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Online Gaming:

An empirical examination of the determinants to
online game player's attitudes toward in-game advertisements

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Abstract

Online video games have exponentially grown in popularity since their creation. Millions of Americans are spending the majority of their free time and money on online video games. For these reasons, advertisers have taken notice and are allocating large amounts of resources to in-game advertisements. The young age of the online gaming medium has created a lack of specific research for advertisers to use when planning media campaigns. This study aimed to examine and report the attitudes and experiences gamers have towards in-game advertisements through empirical methods. Experimentation provided several sets of significant data, centered around ad recall and gamer attitudes. The results of this study stand to improve gamers' experiences in online video games and advertisers' in-game marketing techniques to form a mutually beneficial relationship between consumers and advertisers.

Mediated advertising began in 1704 with an ad published in the Boston Newsletter for an estate buyer on Oyster Bay, Long Island (Advertising Age, 2005). Since then, the advertising industry has grown at an exponential rate to become one of the largest industries in the world. A 2007 Census report documented that adults and teens spend an average of 5 months per year being exposed to media (Beg, 2007). A separate report of the same year estimated that the average person is exposed to approximately 5,000 ad messages each day (Story, 2007).

This massive exposure to media and advertisements can be seen throughout many facets of entertainment. The advertisement industry's omnipresence is a result of its codependence with the entertainment industry. As the entertainment industry grows and discovers new methods of acquiring and retaining consumers, the ad industry is not far behind. The newest of these methods is online virtual gaming. In these games, users carry out missions, interact with others, and simulate life and fantasy.

Online virtual gaming has received a considerable amount of attention from advertisers because of the amount of revenue and consumers it draws in. In 2008, U.S. computer and video game software sales increased a total of 23%, adding up to an \$11.7 billion gaming industry (Entertainment Software Association, 2009). This increase occurred despite the fact that the US economy's growth was below four percent that year (Entertainment Software Association, 2009). In 2006, there were over 200 games that incorporated some form of in-game advertising (Burns, 2006). In 2010, advertisers are expected to increase their spending on

in-game advertising to nearly \$2 billion, an increase of about 3000% from \$56 million in 2005 (Sheperd, 2005).

These resources are wasted without proper knowledge of the public's ability to recognize and retain information within advertisements. Detailed research on ad recognition and recall has been done within many forms of media except for online gaming because of its young age. The amount of revenue invested in the online gaming industry suggests a need for knowledge about users' reactions to advertisements within online virtual games. For this reason, this study seeks to examine the effects of in-game advertisements and the attitudes players have towards them.

Research Questions

- What are the differences among non-playing, casual, moderate and heavy gamers' ability to remember advertisements presented within online games?
- What effects do advertisements have on users' self-reported online gaming experiences?
- What are the differences among non-playing, casual, moderate and heavy gamers' self-reported attitudes toward advertisements within online games?

Rationale

Personal

In 2008, I was introduced to an online virtual world called Second Life through an internet advertising course. The main goal of this course was to examine the advertising and marketing techniques used in online games and virtual worlds. In the time I spent exploring Second Life, I noticed the use of many different types of advertisements. As the course moved on, my continued explorations caused me to wonder how advertisements within online games affected users or if the user even noticed them. I aspire to enter the online gaming industry upon graduating, which is why I think it is important to discover the effects of ads in online games.

Scholarly

One of the largest contributions this study offers is its ability to improve researchers' understanding of the reactions and feelings consumers have toward in-game advertisements. This study examines and analyzes consumers' ability to recognize ads and their reaction to advertisements within an online gaming environment. The execution of the proposed research is important because of the new insights it can offer into the online gaming industry, a previously unexplored medium. The results of this study add to the current body of knowledge

regarding ad recognition and consumer attitudes toward advertisements. The examination of these areas in relation to the recently created and hugely popular online virtual gaming industry gives further insight into the studies of attitudes and ad recognition in all media.

Social

The exploration of the proposed concepts is vital to advertisers and game creators because the research stands to give these groups insight into the consumers' opinions of the use of ads within online games. This information can be used to increase profits through the improvement of advertising strategies within online games. Gamers also stand to gain from this research because their attitudes and ideas will be represented in the results. The findings of this research are able to stand as a scientific voice for consumers, identifying how they feel about the advertisements they encounter within online games.

Literature Review

As of 2008, online gaming has become an \$11.7 billion industry (ESA, 2009). Advertisers have taken notice of this growth and are currently investing \$537 million on in-game advertisements and are projected to increase their spending 372% in 2012, bringing the total to \$2 billion (Goodman, 2007). The growth of the online gaming industry and the great attention and funds it receives from advertisers has created a vast demand for information about gamers' ability to perceive and their reaction to advertisements.

Demographics

The Nielsen Media Research group reported that in 2007 the number of households with video game consoles grew by 18.5% since 2004 (Nielsen, 2007). Currently, 43% of households own a video gaming system (Sadler, Kelly & Rhind, 2008). The key consumers of online games are males between the ages of 18 and 34 who were reported to spend 30 billion hours playing online games every year (In-Game Advertising, 2009).

The Entertainment Software Association reports that the age of the average gamer is now 35 years old and has been playing for an average of 12 years. In the same document, it was reported that the percent of Americans over the age of 50 who play games rose to 25% in 2005 from 19% a year before, while the increase between 1999 and 2004 was only 9%. Women are not left out of this equation; they have become 43% of all gamers nationwide (ESA, 2009).

Advertisement Types Effect on Experience

As new technologies are invented and expanded upon, the methods of advertising are also expanded. With new media come new and adapted methods of advertising. Currently, there are three major types of in-game advertisements: static ads, dynamic ads and product placements. Millions of dollars per year are invested in many different forms of in-game advertisements. For this reason there must be an adequate understanding of the types of advertisements used within online games and their effects.

Static Advertisements

In-game advertisements integrate their brands into the scenery and narratives of electronic games. One common practice implemented by advertisers is hard-wired static ads are inserted into in games and cannot be changed after the game's release. For this reason, static ads are often popular in games that do not require the internet. In a study conducted by the Entertainment Software Association, it was found that static ads give advertisers more options when it comes to the look of their ads (In-Game Advertising, 2009). This includes having ads imitate traditional billboards or even allowing them to glow in an attempt to briefly catch a player's attention. Havas Digital explains that static ads allow programmers to better incorporate brands within a game because they are hard-wired into the game, which allows designers and programmers to work the ads seamlessly in the game (Sadler, Kelly & Rhind, 2008).

Static ads have created many positive aspects for consumers, marketers and game developers alike because of their hard-wired sturdiness and interactivity. Despite this, static ads are also becoming obsolete because they do not offer change. With the high transition of games to the internet, change is necessary.

Dynamic Ads

In the past, video games consisted of simple elements and very little dynamicity. Technical innovations have completely revolutionized the gaming industry, allowing individual users to have their own unique experiences.

Dynamic advertisements have greatly impacted the gaming industry due to the fact that these advertisements can be altered remotely. This has given advertisers the power to tailor these ads to geographical locations, times of the day and for temporary ad campaigns. Another important aspect of dynamic ads is their ability to track and record information such as amount of time spent viewing an ad, viewing angles and number of views (In-Game Advertising, 2009).

The use of dynamic advertisements has had a significant impact on users' experience within a game. These advertisements provide games with an ever changing canvas because of their ability to be customized. This changing background adds a degree of realism these games which can be appealing to many consumers (Vedrashko, 2006).

Product Placement

A subdivision of both static and dynamic advertisements is product placement.

Product placement is a merger between the fields of advertising and publicity designed to influence the audience by inconspicuously inserting branded products in entertainment programs such that the viewer is unlikely to be aware of the persuasive intent (Balasubramanian, 1994). Examples range from characters drinking coffee out of Dunkin Donuts cups to having the player use a specific brand of clubs to play golf.

A recent study on the effects of program liking and the placement prominence of advertisements in TV programs revealed that the prominence of the ad placement (Cowley & Barron, 2008). When people with high levels of program liking see a prominent product placement, they may interpret the placement of the ad to be an attempt to influence, which could result in an interruption of the viewing experience. This interruption causes a negative shift in brand attitude.

Conversely, a study presented at the 2007 Association for Education in Journalism and Mass Communication concluded that consumers have a positive disposition towards product placement. This study looked at the responses of 3,300 consumers for an online survey which asked consumers questions about their attitudes towards product placements in films. The results from this study concluded that average consumers are not in agreement with the regulation or banning of product placements and do value the realism that product placement brings to films. The study also concluded that consumers are not willing to stop watching a film

that contains product placement and also do not view the practice as unethical (de Gregorio, 2008).

Advertisement Recognition and Recall

Advertisers place ads on billboards, television and the internet in an effort to catch the attention of the consumer. Ideally, this attention then converts in brand recognition and ends with an increase in sales and brand loyalty. This is why it is safe to say that the recognition of advertisements is a fairly important goal for advertisers.

In recent years, studies in the identification of advertisements have focused on the recognition of the product placements. One recent study revealed that product placement is most effective when placed properly. OTOinsight discovered that placing ads in terminal locations, such as menus, finish lines and check points is an effective strategy for maximizing the strong recall of the product (Bardzell, Pace & Bardzell, 2008). This is because, as the peek-end theory of memory points out, people best remember their best and last experience (Kahneman, 1999). The enjoyment of the gamer within a game can cause for the brands expressed in the game to receive a stronger and more positive place in the consumer's mind.

Michelle Nelson of the University of Wisconsin-Madison conducted a study which found that gamers were able to recall 25% to 30% of brands in the short-term, which was immediately after the games, were played and 10% to 15% in the long-term, which was five months after the initial playing. Nelson's findings continue explain that players were generally positive about the product placements within games, indicating that some players stated that the brands increased the realism of the game (Nelson, 2002).

The previously mentioned study by Eric Ritter and Chang-Hoan Cho supports these findings indicating that, in their study, participants perceived traditional advertisements as more intrusive than the sponsorship type of product placement (Ritter & Cho, 2009).

Early research into product placement was done by Gupta and Lord in their study of the placement of products within movies. The results of this study are similar to the research done about the placement of products within games. Gupta and Lord's (1998), experiment results explain that brands placed prominently within movies receive a higher level of brand recall. The researchers additionally discovered that the combination of visual and verbal brand references resulted in stronger brand recall (Pokrywczynski, 2005).

Attitudes toward Advertising

Consumer attitudes toward advertising have been found to be negative for quite some time and appear to have worsened over time (Zanot, 1981). The tactics advertisers use to compete for consumers' attention can cause audiences to be annoyed (Zhang, 2000). One explanation for the negative feelings consumers experience is explained by Ducoffe (1996) who argues that, "The vast majority of advertising exposures reach individuals when they are not shopping for the product or service being advertised, so most messages are simply not relevant to consumer concerns at the time of exposure" (p.22). The relevancy of the advertisements and their placement can be an important factor towards consumer attitudes because an irrelevant advertisement can be seen as intrusive and unrelated.

The medium an advertisement is located on can also influence the attitude of the consumer. A study examining consumer attitudes and the location of the advertisements found there suggests that there are three key attitudes related to advertising that must be distinguished to gain a proper understanding of the effects ads have on consumer's attitudes. The three categories are attitude-toward-advertising-in-general, attitude-toward-the-medium, and attitude-toward-the-ad (Burner & Kumar, 2007). As far back as Lutz (1985), it was recognized that one of the main determinants of attitude-toward-the-ad is attitude-toward-advertising-in-general. A consumer with a predetermined negative attitude toward all forms of advertising will likely have negative attitudes toward specific ads they are exposed to.

However, it has been implied that consumer's attitudes-toward-the-medium could have a more immediate and powerful effect on attitudes-toward-the-ad (Elliott and Speck 1998; Stewart and Ward, 1994). Brackett and Carr (2001) distinguish advertising from the media they are located on. Ducoffe (1996) explains that media context has an important influence on the value of advertising (p.24). Preceding studies confirmed that advertisements located in a more credible medium such as a newspaper are perceived as more informative, reliable, and believable while advertising placed in a less credible medium like TV is considered to be less informative and intrusive (Bauer and Greyser, 1968; Becker, Martino, and Towners, 1976;). The medium on which an ad is presented on can be a powerful determinant of the attitudes consumers will have towards them. In research conducted by Youn, Lee, and Doyle (2003) comparing attitudes toward advertising among on-line game players, non-game playing Internet users, and non-Internet users, results indicated that online game players were more open to advertising content than the other two segments measured.

Research conducted on people's evaluations of advertisements revealed that, to some consumers, ads are viewed as a useful source of information or entertainment while other consumers fear the use of covert manipulation and subliminal techniques or often complain about advertising clutter (Pollay and Mittal 1993). An early study by Bauer and Greyser (1968) found that more people held favorable attitudes towards advertising than unfavorable attitudes and that the majority of respondents felt that advertising was necessary. Despite these positive results, a majority of respondents felt that advertisements were misleading and caused higher product prices. In a more recent study that focused on in-game advertising, it was determined that players were positive about ads that added realism to games. The majority of gamers did not think they were influenced by ads, but many reported that they had learned about and purchased products advertised within games. The same study further concluded that a person's overall attitude toward the field of advertising influenced their attitude to specific advertisements (Nelson, Keum & Yaros, 2004). The results from all these studies indicate a clear need for information about consumer attitudes towards a specific medium. The advertising industry allocates a rapidly growing amount of funds to in-game advertising in order to properly target consumers. Specific information about the attitudes consumers have toward the advertisements they are exposed to is needed, which is the one of the purposes of the study.

Methods

Experimentation Design and Sampling

The proposed research was conducted through the implementation of a combination of experimental and survey research. The use of these two methods increased the validity of the study because it allows researchers two distinct, but connected methods of measuring variables. The combination of experimental and survey research also allowed the researcher to obtain answers to all variables within the research questions.

The participants of the study were drawn through convenience sampling. Subjects in the study were from the RIT student population. The sample was gathered through the solicitation of students from various colleges on the RIT campus. The researcher asked permission from professors to perform the experiment during their courses. When this permission was granted, the researcher set up a time and class with the professor in which to best perform the experiment.

Procedure

The study was conducted in a calm, neutral environment with access to adequate computer equipment. Before the arrival of the participants, the researcher created a controlled environment for the experiment and prepared the video.

On arrival to the experiment, participants sat as they normally would in their class and were told that they will participate in the evaluation of an online video game. The researcher explained that the purpose of the experiment was to gather information on their attitudes toward online video games. From here the researcher explained all the risks of the experiment and passed out and allowed the participants to read a waiver form. See Appendix B.

The researcher then began the experiment. The subjects were shown a five minute, previously recorded video of a run-through of a popular online virtual game. There were two variations of this video to which subjects were randomly assigned. The only difference between these videos was that one video contained advertisements while the other had none.

When the video was finished, the researcher handed the student a stapled packet of surveying materials. The student was instructed to answer the questions in relation to the video they just witnessed. The questions are divided into five groups with clear titles and instructions.

The first section of survey asked to write down all the thoughts, reactions and ideas that went through their minds while watching the video. See Appendix C Part I. This question is open-ended to allow the user to write out all of their answers. The purpose of this question is to identify the initial reactions participants had towards the online video game demo. This also serves as a mind clearing exercise allowing them to purge their thoughts before moving onto the rest of the survey. The question also prompts the participants to think about all areas of the video they just viewed more in-depth, which will be useful for the upcoming questions. Upon the completion of the first section the student was instructed to move onto the next section.

The second section of questions was used to gauge the effect of ads on the gamers' experiences. As previously stated, two videos were developed for this study. These conditions were used to measure the specific effects of ads on consumer experiences with the game. The subjects were randomly assigned to one condition before the experiment took place.

Directly after the first question was asked, the user was asked to turn the page to reveal and answer the second set of questions. See Appendix C Part II. Participants answered a series of questions to assess their self-reported experiences within the online video games. These questions gauged experience through the implementation of value statements and close-ended questions with the use of a five-point Likert-scale for responses. Questions asked about the participants' own experience with online video games and their opinions after seeing the previously shown video.

The third set of questions sought to identify and measure the participants' self-reported attitudes toward ads within online video games. See Appendix C Part III. This was accomplished through the implementation of two surveying techniques. The first of these was the use of a semantic differential scaling system. Participants were asked to answer three sets of questions about online video games and advertisements using this scale. Some examples of the semantic differential scales that were used are: enjoyable – dull, pleasant – irritating and positive– negative. These scales were selected because they have been used effectively in past studies to examine attitude (MacKenzie and Lutz, 1989). Following these scales, ten matrix-style questions with a Likert response scale were asked. The questions focused on players' attitudes towards advertisements in general and ads within games.

The next section of the survey tested the participants' ad recall ability. The students were asked to write down the advertisements they remembered from the previously shown film. See Appendix C Part IV. This question was asked at this time because it allows users to engage in other activities before answering. This better tests long-term ad recall and is a better representation of real world experiences.

After the completion of the previous sections, participants were asked to complete the final section of the survey. This section was used to gather biographical information on the participant (See Appendix C Part V). Standard information like age, name, grade level and college major was collected. The final question on the survey asked the participant to guess and write down the purpose of the study.

Following the finalization of the survey, the researcher collected the survey packet and informed the participants that the experiment was complete. The researcher took the time to debrief the participants by explaining the true purpose of the study. The researcher then thanked the student and the experiment was complete.

Validity:

The validity of this study was assured because of the sturdy construction of the study. Participants were shown a video and then asked specific question pertaining to their experience and attitudes in relation to the video they were shown. The instructions on the survey also specifically detailed that the participants should answer the questions in relation to their gaming experiences and the video they were previously shown.

Subjects were also not aware of the two separate conditions (video with ads and control without ads) or assignment of other participants to separate conditions.

At the end of the study, students were asked to guess the purpose of the study. Though many participants correctly guessed the purpose of the study it does not indicate a lapse in validity. This should be manipulated in further studies in order to successfully conceal study purposes in an effort to reduce the possibilities of leading a participant toward specific methods of answering or action.

Reliability

Internal reliability was assured through the utilization of surveying methods successfully implemented in previous research projects similar to this one. The researcher thoroughly examined and compared the questions asked and their formats to those from successfully tested experiments. This comparison yielded a series of Likert-scale opinion statements, semantic differential scales and open ended questions which best tested for recall, attitude and experience.

Results & Discussion

Demographics

Respondents were divided into four groups determined by their self reported game playing experience levels which were assigned by combining the number of hours per week spent playing and the number of years they reported playing online video games (See Appendix E). There were 21 non-gamers (30%), 17 casual (25%), 19 moderate (28%) and 12 heavy gamers (17%).

Overall, 25 males (36%) and 44 (64%) females participated in this study. According to the Entertainment Software Association (ESA 2005), only 43% of video game players are female. While the sample was weighted toward females differences among experience levels and respondent sex were non-significant. The tests results examining gaming experience and frequency of game play were matched with previous research which showed that males were the primary consumers of online video games with women very close behind. Males had higher levels of gaming experience and frequency ($n = 11$; 58% moderate and $n = 7$; 58% heavy gamers) while females were most likely to not play online video games or be casual gamers ($n = 18$; 86% non-gamers and $n = 12$; 71% casual gamers).

Ad Recall

To examine the differences between gamers of different frequency levels and their ability to recall advertisements within online video games , the proportion of the 7 target brand

names correctly identified by each participant was analyzed using a one-way ANOVA with four levels (non-gamers, casual, moderate and heavy gamers) within two conditions (video with ads and control). The one-way ANOVA tested the difference among the four gaming frequency groups and was significant ($F=3.06$, $df=3$, $p=.04$). Tukey post-hoc comparisons of the four gamer frequency levels indicated a significant difference ($p= 0.011$) in casual gamers' ad recall ($M = 0.09$) in comparison to moderate gamers ($M = 0.29$). Additional Tukey post hoc comparisons indicated another significant difference ($p= 0.035$) in casual gamers' ad recall ($M = 0.29$) in comparison to heavy gamers ($M = 0.23$). As for the population that was shown the video that contained advertisements there were significant differences in the reported results.

Non-gamers ($n=13$) were reported to have recalled, on average, 18% of the ads within the ad video. Casual gamers ($n=14$) were reported to have recalled, on average, 9% of the ads within the ad video. Moderate gamers ($n=9$) were reported to have recalled, on average, 29% of the ads within the ad video. Heavy gamers ($n=8$) were reported to have recalled, on average, 23% of the ads within the ad video. The tests seem to suggest that the more experienced a player is the more likely they are to recognize and remember advertisements within online video games with the exception of non-gamers (See Appendix H).

The results from this ad recall section of the survey are lower and more varied than those reported by Nelson's (2002) study of short-term ad recall. Nelson's results indicate that gamers were able to recall 25% to 30% of brands in the short-term (Nelson, 2002). The results from the current study ranged from 9% to 29% with the average at 20%. One factor that may have been the cause for the differences in ad recall is the demographics, psychographics and the size of the sample. The Nelson research had 20 monetarily compensated subjects that

were self reported gamers while the current study had 69 voluntary subjects who self reported into four gaming levels, non-gamers, casual, moderate and heavy gamers.

Research seems to conclude that gaming levels affect the participant's ability to recall ads within online video games. A comScore study revealed that the more active a gamer is the more likely they are to recall an in-game advertisement (comScore, 2006). The fact that the current study had 21 non-gamers (30%) and only 12 heavy gamers (17%) could have affected the outcome of the test results. With a larger heavy gamer sample there is likely to be a higher amount of participants who recalled the ads, especially because 23% of the heavy gamers did recall the ads in the current study which lies closely to Nelson's study. The fact that 29% of moderate gamers recalled ads seems to indicate that as gaming levels increase so does the respondents' ability to recall ads.

Online Gaming Experience

For the analysis of user's self reported gaming experiences within online video games, Mann-Whitney tests were performed on survey questions positioned on multiple Likert-scaled questions. The first section of these questions presented opinion statements in which respondents were given a six point scale in which they could strongly disagree to strongly agree with the opinion statements. These opinion statements focused on how online games effect the gamers' life and how they feel when they are playing the game. Some statements also focused on ads effect gaming experiences. These opinion statements varied from "Ads adding realism," to "Ads creating distractions."

The second section of questions asked respondents to rate their opinions of their feelings towards a question on a 5 point scale. An example of a question asked respondents “How do you feel playing most online video games?” The respondents then were give a 5 point scale in which they were to circle the most relevant number with “At home” at one end of the scale and “Out of place” at the other end.

The overall results of the gaming experience portion of the study proved to be statistically non-significant. In this section participants were asked to answer questions relating to their perceived experiences in online games in relation to advertisements. There were two conditions for this test which were the video with advertisements and the control video which contained no ads. Given a wider range of participants and a more robust sample, differences may become more apparent.

Attitudes toward Online Games

Results of a Student’s t-Test showed that heavy gamers had, overall, a more negative view than the other three gaming frequency levels (non-gamers, casual and moderate gamers) toward advertisements in general. On a six point semantic differential scale, heavy gamers (M = 3.17) reported advertisements as being more detrimental than any other group. Casual gamers (M = 2.24) found advertisements to be the most beneficial. Advertisements were found to be most irritating to heavy gamers (M = 3.75) and more pleasant to casual gamers (M = 3.12). There was very little variation on the opinion of how interesting advertisements were to all the gaming levels. Moderate gamers (M=3.16) found advertisements to be the least

interesting, followed by heavy gamers (M = 3.01), non-gamers (M = 2.86) and finally casual gamers (M = 2.82). Heavy gamers (M = 2.58) found advertisements to be more negative than the other groups. Casual gamers (M=2.94), non-gamers (3.14), and moderate gamers (3.21) had a slightly more positive opinion of advertisements (See Appendix G).

The present results dispute the results of several other studies but confirm many others. One of these studies was done by Bauer and Greyser (1968) in which they found evidence that people were likely to hold a more favorable attitude toward the practice of advertising in general. Though B&G's study was performed many years ago and can be thought of as out of date many current studies have revealed similar results. In a study conducted by the Havas Digital it was found that the average ad rating had increased by 69% in 2007 (Sadler, Kelly & Rhind, 2008).

Though many studies seem to confirm a positive consumer relationship with the general field of advertising, there are also many other reports that suggest a negative correlation between the two which falls in line with the results of this study. A study presented at the 1995 Conference of The American Academy of Advertising concluded that though many participants claimed to like advertisements and their ability to inform, they also felt that advertisements are generally annoying (Mehta & Purvis, 1995). There is also evidence that consumer attitudes toward advertising are negative and appear to have worsened over time (Zanot, 1981). The tactics advertisers use to compete for consumers' attention can cause audiences to be annoyed (Zhang, 2000).

This aversion to advertisements in general can likewise affect consumer attitudes toward ads within online video games. Lutz (1985) examined this and determined that one of the main determinants of attitude-toward-the-ad is attitude-toward-advertising-in-general.

Opinions of online video games were measured using the previously mentioned Student's t-Test. Heavy gamers gave a more positive overall rating than the other gamer levels by a large margin. Throughout this section heavy gamers held a considerably more positive opinion in regards to how enjoyable (M = 3.00), interesting (M = 3.17), pleasant (M = 2.92), and how good of a hobby games make (M = 4.00). Compared to the results of the heavy gaming group, other groups reported significantly less positively about online games. Non-gamers found online video games to be the least enjoyable (M = 4.05), least interesting (M = 4.05) and least pleasant (M = 3.91). Surprisingly, moderate gamers (M = 4.58) considered online video games to be more of a waste of time than any other group.

Throughout this section of the survey heavy gamers indentified online video games as positive which is not much of a surprise because of the amount of time that they spend on the medium. It is surprising that moderate gamers considered online video games a waste of time. This is maybe because they dedicate their free time to playing games as a method to relax. Further research on reasoning behind the waste of time attitude gamers have toward video games is needed.

The importance of asking participants several questions of their attitudes toward online video games lies within additional research that implies that consumer's attitudes-toward-the-medium could have a more immediate and powerful effect on attitudes-toward-the-ad (Elliott & Speck 1998; Stewart & Ward 1994). The combination of the participant's attitudes toward

general advertisements and online video games in relation to their attitudes toward in-game advertisement will be examined in the following section.

The participant's attitudes toward advertisements found within online video games were calculated through the use of a one-way ANOVA test. A one-way ANOVA tested the difference in the attitude statements amount the four player frequency levels. The results from this test showed that heavy gamers had, overall, a more negative view than the other groups toward advertisements within online video games. The group as a whole had an overall more negative attitude towards ads placed within video games. On the same previously mentioned six point scale, heavy gamers (M = 3.83) reported advertisements within online games as being more detrimental than any other group. Casual gamers (M = 3.50) found in-game ads to be the most beneficial while leaning towards a neutral standpoint. The one-way ANOVA for this question was non-significant (F=1.33, df=3, p=.27).

Advertisements in video games were found to be most irritating to moderate gamers (M = 4.16) and more pleasant to casual gamers (M = 4.06). These results showed that overall gamers and non-gamers found in-game ads to be closer to irritating than pleasant. The one-way ANOVA test for this question was non-significant (F= 0.49, df=3, p=.69).

Moderate gamers (M = 3.74) reported that they found in-game ads significantly less uninteresting than the rest of the sections (non-gamers M = 4.19, casual M= 4.06 and heavy gamers M= 4.17). The one-way ANOVA test for this question was non-significant (F= 0.26, df=3, p=.85).

The final question of this section of the survey asked participants to report their attitudes toward in-game ads and how positive or negative they felt about them. The results

showed that heavy gamers ($M = 4.33$) found in-game ads considerably more negative than the rest of the gamer levels. Moderate ($M=3.84$), casual gamers ($M=3.88$), and non-gamers ($M=3.90$) had more positive opinions of in-game ads. The one-way ANOVA test for this question was non-significant ($F= 0.70$, $df=3$, $p=.56$).

Previous research on how ads and their media can influence consumers leads to a diverse analysis of the participants' attitudes toward in-game advertisements. Though heavy gamers rated their attitudes toward online video games (the medium) as very positive, they identified a negative attitude toward the advertisements in general. Consequently, heavy gamers also identified a negative relationship with in-game advertisements. These results dispute the research done by Gordon C. Bruner and Anand Kumar who in their research found that the consumer's attitude toward the medium can have a much more powerful effect on their attitude toward the specific advertisement (Burner & Kumar, 2007).

The connection between positive attitudes toward the medium (online video games) and positive attitudes toward specific ads (in-game ads) exists and is strong but this is not the same for the rest of the data. Casual gamers ($M=2.94$) ($M=3.88$), non-gamers ($M=3.14$) ($M=3.90$), and moderate gamers ($M=3.21$) ($M=3.84$) had a positive opinion of advertisements in general and positive opinion of in-game ads. These groups also had a negative attitude toward the medium (online video games). Non-gamers found online video games to be the least enjoyable ($M = 4.05$), least interesting ($M = 4.05$) and least pleasant ($M = 3.91$). Moderate gamers ($M = 4.58$) considered online video games to be more of a waste of time than any other group.

This information refutes Bruner and Kumar's test results which express a positive correlation between attitude toward the medium and attitude toward the specific advertisement. These results seem to indicate that the connection lies within the participant's attitude toward advertising in general and their attitude toward in-game advertisements. The truth of the matter is that these two set of results indicate some connection between the two which should be more closely examined through an additional study.

In a second attempt to gauge participants' attitudes toward ads within online video games they were asked to respond to several belief statements with on Likert –scale response options. Participants were presented with a series of opinions and then asked to mark how strongly they agree or disagree with them by marking what best applies to their own opinions. The results from this section were analyzed using the Kolmogorov-Smirnov test to compare responses among the four gaming frequency levels. This test produced results that were statistically non-significant with p-values all above 0.150. The results from the Kolmogorov-Smirnov test indicated that the survey result closely followed a normal curve.

The final section of the survey presented participants with six opinion statements directly related to their attitudes toward advertising in online video games. The first question presented the opinion "I hate seeing ads in online video games," and asked participants to check how strongly they agree or disagree with the opinion. Heavy gamers (M = 3.55) reported that they agreed with that statement considerably more than other groups. Non-gamers (M=2.86) and casual gamers (M=2.88) disagreed more with the attitude statement. While moderate gamers (M=3.00) reported that they were undecided on the issue. This result

disputes the results of a Game Metrix study which found that heavy gamers are more positively receptive to in-game ads than medium gamers (Ozturk, 2006).

The second statement presented was “Advertisements provide valuable information about products.” Casual (M= 3.38) and heavy gamers (M= 3.17) reported that they closely agreed with the opinion statement. Non-gamers (M= 2.90) and moderate gamers’ (M= 2.53) results indicated that the two groups leaned more to disagreeing with the opinion statement. It is interesting to find that heavy gamers agree with this opinion because in the previous question they answered that they had a negative attitude toward the appearance of ads within online video games. This is also an interesting finding because in a 2007 study a finding showed that more than two-thirds of that study’s participants claimed that seeing an car ad in an online video game causes them to be more interested in purchasing the advertised car (Massive, 2007). The results from this section seem to uphold the results of other studies.

The third opinion presented was “I hate seeing brand name products in online video games.” The results from this question were very uniform, non-gamers (M=2.71), casual gamers (M=2.63), moderate (M= 2.68) and heavy (M= 2.64). These results indicate that all groups felt negatively about seeing brand names within online video games.

The fourth statement presented was “I like ads in games as long as they are realistic.” Heavy gamers (M= 2.91) reported that they disagreed with the statement considerably more than other groups. Moderate gamers (M= 3.21) indicated that they most closely agree with the statement while non-gamers’ (3.19) and casual gamers’ (M= 3.13) results fell more closely toward undecided.

The results from this question differed greatly from research done in 2006 where heavy gamers were found to believe that ads make online video games more realistic resulting in a positive feeling toward in-game advertisements (Double Fusion, 2006).

The fifth opinion presented was “Games should use real brands rather fictitious brands.” Overall, casual gamers (M= 3.88) strongly agreed with this opinion statement with non-gamers (M=3.38) reporting somewhere in between “Undecided,” and “Agree.”

The final opinion presented was “I would avoid playing an online video game with ads.” The results from this section indicated that participants would not be willing to avoid playing online video games because it contained ads. Heavy gamers (M= 2.82) were the closest group to being undecided on the opinion with casual gamers (M= 2.63) following closely behind. Non-gamers (M= 2.33) and moderate gamers (M =2.26) disagreed with the final opinion statement. The results from tests on this question are in line with those from previously done research. In a 2006 study 33% of heavy gamers indicated that they are likely to play titles with advertising, and 52% say that advertising has no impact on the choice of games they play (comScore, 2006).

Limitations

This study, though thorough, contains limitations. The first of these deals with the exclusive use of RIT undergraduate students as a population and sample. This is a limitation because, statistically, the majority of online video gamers are males ranging in age from 18 to 35 years old. Sixty-four percent of the participants in this study are females ($n= 44$) while the rest were males ($n=25$). This sample is not representative of the entire population despite the fact the females are the fastest growing group of gamers. The age range of the online gaming population is also not properly represented in the RIT undergraduate sample.

Another limitation is the use of only RIT students in the sample. This poses a constraint on the quality of the sample because there is a chance that the values and attitudes of RIT students are not representative of the general population. This is because RIT as a whole has a culture more inclined toward technology and the arts which make it a secluded community.

The size of the sample used throughout this experiment ($n= 69$) also poses a limitation to the study. Sixty-nine people participated in the study and, though this can be representative of the RIT community, there is a chance that the sample is not large enough to represent the attitudes and experiences of the entire gaming community.

The design of the experiment highlights the final section of possible limitations to the study. Participants were either shown a video with advertisements or a video without advertisements at the beginning of the experiment. These videos were of the online virtual world, Second Life. In order to yield two videos, one with ads and one without, the researcher

was forced to capture video from two different areas of the world. The fact that the two videos differed in action, location and visuals; and not just the inclusion of advertisements can be looked at as a limitation. This is because the differences between what the groups reported could have a slight chance to be influenced by other factors shown in the video.

The fact that videos of game play were used in this study instead of participants actually playing the game is a major limitation to the study. This is because intently viewing a video is not the same as actively playing a game. This passive viewing of the video may generate different results than those of participants actively playing a game. This is because the level of attention players give to a video is different than the level of attention that they give to the game they are playing. While playing a game there are many things happening which the participant must focus on to successfully complete the task but with a video the participants have no other actions but viewing. This may lead one group to be more attentive than the other.

Future Research

To overcome the limitations described above, this study must be expanded upon. The sample size must be increased to effectively represent a broader population. In an ideal world, the sample size would include as much of the online gaming population as possible. This can be done through the implementation of this study to a randomized sample in a population that is representative to the online virtual gaming community.

Researchers interested in recreating and improving upon this study should devise a way to capture a video in which they can manipulate the appearance of advertisements. This will ensure that the only differences the groups are exposed to deal with inclusion or exclusion of ads in the video.

Another possibility for more accurate results in the future is to have participants play the same section of a game with the only difference being that one game will have ads and the other will not. Having participants actually play the game will recreate actual game play situations which will give more accurate results because the gamer is in their natural environment and the conditions will be close to those they actually experience while playing games.

Researchers looking to replicate this study or do one similar to it are advised to hide the true purpose of the study more effectively. This can be done by explaining that the study is an evaluation of the game the participants are viewing for the experiment. This will add validity to the study because it eliminates the possibility that participant's answers are influenced by knowledge of the experiment's purpose.

In future projects researchers should focus on the areas of ad recall and the measurement of gamer attitudes toward in-game ads and the correlation between those attitudes and the ones gamers hold toward ads in general and the medium. These two areas produced the most significant data and can be studied more in depth.

Conclusion

With an ever growing market, the in-game advertising industry is only predicated to expand. The main focus of companies and scholars of the field must include ensuring the success of the campaign while also benefiting the consumer. Though there has been much research done on advertising in many media, the online gaming a medium for advertising has not gotten the same attention. This is a serious deterrent to many companies because the online gaming industry is an unexplored but growing and powerful market.

This study sheds some light on the attitudes, experiences and ad recall ability of consumers within the medium. This information is much needed in the in-game advertising industry to successful reach and retain consumers.

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Appendix A

Gaming Experience Determination Survey

Name: _____

Email Address: _____

Phone Number: _____

How many hours per week do you spend playing online video games?

I don't play video games 1-5 hours per week 6-10 hours per week
 11-15 hours per week 16-20 hours per week over 20 hours per week

How long ago did you start playing online video games?

I don't play video games 0-3 years ago 4-7 years ago
 8-11 years ago 12-15 years ago over 15 years ago

What online video games do you currently play?

Appendix B

Consent Form

This research project is an investigation into gamers' attitudes towards several aspects of online video games. For this study, you will be shown a video of a scene in a video game and then will be asked to answer survey questions. The questions will be used to understand your attitude to different aspects of online video games. The experiment require an average of 10 minutes of your time.

This experiment poses no known risks to your health and your name will not be associated with the findings. The study is also completely voluntary and can be terminated at anytime if needed. Upon completion of your participation in this study you will be provided with a brief explanation of the questions this study addresses and how your involvement in this experiment will impact the research being done. If you have any questions not addressed by this consent form, please do not hesitate to ask. You will receive a copy of this form, which you should keep for your records.

Thank you for your time.

Researcher's Signature

(Luz Ramirez, (508) 991 1212, ler6746@gmail.com)

CONSENT STATEMENT:

I have read the above comments and agree to participate in this experiment. I understand that if I have any questions or concerns regarding this project I can contact the researcher at the above location or the HSRO Institutional Review Board at (585) 475-2424

Appendix C

Online Gaming Survey

Part I.

In the space below, please list all thoughts, reactions and ideas that went through your head while you were watching the video, no matter how simple, complex, relevant or irrelevant they may seem. Write down everything, regardless of whether it pertained to the video or not. Do not worry about grammar, spelling or punctuation but please write legibly.

Part II.

Section I: Gaming Experience

Please mark the box that best represents your opinions in relation to online video games.

SD = Strongly Disagree D = Disagree U = Undecided A = Agree SA = Strongly Agree

		SD	D	U	A	SA
1.	I enjoy playing online video games.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.	Video games are an important part of my life.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.	I am satisfied with the online video games that I play.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.	The realism of video games is important to me.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5.	Advertisements can add realism to a video game.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6.	I read reviews online before deciding whether or not to buy a video game.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7.	The quality of a game's graphics is important to the enjoyment of that game.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8.	I would rather pay a monthly subscription than play with in-game advertisements.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9.	I feel happy after playing online video games.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10.	I am generally focused when I play online video games.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11.	I become distracted when I notice advertisements while playing video games.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12.	I generally have a positive experience when playing online video games.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13.	Advertisements within video games should be related to the game.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14.	I enjoy online video games more when I play with others.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15.	The music used in a video game effects whether or not I will play the game.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Section II: User Experience

Please circle the number that best represents your opinions in relation to online video games.
(Select only one)

1. How do you feel playing most online video games?:

At home **1** **2** **3** **4** **5** **Out of place**

2. Your experience with ads in online video games has been:

Extremely positive **1** **2** **3** **4** **5** **Extremely negative**

3. How important are online video games in your life?

Extremely important **1** **2** **3** **4** **5** **Not very important**

4. How much enjoyment do online video games generally bring into your life?

All **1** **2** **3** **4** **5** **None**

Part III.

Section I: Attitude towards Gaming

Please place an **X** on each scale that best represents your feelings about **advertising in general**:

Beneficial	_____	Detrimental
Pleasant	_____	Irritating
Interesting	_____	Uninteresting
Positive	_____	Negative

Please place an **X** on each scale that best represents your feelings about **online video games**:

Enjoyable	_____	Dull
Interesting	_____	Uninteresting
Pleasant	_____	Irritating
Good Hobby	_____	Waste of Time

Please place an **X** on each scale that best represents your feelings about **in-game advertisements**:

Beneficial	_____	Detrimental
Pleasant	_____	Irritating
Interesting	_____	Uninteresting
Positive	_____	Negative

Section II: Attitude towards Gaming

Please mark the box that best represents your opinions in relation to online video games.

SD = Strongly Disagree D = Disagree U = Undecided A = Agree SA = Strongly Agree

	SD	D	U	A	SA
1. I hate seeing ads in online video games.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. I play online video games to escape from problems.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Advertisements provide valuable information about products.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. I hate seeing brand name products in online video games	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. I like ads in games as long as they are realistic	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Games should use real brands rather than fictitious brands	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. I would avoid playing an online video game with ads	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. I believe video games promote violence	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. I believe that video games can be addicting	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. The quality of graphics in video games in important to me.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Part IV.

Ad Recall

Please identify any advertisements, if any, that you noticed in the previously shown video.

Part V.

Biographical Information

Finally, the last set of questions asks about selected personal characteristics. Your responses will be only used for statistical purposes.

1. What is your current major?

2. What is your current year level?

Freshmen

Sophomore

Junior

Senior

3. How many years have you attended RIT?

1 year

2 years

3 years

4 years

5 years

more than 5 years

4. What age were you on your most recent birthday?

years old

5. Are you

Male

Female

6. Ethnic group (Check one response)

African American/Black

Asian or Pacific Islander

Caucasian or White

Hispanic/Latino

Multiracial

Native American (Indian, Alaskan, Hawaiian)

7. How many hours per week do you spend playing online video games?

I don't play video games 1-5 hours per week 6-10 hours per week
 11-15 hours per week 16-20 hours per week over 20 hours per week

8. How long ago did you start playing online video games?

I don't play video games 0-3 years ago 4-7 years ago
 8-11 years ago 12-15 years ago over 15 years ago

Please write down the purpose of the study you just participated in:

Use this section for any additional comment

Appendix D

Sources Searched

Google Scholar:

Terms:

- In-game Advertising
- Web Advertising
- Product Placement
- Ad Recall
- Ad Placement
- Game Player Experience
- Ad Types in Online Games
- Ad Avoidance
- Static Ads & Effectiveness
- Internet User Experience
- Measuring Feelings & Experience
- Advertising Industry Statistics

EBSCO:

Terms:

- Advertisements & Exposure
- Ad Recall in Video Games
- Effects of Media
- Ad types & Effects
- Advertising Effects & Determinants
- Forced Exposure
- Unconscious Familiarity

ProQuest

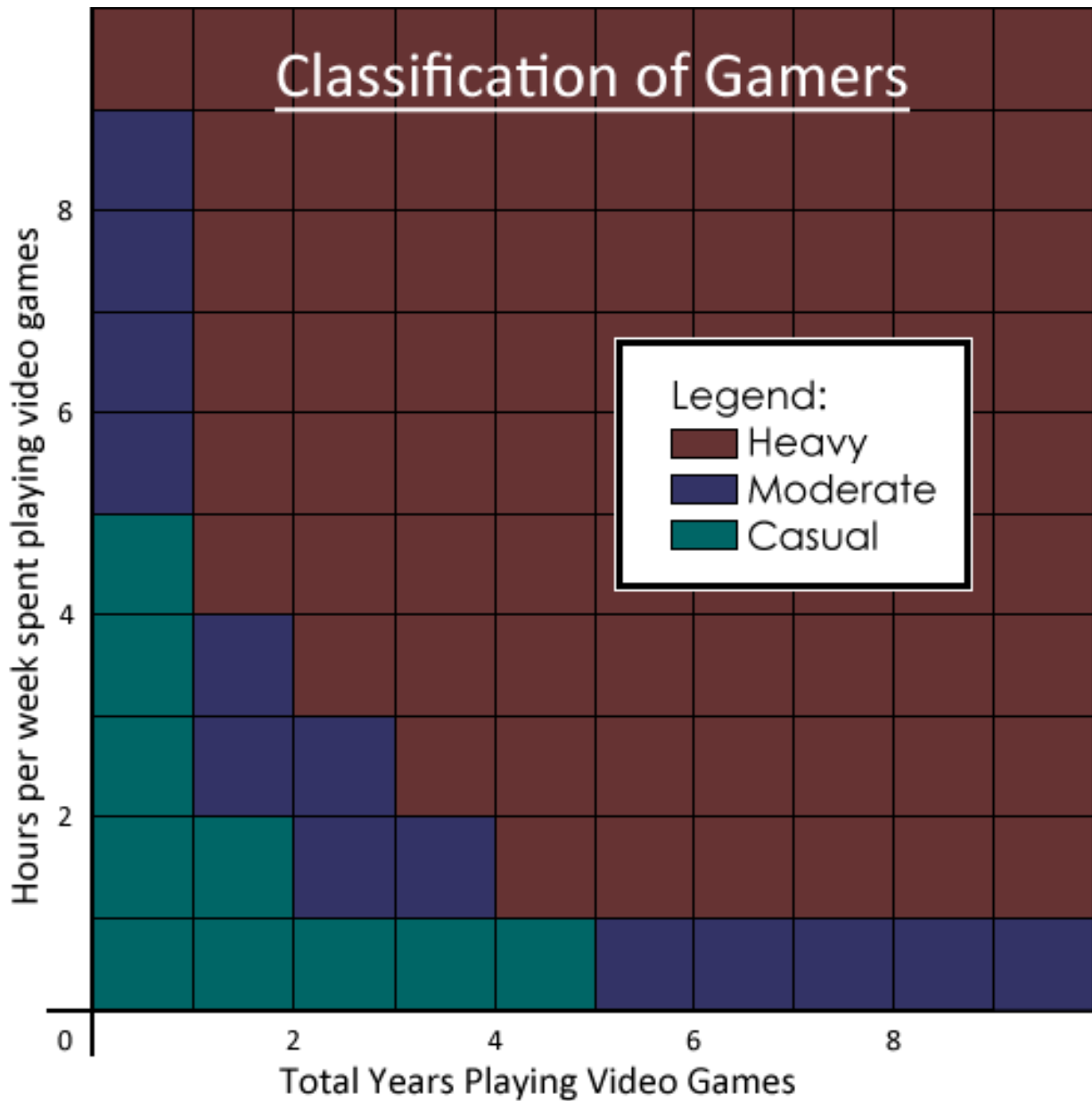
Terms:

- Effect of Advertisements on Consumers
- Effect of Advertisements on Consumer Experience
- Player Engagement and In-Game Advertising
- Branded Entertainment
- Virtual Worlds

Time frame:

- 1960 - 2009

Appendix E



*non-gamers were not plotted on the graph because they identified that they played 0 hours a week for 0 years.

Appendix F

Survey Answer Encoding

Part II & Part III, Section 2:

- 1: Strongly Disagree
- 2: Disagree
- 3: Undecided
- 4: Agree
- 5: Strongly Agree

Part III, Section 1:

Scale measures 1 – 6 from left to right.

Part V:

- 1: Freshman
- 2: Sophomore
- 3: Junior
- 4: Senior

- 1: Male
- 2: Female

- 1: African American/ Black
- 2: Asian or Pacific Islander
- 3: Caucasian or White
- 4: Hispanic/Latino
- 5: Multiracial
- 6: Native American

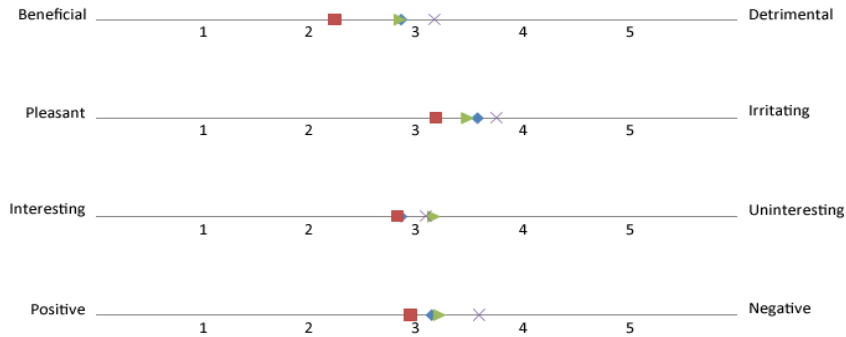
- 1: don't play
- 2: 1-5 hours
- 3: 6-10 hours
- 4: 11-15 hours
- 5: 16-20 hours
- 6: over 20 hours

- 1: don't play
- 2: 0-3 years
- 3: 4-7 years
- 4: 8-11 years
- 5: 12-15 years
- 6: over 15 years

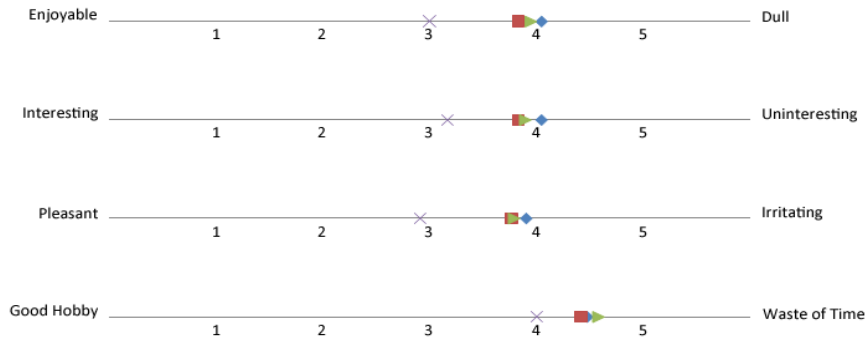
Appendix G

Gamer Attitudes

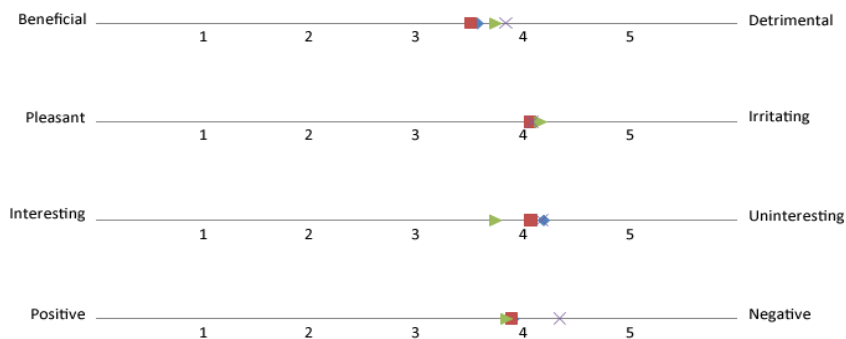
General Advertising



Online Video Games



In-game Advertising

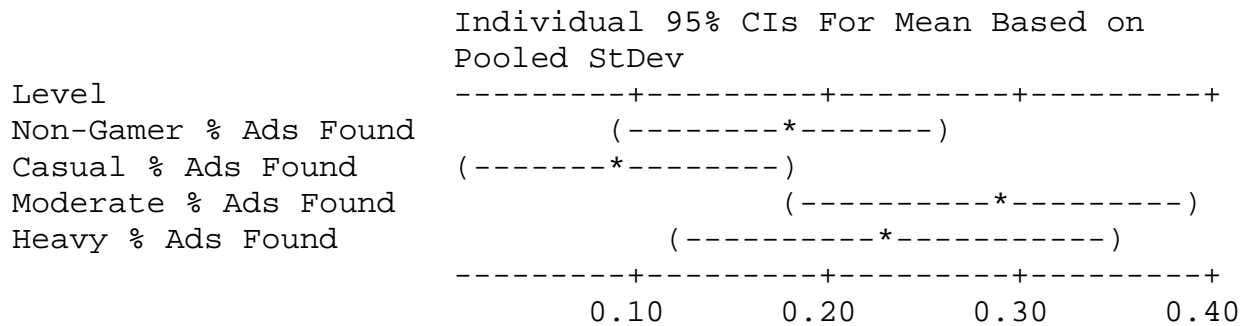


- ◆ Non-Gamer Mean
- Casual Mean
- ▲ Moderate Mean
- × Heavy Mean

Appendix H

Ad Recall

Level	N	Mean	StDev
Non-Gamer % Ads Found	13	0.1758	0.1324
Casual % Ads Found	14	0.0918	0.1064
Moderate % Ads Found	9	0.2857	0.2259
Heavy % Ads Found	8	0.2321	0.1861



Tukey Test:

P-Values:

- Non-Gamer vs. Casual: 0.080
- Non-Gamer vs. Moderate: 0.165
- Non-Gamer vs. Heavy: 0.427
- Casual vs. Moderate: 0.011
- Casual vs. Heavy: 0.035
- Moderate vs. Heavy: 0.604