one to the fantasy world while forgetting all what's happening in the real world. In the case of Candy Crush,

players use the game to escape from their reality and live the fantasy of Candies. This would allow them to release stress and live in a virtual space of their own away from their realities.

2.4 The Negative Sides of Social Video Games

As a subset of behavioral addiction, Griffiths (1996) proposed an extended concept of “technological addiction”, which was operationally defined as “non-chemical addictions that involve human-machine interaction” (p. 47). Some users may go beyond the aspect of gratification to become addicted to social video gaming (Ng & Wiemer-Hastings, 2005). Social video games cause a kind of isolation where people spend less time with friends but spend more on gaming. This also causes confusion about fiction and reality in life as real-life experiences are limited (Greitemeyer & Osswald, 2010). In the case of Candy Crush, when players play the game, they get a feeling of pleasure, when this happens they would continuously want to play. When players start preferring playing the game over socializing and their education and work, here addiction starts. They start playing unconsciously.

Another side effect is suffering relationships whereby the connection with friends and family members suffer if the user or player spends more time gaming than talking to or going out with their loved ones. According to Grodal (2000), an “On-Line Gamers Anonymous website” records that gaming may be negatively affecting the user's life if he or she only wants to talk about video games, lies to cover up the amount of time he or she spends playing, and contends any opposite reason with others over his or her excessive gaming.

Correspondingly, there is an increased aggression whereby the video games that frequently feature violent scenes and actions may lead to addiction for players to be desensitized to violence. Kuss & Griffiths (2015) state that players who become engrossed in first-person shooter-style video games, for instance, users may adopt a detached perspective of society or develop an aggressive thoughts and predispositions.

Lastly, the poor performance whereby long hours while playing video games can destructively affect the player's performance in school life if he or she is thoughtful about video games. One can fail to work at his or her optimum level because of exhaustion from late night video gaming.

2.5 Addiction to Online Games

“Gaming Addiction” is “a term used to describe the phenomenon of excessive problematic gaming which include salience, mood modification, tolerance, withdrawal, conflict, and relapse” (Griffiths, 2010). Since the release of online games in the run up to 2000s, some traces of game addiction had appeared in the psychological and psychiatric literature. The early studies on the subject claimed that the addiction outcomes were similar to other behavioral addictions. They consisted mainly of “a compulsive behavioral involvement, a lack of interest in other activities, association and friendship circles mainly with other online game addicts” (Griffiths, 2010). Griffith (2010) stated that an attempt to stop the addiction then was met with physical and mental symptoms.

With the rise of the internet, the wake of the 21st Century saw a substantial growth in the number of studies on gaming addiction particularly as gaming expanded into the online medium where games could be played as part of a gaming community (Sekaran & Bougie, 2016). Having reviewed a wide range of studies on problematic gaming, Griffiths et al. (2012) realized that “prevalence rates of problematic gaming ranged from 1.7% to over 10% among general samples. The implication from the analysis was that more male gamers than females were addicted to online gaming, it was related to gender. Overall, there are some generalizations that can be made with regard to the demographic characteristics of gamers and problem gamers” (p. 57). The literature suggests that adolescent males and young male adults appear to be at greater risk of experiencing problematic online video game-play. Furthermore, Griffiths et al. (2012)

indicated that “problematic online gaming is responsible for a wide variety of negative psychosocial consequences for a minority of affected individuals. In extreme cases, these can include sacrificing work, education, hobbies, socializing, time with partner/family, and sleep; increased stress; an absence of real-life relationships. That is why it is expected that males will more likely be addicted to Candy Crush than females.

2.6 Perceived Gratifications and Addiction to Online Games

The Uses and Gratifications theory states that people use the media to gratify their various needs, which emanate from their social environment and serve as motivations for using a particular media (Weibel et al., 2008). The continuous engagement in online games can be related to the gratification people draw from it. People choose online games to demonstrate empowerment. On evaluation of an initial trial, gamers decide whether to continue playing and this makes them stick further to the game (Ng & Wiemer-Hastings, 2005).

Bartholow & Anderson (2012) indicated that the concept of gratification is viewed in relevance to how an individual reacts from experiences of media use that influences continued motivation. The other variables of motivation of players to online games to be determined is based on three components which are social component, achievement component and immersion component (Bartholow & Anderson, 2012). The social component involves socializing with others; achievement component means desire to compete with others and gain power; while the immersion component is about role playing for gratification. Gratification is the extent to which gamers’ motivation is satisfied. Addiction from perceived gratifications offered by online games is as a result of sustained playing due to previous experiences (Bartholow & Anderson, 2012). This is how Candy Crush achieves its gaming purpose.

2.7 Boredom and Addiction to Online Games

While online games have tremendously increased and become easily accessible for many people, they have caused a growing problem of gaming addiction. Addiction to online games causes irritability, depression, reduced social interactions and boredom (Yee, 2000). Yee (200) continues and state that the addiction causes a feeling for compulsive use that when a person is deprived then they get bored. Individuals who are prone to boredom are at high risk of online games' addiction. Boredom can be defined as a state of dissatisfaction due to a low stimulating environment. Online games which provide immediate rewards and rapid responses help reduce the feeling of boredom therefore causing high addiction levels (Yee, 2000). Candy Crush is related to boredom. Most players take the challenge when they are bored or looking for a way to fall asleep just to reduce the aspect of boredom and find some peace of mind as well.

2.8 Loneliness and Addiction to Online Games

Loneliness is a problem that has had great implications on people worldwide. The feeling causes several psychological problems such as depression, anger, sadness and withdrawal. The lack of quality and adequate interactions leads to the psychological condition (Chen, 2014). Loneliness occurs when a person gets inadequate excitement and intimacy from relationships. Online games addiction decreases social interaction even with family, it results to withdrawal from real life. The more people spend time on online games, the more depressed and withdrawn they are. A person may choose to use online games to escape the feeling of loneliness (Li & Wang, 2013). Candy Crush has been highly associated with killing the feeling of boredom and loneliness while decreasing the social interaction aspect physically.

2.9 Addiction to Candy Crush

In the year 2012, King Digital Entertainment launched Candy Crush, an online game for Facebook and smartphones. The game requires players to match-3 puzzle to successfully

graduate from one level of the game to another. According to Think Gaming (2014), an online website that evaluates application, Candy Crush is ranked amongst the top most engaging and lucrative social games. It was titled as the "Best Social Game" by the Universal Portable Gaming Honors.

Think Gaming (2014), a gaming investigation organization, evaluated that Candy Crush gaming involved transaction of up to US\$902,191 on a daily basis. In the game, players can blend and match desserts in a mix of three or more to pick up focuses and different rewards. The fact that Candy Crush is associated with Facebook enables players to discover their friends and their own levels by means of a guide. Moreover, friendly players can help each other through invitations, sending additional moves and lives. From an economical perspective, the developer of Candy Crush reveals that players spend about \$800,000 every day in buying new lives or boosters that help to clear the difficult levels. Since the game requires a player to only match 3 candies of the same color, the idea is pretty simple and attractive to online gamers. In fact, at the beginning it is easy to pass levels and this gives satisfaction, these accomplishments give small rewards to brain releasing the neurochemical dopamine. Dockterman (2013) attributes the results in neuro-activity to addiction and reinforcement of gaming activities. Furthermore, the American Psychiatric Association, (2013) found out that online game playing triggers a neurological response connected to pleasant feelings which results in an addictive behavior.

King initially discharged Candy Crush on Facebook in April of 2012, and it turned into a brisk achievement. "Inside a time of its dispatch, it had achieved 500 million telephone downloads. The numbers kept on developing. Right now, amusements inside the Candy Crush establishment have been downloaded a fabulous aggregate of 2.73 multiple times" (Li & Wang, 2013). It has 70 million Facebook fans, and has been downloaded on every one of the seven mainlands. While individuals in the US play the most — with 212 billion rounds played there to

date different nations aren't a long way behind. In the UK, 50 billion rounds have been played since the amusement propelled. In France, 54 billion rounds have been played, and in Spain 40 billion rounds have been played. While those European nations all have brought down numbers, they likewise have littler populaces. Spain has really had the most adjusts played per individual, trailed by France, the UK, and the US (Li & Wang, 2013). In Japan, 26 billion rounds of Candy Crush have been played since its dispatch. To date, 350 trillion confections have been swiped. An astounding 59 trillion red confections alone have been swiped. Sweet Crush is played by 93 million individuals consistently, and it gathers an expected \$800,000 every day through players acquiring new lives and supporters that assist them to overcome new dimensions (Li & Wang, 2013). Moreover, a large portion of a billion people have downloaded the free application, and King Digital Entertainment, the organization behind the wonder, purportedly got \$568m a year ago alone.

According to Miller (2013), the predominance of Candy Crush has raised numerous issues. The survey found out that players of the addictive online game had left their youngsters stranded at school, relinquished housework and even harmed themselves as they attempted to reach new levels. Other researchers like Li & Wang (2013) have also found that high recurrence diversion playing may adversely impact players' wellbeing and practices which include and are not limited to poor scholarly execution, and subjective contortion. Also, connected to Candy Crush addiction is a low nature of interpersonal connections, social nervousness, anxiety and sleep disturbances, and dangerous practices taken (Lo, Wang & Fang, 2005). According to the "Wall Street journal" (2013), "close to 15 million people were reported to be addicted Candy Crush online game". Out of the said millions, the journal indicated that women commanded 70% of the addiction. Based on that information, it is clear that Candy Crush addiction is not an issue affecting men only (Billieux et al., 2013).

Much occasions spent in playing Candy Crush amusement can cause mental issues, for example, depression, weariness and delight. Forlornness is a critical mental issue which regularly incorporates restless sentiments about an absence of connectedness or shared characteristic and it might be a side effect of another social or mental issue, for example, unending despondency, and introverted and reckless conduct (Billieux et al., 2013). Also, forlornness frequently negatively affects learning for kids. “Playing Candy Crush can change how our cerebrums perform, and even their structure. For instance, playing the amusement influences our consideration, and gamers demonstrate upgrades in a few kinds of consideration, for example, continued consideration or particular consideration” (Billieux et al., 2013 p.11). The cerebrum locales associated with consideration are additionally progressively productive in gamers and require less enactment to continue consideration on requesting errands.

Chapter Three: Theoretical Framework

This thesis seeks to apply the generalized definition of ‘addiction’ to a firmer grounding in various forms of multimedia; in particular, this section will discuss the “Uses and Gratifications” consistency in the usage of the name theory to identify how people start to be addicted to Candy Crush among Lebanese students community.

3.1 The Theory of Uses and Gratifications

The theory of Uses and Gratifications, sometimes abbreviated as ‘UGT’ or ‘U&G’ is an approach that was introduced by Blumler and Katz 1974. The theory particularly focused on mass communication and the consumption of media services or products (Grodal, 2000). Through this theory, Blumler and Katz revealed their belief that media consumers are active role players in making a choice and using a specific media (Katz, Haas, & Gurevitch, 1973). They believed that the users of media products often seek for the relevant source, which would best fulfill or satisfy their needs. The theory assumes that the mass media audience chose to consume what they want, but with focus on five key factors or reasons. These factors include information and education, personal identity, integration and social interaction, entertainment, and escapism (Sampat & Krishnamoorthy, 2016).

The theory of Uses and Gratifications seeks to understand why, how, and when people tend to seek for a specific media product in order to satisfy their individual needs. The approach is audience-centered, attempting to understand the entire intrigues behind the consumption of mass communication products (Yee, 2007). Different from other media-oriented theories, which seek to understand “what media does to its consumers.” the UGT primarily focuses on a divergent understanding of “what people do with the media?” This theory hypothesizes that media or mass communication products are abundantly available almost everywhere, and the audiences are the varying users of these products (Rehman, 1983). According to Blumler and

Katz, a single media product can be consumed by millions of users, hence the consumers are the dependent variables while the products remain independent variables (Katz, Blumler, & Gurevitch, 1974).

The Uses and Gratifications theory is quite positivistic in its approach. It is based on the psycho-social communication traditions, hence focusing on mass communication on a massive scale. The integral question in this approach, which seeks to be answered is – Why? In that regard, the focus is to answer why consumers of the media consume them, and for what purpose do they use them? (Yee, 2007). In essence, the Uses and Gratifications uses assumptions to answer the questions on how users deliberately pick on the type of media that will fulfill their specific needs (Sjöblom, 2015). Consequently, it enables consumers to expand their knowledge base, and enhance relaxation, diversion/escape, companionship or social interactions, as well as entertainment desires. It assumes that audience has the ultimate power over their media consumption. They are capable of selecting the media to use and a medium that satisfies their specific needs (Sampat & Krishnamoorthy, 2016). Therefore, they play a significant role of interpreting and integrating a particular media product into their daily lives. As Candy Crush is predicated on players reaching a certain level of skill and ability, and that then calling for strategy on how one moves the candies around, this enables the players to expand their knowledge base, and enhance relaxation, diversion/escape, companionship or social interactions, as well as their entertainment desires. The more the players score, the more challenging it becomes. Players find interest in scoring more, attaining more points, and making their challenge more entertaining. That is why they become eager to play more, and thus get addicted.

3.2 The Uses and Gratifications Theory in Online Games Addiction

Playing on the digital platforms has been a real entertainment encounter for the online gamers. Some of these platforms permit for a single player at a time while others are designed

for multiple players online. Using the key assumptions in the Uses and Gratifications theory, the consumers of online gaming products get to these platforms for a specific purpose. They go to entertain themselves and get companionship. With time, players may adapt and get used to the virtual realities offered by the online game platform. They begin to escape from the realities of the real-world and form virtual networks through which they identify and interact (Bartholow & Anderson, 2012). At this stage, the online gamer is said to have been addicted to the games. For Candy Crush, it is no coincidence that the game is played using some pieces of candy. As Dockterman (2013) points out, food is often used in gambling games, tying our happy associations and the pleasure we derive from eating into the game. In this case, candy's positive associations help make the game more fun and relaxing.

The playing of online games is an experience-oriented effort, however, very few studies have been conducted to explore the initial (trial) reactions by the users when they first interact with a particular game. A study by Sjöblom (2015) examined this initial encounter by gamers and further explored how the games influenced the behaviors of a player. Borrowing from the theory of Uses and Gratifications, the study investigated different players' multifaceted gratifications for indulging themselves in laying the games. The study explored their social interactions, enjoyment, and achievements (Sampat & Krishnamoorthy, 2016). Altogether, these aspects helped in exploring the gamers' experience with game after playing online. The findings from the study revealed that service mechanisms and gratifications have significant influence over a player's addiction of continued motivation to play a particular game. Their findings were similar to the findings of this study. This study indicated that players enjoy playing Candy Crush because it entertains them and give them a feeling of achievement every time they finish a level.

The motivation of an addicted online gamer to continue playing on the online gaming platforms is driven by five key factors, which happen to be the key assumptions in Blumler and

Katz's Uses and Gratifications theory (Katz, Blumler, & Gurevitch, 1974). With close regard to the five theoretical assumptions mentioned earlier, this paper can relate the Uses and Gratifications theory to the online games addiction as personal identity, information and education, entertainment, escapism as well as integration and social interaction.

Initially, user of online games, during their initial stages of use, are concerned about learning from the information they obtain from these games. Sometimes, they seek to acquire the much-needed knowledge and understanding through playing more challenging games. Furthermore, addicted online gamers may recognize a specific character in the video game, who plays the most important, interesting, or destructive role and then begin to identify with the individual traits of that character. These characters may sometime serve as their role models with values or qualities a player can mimic or copy (Sampat & Krishnamoorthy, 2016). Additionally, online game addicts go to play the games in order to satisfy their urge for entertainment. They play to enjoy themselves, drive away boredom, create humor and hence become completely entertained. Escapism is one of the key symptoms for identifying addiction to online games. Once addicted, the online games are designed with abilities in the programs, which can make the player escape his or her real life. The addicted gamer begins to forget about the real-world surrounding, hence imagining himself/herself in the situation of the characters in the games. Lastly, online games are designed with abilities to trigger topics of conversation among gamers. For instance, the players, during or after playing, would begin to debate about who the best character is, how well the interface is designed, and which game best appeals for them (Sampat Rishnamoorthy, 2016).

Chapter Four: Research Methodology

4.1 Introduction

This chapter discusses the research methodology. It explains the design used in conducting the study which includes the population, design of the sample, the methods of data collection, instruments.

4.2 Study Design

According to Tromp and Kombo (2006) research design is regarded as the composition of a research, the glue that seizes all rudiments in an investigative project together. The design is involved in structuring the research, by showing how the key parts of the study function together in addressing the essential research questions.

This study adopts a descriptive research design. This design is preferred because the study needs to formulate possible factors that may affect consumer addiction on Candy Crush online gaming in Lebanon. Furthermore, the descriptive study entails collecting data by conducting interviews or by administering questionnaires to a (Kombo & Tromp, 2006). It can be utilized in collecting information regarding the attitudes, habits, opinions or any personal attributes. Sekaran and Bougie (2016) note that descriptive study is linked to several advantages, such as helping in understanding the distinctiveness of a group in a specified situation as well as the systematic thinking regarding aspects of a certain situation.

The descriptive study design was adopted because it allows data collection to take place in various forms which include surveys, thus offering a multifaceted approach that provides a broader view of the situation or topic under investigation. Moreover, the design provides the unique means of obtaining data that examine the life experiences, which are crucial in determining factors that affect consumer addiction to online gaming (e.g., Candy Crush) in Lebanon. The study covered high schools.

After conducting the literature review, it was concluded that different factors found to drive people to play online games. It is either that the game is entertaining, or that people want to waste some time. According to studies by Chen (2014) boredom and loneliness are two factors that make people play online games besides other factors. Similarly, Li and Wang (2013) stated that perceived gratification can also make people play online games. Miller (2013) argued that Candy Crush got people addicted to it because of its interesting and challenging features. “People started playing for entertainment and boredom then became addicted to it because they want to accomplish higher levels” (Miller, 2013).

This study aims at studying the relationship between boredom, loneliness and gratifications from playing Candy Crush. . The hypotheses address in this study is as follows.

H1: There is a positive correlation between boredom and Candy Crush addiction.

H2: There is a positive correlation between loneliness and Candy Crush addiction.

H3: There is a positive correlation between perceived gratification and Candy Crush addiction.

H4: Males are more likely to get addicted to Candy Crush than females.

4.3 Population

The study population is the whole group of individuals to which there is legitimate interest in applying conclusions (Sun & Wang, 2011). Moreover, the population is also regarded as a collection of individuals, objects or items with common aspects that deliver samples required in measurement. Population refers to a whole group of elements or individuals that have a common aspect (Sekaran & Bougie, 2016).

The target population can be all Candy Crush game players, however this study targets specific high school students who play Candy Crush. Accordingly, the study focuses mainly on high school students located in North Maten.

This population was selected because students are most probably the ones who purchase or use online games. Hence, they will provide information regarding the topic under investigation. Moreover, high school students are likely prone to gaming addiction, thus they will give relevant information regarding the factors that affect or lead to their addiction. The study mainly focuses on three high school students at Lebanese Northern Maten (Sainte Famille Maronite – Evangelical School- Lycee Franco-Libanais) who play Candy Crush.

4.4 Sampling

The sample size for this study is 90 students, 30 students from each high schools based on purposive sampling, which is a non-probability sampling method. Purposive sampling is used in the selection of study' participants (people who play Candy Crush).

Based on Mugenda & Mugenda (2003) argument, purposive sampling refers to a sampling technique that enables a researcher to employ cases that have obligatory information with regards to the study objectives. Cases of the area under discussion will, therefore, be specially selected because they meet the necessary characteristics. The non-probability sampling entails on sampling approaches where the population that is investigated is founded based on the judgment of the researcher (Mugenda & Mugenda, 2003).

The sample of this study targets only Candy Crush users who are high school students. Out of 90 respondents 52.9% were females and 41.1% males ranging in age from 15 to 18. 13.3 % were between 15 to 16 years old, 40.0% in 16 to 17 and a whole lot of 46.7% were 18 years or older. 13.3% had first secondary education, 40% had gained second secondary education and 46.7% were holders of the third secondary education. It is important to mention that not all students played Candy Crush, thus after collecting 125 respondents, 90 had to be deducted because they did not play Candy Crush.

Gender

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Male	37	41.1	41.1	41.1
Valid Female	53	58.9	58.9	100.0
Valid Total	90	100.0	100.0	

Table 1: Gender**Age**

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 15 - 16 years	12	13.3	13.3	13.3
Valid 16 - 17 years	36	40.0	40.0	53.3
Valid 18 or more	42	46.7	46.7	100.0
Valid Total	90	100.0	100.0	

Table 2: Age**Education**

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid First Secondary	12	13.3	13.3	13.3
Valid Second Secondary	36	40.0	40.0	53.3
Valid Third Secondary	42	46.7	46.7	100.0
Valid Total	90	100.0	100.0	

Table 3: Education

4.5 Data Collection

In this investigation, primary data was collected by the use of a structured questionnaire which is easier to analyze, administer and economical since it saves time and money. The researcher used a survey questionnaire as a tool for data collection. The questionnaire contains open and close-ended questions. By using a structured questionnaire, the researcher ensures questions consistency and appropriate answers from the respondents. A questionnaire is preferred by many respondents because it helps ensure anonymity. The questionnaire of this study helped in collecting data from the student respondents about factors affecting their behaviors while using the Candy Crush online gaming.

During the data collection process, the questionnaires were self-administered to respondents through field visits to the three high schools. The questionnaires were printed out and the students had to fill them manually.

The questionnaire was divided into two sections. The first part included demographic information of the participants, which comprised of age, gender and residential place. The second part contained the major part of the study in which the respondent were required to answer questions related to boredom, loneliness, gratifications and addiction.

Before collecting data, several schools at North Lebanon were selected. Six schools were first targeted to collect data from, however after communicating with the principle and supervisor of every school, only 3 schools accepted the conduction of the project among its students. Data collection took up one week. The appointments were taken within consecutive days. The schools were visited, and students were given the questionnaires in hand to fill them up. More than 120 students filled up the questionnaire, but only 90 students were selected. These are the ones who actually play Candy Crush. This allowed the explanation of questions when the respondents

asked. So in some cases, the questions were adapted based on the respondents needs just for better understanding and better response.

4.6 Variables

Gratifications: This variable indicated the reasons why players played Candy Crush. Gratification in this study meant the perceived benefit of playing Candy Crush. It was measured on a Likert-type scale from 1 = strongly disagree to 5 = strongly agree and included four items such as “x” and “y” ($\alpha = .871$, $M = 3.878$, $SD = .772$).

I prefer playing video games than doing other activities

Video games entertain me

Boredom: This variable aimed on testing whether participants play the game when they do not have anything to do or if they free themselves in order to play the game. Boredom was measured on a Likert-type scale from 1 = strongly disagree to 5 = strongly agree and included three items such as “x” and “y” ($\alpha = .871$, $M = 3.878$, $SD = .772$).

I have a lot of free time

I do not have tasks during my day

Loneliness: This variable meant that Candy Crush was the company for people who are not sociable. It referred to the fact that people who do not interact with other people are the ones who spend time playing Candy Crush. Similarly, it was measured on a Likert-type scale from 1 = strongly disagree to 5 = strongly agree and included three items such as “x” and “y” ($\alpha = .871$, $M = 3.878$, $SD = .772$).

I do not have much friends around

I prefer to spend my time alone

Addiction: This variable refers to how much people are dependent on Candy Crush. First, participants were asked to indicate how much time per day they spend playing the game. Second, addiction was measured on a Likert-type scale from 1 = strongly disagree to 5 = strongly agree and included three items such as “I should play Candy Crush everyday” and “I dedicate my time to play Candy Crush” ($\alpha = .871$, $M = 3.878$, $SD = .772$).

I should play Candy Crush everyday

I dedicate my time to play Candy Crush

Chapter Five: Findings and Data analysis

The obtained data was examined through the use of the Statistical Package for Social Sciences (SPSS). The data was screened for outliers, all cases were kept. Descriptive statistical analysis was used to describe the participants responses in percentages on each question asked. To answer hypotheses one through three, Pearson's correlation test was conducted to identify whether a correlation exists between the study variables. Finally, to test hypothesis four in investigating gender differences on the variables an independent t-test was used.

According to the literature review, the expected results state that boredom, loneliness, and perceived gratification impacted the excessive time spent playing Candy Crush. This chapter details and reports the research based on the approach mentioned above and answers the four hypothesis of the study.

5.1. Frequency Test

Frequency test illustrates through tables and graphs the distribution of the respondents' responses. Accordingly, the results are as following:

I play online games because it's fun

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Neutral	48	53.3	53.3	53.3
Agree	42	46.7	46.7	100.0
Total	90	100.0	100.0	

Table 4: I play online games because it's fun

46.7 % of the respondents play online games because it is fun, while 53.3% were neutral.

I play online games because I have a lot of free time

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Agree	24	26.7	26.7	26.7
Valid Strongly Agree	66	73.3	73.3	100.0
Total	90	100.0	100.0	

Table 5: I play online games because I have a lot of free time

All the participants believe that they play online games because they have a lot of free time. 73.3% of the participants strongly agreed and the rest (26.7%) agreed.

I play online games because I am lonely

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Agree	54	60.0	60.0	60.0
Valid Strongly Agree	36	40.0	40.0	100.0
Total	90	100.0	100.0	

Table 6: I play online games because I am lonely

Similarly, 100% of the sample studied play online games because they feel lonely, 60% agreed and 40% strongly agreed to playing online games because of feeling lonely.

I play online games because it is interesting and entertaining

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Neutral	69	76.7	76.7	76.7
Valid Agree	21	23.3	23.3	100.0
Total	90	100.0	100.0	

Table 7: I play online games because it is interesting and entertaining

23% of respondents agreed that Candy Crush was very interesting to play.

I play online games so that I can achieve my online gaming goals

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Neutral	21	23.3	23.3	23.3
Valid Agree	69	76.7	76.7	100.0
Total	90	100.0	100.0	

Table 8: I play online games so that I can achieve my online gaming goals

Even though not all claimed that online games are interesting, 76.7% agreed that they play online games to achieve their online gaming goals, while 23.3% of the respondents were neutral of

Uses and Gratifications

I play Candy Crush because it is very interesting

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Neutral	45	50.0	50.0	50.0
Valid Agree	45	50.0	50.0	100.0
Total	90	100.0	100.0	

Table 9: I play Candy Crush because it is very interesting

50% of the respondents play Candy Crush because it is very interesting to them; on the other hand, 50% remained neutral; thus the responses were equally distributed.

I play Candy Crush because I want to get the highest scores in the game

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Agree	45	50.0	50.0	50.0
Valid Strongly Agree	45	50.0	50.0	100.0
Total	90	100.0	100.0	

Table 10: I play Candy Crush because I want to get the highest scores in the game

Regardless of interest, all respondents claimed that they play Candy Crush because they want to achieve the highest score in the game; again the response on this was equally distributed between agree and strongly agree.

I play Candy Crush because I want to achieve the highest levels in the game

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Neutral	21	23.3	23.3	23.3
Valid Agree	57	63.3	63.3	86.7
Valid Strongly Agree	12	13.3	13.3	100.0
Total	90	100.0	100.0	

Table 11: I play Candy Crush because I want to achieve the highest levels in the game

While 23.3% of the respondents were neutral on this question, 63.3% agreed that they play Candy Crush to reach the highest levels in the game and 13.3 % strongly agreed that they played to achieve reach the highest levels in the game.

I play Candy Crush because I am bored

	Frequency	Percent	Valid Percent	Cumulative Percent
Neutral	12	13.3	13.3	13.3
Agree	57	63.3	63.3	76.7
Strongly Agree	21	23.3	23.3	100.0
Total	90	100.0	100.0	

Table 12: I play Candy Crush because I am bored

86.6% of the respondents play Candy crush because they are bored (63.3% agree, 23.3% strongly agree) and the remaining 13.3% neither agreed nor disagreed.

I play Candy Crush because it is very entertaining

	Frequency	Percent	Valid Percent	Cumulative Percent
Neutral	33	36.7	36.7	36.7
Agree	36	40.0	40.0	76.7
Strongly Agree	21	23.3	23.3	100.0
Total	90	100.0	100.0	

Table 13: I play Candy Crush because it is very entertaining

23.3 % strongly agreed and 40.0% agreed that they play the game because it is very entertaining. 36.7% of the respondents were neutral on this question.

Table 14: I play Candy Crush because everyone else is playing it**I play Candy Crush because everyone else is playing it**

	Frequency	Percent	Valid Percent	Cumulative Percent
Neutral	21	23.3	23.3	23.3
Agree	36	40.0	40.0	63.3
Strongly Agree	33	36.7	36.7	100.0
Total	90	100.0	100.0	

Table 15: I play Candy Crush because everyone else is playing it

While 23.3 % were neutral,36.7% of the respondents strongly agreed and 40.0% agreed that they play the game because everyone else played it.

I play Candy Crush because I have a lot of free time

	Frequency	Percent	Valid Percent	Cumulative Percent
Agree	24	26.7	26.7	26.7
Strongly Agree	66	73.3	73.3	100.0
Total	90	100.0	100.0	

Table 16: I play Candy Crush because I have a lot of free time

All respondents, agree to playing Candy Crush because they have a lot of free time. 26.7% of the 90 respondents agreed and 73.3% strongly agreed.

I prefer playing video games than doing other activities

	Frequency	Percent	Valid Percent	Cumulative Percent
Disagree	12	13.3	13.3	13.3
Neutral	12	13.3	13.3	26.7
Valid Agree	45	50.0	50.0	76.7
Strongly Agree	21	23.3	23.3	100.0
Total	90	100.0	100.0	

Table 17: I prefer playing video games than doing other activities

50% agreed on this, and 23.3% strongly agreed. 13.3% of the respondents were neutral, and 13.3% disagreed.

Video games entertain me

	Frequency	Percent	Valid Percent	Cumulative Percent
Neutral	12	13.3	13.3	13.3
Valid Agree	78	86.7	86.7	100.0
Total	90	100.0	100.0	

Table 18: Video games entertain me

78 out of 90 respondents found video games entertaining while 12 only could not get entertainment from video games.

Video games make use of my time

	Frequency	Percent	Valid Percent	Cumulative Percent
Neutral	12	13.3	13.3	13.3
Agree	57	63.3	63.3	76.7
Strongly Agree	21	23.3	23.3	100.0
Total	90	100.0	100.0	

Table 19: Video games make use of my time

63.3% respondents agreed that video games take more of their time. 23.3% had a strong agreement with this while 13.3% were only neutral.

I enjoy video games challenges

	Frequency	Percent	Valid Percent	Cumulative Percent
Neutral	12	13.3	13.3	13.3
Agree	36	40.0	40.0	53.3
Strongly Agree	42	46.7	46.7	100.0
Total	90	100.0	100.0	

Table 20: I enjoy video games challenges

46.7% of the respondents strongly agreed that video games take more of their time. 40.0% had an agreement with this while 13.3% were only neutral.

I have a lot of free time

	Frequency	Percent	Valid Percent	Cumulative Percent
Neutral	24	26.7	26.7	26.7
Agree	24	26.7	26.7	53.3
Strongly Agree	42	46.7	46.7	100.0
Total	90	100.0	100.0	

Table 21: I have a lot of free time

26.7% were neutral and 26.7% of the 90 respondents just agreed that they have a lot of free time, 46.7% of the respondents strongly agreed that they played the game because they had a lot of free time.

I do not have tasks during my day

	Frequency	Percent	Valid Percent	Cumulative Percent
Disagree	12	13.3	13.3	13.3
Neutral	12	13.3	13.3	26.7
Agree	45	50.0	50.0	76.7
Strongly Agree	21	23.3	23.3	100.0
Total	90	100.0	100.0	

Table 22: I do not have tasks during my day

12 out of 90 respondents disagreed they did not have tasks during days, 12 more were neutral while 45 agreed they did not have tasks during their days. 21 respondents had a strong agreement here.

I spend my time doing nothing

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Disagree	24	26.7	26.7	26.7
Neutral	21	23.3	23.3	50.0
Agree	45	50.0	50.0	100.0
Total	90	100.0	100.0	

Table 23: I spend my time doing nothing

26.7% of the respondents disagreed while 23.3% were neutral. 50% agreed that they had nothing to do with their time.

Loneliness**I do not have much friends around**

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Disagree	12	13.3	13.3	13.3
Neutral	57	63.3	63.3	76.7
Agree	21	23.3	23.3	100.0
Total	90	100.0	100.0	

Table 24: I do not have much friends around

13.3% of the respondents had a disagreement that they do not have much friends and 23.3% agreed with that.

I prefer to spend my time alone

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Disagree	36	40.0	40.0	40.0
Neutral	12	13.3	13.3	53.3
Agree	42	46.7	46.7	100.0
Total	90	100.0	100.0	

Table 25: I prefer to spend my time alone

46.7% of the respondents preferred to spend their time alone so they could play Candy Crush while 40% never preferred spending their time alone. Only 13.3% had no extreme response on this question.

I do not get along with people

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Disagree	69	76.7	76.7	76.7
Agree	21	23.3	23.3	100.0
Total	90	100.0	100.0	

Table 26 : I do not get along with people

On this question, 76.7% of the respondents strongly disagreed with the question. Only 23.3% could not get along with people.

Addiction

How much do you spend time playing Candy Crush per day

	Frequency	Percent	Valid Percent	Cumulative Percent
less than 1 hour	12	13.3	13.3	13.3
1-2 hours per day	12	13.3	13.3	26.7
Valid 5-6 hours per day	21	23.3	23.3	50.0
7 or more hours	45	50.0	50.0	100.0
Total	90	100.0	100.0	

Table 27: How much do you spend time playing Candy Crush per day

13.3% of the respondents took less than an hour to play the game, and an equal percentage played the game for 1-2 hours daily. 23.3% of the respondents played the game for about 5-6hours daily while the greater portion of 50% took 7 hours or more to play Candy Crush.

I should play Candy Crush everyday

	Frequency	Percent	Valid Percent	Cumulative Percent
Disagree	24	26.7	26.7	26.7
Agree	24	26.7	26.7	53.3
Valid Strongly Agree	42	46.7	46.7	100.0
Total	90	100.0	100.0	

Table 28: I should play Candy Crush everyday

46.7% of the respondents had a strong stand that they should play Candy Crush daily. 26.7% of the population agreed that they should play and an equal population of 26.7% did not agree on this.

I dedicate my time to play Candy Crush

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Neutral	24	26.7	26.7	26.7
Valid Agree	66	73.3	73.3	100.0
Valid Total	90	100.0	100.0	

Table 29: I dedicate my time to play Candy Crush

Out of 90 respondents, 66 dedicated time to play Candy Crush. Only 26.7% did not have some time allocated for playing Candy Crush.

I am eager to boost my performance and reach higher levels in Candy Crush

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Neutral	24	26.7	26.7	26.7
Valid Agree	45	50.0	50.0	76.7
Valid Strongly Agree	21	23.3	23.3	100.0
Valid Total	90	100.0	100.0	

Table 30 : I am eager to boost my performance and reach higher levels in Candy Crush

Out of 90 respondents, 45 were eager to boost their performance and reach higher levels in Candy Crush. 21 were very eager to boost their performance and reach higher levels in Candy Crush while 24 of them were just neutral.

How likely would you recommend Candy Crush for others?

	Frequency	Percent	Valid Percent	Cumulative Percent
Neutral	12	13.3	13.3	13.3
Likely	57	63.3	63.3	76.7
Most Likely	21	23.3	23.3	100.0
Total	90	100.0	100.0	

Table 31: How likely would you recommend Candy Crush for others?

63.3% of the study population were likely to recommend Candy Crush to friends and 23.3% were most likely. Only 13.3% were neutral on this question.

5.2. Factor Analysis

The aim of this section is to divide the components of the questionnaire upon the variables of the study

5.2.1. Factor Analysis Components

Factor analysis reduces, variables, this test will group questions related to the same variable into one factor in SPSS.

Accordingly, 4 variables are extracted:

1. Boredom
2. Loneliness
3. Perceived gratification
4. Candy Crush addiction

5.3. Correlation Test

Correlation identifies whether a correlation between variables exists or not

		Candy Crush Addiction
Boredom	Pearson Correlation	.978
	Sig. (2-tailed)	.000
	N	90
Loneliness	Pearson Correlation	.707
	Sig. (2-tailed)	.000
	N	90
Perceived Gratification	Pearson Correlation	.846
	Sig. (2-tailed)	.000
	N	90

Table 32 Correlation Test

For a correlation to exist, significance should score less than 0.05. Boredom, loneliness, and perceived gratification scored $p < .001$ with candy crush addiction.

Pearson correlation between Boredom and Candy Crush addiction scored 0.978, hence as boredom increases by one unit, Candy Crush addiction increases by 0.978, for loneliness addiction increases by 0.707, and by 0.846 for perceived gratifications.

Hypothesis 1: Boredom and Addiction

H1: There is a positive relation between boredom and Candy Crush addiction.

Hypothesis one was supported. Pearson's correlation indicated that there was a positive relation between boredom and addiction. The magnitude of this relationship was strong ($r = .978$, $p < .05$).

Hypothesis 2: Loneliness and Addiction

H2: There is a positive relation between loneliness and Candy Crush addiction.

Hypothesis two was supported. Pearson's correlation indicated that there was a positive relation between loneliness and addiction. The magnitude of this relationship was strong ($r = .707$, $p < .05$).

Hypothesis 3: Gratifications and Addiction

H3: There is a positive relation between perceived gratification and Candy Crush addiction.

Hypothesis three was supported. Pearson's correlation indicated that there was a positive strong relation between gratification and addiction ($r = .704$, $p < .05$).

H4: Gender Differences

H4: Males and females will differ on the levels of boredom, loneliness, addiction and gratifications. An Independent t-test indicates that there is a significant statistical difference between male and female on levels of boredom, loneliness, addiction and gratifications, such that females have higher levels on all variables than males.

The table below details means, standard deviation and t-tests results.

	Boredom	Loneliness	Addiction	Gratification
Female	M = 4.19, SD = .395),	M = 3.84, SD= .687	M = 4.32 , SD=.471	M = 4.15, SD=.285
Male	M = 3.14, SD = .776	M = 2.36 , SD= .253	M = 3.24 , SD=.670	M = 3.84 , SD=.268
	Welsh's T (df) = t value, $p < .005$	Welsh's T (df) = t value, $p < .005$	Welsh's T (df) = t value, $p < .005$	Welsh's T (df) = t value, $p < .005$

Chapter Six: Discussion

Comparing the findings of the literature review and the findings of this study, some relationships were confirmed while others were not. According to Weibel et al (2008) people use the media to gratify their needs. This isolates them from their surrounding and make them spend their time using particular media. Ng & Wiemer-Hastings (2005) indicated that people get engaged in online games for three main reasons. Either to socialize with other people who share the same interest, or to accomplish an achievement and satisfy themselves, and finally to play a role that vents them out from their personal stress. It's a sort of escaping from their reality.

Findings of the study about U&G indicated that high school students play Candy Crush because they find it very interesting, according to 50% of the respondents who agreed with that. This means that playing Candy Crush gives them pleasure. When the respondents were asked if they play Candy Crush to achieve high levels in the game, 63.3% of the respondents agreed and 13.3% strongly agreed, meaning that the game gives them a feeling of achievement. And finally when they were asked if they play Candy Crush because its entertaining, 40% agreed and 23.3% strongly agreed.

Comparing the findings of this thesis with those of the literature review, the results confirm what the literature review above mentioned reported.

Regarding Boredom, Yee (2000) indicated that boredom is the state of dissatisfaction due to a low stimulating environment. Online games provide immediate rewards that reduces the feeling of boredom therefore causing high addiction levels. Relating that to Candy Crush, the game rewards its players and provides them with something to do.

The findings of this thesis showed that, 63.3% of the respondents agreed and 23.3% strongly agreed that they play Candy Crush when they are bored. In addition to that, 73.3% of the respondents strongly agreed that they play Candy Crush because they have a lot of free time. Chen (2014) discussed loneliness and stated that loneliness occurs when a person gets inadequate excitement in relationships. Therefore, the person would choose to play an online game to escape this loneliness. However, although online games reduce the loneliness feeling, yet they isolate the players from their social environment and make them more lonely (Li & Wang, 2013). In this study, responses about loneliness confirmed findings from the literature review, they showed that 23.3% of the respondents said that they do not have many friends around to socialize with. Also, 46.7% of the respondents stated that they prefer to spend their time alone.

Addiction to online gaming has always been related to gender. According to a study by Griffiths et al. (2012) males are more likely to get addicted to online video games. Griffiths et al (2012) reported that “prevalence rates of problematic gaming ranged from 1.7% to over 10% among general samples. His study suggested that adolescent males and young male adults appear to be at greater risk of experiencing problematic online video game-play. However, the findings of this study showed that females are more likely to be bored, and lonely, and more likely to use Candy Crush for Gratifications. Hence, females are more likely to be addicted to Candy Crush than males.

Uses and Gratification considers that users of media products often use media to fulfill or satisfy their needs. The theory assumes that the mass media audience choose to consume what they want, but with focus on five key factors or reasons. These factors include information and education, personal identity, integration and social interaction,

entertainment, and escapism (Sampat & Krishnamoorthy, 2016). According to the findings of this study, players want to accomplish achievement, and enjoy personal entertainment. Thus the findings support in this regard the assumptions if the Uses and Gratification Theory.

Chapter Seven: Conclusion

7.1. Conclusion

Owing to the advancement of the internet, there has been a significant growth in gaming addiction especially as gaming expanded into the online medium where games can be played as part of an online gaming community (Greitemeyer & Osswald, 2010). However, problematic online games are accountable for an assortment of negative psychological impacts for a minority affected individuals (Greitemeyer & Osswald, 2010).

The main objective of this study was to assess the correlation between boredom, loneliness, and Candy Crush addiction. Findings of the study showed that boredom, loneliness, and perceived gratification are correlated with Candy Crush Addiction. Specifically, it shows that there is a positive correlation between boredom and Candy Crush addiction, loneliness, perceived gratifications, and boredom.

Online games which provide instantaneous rewards and fast reactions aid in the reduction of the feeling of boredom, therefore causing high addiction levels. Online games addiction diminishes social interaction and this also includes family and gives rise to withdrawal from the real world (Greitemeyer & Osswald, 2010). The more people spend time on online games, the more depressed and withdrawn they become (Greitemeyer & Osswald, 2010) . An individual might opt to use online games to escape the sentiment of loneliness. The notion of gratification is looked at as to how a person responds to experiences of media use that influences continued motivation. Gratification is the magnitude to which gamers' motivation is satisfied. Obsession from perceived gratifications presented by online games is owing to continued playing as a result of preceding experiences. Candy Crush addiction has never been studied in Lebanon, yet according to Griffith et al (2012) addiction rates in US increased to over 25% of the youth

population. Jadia (2014) compared Candy Crush with other online games like Farmville and Angry Birds. Yet the reasons why Candy Crush became that popular is related to the ease of use and the challenge it offers. Another thing that contributed to its success is the score achievement that takes the player to a higher level. That provided temptation to players to continue playing to meet the challenge (Jadia, 2014).

7.2. Ethical Considerations

To make sure that the research corresponds with the ethical standards, the consent letter and permit to carry out the study were obtained from the authorities in the three schools used in for this study. After getting the principal's approval, the questionnaires were distributed to the students during class hours. Moreover, the privacy of the respondents was retained, and their names were not mentioned in any part of this thesis.

7.3. Limitations

Conducting the research of this thesis was difficult and challenging. Candy Crush has been popular among youth, yet they do not confess that they are addicted to it, this forced the researchers to manipulate some questions in order to identify addiction among the sample selected for example the questionnaire had to ask them how much time do they spend playing Candy Crush instead of asking them if they are addicted to it. Furthermore, the sample size should have been larger. Candy Crush is a popular game in Lebanon, yet only 90 players were selected, due to time limitation from the Maten region. Other geographic areas should have been covered.

7.4. Further Suggestions

The findings of the study indicated that boredom, loneliness correlate with Candy Crush addiction. Conducting this study at high schools means that recommendations should be carried out there. First of all high schools should communicate the possible negative effects of addiction to students. High schools should control the usage of Candy Crush with the cooperation of parents because it seems that students are heavy users to this game. A campaign at schools can have an influence on the target students.

It is essential to mention that this kind of addiction was not limited to teenagers at schools. People above the age of 18 also reported playing and getting addicted to Candy Crush. It is recommended based on the this study that studies comparing Candy Crush addiction to other forms of addiction such as alcohol or drugs, must be conducted to compare the psychological and social impacts involved.

It is important to mention that this study showed that females tend to use the app more than men. This finding requires further investigation of online gaming and gender.

Finally, the lack of physical outdoor activities among teenagers may have contributed to the addiction on Candy Crush, therefore further exploration of the relation between outdoor physical activities among teenagers and addiction to online gaming may add to the findings of the current study.

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Appendix I: Questionnaire

Dear Respondent,

I am a Master's student conducting my thesis about Candy Crush addiction and the reasons behind this addiction.

I kindly ask you to answer the following questions to assist in fulfilling the objectives of this study. Your confidentiality is guaranteed. The purpose of this questionnaire is only educational.

I appreciate your participation.

Christelle Tabet

Do you play Candy Crush?

- yes
- no

[If no, please stop here and submit your questionnaire]

Section 1: Demographic Information

1. kindly indicate your gender:
 - Male
 - Female
2. Kindly indicate your age category
 - 15 – 16 years
 - 16 – 17 years
 - 18 or more
3. Kindly indicate the highest education Level:
 - First Secondary
 - Second Secondary
 - Third Secondary

Please indicate how much you agree with the following propositions

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I play online games because it's fun	1	2	3	4	5
I play online games because I have a lot of free time	1	2	3	4	5
I play online games because I am lonely	1	2	3	4	5
I play online games because it is interesting and entertaining	1	2	3	4	5
I play online games so that I can achieve my online gaming goals	1	2	3	4	5
I play Candy Crush because it is very interesting	1	2	3	4	5
I play Candy Crush because I want to get the highest scores in the game	1	2	3	4	5
I play Candy Crush because I want to achieve the highest levels in the game	1	2	3	4	5
I play Candy Crush because it is very entertaining	1	2	3	4	5
I play Candy Crush because everyone else is playing it	1	2	3	4	5
I play Candy Crush because I have a lot of free time	1	2	3	4	5

Kindly indicate the degree of agreement with the following statements:

CODE	SATEMENT	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
BOR	I have a lot of free time	1	2	3	4	5
BOR	I do not have tasks during my day	1	2	3	4	5
BOR	I spend my time doing nothing	1	2	3	4	5
LON	I do not have much friends around	1	2	3	4	5
LON	I prefer to spend my time alone	1	2	3	4	5
LON	I do not get along with people	1	2	3	4	5
GRA	I prefer playing video games than doing other activities	1	2	3	4	5
GRA	Video games entertain me	1	2	3	4	5
GRA	Video games make use of my time	1	2	3	4	5
GRA	I enjoy video games challenges	1	2	3	4	5

How much time do you spend playing Candy Crush per day?

- Less than one hour
- 1-2 hours
- 3-4 hours
- 5-6 hours
- 7 or more hours

Kindly indicate the degree of agreement with the following statements:

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I should play Candy Crush everyday	1	2	3	4	5
I dedicate my time to play Candy Crush	1	2	3	4	5
I am eager to boost my performance and reach higher levels in Candy Crush	1	2	3	4	5

	Least Likely	Not Likely	Neutral	Likely	Most Likely
How likely would you recommend Candy Crush for others?	1	2	3	4	5

