

University of Portsmouth

School Of Creative Technologies

Final Year Project undertaken in partial fulfilment of the requirements for the BSc (Honours) in Computer Games Technology.

Players Motivation: An in-depth analysis into the effects of extrinsic motivation in the design of games.

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May 2011

Project Type: Study

Abstract

This study is intended to give a greater understanding of the role extrinsic motivators have on a game user as well as game design itself. Previous research by Vorderer and Bryant (2006) suggests that certain characteristics of games trigger intrinsic motivation within the user and then generate repeated cycles of user judgements such as enjoyment, behaviour (game play) and feedback. A process the author calls the “game cycle”. However the latest trends in gaming, according to Schell (2010), are pushing more towards relying upon psychological advantages such as extrinsic motivation to not only keep the player entertained but to generate financial profit at the same time. There has been no substantial previous research into these new forms of addictive game elements; with this in mind this study has attempted to observe the effects of intrinsic and extrinsic motivation in games design ranging from industry leading titles to games available for free on ‘Facebook’.

Acknowledgements

I would like to thank my family and friends for their guidance and support during this and throughout my degree. In particular I would like to thank my fiancée Sara for the dedication she has shown in helping me through this report. I would also like to thank my supervisor Mark Eyles to whom I consulted for academic guidance. Lastly I give my thanks to all the participants of the survey for whom I would not have been able to collate accurate results to the hypothesis for my study.

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Est. Word Count: 13,000

Introduction

There are two different types of motivation which may have an impact on a game user. Intrinsic motivation occurs when people are internally motivated to do something because it either brings them pleasure, they think it is important or they feel that what they are learning is significant (Wikipedia, 2010(a)). Extrinsic motivation refers to motivation factors that are external or come from rewards outside an individual such as money or grades. According to Bainbridge (2009), “these rewards provide satisfaction and pleasure that the task itself may not provide”. This viewpoint is supported by Alfie Kohn (1993, p.87) who stated “*it is true that the most destructive way to use extrinsic motivators is to offer them [extrinsic rewards] for doing something that is potentially interesting in its own right*”, stipulating that adding external motivators could be detrimentally affecting the intrinsic motivation behind a task which should by itself be interesting. This study is intended to give a greater and more modern understanding of the role external motivation techniques, such as Xbox achievements, Playstation trophies and the Wii stamps, have on game design and effectiveness. Previous research by Garris, Ahlers and Driskell (2002) suggests that certain characteristics of games trigger intrinsic motivation of the users and then generate the repeated cycles of user judgments (e.g., enjoyment), behaviour (game play), and feedback, as the game cycle process. My hypothesis suggests a combination of intrinsic and extrinsic contrasting motivational techniques are making an ever stronger presence within games design. This will be explored further in the following literature review.

Literature Review

The role of intrinsic motivation in games

According to Donald Clark (2007) games, by definition and design, rely on intrinsic, not extrinsic motivation. This viewpoint is further supported by Malone (1981) who proposed the primary factors that make an activity intrinsically motivating are challenge, curiosity and fantasy, specifically when this framework is applied to the design of computer games. Games are intrinsically challenging since they thrive on managing challenges in such a way that playing becomes compulsive. This is often through measured success and reward patterns that keep one playing (Donald Clark, 2007). It is not difficult to see that the motivation behind playing a game is the key to creating a great game. It is argued by Alfie Kohn (1999) that extrinsic motivators such as achievements, trophies etc. could undermine the intrinsic motivation that promotes optimal performance in computer games case enjoyment. It can further be argued that the most destructive way to use extrinsic motivators is to offer them for doing something that is potentially interesting in its own right (Alfie Kohn, 1999). Chris Hecker (2010) wrote about external rewards such as achievements claiming the game industry *“seems to be careening head first into a future of larding points and medals and cute titles on players just for starting up a video game”* (Hecker, 2010). This is supported by the fact that most, if not all, newly released titles will have some sort of achievement system. For example, Call of Duty Black Ops has 50 achievements, 51 trophies and 41 PC achievements, all designed for the player to complete as extrinsic motivators. Bruce Phillips (2008) said to keep players motivated *“is to strike the right balance between difficulty and player ability, thereby always keeping the player within arm's reach of a new achievement”*. An article on 8bitRocket.com gives the example for *intrinsic* reward for a space shooter to give the player a bolt-on extra weapon for manoeuvring successfully around some asteroids to pick-up the floating bonus icon. This is still an award however it is used in game-play to help the player advance further in the game. The value on the award is inclusive to the game itself (Trinen, 2010, p. 5).

Extrinsic motivators in games

The more apparent extrinsic motivations within games such as: Achievements, Trophies, Stamps, PC Achievements, are all relatively new. It could be argued that high score tables were the first forms of extrinsic motivation, initially featured as high scores in Sea Wolf (1976) where players would compete to gain the number one place on the board and play the game to gain the high score rather than for the fun of the game. An article from Sirlin.net (2010) described the high score motivation technique as *“leaderboard system or matchmaking system surrounding a competitive game is an external reward system, but it also legitimately improves the experience of competition”*. Acknowledging that whilst high scores and leaderboards are forms of extrinsic motivation, if the type of game is competitive this type of motivator could improve the gaming experience. An *extrinsic* award for the same game would be to award the player a ‘badge’ that they display on their portal profile for reaching level 5 of the game. The ‘badge, has no intrinsic value in the game; it is simply an achievement for bragging rights to other players. Furthermore, this extrinsic reward might have its own value (such as Microsoft Gamer Points) that transcends the single game, turning a system of games into a meta-game (article by 8bit_admin, 8bitRocket.com 2010).

The first emergence of extrinsic motivators, excluding high scores, appeared when the Xbox 360 was released in December 2005 (November for U.S) including 14 game titles. Most of the games at release did not utilise the achievement system as seen with current day games indicating increased focus from developers as a motivation technique. Vince Curley, a developer of the Xbox 360 achievement system, described the initial response:

“Achievements were not well understood by game designers, and we didn't provide early titles with good guidance on how to best use the system. Because of this, early implementations of achievements were inconsistent and not as good as they could have been. Some games did the minimum required: 5 achievements which were tossed out for basically just starting the game. Some games made the achievements way too hard or too easy. Our developer support team has done an amazing job of providing guidance, including creating a 21-page, 8,000 word whitepaper on best practices for achievements”. (Vince Curley, 2010)

This differs from more recently released games which have individual images for each achievement with on average 50 achievements demonstrating the shift toward extrinsic motivation used by developers to increase game play motivation. *“These days most designers realize that achievements provide a great motivator for people to try out new areas of their game, or offer replay value that would be difficult to advertise without them”* (Vince Curley, 2010).

Microsoft Game Studios user research expert Bruce Phillips (2009) discussed how Microsoft are researching into how to keep players motivated to play their games. As part of a research study, Phillips (2009) compared a number of game titles using the number of people who completed a game and the number who collected all the achievements. The results of this study (shown in table 1) involved over 14,000 Xbox players and showed that more people completed the games campaign than achievements by comparing the three highest selling titles.

Table 1. Campaign Completion compared to Achievement completion

Title	Campaign Completion	Achievement Completion
Call of Duty 4	75%	45%
Halo 3	72%	32%
Gears of War 2	67%	34%
Grand Theft Auto 4	27%	19%
Fable 2	53%	45%

Showing that although the games have a high campaign completion, all three have below half completion rates for the achievements. Phillips (2009) explains the results tend to be from the more ‘hardcore’ type of player which introduces the factor that the type of player can influence how effective extrinsic motivations are in games.

This differs from Nintendo's approach to extrinsic motivation within games and why there is no global achievement system similar to the Playstation 3 and Xbox 360. Bill Trinen (Head of Product Marketing for Nintendo of America) suggests:

"there are things you can do in the game that will result in some sort of reward or unexpected surprise. In my mind, that really encourages the sense of exploration rather than the sense of 'If I do that, I'm going to get some sort of artificial point or score that's going to make me feel better that I got this.' And that, to me, is I think more compelling." (Trinen, 2010).

Nintendo's stance on extrinsic motivations indicates preferences to use in-game rewards that might benefit or change the game itself to encourage exploration. Furthermore the obligations developers are under when it comes to extrinsic motivation or an achievement system *"when they create their games, [Nintendo's designers] don't tell you how to play their game in order to achieve some kind of mythical reward"* (Trinen, 2010). There are exceptions to this for example Wii Sports Resort has an achievement system whereby the user would get a 'stamp' for completing a certain task. Neither statement acknowledges the benefits or disadvantages for extrinsic motivation but further supports claims that an in game reward is a viable motivator and could benefit the player(s) engagement directly in the game.

Types of players and their motivations

Each game player is different and this makes it increasingly difficult to generalise people's motivations especially within regard to computer games. Reiss said: *"Individuals differ enormously in what makes them happy – for some competition, winning and wealth are the greatest sources of happiness, but for others, feeling competent or socializing may be more satisfying. The point is that you can't say some motivations, like money, are inherently inferior."* (Steven Reiss, 2005), G. Christopher Klug and Jesse Schell (2006) put forward a thesis about the different types of player and what motivates them. These were 'The Competitor, The Explorer, The Collector, The Achiever, The Joker, The Director, The Storyteller, The Performer and The Craftsman. Klug and Schell (2006) describe each type of player.

"The Competitor as someone who plays to be better than other players. The Explorer plays to experience the boundaries of the play world. He plays to discover first what others do not know yet. The Collector plays to acquire the most stuff through the game, The Achiever plays not only to be better now, but also be better in rankings over time. He plays to attain the most championships over time. The Joker plays for the fun alone and enjoys the social aspects. The Director plays for the thrill of being in charge. He wants to orchestrate the event. The Storyteller plays to create or live in an alternate world and build narrative out of that world. The Performer plays for the show he can put on and The Craftsman plays to build, solve puzzles and engineer constructs." (2006, p.104).

The idea of different types of players is much debated amongst developers and scholars Mitch Krpata (2008) suggests there are two different reasons why people play games rather than the traditional 'hardcore' and 'casual' groups. Krpata (2008) argues that these two

types are too broad and are not properly defined claiming that ‘Skill Players’ and ‘Tourists’ are better definitions of the reasons why people buy/play games (2008). According to Krpata (2008) the reason behind this is ‘Skill Players’ are “*people [who] play to master a game -- to perfect its mechanics, to explore every inch of the game world.*” Whilst describing ‘Tourists’ as players who “*play to...see the sights... to hit the high points and not get too caught up in the minutiae*”(Krpata, 2008). There is a strong argument to logically conclude that it would be the ‘Skill Players’ drawn to extrinsic motivators.

Effect of genre on motivation techniques

An area of further research required by this study is the genres of games and how these might affect motivation in the game and how extrinsic motivation techniques differ depending on genre as well as target audience. Most game genres are subtly different in the experiences that they provoke (Pagulayan *et al* 2001). We assume different genres, game contents and interfaces will have different effects on, and relate differently to, the motivational variables (Richard M. Ryan *et al* 2006). Although this assumption was made in the study by Ryan it was also identified that more work was needed to be able to study how different genres affect motivation. Malone (1981) indicates the three main successful features of instructional computer games that triggered intrinsic motivation of users to be fantasy, challenge and curiosity, further suggesting if a game is made with these aspects then it will be popular. Klimmt and Hartmann (2006, p.140) claimed that the player may, for example, decide that a given computer game does not offer “enough things to do”, which would mean that the assumed input-to-output ratio is not sufficiently attractive. The idea of the players expected enjoyment in regards to what the player needs to do or how they interact is known as effectance. Klimmt and Hartmann (2006, p.140) specify the example of “*effectance*” as causing an individual to select a modern 3-D combat game with stunning visual, auditory, and narrative outputs over an old fashioned game like Tetris, which is unimpressive in terms of player produced output. Effectance is a more specified form of games motivation as it is primarily based more around the expected experience and the output produced by the game which in turn motivates the player to engage with more of the game.

Motivation in social media websites

It is not only the more ‘traditional’ console games which are utilising extrinsic motivation but also networking sites, in particular games on Facebook, which have utilised this type of motivation to increase their profits. Jesse Schell (2010) presents a strong argument to support this view about the motivation behind Facebook games such as Farmville and Mafia Wars, by stipulating that using the reality aspect of Facebook, where your friends are in the game sometimes competing against you, uses the ‘psychological trick’ that in order to beat your friends you can just make a direct payment. These psychological tricks are another form of extrinsic motivation using reality to motivate the player to buy into and continue playing the games. Jesse Schell (2010) demonstrated this best when he talked about the online game Club Penguin which motivates players by making everything in the game free, ultimately collecting money this ‘hooks’ the player intrinsically. This intrinsic motivation is then used to persuade players to then subscribe allowing them to then spend the ‘in game’ money.

An article on 8bitrocket.com (2010) discusses the extrinsic mechanics being used stating that

“When studying the current crop of “social” games [they] are all about extrinsic awards. A game like Roller Coaster Kingdom downplays nearly all the traditional intrinsic awards for a game, and instead opens it up to the extrinsic world based on Facebook functionality.” (8bitrocket.com, 2010).

This suggests developers are focusing more on open media, extrinsically based games. Chris Hecker (2010), currently working on SpyParty, in a recent interview with Gamasutra talks about how new media such as Facebook will affect the more traditional console system saying, *“I think Facebook will crush them both, assuming the Facebook game developers can figure out how to make their games matter a bit more, as opposed to just designing machines to separate people from their wallets and friends lists.”* (Interview by Patrick Dugan, 2010).

This is beginning to show a shift by developers to more extrinsically based games. *“These days most designers realize that achievements provide a great motivator for people to try out new areas of their game”* (2010, Vince Curley) which undermines the intrinsic motivation behind games. David Berkowitz, director of an emerging media marketing company, describes this effect of continual extrinsic motivation as powerful systems, stating:

“powerful systems are in place, but these systems in their current form are too new. We are focused on the short-term results: spikes of fans, clicks, engagement, or whatever action we're trying to incentivize. It won't last indefinitely. We're creating a motivation bubble. We'll fill it with extrinsic rewards until it pops. We'll try to revive it with more, and it will be too late. We'll call out for the intrinsic motivation to return.” (Berkowitz, 2010) .

Berkowitz (2010) explains that whilst this system of continual extrinsic motivation in games such as badges, coins, achievements, notifications etc. reap the short term award of increased sales and bringing in more players (in the case of Facebook “likes”), the benefits will not last forever and players will eventually seek out the more intrinsically valued games, effectively creating a motivational loop meaning games developers will need to create more intrinsically interesting games to attract audiences.

Enjoyment as a form of motivation

Enjoyment of a game, or variety of games, is an overlooked type of psychological motivation that game developers should not ignore. Donald Clark (2007) described the psychological motivation to play as games placing *“the learner at the centre of the action and progress depends on intrinsic drivers. Avatars are proxies for the player/learner but they are, in motivational terms YOU the player”* (Clark, 2007). The understanding of what leads to the enjoyment of a game is affected by a spectrum of variables including how enjoyment differs from individuals, differing game types, systems, and playing conditions. A study by Phillips,

Rolls, Rouse and Griffiths (1995) showed that nearly three quarters of study participants played video games for the sake of enjoyment, with most claiming they enjoyed it so much that they played for longer than originally intended to. With reference to the psychological definition of enjoyment, Deci and Ryan (1985) came to the conclusion that enjoyment is the satisfaction of three psychological well-being intrinsic needs namely autonomy, competence and relatedness. This suggests enjoyment is defined through partaking in the game or event as the person is fulfilling these three psychological intrinsic needs. *“Though the resulting emotional reactions are not always positive in nature – for instance frustration can occur when challenges within a game cannot be met – positive outcomes are surely hoped for and thus can potentially lead to habitual playing”* (Raney,Smith and Baker, 2006. P.191). Scholars (Gan, Tuggle,Mitrook,Coussement, and Zillman,1997) have noted the emotional rollercoaster effect and type of emotional spectrum as part of the appeal of sports spectating. Creating an environment where there is a fluctuation of emotions both high and low this has the benefits of fuelling game player’s curiosity as well as challenges.

Intrinsic and extrinsic motivation in other fields

Motivational techniques for games in other fields such as sports are similar to motivation in computer games in that they both have intrinsic and extrinsic influences. An article in Peak Performance (Peak Performance, 2010) said that external motivation can lead to the person *“experiencing psychological pressure”* (Peak Performance, 2010). Participating in sport activities to receive prize money, win a trophy or a gold medal typifies external regulation. Participating to avoid punishment or negative evaluation is also external signalling that are external influence rewards which can also be the desire to avoid punishment. It could be argued that avoiding punishment for computer games players could be in the form of others gloating about their victory. This leads to the debate about which form of motivation, intrinsic or extrinsic, can increase player performance. Roberto Forzoni (2001) from Brunei University made the point that anecdotal evidence suggests that elite performers do indeed sustain high levels of intrinsic motivation throughout their careers. Forzoni (2001) further states that it appears most unlikely that high levels of motivation would be difficult to sustain throughout all the setbacks and "lean periods" (Forzoni, 2001, p.2) that are experienced if players did not have high levels of intrinsic motivation for their sport.

Project Planning and Management

The planning of this project was based around Morrison (1993) that suggested the structure of a research project split into four main areas: *“orienting decisions, research design and methodology, data analysis and presenting and reporting the results”* (Morrison, 1993, p.). Orienting decisions set the general nature of the research; this would cover areas such as the research audience, the aims and purpose of the research, ethical implications and timeframes for the project. The general project was set at the very beginning of the project as it was mentioned in a speech by Chris Hecker (2010) who said *“there are no direct studies [about the psychological effects of extrinsic motivations]”*(Hecker,2010) this aligning the study more towards effects in game design in regards to developers and how extrinsic mechanics are effective with advantage and disadvantages this will give a better insight for developers refining extrinsic mechanics usage within games. The ethical implications of this type of study are low as questions will not need to be personal or potentially confidential information and will instead focus on participants playing habits; an ethical review form is included in the report. The timeframe for the project was based on preparation and background research taking half the time with the rest of the given time dedicated toward the primary research in gathering, analysing and concluding the report.

To manage this research study within the timescale, a survey was completed to effectively gather current gaming behaviour to test the hypothesis for this study and literature review completed. Research is described as the process of operationalization and *“translating a very general research aim or purpose into specific, concrete questions to which specific, concrete answers can be given”* (Cohen et al., 2004 p.75). For the survey completed this process was considered and indicated that the questions used would need to include trends and questions brought up from the background research covered in the beginning of the project along with ethical practices in mind. Analysis of the data would need to be quantified and then structured into emergent themes from both the background research and any that had become evident within the survey results. This process would then facilitate presenting and reporting results and research findings whilst drawing conclusions based upon the research projects overall initial purpose and hypothesis. The following section will describe the methodological approaches taken to support the study.

Methodology

Quantitative/Qualitative Research Type

There are two differing types of research data, quantitative and qualitative, used as part of the inductive-deductive approach to research “so that their explanations have a firm basis in fact” (Cohen, Manion and Morrison, 2004, p.3). Quantitative data is described by DJS Research (DJS Research, 2010) as a “measure how many people feel, think or act in a particular way. These surveys tend to include large samples - anything from 50 to any number of interviews. Structured questionnaires are usually used incorporating mainly closed questions - questions with set responses” (DJS Research, 2010). Closed questions can be used to collect empirical data for numerical, scientific measurement and analysis.

Qualitative data on the other hand, uses “descriptive information, such as a narrative or portfolio. These data often collected in open-ended questions, feedback surveys, or summary reports, are more difficult to compare, reproduce, and generalize.” (Oakland Community College, 2008). This form of research could be more subjective however it allows for more detailed and in depth results by analysing the results into patterns.

Participants

The sample for this research involves 30 participants drawn from several sources. This sample will be obtained from a wider spectrum of players as there was no specific target audience for this study and a wider spectrum was desired in order return results from varied demographics including age and gender groups. The mean age of the participants was 22.96 years and the age range was 16 to 51 years of age. From the 30 participants 5 were female which indicates a minority. The information was gathered from a mixture of both open and closed questions to support analysis with quantitative and qualitative data. The study findings could have been affected by the distribution methodologies which in turn affected population sampled since participants and distribution methods were circulated via email around the Computer Games Technology course and through Facebook. This resulted in a population that had 7 under 19, 18 between the ages of 20 and 25 one participant between the ages of 26 and 29, with the remaining three participants aged over 30 with a majority of males (5 females).

Statistical analysis of the data

There were several different mathematical methods employed to gather meaningful results from the sample, the exact methods used were dependant on data retrieved from the questions. Closed quantitative questions were analysed dependant on the data provided, for example question three asks participants if they notice extrinsic bonuses while playing and participants were able to select more than one option making for percentages over one hundred. To effectively analyse this type of closed question finding the mean gives a better understanding on average how many extrinsic mechanics participants are aware of. Coolican (2004, p.259) described an advantage of this mathematical method as “the most sensitive and accurate...because it works at an interval level of measurement” however the sensitivity of calculating the mean makes it liable to decimal numbers since “with discrete variables we get ‘silly’ values for the mean and this is sometimes misleading or at least

distracting – for instance, the notorious case of parents with 2.4 children”(Coolican,2004, p.259).

A primary type of method used in the survey was the calculation of the mode which is the most frequently selected or entered result from the question as, an evident source of statistical analysis since a lot of the questions within the survey provided data that would benefit from calculation of the mode. It is important to note that the mode is the most popular option and is not the frequency of the popular option. For example, question one in the survey asks participants to select which platforms they own; if Xbox 360 was the most selected option this would make it the mode rather than the frequency which states the number of participants who selected it. Advantages of mode are it *“shows the most frequent or ‘typical’ value of a data set”*(Coolican, 2004, p.262) and unlike the mean, mode is *“unaffected by extreme values in one direction”* (Coolican, 2004, p.262). A disadvantage to using this methodology is it *“can’t be used in estimates of population parameters”* (Coolican, 2004, p.262). This affected the methodology as it meant in order to gather information about the population and information about the types of participants responding a different calculation method would need to be applied, two examples of this were the age and gender questions as these are population parameters they would need to be quantified rather than calculated using mode.

Quantitative data returned from the survey could be calculated on the frequency of selection largely represented via cardinal data presented in tables this. *“Frequency or one-way tables represent the simplest method for analyzing categorical data. They are often used as one of the exploratory procedures to review how different categories of values are distributed in the sample”* (Statistica, 2007); this would indicate popularity as well as further opportunities to calculate using other statistical mathematical methods. Some of the open ended input from the questionnaire can be analysed and then set into categories which can be applied to the statistical strategies listed. This type of analysis, described as *“categories and final analysis”* (Coolican, 2004, p.569) enables the data to be used directly within the report to support an analytical claim made based upon results.

Materials

The survey contains nine questions incorporating demographic aspects, such as age and gender, and a combination of open and closed questions. This allowed for both quantitative and qualitative data capture to support both empirical and numerical information to engage factual statistics and qualitative data to further analyse attitudes, feelings and behaviours. Questions were structured to give insights into participants own interpretations with how effective extrinsic systems within games are. The nine questions were as follows:

1. Which of the following (Game systems) do you own?

- *PC*
- *Xbox 360*
- *Wii*
- *Playstation 3*
- *None of these*

This question is quantitative and will allow for an insight into the more popular systems and will help to narrow the results as each of the options given currently employ a type of extrinsic motivation system.

2. Do you play games to better other people's scores?

- *Most of the time*
- *Sometimes*
- *Rarely*

This qualitative question will support empirical analysis with the social aspect of beating other people's scores which is further addressed in more detail later on in the survey. This will help to determine how effective competitive gameplay mechanisms are and the reasons why people enjoy playing the game.

3. Do you notice when you get a bonus when playing?

- *Extra Points*
- *Achievement Notification*
- *Unlockable Content*
- *Other*

This question was designed to see whether people are psychologically aware of extrinsic motivators and whether or not they break up the suspension of disbelief (takes the player out of the game world). To see which of these mechanisms players consciously noticed the most the question was made quantitative, allowing for pure statistical information.

4. Do you actively collect:

- *Xbox Achievements*
- *Playstation 3 Trophies*
- *Steam PC Achievements*
- *Farmville Ribbons*
- *Other*

As far as popularity is concerned this question links partially with the first question as players may own both a Playstation 3 and Xbox 360 but only actively collect the Xbox 360 achievements. This question would indicate if these motivators are/are not working and the results would provide some insightful data.

5a. What's your favourite game?

This question was in two parts to make it easier for participants to complete as previously this question was unlimited with the range of responses making analysis and conclusive data more difficult. The first part of the question was a closed response to allow for the comparison of the more popular titles in regard to the number of external motivators within those games.

5b. Give 2 reasons why you play that game

The second part of the question was open and qualitative to gather information to give an indication of the gameplay mechanisms that people remembered and enjoyed the most. Unlike other questions this was made qualitative as there is a wider variety of possible answers also allowing for a more detailed response and analysis with data.

6. Have you ever:

- **Filled in a survey to get in game currency or other rewards**
- **Paid directly for game currency or other rewards**
- **Gifted/Notified items to friends to earn yourself rewards**

One point introduced from the background research is how much people will do in order to get playing rewards; this question was designed with that thought in mind and allowed for statistical data to be collected as to how effective the most common ways of producing either income or marketing with the product.

7a. Do you spend most of your time playing games on Facebook than on Console/PC/Phone or other platforms?

This question was designed to see if participants were more interested in the games on Facebook as opposed to more traditional platforms, considering the console games are much more graphically intense and could be construed more immersive. The results may indicate if gameplay mechanisms attracting people back to the games on Facebook.

7b. Which game do you play (if any) the most on Facebook?

This question was to determine the most popular games on Facebook then analyse the frequency of extrinsic mechanics within the more popular games suggesting effectiveness of extrinsic mechanics.

7c. Give 2 reasons why you play that game the most

An interesting point from the literature review and part of the research hypothesis was how external motivators can affect the popularity of games. These two questions were an attempt to gather data to provide an insight into which games were the most popular and what are the overall reasons for people playing those games were. These questions were designed to triangulate findings from question 2 in determining how significant the influences of social elements in games are in terms of motivation.

8. Do you feel you have completed a game when you have:

- **Completed the story**
- **Collected all the badges, achievements or trophies**
- **Beaten all of your friends scores**
- **All of the best items/strongest team**

In order to return statistical data that would determine what gave participants the sense that they have finished the game they are playing and therefore no longer feel the need to play further (or anymore) the findings from this question, whilst narrow in possibilities, will show whether external motivators are making games replayable.

9. Do you prefer:

- **Collecting items that improve the game (such as a new gun, or new items that directly change the way you play)**
- **Collecting reward items (items such as Farmville Ribbons, PS3 Trophies, Xbox Achievements that don't change the gameplay)**

Background research indicated that types of rewards that affect gameplay or change the game in certain ways were more effective than the achievement based systems such as Playstation Trophies or Xbox Achievements. It was this finding that led to this question to provide an insight into what participants/players were more motivated by with regards to types of rewards.

Appendix 1 contains a copy of the survey as it was presented to the participants.

Procedure

The survey was published and released to participants through the public domain via Facebook and Twitter as well as being circulated around the University of Portsmouth via email. This resulted in obtaining data that was not as varied as possible giving larger numbers of results from 17 to 21 age ranges. The survey was hosted using the Google documents system enabling each of the participants to be given a link to the website to for access to the form for completion. The results were sent to a specifically created email address (externalrewards@hotmail.co.uk) to further secure the information. Data confidentiality was maintained throughout the survey described the purpose, intended use and identities kept anonymous unless specified otherwise implications if participants want to be identified were also described. Participants were advised if they had any issues that they could contact the email address displayed this would include if participants wanted to withdraw from the study. The completed surveys were analysed into groups of information which fit into themes. The themes discovered are discussed in the results section of this study and where appropriate are accompanied with direct examples from the survey results.

Results

Question one gave survey participants a selection of the current game platforms that all currently employ a form of extrinsic motivation system. This was an attempt to gauge which was the most common system and therefore had the larger audience. Results from this question were unsurprising as there was a distribution fault with this question. Participants could only access the survey through the internet explaining why 29 (97%) of participants selected this as an option. The single one response that did not may be because it was accessed through a net-book or laptop as opposed to a traditional standalone computer. Participants could only access the survey through the internet explaining why 29 (97%) of participants selected this as an option, the single one that didn't may be because it was accessed through a net book or laptop as opposed to a traditional standalone computer. The remaining results are unaffected by the same fault as the PC results indicated in figure 1 show the results from this question are not affected because participants were unable to access the survey from any of the other option systems.

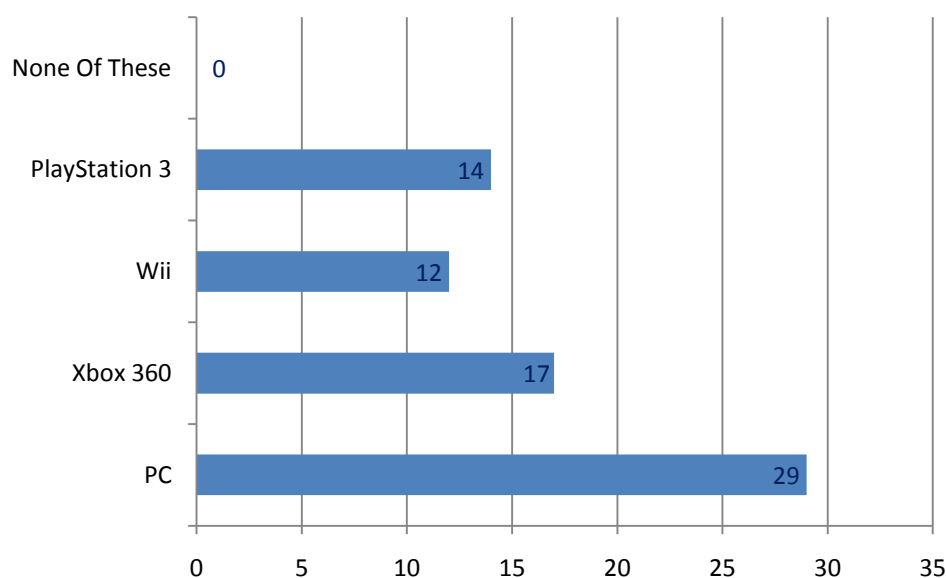


Figure 1. Chart indicating question one results

The second question in the survey addressed competition as a type of motivation and was incorporated to indicate the competitive nature of participants. Each participant answered this question and the results reflect this, with 16 (53%) of participants selecting the 'sometimes' option. Significantly the second most popular choice for this question was 'most of the time' with 9 (30%) participants indicating players will tend to be competitive when possible. The remaining 5 (17%) of participants selected 'rarely' this could indicate that players can ignore competitive nature and this will be compared to results from other questions.

Question three gathered information regarding whether the player has awareness of extrinsic motivation systems and how to contribute to the game system. Results signal that on average each participant selected 2 of the extrinsic systems which gives an insight into how effective extrinsic motivation mechanics are within games suggesting players are recognising the systems when they play, can remember which rewards they are collecting and have identified what to do to gain rewards. The participants had options of the most common types of bonus within games; the results were surprising out of the 30 participants there were 69 options chosen. This indicates that on average when playing games each of the participants were aware of the different types of motivational gameplay elements. Question three asked participants whether they noticed when they got a bonus when playing. Figure 2 shows the results of participant selections.

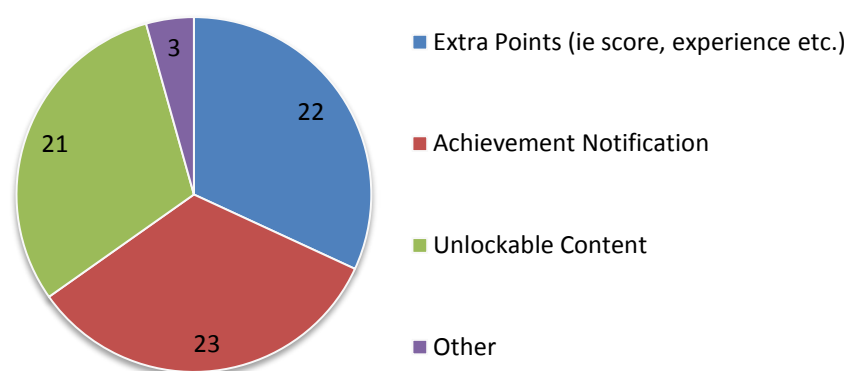


Figure 2 Chart indicating which extrinsic motivations participants acknowledge

From the results that participants inputted themselves, two stated that they noticed all of the options but were not affected or motivated by them. The last entry indicated they would only notice these types of mechanisms when the gameplay was not immersive enough.

Question four was designed to give an insight into identifying the most popular extrinsic motivation system. Question 4 resulted in 33 replies to this question averaging at 1.1 per participant. Results show that the highest systems were the Xbox Achievement and Steam PC achievement which both received 10 votes equating to 42% each. Initially this suggests that these are the most popular motivation systems however results from question 1 show the Xbox 360 as the second most popular system. This could be a possible factor affecting the results of this particular question whilst the survey was accessed primarily through web browser arguably increasing the PC results. The second highest result was Playstation 3 Trophies which obtained seven (29%) with only one vote for Farmville Ribbons (4%). There were 2 (8%) qualitative answers the first naming Farkle points as the extrinsic system acknowledging that these systems are present in Facebook games. One participant replied to this question with “Any Achievements for games I play (mostly WoW [World of Warcraft] :P)”.

The fifth question in the survey was split into two parts. The first part of the question asked participants what their favourite current game was. This was to gather the most popular current games allowing a table to show extrinsic information (i.e. number of extrinsic motivators, types etc.). This was to gain an insight into how dependant developers are becoming focused on including extrinsic motivations. In addition, to see trends between popularity and number of extrinsic motivators, these trends have been presented in Table 2. The results to the first part of question five were far more varied due to the vast selection of current games available to participants. In total there were 21 different titles submitted and 29 responses. The results have been refined to indicate the five most common titles submitted in the survey. One participant stated about Black Ops: *“It’s a good game with loads of content and a very good multiplayer online, with leagues and scoreboards”* and *“Playing with friends, for achievements (to up my multiplayer level)”*.

Title	Frequency	Released	Genre	Extrinsic Mechanisms
Black Ops	4	2010	FPS	Achievements, Unlockable Content, Experience points, Currency system
World of Warcraft	3	2005	MMORPG	Achievements, Unlockable content, Experience points, Currency system
Starcraft 2	2	2010	RTS	Achievements
Little Big Planet 2	2	2011	Platform	Achievements, Unlockable Content,
Counter Strike	2	2004	FPS	Achievements, Currency System

Table 2. The most common console game

Note: Remaining 16 titles were all single frequency.

The second part of question five related to the first part as it asks participants to give two reasons as to why the indicated game is currently their favourite. This was to support further understanding of player motivation in games and the extrinsic effects. The intended purpose of this question was to determine if there are any correlations between the types of extrinsic motivations in a game and what the participants themselves believe their motivation is. Table 3 shows the most common themes found within the results and the number of participants who mentioned them.

Title	Frequency
Competitive	14
Gameplay	6
Story	5
Gameplay changes	4
Balance Gameplay	3
Quick to Play	3
Extrinsic rewards	3
Addictive	3

Table 3. Themes found within question 5b

Note: Not all participants entered the two reasons requested

In response to this question one participant stated *“I been into the CoD[Call of Duty] series ever since the original Call of Duty came out and been a fan of almost all Call of Duty series ever since. Especially Call of Duty 2. In my opinion, games like Call of Duty 2 are not made anymore. It’s a simple straight on FPS shooter. It takes skill and style to be good at this game. Without the help of perks, attack helicopters etc.”*.

The results from question 6 averaged as one selection per participant suggesting that these mechanisms are being used as ways of creating income or free marketing for the games. 12 (67%) participants selected that they have filled in a survey to get in game currency or other rewards. 10 (56%) participants selected that they Gifted/Notified items to friends to earn yourself rewards while the remaining 8 (44%) participants selected that they have paid directly for game currency or other rewards.

The first part of question seven asked participants if they spent more of their time playing games on Facebook than on other more traditional platforms. The results from this question were conclusive with 26 participants (87%) stating that they spent more time on other platforms, 3 participants (10%) selected they spend more time on Facebook, and 1 participant did not select an option. One participant gave the qualitative response: *“something to kill a short amount of time while I’m waiting for something or a very short break while I am doing work”*.

The second part of this question was to determine the most popular Facebook game played by participants. This is similar to question five therefore a table has been composed (Table 4) with the key information showing extrinsic information for games on Facebook and the most popular results broken down into differing aspects.

Title	Frequency	Genre	Extrinsic Mechanisms
Bejewelled	4	Puzzle	Friends Leaderboard, Unlockable Content, Experience points, Currency system
Zuma	3	Puzzle	Friends Leaderboard, Unlockable Content, Experience points, Currency system
Farmville	2	Sim	Friends Leaderboard, Achievements, Currency system, Experience points
Farkle	2	Card Game	Friends Leaderboard, Currency system
Robot Unicorn	2	Platform	Friends Leaderboard, Achievements, Currency System

Table 4. Survey results extrinsic mechanic’s in most popular Facebook games

Note: Remaining 8 titles were all single frequency.

The final part of the question was added to show any themes in relation to players motivation and to calculate the more common extrinsic motivation techniques within social site games and was focussing on the motivation people have to play games on Facebook. This provided a qualitative response and as such gave varied responses which, were analysed for themes, presented in Table 5 the frequency of participants.

Theme	Frequency
Addictive	6
Simple (Low Commitment)	6
Competitive	6
External Rewards	2
Gameplay	2
Challenging	1

Table 5. Most Common motivation theme’s for playing Facebook games.

Question 8 was to give a further insight into at which point players lost motivation to play the game. The results would also give indications into the replay ability factor of extrinsic reward systems along with a quantitative result in regards to a pre-given set of motivations. The results were significant in regards to the questions purpose. Although participants were able to select more than one option, the majority of participants chose the completion of the story as their main motivation for playing. The chart (figure 3.) below represents the results for this question.

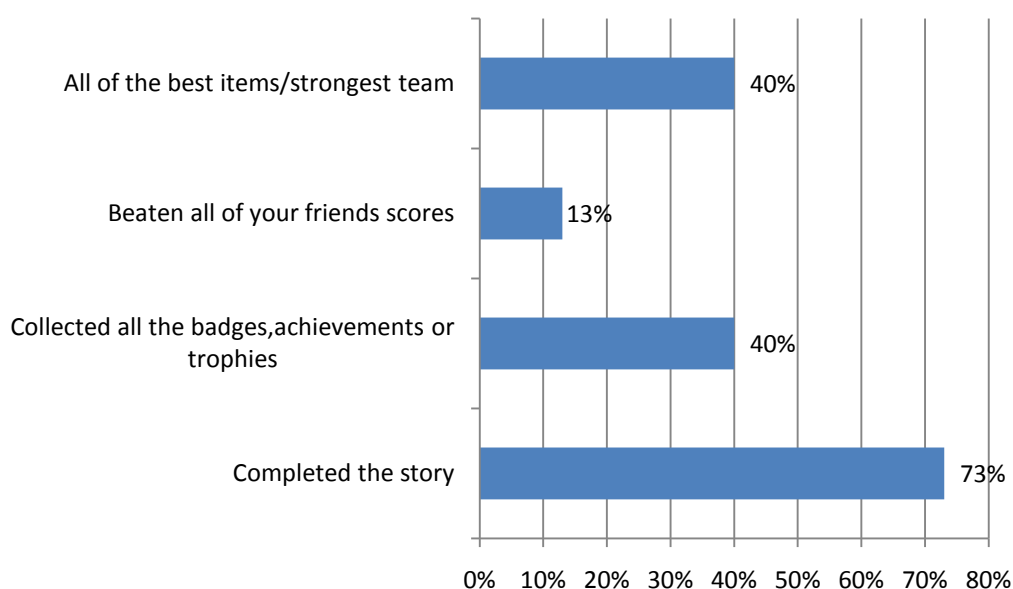


Figure 3. Chart showing point player feels game completion

Results from question 9 gave surprising results showing that 21 (70%) of participants prefer to collect items that improve the game in comparison to the remaining 9 (30%) of participants who would rather collect reward items.

Discussion of Results

Discussions of the results were structured into three categories. The most relevant in regards to the dissertation thesis/hypothesis was the effectiveness of extrinsic motivation, in the survey questions 3, 4, 6 and 9 all addressed this through different means. This section of questions in the survey showed that participants were acknowledging the different types of extrinsic motivation when they played and are engaging these systems primarily through active collection of the different types. The results further suggested that people were more inclined to perform other actions in order to get more of these extrinsic rewards; however results also indicated that 70% (question 9) of the participant audience were more motivated to collect rewards that change the game in different forms.

The second category was defining the most common motive behind playing and replaying different games discussing questions 1, 5, 7 and 8, this showed (Figure 1.) that people largely own a platform that has games that utilise some form of extrinsic motivation, whilst showing that people consider the end of the game to be the end of the storyline supporting the majority of the background research. This section contained open ended questions that needed to be analysed qualitatively, therefore giving this category more detailed information which is not statistically based. The results and analysis of this section supported the hypothesis that intrinsic motivation is more effective than extrinsic.

The final category was concerned with competition as motivation emerged as a more prevalent motivation than expected with a majority of questions mentioning competition as a factor. Most of the open ended questions indicated that this was a motivation to play and replay games more so than the external motivations such as Achievements or Trophies. Question 2 was the only question in the survey that directly asked participants how important competition was as a motivation to play however as previously mentioned a majority of the open ended questions supported competition as a motivation.

The effectiveness of extrinsic motivation

Out of the 9 questions asked four related to reactions to extrinsic motivation and whether or not they are working. Questions 3, 4, 6 and 9 addressed whether players actively acknowledge the presence of these extrinsic motivation systems within games. The need for a player to collect these extrinsic motivations could push them to perform other tasks to gain these rewards.

The number of participants who selected that they are aware of extrinsic rewards (question three) signifies that the majority of people know that the game they are playing has an extrinsic motivation system and how to contribute to that system. This gives an insight into how effective extrinsic motivation mechanics are within games as people are recognising the systems when they play and can remember which rewards they are collecting. Results from question 4 indicate that extrinsic motivators are being used more in games and players are engaging them a participant stated: *"[collects] Any Achievements for games I play*

(mostly WoW [World of Warcraft] :P)" (Wareham, 2011, p.20). This gives the impression that people can be addicted to the extrinsic methodologies within these games and do actively collect the rewards, supporting the use of these motivational methodologies by keeping the player interested in the games. This was added into the effectiveness of extrinsic motivators within games as it directly asks players if they collect the rewards within games. The results indicate which systems are more popular as well as a brief insight into why.

Background research indicated a trend that Facebook games are utilising extrinsic motivation in order to motivate people to perform actions outside of the game itself in order to gain more external rewards. Question 6 addressed this with each participant selecting at least one of the external actions to gain extrinsic rewards within Facebook games. The three most common mechanisms used in these social games were: filling in a survey, paying directly (micro transactions) and the gifting/posting of items to friends. As these are the most common forms the participants had the option to choose which of these three mechanisms they had previously done in order to gain rewards. The results from question six show a tendency that people prefer to utilise free options rather than pay directly indicating that while players are willing to pursue these forms and notifications in order to receive rewards and they are more inclined not to pay directly for the rewards. Having reviewed these findings it could be argued that people are not motivated enough to want to invest further into the game. To understand this further if repeating this study this could be addressed by additional questioning within the survey regarding paying for additional game content. These different game mechanics are designed to produce income for that game rather than a more traditional model and to help market the game. Results imply that these new mechanics are effective since on average each participant has at some point used one of these mechanisms. The majority of participants opted for the 'free' options rather than paying for rewards directly supporting the viewpoint that the use of extrinsic motivation is effective as a way of creating income for games; however these motivation mechanics are being utilised by developers in order to get people to perform these actions rather than relying on the quality of gameplay or intrinsic motivation.

The number of participants that indicated preference towards motivations that change the experience the game as opposed to a symbolic award such as trophies, achievements, badges etc. (question nine) indicates a difference to the others within this category. Other questions signalled that the use of extrinsic motivation in different forms was more effective, however the results from this particular question indicates that the majority of people prefer to collect rewards that will change the way they play or the gameplay overall. Research (Malone, 1981) has suggested this could be a possibility and proposed that the primary factors that make an activity intrinsically motivating are challenge, curiosity and fantasy particularly when this framework is specifically applied to the design of computer games. Malone (1981) described keeping the intrinsic motivation sustained such as adding new components to the game can actively change how the player engages, changing these factors. Findings from this study also indicate that game players prefer unlocking or achieving rewards that change the game or how the player's experience.

These questions have been based around the same theme which was to determine how effective extrinsic motivation mechanics are within games. Vince Curley (2010) explained the purpose of extrinsic rewards within games claiming they are “great motivator[s] for people to try out new areas of their game, or offer replay value that would be difficult to advertise without them” (Vince Curley, 2010). By definition these extrinsic rewards were put into games to keep players motivated to play the game, add to the replay ability, or to try and persuade the player to play new parts of the game that they would not otherwise have done. Evidence in this study (Figure 2) also suggests that each participant on average selected two extrinsic motivation which when combined with the results from asking which extrinsic motivator participants collect (question four) equates to strong evidence that players are engaging extrinsic motivations and that they can be effective in games. It is this effectiveness that is being utilised by developers as results from identifying the most common methods of income/marketing techniques (question six) averaged that each participant had performed an external task to gain ‘in game’ extrinsic rewards giving a strong correlation to the previous results (question four) with indications that players are more inclined to perform other more mundane tasks such as filling in surveys or sending notifications to friends in order to receive these external rewards within the games they are playing. The final question in this category directly enquired the preference regarding which type of motivation participants enjoyed more. These results differed from the trend indicating that 70% would rather collect items that improve or change the way they play the game in some form compared to 30% who prefer collecting the extrinsic motivators. This significantly differs from previous results and indicates that intrinsic motivation is a greater motivation to continue playing as opposed to extrinsic motivation.

The most common motivation mechanism within games

The second category of the survey was split into questions 1, 5, 7 and 8. These questions were structured to give indications of the most effective extrinsic motivation and whether there is a correlation between the number and types of extrinsic motivators as well as the most often implemented extrinsic mechanics. This category contains the only qualitative answers in the survey and provided greater detail into why players continue to play games and what motivates them to do so. This information provided a limited view of current usage and effectiveness of extrinsic motivators.

Participants feedback from question one provided an interesting aspect in regards to the results this was that with the PC results omitted the number of results still exceed the number of participants (43) on average 1.4 per participant showing that these console systems have a much wider audience implicating that each participant would be accustomed to at least one extrinsic mechanic.

Results from the first part of this question do not give any significant outcomes in regards to trends. Interestingly two of the titles listed (World of Warcraft & Counter Strike) added achievements post-release possibly to keep target audience interested in aging titles. The remaining titles all launched with the achievement systems partially indicates that developers are relying on achievement systems in order to expand or prolong players interest in that game. The most popular titles have an equal amount of extrinsic mechanism as well as the same types of mechanisms even though they are based in differing genres.

This is supporting research from Klimmt and Hartmann (2006) suggesting the influence of effectance and how the player must feel as though there is more to do. In regards to this, the primary differences between the two first person shooter (FPS) titles is the year of release since Black Ops has more visual effects and twice the number of extrinsic mechanisms.

The results from the second part of question five identified the most common theme discovered in the results was competitive gameplay (more often multiplayer) with 14 (22%) of the results supporting this claim (Table 3). One participant who completed the survey gave a particularly detailed response in regards to why he/she prefers multiplayer also indicating that the new trend of perks in games is effecting motivation.

"I been into the CoD[Call of Duty] series ever since the original Call of Duty came out and been a fan of almost all Call of Duty series ever since. Especially Call of Duty 2. In my opinion, games like Call of Duty 2 are not made anymore. It's a simple straight on FPS shooter. It takes skill and style to be good at this game. Without the help of perks, attack helicopters etc."(Wareham,2011,p.20)

This gives credit to the player type theory of Klug and Schell (2006) who described a type of player known as 'the competitor' *"as someone who plays to be better than other player."*(Klug and Schell, 2006, p.104). An interesting point made by the participant is about the gameplay and how it's *"a simple straight on FPS shooter"* (Wareham, 2011, p.20) preferring this to the newer titles in the same series due to the equal player chances and its simplicity. The newer titles in the same series have incorporated a perk system that gives players with more points special weapons arguably creating an unfair advantage. Further results from this question gave unexpected results since only a few participants entered extrinsic rewards as reasons why they play.

This question gave contradicting results as the initial part of the question findings (Table 2) indicated that players were more likely to prefer games that had multiple extrinsic operators within that game. However the direct responses given in the second part of this question indicated that the most popular motivational component is the multiplayer aspect giving credit to competition as a form of motivation within games.

The seventh question addressed motivation in social media websites. For this study the social site chosen was Facebook, the reason for this was the wide range of games along with the overall popularity of this particular social site. However because of the limitations of a medium such as Facebook the games on the site can not utilise the advanced gameplay and graphics that console titles provide giving an interesting concept to compare the extrinsic motivators between a social medium and the stronger processing console. This question was divided into three differing questions. The first part was an attempt to gain an understanding of the attraction towards Facebook games and how popular a medium it can be. When asked how often games on Facebook were played as opposed to other platforms such as console, PC or mobile phone (question 7a) the results while unsurprising do acknowledge the works of Klimmt and Hartmann (2006). Klimmt and Hartmann (2006) specified the example of effectance as causing an individual to select a modern 3-D combat game with stunning visual, auditory, and narrative outputs over an old fashioned game like

Tetris, which is unimpressive in terms of player produced output. This would implicate that motivation to play Facebook games is to fulfil other criteria rather than for a graphical experience. Responses from question 7c give insight into one particular motivation where five participants stated the reason they play Facebook were in the theme of to 'waste time', one particular participant said *"something to kill a short amount of time while I'm waiting for something, or a very short break while I am doing work"* (Wareham, 2011, p.20). This will be further explored in the discussion of the final part of question 7.

When participants were asked which Facebook game they played results indicated the most popular type for social medium games is the puzzle genre, whilst the genre with the most extrinsic mechanics was the simulation game Farmville. Interestingly only two of the common choices contained an achievement system questioning the effectiveness of this type of extrinsic mechanic in this medium as opposed to console platforms which all had an achievement system contrasting to the fact each title utilised the 'Friends Leaderboard' motivation mechanic. This is most likely developers maximising the social feature of Facebook to create competition between players thus keeping them motivated to play and interact. Similarly a common extrinsic mechanism within this set of games is the currency system which in most cases is used to unlock bonuses that will change the gameplay. For example in Bejewelled the player can use the coins in order to unlock more time to play in each round increasing the likelihood of gaining the high score with coins gained at the end of each round creating a motivational loop dependant on the players original motivation. The exception to this are games such as Farkle where the currency system is also the measure of your score.

The final part of question 7 asked participants to give two reasons why they played the game they chose in part B in order to gauge what motives participants had to play. One of the more prominent trends within the results especially in regards to the Facebook medium was that participants would only play games that would not be too time consuming. One participant replied *"something to kill a short amount of time while I'm waiting for something or a very short break while I am doing work on the computer"* (Wareham, 2011, p.20) precluding that their motivation to play games on Facebook is more of a pastime nature rather than wanting to play for rewards. This is in contrast to results showing that only two participants were motivated by external rewards, to gain points in one game and collect coins in a different title. These findings indicate that external motivation within Facebook games are not key motivation for participants where as addictive, simple and competitive mechanics are more effective in regards to keeping participants playing the same games. One response given showed how the competitive side of games motivates playing 'City of Wonder' giving the reason: *"my friends play it"* and *"I still maintain it so that my friends won't over take my score"* (Wareham, 2011). The terminology used in the second reply 'maintain' implies that the participant feels the need to be better than his/her friends; perhaps feeling that the time invested in the game should not be wasted and therefore continues to play. This demonstrates the addictive side of this particular medium which was a common response given in the results. Significantly participants who reasoned that the game was addictive chose the puzzle genre Facebook games research by Malone (1981) who identified three aspects of computer games that triggered intrinsic motivation of users

to be the main features of successful instructional games: fantasy, challenge and curiosity. These findings further suggest if a game is made with these aspects then it will be popular and the puzzle genre fulfils these criteria in regards to the research results with Bejewelled and Zuma as two primary examples.

8bitRocket.com (2010) described two differing types of mechanisms and defined the difference between intrinsic and extrinsic in terms of gameplay mechanics. Intrinsic was a reward the player gained that changes the actual game in some form, whilst extrinsic is a reward that is essentially a number or a collectable item such as a badge. This proposition was the basis for question 9. This question would allow for a better analysis of how effective extrinsic motivation in game design is considering it focuses on which of these two mechanics people prefer. Question 9 gave a different analysis into the effectiveness of extrinsic motivation by giving surprising results in its findings. It does partially show that intrinsic motivation can be more effective than extrinsic motivating mechanisms; however the question does have limitation in scope as it does not specify exact genres, platforms or specific types of motivation mechanisms. To gather an understanding of when the player has lost motivation to continue playing question eight was added, the results contradicts previous questions suggesting that the strongest motivation was competition within the games or against friends. Importantly it can be seen that participants feel the sense of completion mostly when they have completed the games storyline if it has one.

The results from the questions regarding common extrinsic motivation techniques detailed information concerning the more popular titles and motivational mechanisms. One of the emerging trends within the results was that the most popular games on both Facebook and Console divisions employed the largest amount of extrinsic mechanisms with mostly the same mechanics. Interestingly these were 'unlockable content', 'experience points' and a form of 'currency system' indicating that developers are using these types of motivation mechanisms across differing platforms which changes how the player interacts with the game.

The questions that addressed what players themselves felt their motivation was when playing games were questions 5b and 7c. The results in tables 3 and 5 mirrored findings despite differing platforms i.e. one using a more social inclination. The highest results in both of these questions were that players felt they were motivated by competition within the game suggesting the combination of the mechanisms added by developers, such as achievement reward systems, detailed earlier and competitive environments is an effective motivational technique. Participants of the survey described this combination of rewards and competitiveness when asked about motivation for console games *"It's a good game with loads of content and a very good multiplayer online, with leagues and scoreboards"* and *"Playing with friends, for achievements (to up my multiplayer level)"*(Wareham,2011,p.19) The particular game for this response was *"Call of Duty:Black Ops"* (Treyarch,2010) this is one of the first games to combine extrinsic motivation within a competitive environment demonstrating its effectiveness with results in table 5 indicating this to be the most popular title. However for question 7c, which asked about the motivation when playing games on Facebook, there was a strong theme of combining extrinsic mechanisms with competitive environments evidenced in one statement saying, *"It's addictive, I want to beat others on*

my Facebook top scores chart.” and “I like to compete my farm against other peoples farms and I want to get the best looking farm.” (Wareham, 2011). It could be argued that this combination is the most common form of motivation mechanic as it is employed across both platforms as well as the players own motivation, providing the basis for an achievement system since the more achievements you collect the higher your overall score which can be compared to others without changing gameplay or the content itself.

Question 8 (figure 3) gave a contradicting result as the most common end point of a game was where people felt they had completed the storyline. This option was chosen 10 more times than when people felt the game was finished when they had collected all the rewards within the game such as through achievements or trophies etc. This could indicate that if the game had a storyline then the player would be motivated to play that game to finish the storyline and once this has been completed then it is unlikely the player will feel the need to re-play or continue to play the game. The main console and Facebook games differ in regards to storylines within gameplay; an example would be Bejewelled a puzzle match three of one kind game that is driven by beating friend’s scores on your own friend’s scoreboard. This board is cleared at the end of each week meaning the competition starts again, supporting the stronger competitive results from question 7c when concerned with the social interface users on Facebook. A lot of console games have story and plotline driven game play for a single player but have a concurrently running multiplayer experience which is similar to the Facebook gameplay style. Patrick Soderlund (2011), DICE Executive Vice President and General Manager of first-person shooters and driving games said *“Battlefield 3 needs to have a competitive single player campaign and a genre defining multiplayer,”* (2011) however the previous game in the same series had no single player storyline campaign showing a change in development ideals Soderland (2011) addresses this *“to remain competitive in the genre, games need to include that [single player storyline] experience”*.

Competition as a form of motivation

The theory of competition as a motivational mechanism for games was first raised by Sirlin.net (2010) and was described as a *“leaderboard system or matchmaking system surrounding a competitive game is an external reward system, but it also legitimately improves the experience of competition”* (Sirlin.net, 2010) this is an important theme that needed to be addressed within this study.

It seems that when a multiplayer experience is present within a series of a title then that multiplayer must be maintained and kept present within titles that follow in the same series examples would be the Call of Duty (Treyarch, 2010), Halo (Bungie, 2010) and Gears of War (Epic Games, 2008) series, all of which have implemented a multiplayer experience and maintained it throughout. This does not mean it is compulsory to keep the experience. In contrast Saints Row 3 has removed the traditional multiplayer modes and intends to replace it with a co-op style similar to that of Borderlands. Senior Producer, Greg Donovan (2011) explains *“the majority of people wanted the single-player and co-op experience, so we're focusing on blowing that out of the water”*. This shows that the competitive multiplayer

element is an active motivation and it is becoming an increasing requirement within games design. Findings from the second question support background research by Krpata (2008) who defined two differing types of players 'Skill Players' and 'Tourists' the minority of participants selected 'rarely' who would be 'Tourists' whilst the 'most of the time' would be 'Skill Players'. The overall findings of the study indicate that extrinsic motivational techniques have changed modern game design with the introduction of achievements and other reward systems utilised more in Facebook games. This study indicates the motivational benefits of these mechanics but they should not be over utilised instead used in balance with the intrinsic gameplay elements.

These new games design trends are supporting the results found in this study's survey how a lot of the participants are motivated by competition and the multiplayer experience in general. When the results from question 2 are compared to the results from question 5b and 7c it suggests that competition as a motivational mechanism is plausible and the influence of competition as a motivation is dependent on the format of the game. Should the game be storyline driven then it is more likely that a significant multiplayer experience will not be present. One typical example of this would be Fable 3 (Lionhead Studios, 2010) which allows for 2 player co-op but does not have the same larger multiplayer type as used in Call of Duty Black Ops (Treyarch, 2010). This would support the results from question 2 which claimed that participants were competitive 'sometimes' which suggests that participants are competitive depending on which game they are playing or their current state of mind.

Conclusion

To conclude from participant results and observations made by the researcher, there is a strong argument to suggest previous research regarding this subject is insufficient in detail as extrinsic motivation techniques is a relatively new area of research especially in the context of computer games design. Further research into this area would be extremely beneficial as there are currently opportunities missed by the computer games industry of academic importance with motivational techniques and the psychological effects of competition. Questions 3, 5 and 7 all indicated that participants were motivated by a combination of traditional game changing extrinsic motivational mechanisms and competition in particular. Further research into this area could be expanded by considering the impact on future releases and what extrinsic mechanics can be implemented within a specific game genre to explore the maximum effects of increasing player enjoyment, concurrently gaining a wider audience.

The limitations of a study of this nature would have been likely to be affected by a population this narrow therefore if a further study were carried out on this subject it would be advisable to involve a larger, more varied population as this would give a more mainstream data sample. Despite this, the population information detailed gives a strong indication of the type of player who filled out the survey with the average participant age being 22 and primarily male. This may not be a sufficient enough problem to discredit the study as it gives an insight into a specific target audience for developers, however further studies could be adapted to address a larger or different audience possibly through more traditional distribution methods such as gathering participants via public places.

The present findings in this study indicate that the use of extrinsic mechanisms within games and their design/effectiveness has increased significantly within the current generation of consoles. This is most likely due to the introduction of online capabilities and services such as Xbox Live and PlayStation Network. The use of these mechanics has not been fully studied and it appears developers are more inclined towards using achievements as a way of motivating players or to quickly extend gameplay. Results as indicated from question 9 shows that 70% of participants preferred to collect items or other mechanics that directly changed either the way they played the game or the game itself, with the remaining 30% preferring to collect the achievements and other rewards. It is likely that as these reward systems begin to increase players will be more inclined towards the intrinsic motivational elements of games. The evidence for this is trends indicated in the survey results showing that participants preferred to play games that would give an award that would change the experience of the game (question 9) this correlates to the work of Klimmt and Hartmann (2006, p.140) who claimed that the player may, for example, decide that a given computer game does not offer “enough things to do” in which case rewarding by changing the experience will motivate the player to continue playing.

This study accounted for a possible difference in extrinsic mechanisms which may have been affected by different platforms specifically differences between Facebook and traditional Console games. This was due to Facebook being based in a social environment with differing types of games to the console platforms and a possibility that background research had indicated different types of games and underlying game mechanics resulting in unique

interaction methods. The conclusion to differences between platforms was that while there are differences in gameplay the extrinsic mechanics were largely similar with both platforms employing achievements, leaderboards and currency systems. Significantly the study results showed that there was more of a competitive reasoning behind participants playing Facebook games compared to console titles. One limitation of the population type is that it is likely to contain more competitive natured participants due to the age as well as an interest in games in general as the email was circulated around Computer Games Technology course.

To summarise and conclude the present study, extrinsic motivators within games design has become a more important factor for developers to consider. There are factors such as game type, genre and whether there is a multiplayer element with extrinsic mechanics for multiplayer elements. The important influence factor with how collecting the rewards can change or affect the game is a further key area for consideration. Developers could benefit by further studying how the player interacts with the game and the scale of motivation behind playing the game and how the player is affected by the balance between intrinsic motivational mechanics. Developers are making steps towards changing the results of extrinsic rewards. One example is *Bulletstorm* (People Can Fly, Epic Games. 2011) where by playing differently the player can gain points which are used to unlock new items in an attempt to balance and combine the extrinsic motivation to collect more points ultimately keeping curiosity and intrinsic motivation to try different areas and techniques within the game. Research from this study concurs suggesting that this is a good balance of the differing mechanism types.

One area of the study that has not made significant progress was the continuation of research into the effects of genre onto game design. While there were indications of trends between the data analysed from the results and genre it did not significantly affect how extrinsic mechanics were employed since across the majority of genres the same mechanics were implemented. If this study was taken further and reproduced it would be the researcher's recommendation to explore how genres affect the types of extrinsic mechanics and how these are implemented, as well as pursuing the effects of the motivational mechanics on players to better determine which is more effective. This study has addressed an area of game design that has become more prevalent within the current generation of consoles and has become a driving force and income for many of the social games on Facebook. Previous research by Schell(2010),Forzoni(2001) and Kohn(1993) indicates that these types of extrinsic motivations deter player interest in the original task (in this case game). Chris Hecker (2010) at the Games Developer Conference described the need for a study of this nature stating *"the game industry used to use no metrics whatsoever ... everything was gut and by the seat of our pants. Then metrics came around, and [now] we're addicted to metrics."* Hecker(2010) describes how games used to be intrinsically driven where as now there is an increasing influence of extrinsic metric driven elements, this study addresses the effects of this study and provided new insights into a developing field.

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Appendices

Appendix 1 – Survey as presented to participants.

External Rewards Within Games Survey

Contact:

Michael Wareham
externalrewards@hotmail.co.uk

Thank you for agreeing to partake in this study. The survey is for a final year university project, for the BSc(Hons) in Computer Games Technology at the University of Portsmouth .
The purpose of this study is to explore how games are increasingly using external rewards to keep players attention or to attract people back to the game, for example receiving a badge for playing the game for 4 hours.

By filling in this survey and returning it to the e-mail address provided you are agreeing for your answers to be used for the study. Your answers and any contact details will be kept confidential at all times and will not be used for any other purposes. This survey can be sent anonymously and any reference to your answers in the report will be quoted anonymously if this is the case. If you do provide any personal information then this will only be referred to when quoting your responses in the report.

Please answer as honestly as possible and give as much information on the topics as you like.

Age

Gender

- Male
 Female

1.Which of the following do you own?

- PC
 Xbox 360
 Wii
 Playstation 3
 None of these

2.Do you play games to beat other people's scores?

- Most of the Time
 Sometimes
 Rarely

3.Do you notice when you get a bonus when playing?

do you notice extra points,coins or a notification appears on screen

- Extra Points (ie score, experience etc.)
 Achievement Notification

Unlockable Content

Other:

4. Do you actively collect :

Xbox Achievements

Playstation Trophies

Steam PC achievements

Farmville Ribbons

Other:

5a. What's your favourite current game?

5b. Give 2 reasons why you play that game

6. Have you ever:

filled in a survey to get in game currency or other rewards

paid directly for game currency or other rewards

Gifted/Notified items to friends to earn yourself rewards

7a. Do you spend more of your time playing games on Facebook than on Console/PC/Phone or other platform?

Yes

No

7b. Which game do you play (if any) the most on Facebook

7c. Give 2 reasons why you play that game the most?

8. Do you feel you have completed a game when you have:

- Completed the story
- Collected all the badges, achievements or trophies
- Beaten all of your friends scores.
- All of the best items/strongest team

9. Do you prefer:

- Collecting items that improve the game (such as a new gun, or new items that directly change the way you play)
- Collecting reward items (items such as Farmville Ribbons, PS3 Trophies, Xbox Achievements that don't change the gameplay)

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