



CHAPTER SIX

SOCIAL GAMES IN EDUCATION

Index

1. Social Games in Education.....	3
Introduction	3
Changes in Students.....	4
Social casual games	5
What a social game is.....	6
Social casual games incentive	8
Why social games may be effective learning environments	9
What Facebook games could mean for education. CityVille	10
Is it possible to use social casual games for education?	11
2. Online video games and social games security.....	14
Objectives of a malware.....	14
Safety on social media.....	15
Security Decalogue.....	16
3. Future	17

1. Social Games in Education

Introduction

Video games have become an increasingly entertainment option in today's society. This is reflected in the huge number of users and the amount of hours per week these users spend playing. The number of hours per week playing on video games has increased significantly until reaching 5.2 hours on average¹. Also the age range of players has been expanding, and currently there are videogames players from children to seniors. This phenomenon has occurred in a uniform way throughout Europe where to a greater or lesser extent, the number of people enjoying the entertainment offered by video games has increased.

The platforms that run games have also diversified, those times playing with a PC or console are over. Today you can play games from a smartphone or tablet.

It's important to highlight that 32.2% of video games users play online and also the increasing importance of games in social media (Facebook, Google, twitter, etc). Over 400 million people participate in games on Facebook², MySpace³ and other social media. This is a new way of fun, making friends and business. We will analyze a particular social media as playing environment: Facebook, that have Contributed to the growth of social games.

Facebook is definitely the ultimate social media. Since its creation in 2004, Facebook has grown to become, with 800 million users, the largest social media today. His approach has been to connect people from around the world through virtual links of friendship. Apart from this, it also allows users to play games online, paying special attention to the social aspect of them. Since the Facebook has existed, video games have changed. They have gone from being more individualistic to more social. The game is played online with friends who help each other, or, as in the MMO (Massively Multiplayer Online Games), where hundreds of thousands of strangers from around the world compete. A great example of these games is Farmville⁴, one of the three games with more users on Facebook. To measure the scale of this phenomenon, just have time to visit the virtual town of Farmville which has exceeded 83 million users worldwide (please see [Annex – Guidelines to play Farmville](#)).

One of the characteristics of social games is, for example, that there is no need to have special skills, because, unlike video games, social games only require a little attention. And if you have any problems, you can ask for help to the social media contacts that have acceded to the game. They are the secret of this social games success.

While there are many studies on motivational aspects for games from an educational perspective and on casual games in general, there are very few studies on 'social casual games'.

¹ "INTECO y aDeSe ponen en marcha una campaña de divulgación para fomentar el consumo responsable de videojuegos". 16, Diciembre 2010. <http://www.red.es/notasprensa/articulos/id/5052/inteco-adeseponen-marcha-una-campanadivulgacion-para-fomentar--consumoresponsable-videojuegos.html>

² <http://www.facebook.com>

³ <http://www.myspace.com>

⁴ <http://apps.facebook.com/onthefarm/>

Changes in Students

A new generation of students is entering vocational training - a group called the "Millennials"⁵ or the Net Generation. NetGen'ers exhibit different characteristics than siblings who are just a few years older. NetGen'ers tend to:

- Gravitate toward group activity
- Believe "it's cool to be smart"
- Are fascinated by new technologies
- They are racially and ethnically diverse
- NetGen'ers learning preferences tend toward teamwork, experiential activities, structure and the use of technology. Their strengths include multitasking, goal orientation, positive attitude and a collaborative style.

Among this group, 20% began using computers between the ages of 5 and 8. Virtually all students were using computers by the time they were 16 to 18 years of age. Another measure of the ubiquity of technology to today's students is the percentage who own computers. In a recent survey, 84% of college students reported owning their own computer, with 25% owning more than one.

Not surprisingly, technology is assumed to be a natural part of the NetGen'ers environment. Virtually all teenagers use the Web for school research (94%) and most believe the Internet helps them with schoolwork (78%). Perhaps most striking is their adoption of the Internet as a communication tool - as comfortable for them as the telephone. Having grown up with both, it may not be surprising. Among teens, the use of instant messaging seems to be a natural communication and socialization mechanism. Seventy percent use instant messaging to keep in touch. Forty-one percent indicated they use email and IM to contact teachers or schoolmates about class work. An even higher percentage use email to stay in touch with friends and relatives (81%). In fact, a slight majority (56%) prefer the Internet to the telephone.

By the time students reach age 13-17, they are spending more time with digital media (computer, Internet, games) than they are television. Their top Internet activities are searching/surfing and communicating, educational activities, followed by games. When students (ages 9-17) are asked what they want from the Net, getting new and exciting information ranks (nearly 80%). It is followed within a few percentage points by learning more/learning better. Communication is third.

The life experiences that shaped today's students are quite different from those of previous eras. Each generation is defined by its life experiences, giving rise to different attitudes, beliefs and sensitivities. Marc Prensky estimates that by the time an individual reaches 21 years of age they will have spent:

5,000 hours reading

10,000 hours playing video games

⁵ How Generational Theory Can Improve Teaching: Strategies for Working with the "Millennials" Michael Wilson & Leslie E. Gerber

http://www.worcester.edu/Currents/Archives/Volume_1_Number_1/CurrentsV1N1WilsonP29.pdf

10,000 hours on the cell phone

20,000 hours watching TV

In addition, he estimates the individual will have sent 200,000 emails.

These differences (Table 1) are exhibited in how different generations view the Web, community, careers and authority.

	TV Generation	PC Generation	Net Generation
Web	What is it?	Web is a tool	Web is oxygen
Community	Personal	Extended personal	Virtual
Perspective	Local	Multi-national	Global
Career	One career	Multiple careers	Multiple reinvention
Loyalty	Corporation	Self	Soul
Authority	Hierarchy	Unimpressed	Self as expert

Table 1: How different generations view the Web, community, careers and authority.

Perhaps as a reflection of the increasing availability of diverse types of content, we are seeing a growing interest in informal learning. Whether it takes the form of a learner searching the Web for information or a museum exhibit or a naturalist cruise, 21st century learners construct their own courses of learning. Learning is conducted in many styles, for many reasons. Largely self-directed and internally motivated, learning is unconstrained by time, place or formal learning structures. And, learning is facilitated by technology

Games represent an informal learning environment. It is not unusual for young people to spend 50, 60, 70 hours or more in a particular virtual world playing a game. It might also take 60 hours or so to read 'War and Peace.' One difference is that games provide a 'multi-sensorial' environment. The students are there in body as well as in spirit, and hence memory is enhanced. An increasing number of researchers and educators are considering gaming as a means of teaching this next generation of students.

Social casual games

Most of games developed for Facebook draw on 'browser games' i.e., games developed for the browser that do not require additional installations. However, because of the environment they are developed in (Facebook) they voluntarily (or involuntarily) include the social aspect.

On December 2009, 208 applications were listed as the 'most popular games' on the Facebook site. Among these 208 applications, 100 (44%) can be defined as 'social' casual games (in the sense we will explain hereafter) while the other 116 can be classified simply as casual games. As examples of the latter we can cite Hatchlings⁶ and Chain Rxn⁷. We have defined these

⁶ <http://apps.facebook.com/egg hunt/>

⁷ <http://apps.facebook.com/chainrxn/>

applications as 'casual games' because of the practically nonexistent social aspect (as in the Solitaire application) and in these applications the number of active monthly users rarely exceeds 600.000. Actually, there is still much confusion regarding the status of most Facebook applications. Marketed as games of some kind until recently, at the beginning of 2008 Facebook managers introduced the new category 'Just for Fun' to accommodate those applications that didn't fit into the 'Gaming' category. In fact, the ambiguity both categories present is often resolved by indexing the same applications in different categories at the same time. For this reason it is not surprising to find very different kinds of applications in the most popular games category.

What is a Casual game

Casual games are one of the most popular categories of games played over the Internet. There are various definitions for the term casual game available from different organizations (e.g. IGDA⁸, CGA⁹, GDC¹⁰)

According to the Casual Games Association 2007 Market Report¹¹, 'Casual games are video games developed for the mass consumer, even those who would not normally regard themselves as a 'gamer.' This definition is also true for Facebook users. In fact, following Rao's analysis Facebook users seem to share the same denial as casual games players, who do not see themselves as gamers.

In general, casual games involve less complicated game controls and less complexity in terms of gameplay than other online games, which make them very popular and accessible.

They can be seen as games that are easy to play and their main focus is on entertainment and relaxation.

While there is the perception that casual game players do not play games frequently or only play in very short game sessions, there is a large group of users who do not fit this stereotype.

Many of the casual online games sites are some of the stickiest web sites on the Internet. For example, on the AOL Games Channel the majority of its online classic card, board and free casino games average between 20 and 40 minutes per game session.

Even Solitaire averages 40 minutes a game session, even though a round can be completed in two minutes. While these times differ greatly from the MMORPG ones (on average, each character spends about 10 hours in WoW during 1 week period see) surely they are remarkable for a so called 'casual' game.

If we compare these data with the abovementioned assertion that casual gamers do not see themselves as players, an interesting scenario emerges.

What a social game is

People are constantly searching for others to share their interests to solve their problems, to date, to meet people, to have an informal conversation, to ask an expert for some help, as well as other interests.

'Why game studies now?' Dmitri Williams¹² says that there are business and technical reasons for the postarcade era resurgence of social game play, but they do not fully explain the sudden

⁸ <http://www.igda.org>

⁹ <http://www.casualgamesassociation.org>

¹⁰ www.gdconf.com/

¹¹ http://www.casualgamesassociation.org/pdf/2007_CasualGamesMarketReport.pdf

¹² 'Why game studies now?' Dmitri Williams (2006) <http://dmitriwilliams.com/WhyGameStudies.pdf>

boom in online networked gaming that ranges from casual card games to vibrant massively multiplayer online games. While it has become obvious that the content of games matters, the social side of what happens to the players, their friends, families, and communities' matters as well, and matters a great deal at this particular moment. Endorsing Robert Putnam's ideas Williams claims that the backdrop for the rise of social gaming is the decline in civic and shared spaces and a decline in realworld places to meet and converse with real people. Whether or not we agree with this statement the emergence of a social online era is a matter of fact, also supported by the growing development of ubiquitous computing.

In addition, we can note the increasing importance of a sense of community for online gamers. In fact, the social gaming audience is looking for an experience that is either built on connections, or incorporates some interaction with others who like the same kinds of games. Players want to compete, collaborate, socialize, and connect through chat and other forms of online communication .

However, it's worth noting that games in Facebook (and in general in all social media) are a particular kind of social game.

A particular characteristic of social casual games: Asynchronous play

Social media have enabled conversations to occur asynchronously and beyond geographic constraints, but they are still typically bounded by a reasonably well defined group of participants in some sort of shared social context. The same asynchronicity can be found in games developed for Facebook.

The concept of asynchronous multiplay was first introduced by Bogost to designate situations in which players play a game 'in sequence, rather than simultaneously', and breaks in the game are a way to 'accommodate real life necessities and game expectations'. In general, asynchronous play supports multiple players playing in sequence, not in tandem. In fact we can talk of 'representation' of multiplay rather than actual interaction between different players. Actually, the space for action in most of those games is personal and not shared. For example, in Farmville¹³ (please see [Annex – Guidelines to play Farmville](#)) a farm management simulation game the only farm the user can interact with is their own. Other players' farms are there only for 'visiting' purposes' and the player cannot modify them. The same thing happens in Happy Aquarium¹⁴ , where the user grows and sells fish. Other peoples' interaction spaces (aquaria) are there only to create a sense of 'social presence' (i.e., that someone else is in the same environment at the same time). In the same way, when one user engages in competitive play, the opponent is notified of having being challenged by the first user and of the outcome of the challenge, but in reality the outcome of the challenge isn't affected by either of the players, and the challenged is allowed to respond to the challenge only by initiating a new game, not in the same contest.

Only in rare and particular circumstances do games in Facebook adopt a real collaborative approach. For example in Mobster2¹⁵ in order to complete one of the quests, several players have to be online at the same time. In this sense, the presence of friends seems more a symbolic representation with the aim of giving a feeling of community and participation without actual co-presence or interaction. However, this 'fictional' sense of presence becomes more real because of the environment the game is in. First of all, the 'fictional' people you are asked

¹³ <http://apps.facebook.com/chainrxn/>

¹⁴ <http://apps.facebook.com/happyaquarium/>

¹⁵ <http://apps.facebook.com/mobsterstwo/>

to play with are your friends, so people you know (more or less). In addition, most games share the same pattern. For example, when a user ‘visits’ someone else’s farm or aquarium, the action can be ‘public’. In fact, the player can publish on his Facebook wall that he/she has helped his friend, or that he needs some object to progress in the game. Even when the application is played only once, the results of the game can be permanently shown in the user’s profile, as boxes or as microstories in the minifeeds (minimal chronicles of every action related to the user or her Friends in Facebook), hence contributing through their persistence to the user’s identity, as expressed by the profile. Note that the private aspect is also important. For example, if I like, I can decide not to show my friends the last trophy I won or the last object obtained in the game. In this case, by refusing to share some information the player carves out a space for the self in a social environment. To summarize: the ‘space of play’ in Facebook can be seen as both private and public. The same goes for actions because each of them can be ‘announced’ or not to friends in the ‘public’ space of the wall. On the other hand, the time of play is always asynchronous.

Social casual games incentive

Having defined what a ‘social casual game’ is in the Facebook context, we will now draw on motivation for playing such games.

In his works Murray describes several categories of Psychogenic Needs (basic needs in personality). It is our opinion that social casual games in the Facebook context are successful because they appeal to the categories listed by Murray¹⁶. In our assertion we are supported by Bogost’s findings on general computer games. However several elements are not directly provided by the game (as happened in the games analyzed by Bogost). On the contrary the appeal to psychological needs is created by the mix of game elements, contextual elements (the Facebook environment) and sometimes external elements (as in the case of Information Needs).

Hereafter is a partial list of needs identified by Murray and his colleagues.

Materialistic Needs

- Acquisition: Obtaining things.
- Construction: Creating things.
- Order: Making things neat and organized.
- Retention: Keeping things.
- Power Needs
- Abasement: Confessing and apologizing.
- Autonomy: Independence and resistance.
- Aggression: Attacking or ridiculing others.
- Blame Avoidance: Following the rules and avoiding blame
- Deference: Obeying and cooperating with others.
- Dominance: Controlling others.

¹⁶2010. Ines Di Loreto, Abdelkader Gouaïch. LIRMM,
available at <http://hal-lirmm.ccsd.cnrs.fr/docs/00/48/69/34/PDF/FunAndGames2010-03-22.pdf>

Affection Needs

- Affiliation: Spending time with other people.
- Nurture: Taking care of another person.
- Play: Having fun with others.
- Rejection: Rejecting other people.
- Succorance: Being helped or protected by others.

Ambition Needs

- Achievement: Success, accomplishment, and overcoming obstacles.
- Exhibition: Shocking or thrilling other people.
- Recognition: Displaying achievements and gaining social status.

Information Needs

- Cognizance: Seeking knowledge and asking questions.
- Exposition: Education others.

Why social games may be effective learning environments

It's important to emphasize that games and play may be effective learning environments, not because they are fun but because they are immersive, require the player to make frequent, important decisions, have clear goals, adapt to each player individually, and involve a social media. Social games have many attributes that are associated with how people learn, this attributes are¹⁷:

Social. Social games involve large distributed communities “it's not the game play per se but the social life around the edge of the game that carries much of the richness in terms of the game's meaning, it's value, and it's social and cultural impact.

Research. When a new player enters a game, he must immediately recall for prior learning, decide what new information is needed, and apply it to the new situation. Those who play digital games are often required to read and seek out new information to master the game.

Problem solving. Knowing what information or techniques to apply in which situations enables greater success, specifically, problem solving. This often involves collective action through communities of practice.

Transfer. Games require transfer of learning from other venues, life, school and other games, Being able to see the connection and transfer existing learning to a unique situation that is part of game play.

¹⁷ “Simulations, Games, and Learning”, By Diana Oblinger. May 2006
<http://net.educause.edu/ir/library/pdf/ELI3004.pdf>

Experimental. Games are inherently experiential. Those who play games engage multiple senses. Those who play games engage multiple senses. For each action, there is a reaction. Feedback is swift. Hypotheses are tested, and users learn from the results.

Acquiring different working skills, the games require teamwork, collaboration between different actors and skills to search for information helping to solve a problem. They are all very useful skills in the workplace.

What Facebook games could mean for education. CityVille

CityVille¹⁸ is one of the latest creations of Zynga, building on their success with games like Farmville. CityVille is a sim game, and it immediately can remember the Theme Hospital, a video game that you could play the late 1990s, where you had to design and operate a hospital. The game involves placing houses and business in field, connecting them with roads, growing crops to supply the business and then investing in community buildings to keep your population happy and increase the amount of people you can have living in your town.

Once you get underway, the game is addictive and you start to set your own goals (get to 1000 in the bank, build a mini housing estate of 3 houses) as well as responding to the goals set by the game itself. The game is powerful for a number of reasons. Firstly it brought home to me the fact that Facebook is evolving into a Gaming platform. Facebook is no longer somewhere where you go to add a random status update, join some group or other, and see photos of your friends out having more fun than you are, it's also somewhere you go to play games. And Zynga have been very clever in weaving the genetic code of Facebook, namely the desire to add more friends, into the very fabric of the game. For the new by CityVille player soon comes up against barriers, mostly created by a lack of cash which is needed to unlock activities which lead to higher levels of game play. Game cash can be bought with real cash (if you can't wait), it can be earned by doing online surveys or purchasing from affiliated retailers, or you can invite your friends to fulfil roles in your city. You can also visit your friends' cities and help them out for mutual rewards. This is a fascinating part of the game as you see art first hand how other people organize their cities. Some of my friends have taken their lead from Soviet style centralized planning with row upon row of regulation housing designed to maximize population density. Others have created ad hoc style townships with factories next to schools and shops and little in the way of a grand plan. There are people who are expert players, has no farms at all, they obviously buys all of her goods in (you can trade with other players via the train and sea). They have evolved a city very close to a modern city, where an agricultural hinterland is needed to support high population density. With some tweaking, and the input of some supporting material from education experts (call them teachers), you could use CityVille to model the industrial revolution. But other persons (called students), could get their hands on the levers of the machine and experience at first hand the push and pull forces driving how cities evolve. Crucially the ability to create, share and co create in teams, would allow students to access the so called zone of proximal development, where someone helps them achieve more than they can do alone. This core theory of Vygotsky demonstrates that some of the best learning happens when learners are engaged in a task, but have another person there to support and challenge them to achieve more. It seems to me that these online gaming platforms are creating rich affordances in this vein and these could be harnessed for educational ends.

¹⁸ <http://apps.facebook.com/cityville/>

Viewed one way CityVille is harmless fun for bored people with computers. Viewed another way it's a dangerous addiction in a world where information overload threatens our sanity. Viewed another way still, it's a fantastic learning opportunity, The game is all about strategy and it provides the rich kind of flow and absorption in a task which characterizes authentic learning. The Games Based Learning community has long been arguing for the educational benefits of games, and it seems to me that with the right kind of scaffolding and support the game could support learning effectively.

Ultimately these games will keep on getting better and better. The programmers will add more and more parameters, edging the games nearer and nearer to reality, in the same way as calculus was able to perform seemingly impossible mathematical feats by breaking them into ever smaller pieces. And the collaborative aspect of these games, whilst crude at the moment, will also develop.

Is it possible to use social casual games for education?

The Snakes and Ladders case. Studied performed in may 2011¹⁹.

Snakes and Ladders is a casual game that is a very popular game, known with different names around the world: in Greece it is called "Little Snake", in Canada "Ups and Downs", in US "Jungle Run" and "Up and Down! The New Ladder Game", in the UK "Steps 'n' Chutes", etc. and in the absence of intellectual property rights and patents, new commercial versions of the game can be marketed under different names. It is up-to-date one of the most popular board games, it is based on chance (i.e. the throw of a dice or the spinning of a wheel) and the estimated duration of a Snakes and Ladders game has been mathematically analyzed, modeled as a Markov chain of 101 states, assuming that the board consists of 100 squares (Daykin, Jeacocke, & Neal, 1967), (Althoen, King, & Schilling, 1993).

The game play maintains the typical rules of the board game and adds to it the questions that players have to answer to be able to use the dice throw displayed on the screen. If the answer is wrong the player remains at the current position (unless the current square is a snake square and the player gets bitten by the snake), if the answer is correct the pawn moves forward as many squares as the dice throw (and if it is a ladder square the player moves up the ladder).

The Evaluation of the game was conducted by four teachers each one supervising a respective group of students. The tests took place in late May 2011 during the 45 minutes of a typical teaching hour in the classroom. After a brief presentation of the procedure students were allowed to play the game as many times as they wanted in the 20 minutes they had at their disposal and at the end they were asked to respond to the second part of the questionnaire which referred to the game they just played. Teachers were assigned the task of creating the

¹⁹ "Is there a Place for Casual Games in Teaching and Learning?: The Snakes and Ladders Case", Vasilis Daloukas, Maria Rigou and Spiros Sirmakessis

<http://www.igi-global.com/article/international-journal-game-based-learning/62854>

respective games for their students to use as well as supervise the testing sessions and provide help to the students

Characteristics of The students involved in the study were:

Teaching Subject	Group	Age	Boys	Girls	Total
Physics, Secondary School 3 rd Grade	A	14	7	4	11
Informatics, Secondary School 3 rd Grade	B	14	7	9	16
Physics, Secondary School, 6 th Grade (technological direction)	C	17	6	6	12
Multimedia Applications, Vocational Training School, 6 th Grade	D	17	7	12	19
			27	31	58

The analysis conclusions after interviewing students and teachers are:

Currently electronic games on PCs, consoles and mobile devices, constitute an entertaining activity of mass consumption with millions of players in all developed countries. Casual games feature as the most dynamically developing section of the videogames industry, covering all electronic games' genres. These games compared to the more complicated and technologically advanced hardcore games, are characterized by simple rules and game play, do not require long time commitment or special skills on the part of the player and have comparatively low production and distribution costs on the part of the producer.

Even though casual games cannot be compared to hardcore videogames that offer intriguing plot, require long-term commitment of the player and manage to absorb the player's attention thus being able to transmit large quantities of knowledge, their usage for student assessment has proved to be of significant interest and was considered positively by students, as well as instructors participating in the evaluation of the game. Moreover, the flexibility of casual games offers interesting potential for alternative usage schemes in educational settings.

Returning to our initial question (i.e. "is there a place for casual games in teaching and learning") the answer is affirmative if these games are used in a way that conforms with the advantages they have to offer: they are easy, they can be played by practically all ages without requiring the player to learn how to play the game, can be played during small chunks of time and if they are provided on a mobile platform can also be played anywhere, anytime. They can be used for student self-assessment and also provide (through adequate explanatory feedback) some learning effect that depends on the student's willingness to read the feedback and also the quality of the feedback. Provided that such games are implemented in a parameterized way that allows easy game generation and also question reuse, then teachers are significantly facilitated in using these games as supporting activities of their teaching. Casual games can be used effectively in educational settings as time 'passers' in the good sense of the term, i.e. as means of entertaining short term engagement with an educational 'twist'. The frequency of using such games is a matter that should be decided by the teacher and may be connected with the age of the students or the subject taught by the teacher, whose role always has been and remains central regardless of what technology has to offer.

2. Online video games and social games security

Online video game users are exposed to more dangers than users who only play locally due to the nature of the Internet²⁰.

The variety of devices that have the ability to run games is very wide. Although the predominant platform is the PC, players will also have consoles, mobile phones, tablet PCs, consoles, portable ... This explosion of diversity of technology has not only been used for online game developers: malware creators have also seen a new "niche market" for his criminal actions.

At present, almost all gaming platforms are affected by some type of malware that can affect the users, so it is interesting to know the dangers that the users of video games may face on the network.

Objectives of a malware

Let's consider what might be the targets of a malware, from the safest to the most detrimental for the safety of the player.

Virtual Money

Today, many of the games implement virtual currency systems to reward achievements in the game. This money is used to increase the character abilities and has become a precious treasure and even a much-needed treasure for new players. Users beginning to play a particular game need a lot of time for their character to get advanced features, so it is much easier to get virtual money in different ways than those established by the game. Thus, the player can obtain in a faster way which otherwise takes weeks or months. Because of the demand for virtual money, has appeared the phenomenon of gold pharming which is to collect virtual money and then exchange it with other players for real money. The best example of this phenomenon appears in the online game World of Warcraft.

Account Theft

To an attacker, it is easier to steal a successful online player account rather than generating an own account and improve it to the desired level. One of the more used techniques to steal accounts is phishing, which prompts the user to enter login credentials in environments controlled by the attacker.

Another technique used by hackers is to distribute fake programs to control their victims machines.

Online traps

One of the objectives pursued by potential attackers is the modification of video games to perform tricks and gain advantage over their adversaries. For example, two years ago with the release of Mario Kart Wii, Nintendo online gaming platform was filled with players who committed cheating (cheaters in the Anglo-Saxon slang) because they could change the game

²⁰ "Seguridad en los juegos online 2011", S2 Grupo

http://www.securityartwork.es/wp-content/uploads/2011/12/SeguridadJuegosOnline_S2Grupo2011.pdf

to get advantage over opponents. Thus, Nintendo was forced to restrict access to users using modified copies of games.

This issue takes a new dimension when it comes to online games in casinos, where the alteration of a normal game can have real monetary losses to both the casino and the other players. There are examples of fraud in online casinos as the poker site Absolute Poker, where a player could learn the letters of the other players.

Data Theft

In most online games today, it is necessary to create an account associated with the player to save the progress achieved in game and it can offer a continuity in time. Typically, in this account it is often inserted player's personal data, such as name, age, gender, email address ... All these data can be exploited by an attacker to perform multiple attacks, from spoofing to send spam e-mails to the obtained addresses.

Theft of personal credit cards number

On some online platforms, apart from the above data in the previous section, it is necessary to introduce a credit card number to create an account. This fact is one of the most valuable for organized crime, as their black market sales can report numerous benefits.

Control of the user's machine

Finally, we must not forget that very often the target of a malware infection is to take control of the machine itself to be used for illegal purposes, such as attaching the machine to a botnet, that is a network of zombies devices acting according the controller instructions. Spamming and the generation of distributed attacks of denial of service are also among the most common actions. As it has seen, this type of attack is not limited to computers, since there are cases of Wii and Play Station 3 that were part of a botnet and then, were service of the network owners.

Safety on social media

Social media have also been a new business space for game developers, especially when the different networks have the means to develop collaborative games by posting application programming interface (API).

A great example of these games is Farmville, one of three games with more users on Facebook, where players must create a farm and care for the animals and harvest. In the game, you can invite "friends" on Facebook to be neighbors on the farm and thus help to develop the game. Farmville (please see [Annex – Guidelines to play Farmville](#)) was also one of the games pioneers in reporting on the players wall about the game information on behalf of users. For example, the following figure shows a publication in which a player offers a game item for the first contact clicking on the link:



This behavior on the part of the games, has set a precedent in the habits of Facebook, users have associated the wall posts from their contacts as legal publications. Time has shown that behind some of gaming publications were viruses, trojans and scams in general. An example of these publications is given in the recent emergence of a supposed game on Facebook that allowed to play Mario Kart:



Once the users clicked on the link, were directed to a website where they were requested to install a plugin to their browsers. As the reader can imagine, it was not any supplement, but a virus that took control of the PC and published the same message on the wall of the unwary player to expand the number of infected users. Not only was published in the wall, but also using the private messaging system for distribution portal:



Security Decalogue

1. Having a protected computer does not guarantee that the players' data are safe.
2. By modifying operating system from consoles, they become more vulnerable to malware.
3. By disabling the restrictions imposed by the manufacturer of a video game, console or other device, the protection measures are removed.
4. It is necessary to protect every device that can have access to online games.
5. Be wary of all notifications received that request us to enter our username and password.
6. Downloaded games from unofficial sites are a danger to the player safety: It is better to download them from official sites.
7. We should be wary of suspected messages sent us from social media users, as they may be a virus.
8. It is highly recommended to have installed a good antivirus on computers as well as on mobile devices.
9. It is advisable not to enter the credit card number if it's not strictly necessary.
10. The security awareness is very important: all users are potential victims of attacks.

3. Future

Everybody is still wondering if social games are a fad or a fashion. There are different speculations about what is going to be the future of these games' genre. Some experts say that the "bubble" is going to pop soon and that the golden era is going to be over; others, from a more positive perspective, say that social games are the future of video gaming. Maybe the two perspectives are extreme.

Experts say that in the future social games:

Will be Much more competitive. A few years ago, Zynga²¹ became the leader in social games; a few other companies, such as Playdom²² and Lolapps, began to pop up. Now big companies such as Electronic Arts are producing social games too.

Will Use of different platforms. Until now Facebook was the dominant social gaming platform. But Google+ and other platforms are becoming more popular so expect more integration with social media moving forward.

Will be developed for Mobile platforms. There are not that many social games for mobile devices – yet.

Will have New and updated monetization models. Innovation in the area of monetization will most likely expand beyond buying virtual goods.

Will have New gaming formulas. Social games tend to follow the same formula. Some commercial games are also beginning to release their social versions, like Sims Online.

²¹ <http://www.zynga.com/>

²² www.playdom.com/