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“Turn It Up to Eleven”

A study of Guitar Hero and Rock Band: Why people play,  
and how marketers can use this information

Timothy J. Hemingway

A thesis submitted to the faculty of  
Brigham Young University  
in partial fulfillment of the requirements for the degree of  
Master of Arts

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Department of Communications

Brigham Young University

August 2010

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## ABSTRACT

“Turn It Up to Eleven”

A study of Guitar Hero and Rock Band: Why people play,  
and how marketers can use this information

Timothy J. Hemingway

Department of Communications

Master of Arts

This thesis seeks to first understand why individuals play *Guitar Hero* and *Rock Band*. Several motivational factors are looked at including fantasy, self-esteem, self-efficacy, and the desire to play a real instrument. In addition to the motivation factors, the communication theories of uses and gratifications and deficient self-regulation are used to define the gamers who play *Guitar Hero* and *Rock Band*. Once the paper defines a theoretical framework, a survey is used to test the variables. The significant findings are then discussed and suggestions are made as to how these games can more effectively be used as marketing tools for guitar manufacturers and music companies.

## ACKNOWLEDGEMENTS

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RUNNING HEAD: Turn It Up to Eleven

## Chapter 1: Introduction

### Introduction

The phrase “turn it up to eleven” has been a well-known inside joke among rock musicians since Rob Reiner’s 1984 mockumentary, *This Is Spinal Tap*. The film follows the fictitious rock band Spinal Tap several years past their prime as they try to overcome being viewed as “washed up” by releasing a new album and going on tour (Internet Movie Data Base [IMDB]). In one of the most memorable, and perhaps funniest scenes, guitarist Nigel Tufnel explains to the interviewer that his Marshall amplifier was custom made to go up to eleven, making it one louder than any other amplifier available. The interviewer questions Nigel about whether the amplifier actually goes any louder, or if it simply has an extra number on the knob. Slightly confused, Nigel responds with the classic line, "But these go to eleven" (Murphy & Reiner, 1984).

For years musicians, guitarists in particular, have referenced this scene jokingly when referring to volume. In recent years an entirely new group of people have become familiar with this phrase. This new group being videogamers, specifically players of *Guitar Hero* and *Rock Band*. The phrase “turn it up to eleven,” for many people has become almost synonymous with *Guitar Hero/Rock Band* because it has been used over and over again in reviews, forum discussions, and even in marketing materials for the games.

## Background

Over the last few years, multiple rhythm-based music games have entered the marketplace and are becoming increasingly popular among teenagers and young adults worldwide. *Guitar Hero*, the first widely distributed rhythm based game entered the market in 2005. With each passing year following the original's release, a new rendition of *Guitar Hero* has entered the market. The most recent being *Guitar Hero 5*, and it has been announced that *Guitar Hero – Van Halen* is only a few months away, making its release just in time for Christmas 2009.

Spurred by the popularity of *Guitar Hero*, an alternative game, *Rock Band*, was released in 2007. Unlike its predecessor which only included a guitar controller, *Rock Band* also features drums, a microphone for vocals, a guitar, and the option of adding an additional controller which can be used as a bass guitar. Due to the popularity of the entire band experience, *Rock Band 2*'s bundle-pack includes a controller patterned after Fender's Precision Bass, and *Rock Band – The Beatles* contains a replica of Paul McCartney's legendary Hofner violin bass (*Rock Band*). *Guitar Hero* didn't include additional instrument options until its fourth rendition, *Guitar Hero – World Tour*. All *Guitar Hero* releases post *World Tour* have included the "full band experience" (*Guitar Hero IV*).

In addition to *GuitarHero/Rock Band*, several other music-based games have been introduced into the gaming world. Nintendo's *Wii Music* is a prime example. *Wii Music* allows the player to simulate playing 66 different instruments. Unlike *Guitar Hero/Rock Band*, *Wii Music* doesn't require any additional equipment to play; all instrument simulations can be made using Nintendo's motion sensor controls which are included

with the system (Wii Music). *Rolling Stone* magazine joined the videogame market in 2009 with *Drum King* for the Nintendo Wii. Like *Wii Music*, *Drum King* doesn't require additional equipment; instead, the motion sensor controllers are used to simulate drum sticks (IGN Entertainment Inc. [IGN], 2009). Other music-based games like *American Idol* and *SingStar*, which focus on a gamers vocal abilities, have also seen success (Wikipedia C).

### **Marketing in Guitar Hero/Rock Band**

Although the rock music rhythm genera has been around for several years now, it has seen very minimal usage as a marketing tool. Little has been done beyond product placement.

The *Guitar Hero* series initially carried an endorsement by the Gibson Guitar Company. In the first three renditions of *Guitar Hero*, players could equip their avatars with an array of different Gibson branded axes, including: Les Paul's, SG's, Explorer's, Flying V's, ES-335's, and Kramer Striker's (Kramer is a subsidiary of Gibson). In addition, the guitar shaped controller used in the game was also based on one of Gibson's popular models.

The *Rock Band* series, being a direct rival to *Guitar Hero*, took up an endorsement with Gibson's direct competitor, Fender. The Fender Music Corporation placed its products throughout *Rock Band*, including the Stratocaster, Telecaster, Jaguar, Precision Bass, Jazz Bass, etc. Likewise, they included controllers patterned after these different guitar designs.

Although the music industry hasn't done much marketing in the actual games, it has still seen the benefits of *Guitar Hero* and *Rock Band* by the sheer fact that players are hearing new songs they haven't heard, or have forgotten, and are consequently going out and purchasing these songs.

There have been several articles featuring *Guitar Hero* and *Rock Band* that have focused on the correlation of specific songs to band sales, before and after being featured in one of the games. One of the most notable examples would be the band DragonForce and their song "Through the Fire and Flames," which is featured in *Guitar Hero III*. "Downloads of relative newcomer DragonForce's "Through the Fire and Flames," selling fewer than 2,000 weekly, rose to more than 10,000 after *Guitar Hero III*'s release and approached 40,000 the week ending Dec. 30" (Best *Guitar Hero* Band: Dragonforce, 2008).

Another notable example would be classic rock icons Aerosmith. "Aerosmith earned an ... increase on its "Same Old Song and Dance," which rose to 2,041 from 374 copies the previous week." In addition, Aerosmith hoped that being featured in *Guitar Hero III* would boost the sales for their upcoming album. "Every *Guitar Hero III* song tracked by Nielsen SoundScan (62 of 70) saw an increase in digital download sales the week ending Dec. 30, 2007" (Aerosmith Plugs in to 'Guitar Hero' Popularity, 2008).

There has been some research concerning music placement throughout videogames, and although it is not specific to *Guitar Hero* and *Rock Band* is still relevant.

The benefit of such promotions is not lost on bands and labels. "Videogames, such as *Splashdown*, have provided labels with a great alternative means of gaining exposure for new music and even music by more-established acts," says

Don Terbush, Universal Music Enterprises' senior director of film and new-media licensing.

"Considering that some games sell millions of units," Terbush adds, "that's a lot of people exposed to bands that may have a difficult time getting radio airplay, let alone [getting] their video played on MTV or VH1. For the more-established acts, it's just frosting on the cake" (Traiman, 2001, p. 76).

It is clear that having a song featured in one of these games is a great promotional tool. Interestingly enough, not all musicians are entirely happy about their music being available through *Guitar Hero* and *Rock Band*. John Mayer, who has been deemed the "New Guitar God" by *Rolling Stone* said, "*Guitar Hero* was devised to bring the guitar-playing experience to the masses without them having to put anything into it. And having done both, there's nothing like really playing guitar. I mean, what would you rather drive, a Ferrari or one of those amusement-park cars on a track?" (Sarkar, 2008).

River Cuomo, frontman of the popular group Weezer, who happens to be featured in both *Guitar Hero* and *Rock Band* said, "To me, it seems like if you're going to put that much effort into playing something, you should just play a real instrument [laughs]" (Snow, 2008).

Some of the more recent games have released an accompanying soundtrack, which features several of the more popular songs (Amazon).

Still, some bands seem to have seen the value in marketing through these games, and have allowed their music and likenesses to be used in a band specific version of the game. Some notable examples of this would be, Aerosmith, Metallica, and as of November 2009, Van Halen, all of whom have their own title in the *Guitar Hero* series. *Rock Band* has also seen success working with AC/DC, and even more so with its most recent release *Rock Band – The Beatles*.

As of September 2009, *Guitar Hero* has teamed up with Yahoo.com to create a concert series called *Guitar Hero 5 Fridays* on Yahoo. These mini concerts feature live performances by bands featured in either *Guitar Hero 5*, or the forthcoming *Guitar Hero-Van Halen*. The band Weezer was the first to be featured in this series; their concert debuted on Friday, September 25, 2009 (Parker, 2009). Two weeks later a mini-concert was launched featuring another popular *Guitar Hero* act, The Killers.

### **Thesis Relevance**

For the course of this study, the *Guitar Hero* and *Rock Band* series' will be looked at, primarily because they are the two highest selling franchises within the rhythm based music genre. Throughout this paper, instead of referencing both videogame franchises, from this point forward, *Guitar Hero* will be used as a generic term which refers to all variations of both *Guitar Hero* and *Rock Band*.

The primary objective of this study is to gain a better understanding of the mass appeal of interactive music based videogames, like *Guitar Hero*. In order to do this, two communications theories will be examined. These theories are: uses and gratification, and deficient self-regulation. Both theories have been used in several videogame studies in the past. Past findings will be used to examine and explain the motivations behind gamers and their desire to play *Guitar Hero*.

The secondary objective of this study is to take the information that is gained through the research, and make theoretical assumptions that can be used to explain the motivations behind gamers who play *Guitar Hero*, and how these motivations lead to purchases of things related to the games, like actual instruments and music.

Once the theoretical assumptions have been created, a survey will be administered to *Guitar Hero* players to test the assumptions. The data will then be used to create suggestions for marketers.

The intent of the researcher is to find common motivations of *Guitar Hero* players that are not congruent with the existing marketing strategies used by guitar manufactures and music companies within *Guitar Hero*. The findings and suggestions found in this thesis can then be used to create more effective marketing tools that are catered to this specific demographic of gamers.

## Chapter 2: Literature Review

Before the study on *Guitar Hero* can move forward, it is important to gain an understanding of the videogame research that has already taken place, specifically focusing on the findings of past studies. In this section, several of the more notable and applicable studies will be cited to help create a more specific frame for the research that will take place. Several motivations for game playing will be discussed, including: fantasy, self-esteem, media selection, media addiction, and fulfillment of needs.

### Why People Play Games

Since the early 1980's when videogames like *Pong* and *Pac-Man* first saw a rise to popular culture, researchers and game developers alike have shown a strong interest in understanding why people play videogames. According to [www.gamecareerguide.com](http://www.gamecareerguide.com), a popular website for game developers and others within the videogame industry, the main reason individuals play games is for enjoyment. Within the shell of enjoyment they have specified eight specific areas:

- Sensation -- game as sense-pleasure
- Fantasy -- game as make-believe
- Narrative -- game as unfolding story
- Challenge -- game as obstacle course
- Fellowship -- game as social framework
- Discovery -- game as uncharted territory
- Expression -- game as soap box
- Submission -- game as mindless pastime

(LeBlanc, 2008).

From a theoretical perspective, several studies can likewise be found which indicate similar, if not the same, reasons the videogame industry has found to explain

why people play games. According to Sherry's research, individuals play videogames for the following reasons:

Arousal – videogames stimulate emotions

Challenge – individuals play videogames to push themselves to higher level of skill or personal accomplishment

Competition – individuals play videogames to prove to others, who has the best skills

Diversion – videogames are used to avoid stress or responsibilities

Fantasy – videogames allow individuals to do things they would not normally be able to do

Social Interaction – many individuals use videogames to interact with their friends

(Sherry, Lucas, Greenburg, & Lachlan, 2006, p. 217-218).

Additionally, through their research, Klug and Schell have identified several different types of videogame players. “Some more prominent types of players are identified as: The Competitor, The Explorer, The Collector, The Achiever, The Joker, The Director, The Storyteller, The Performer, and The Craftsman.” Of all the types of videogame players discussed, “The Performer” appears to be the most likely candidate for *Guitar Hero*; he is defined as, “plays for the show he can put on” (Klug & Schell, 2006, p. 91-92). The following discussion will cover the motivations for playing that are most applicable to this study.

### **Fantasy.**

According to the Merriam-Webster Dictionary, a fantasy is, “the power or process of creating especially unrealistic or improbable mental images in response to psychological need” (Merriam-Webster, 2009). From a psychological perspective, “fantasy is the way everyone, each in a particular way, conceals the impasse of his desire” (Lingis, 1999, p. 94). Through his research, Lingis argues that fantasy or make-

believe is used for “masking a flaw.” This finding concurs with Gibbs research in which he states, “Games lend to a sense of mastery to those who do not excel at other pass times” (Gibb, Bailey, Lambirth & Wilson, 1983, p. 163).

Several studies on videogames have shown fantasy to be a common reason why individuals choose to play. “Videogames allow players to do things that they normally would not be able to do, such as drive race cars, fly, and so on.” Participants in Sherry’s studies “spoke frequently about the appeal of being able to do things they cannot do in real life” (Sherry, Lucas, Greenburg, & Lachlan, 2006, p. 218).

Although there are undoubtedly many reasons an individual plays *Guitar Hero*, for the course of this paper the focus will be on individuals who play *Guitar Hero* because they have some type of fantasy of themselves as a rock star or musician; one explanation for this fantasy could be a lack of self-esteem as insinuated by Gibbs research. This paper takes the assumption that *Guitar Hero* essentially becomes an avenue through which the player can “live” out this fantasy in the “virtual world.”

One specific concept that supports the idea that videogames help individuals live out their fantasies is psychological absorption, also known as flow in some studies (Funk, Chan, Brouwer, & Curtiss, 2006). According to Irwin’s studies of videogames in the late 1990’s, players experience psychological absorption which is essentially an altered state of consciousness, that occurs when the gamer is totally immersed in virtual environment of the videogame (Irwin, 1999). It has also been pointed out that videogame players experience a sensation which could be compared to daydreaming while playing, and that many discuss feelings of actually being part of the fantasy world in which the game exists. “It’s hypnotic, psychological absorption is considered to be one type of altered

state of consciousness, occurring when one becomes totally immersed in the present experience“ (Funk, Pasolt, & Baumgarnder, 2003, p. 3).

Klug and Schell go on to explain, “Virtual gaming worlds allow participants to experience a universe they may have only imagined.” Their research on fantasy focuses specifically on sports games, “These customers are not content to watch sports on TV – they want to get right in the middle with the stars they follow and feel as if they are on the same field with them. Often, they are people who really did want to play a professional sport but were not blessed with the physical talent.” Klug and Schell go on to say, “Satisfying the desire of many people to escape into a true fantasy world, is in our opinion, the big gateway into mass market for games” (Klug & Schell, 2006, p. 94).

By taking Klug and Schell’s findings, and applying them to *Guitar Hero* players, it can be assumed that many *Guitar Hero* players have similar motivations to sports game players. *Guitar Hero* players may not necessarily have the talent to become a real rock star, but through the games, can enter a fantasy world and play vicariously next to real rock stars like Tom Morello and Slash (*Guitar Hero III*) or Travis Barker, Billy Corgan and Jimi Hendrix (*Guitar Hero IV*). If that isn’t enough, how about jamming with the guys from Aerosmith, Metallica, AC/DC, The Beatles, and Van Halen, all of whom have their own personal volume in either the *Guitar Hero* or *Rock Band* series.

The assumption can be made that the reason for the success that rhythm-based music games have seen can be directly correlated to the fact that they satisfy the individual gamers' desire of escaping into a true fantasy world.

**Self-esteem.**

Self-esteem is defined as being an individual's consistent sense of personal worth or personal worthiness (Rosenburg, 1965). Branden took this idea one step further and explained that self-esteem relied on an individual's ability to cope with basic challenges in life. Additionally, an individual's self-esteem is dependent on whether they find their self worthy of being happy (Branden, 1969). Essentially, self-esteem is how one views his/her own self. "A low self-esteem individual would be someone who felt that there was a relatively big difference between what he was and what he wanted to be" (Parrott & Hewitt, 1978, p. 955).

Since self-esteem is a measure of an individual's self-worth or personal happiness, it is clear that it is important for individuals to have high self-esteem. Several researchers have looked into ways that individuals with low self-esteem can raise their self-esteem. Videbeck's research found that simply through praising an individual, the person's self-concept could be enhanced (Videbeck, 1960). Based on their research, Parrott and Hewitt proposed that an individual with low-self-esteem, "might gain self-esteem" by being put on a program that "required behavior consistent with *the* ideals" the individual measured their self-esteem against (Parrott & Hewitt, 1978, p. 955).

This paper takes the assumption that individuals who have the fantasy or need to be a musician or rock star base their self-esteem partially on this need. Since the individual is not a rock star, *Guitar Hero* becomes an avenue through which they can boost their self-esteem because it allows them to excel as "virtual" musicians. The game becomes the "program" that Parrot and Hewitt discussed. The sheer number of individuals posting their accomplishments as a *Guitar Hero* player online validates this

assumption (online posting of accomplishments will be discussed in greater detail later on).

Several studies in both the field of communications and the field of psychology have focused on self-esteem and the role it plays in videogame enjoyment and success. Klimmt performed several studies that look at these particular variables. Through his research he “proposed that successful task resolutions lead to short-term *increases* in self-esteem (i.e., feelings of *pride* following the self-attribution of positive events in the game such as reaching the next level)” (Klimmt, Hefner, Vorderer & Roth, 2008, p. 6).

Yet another study looked at character attachment and self-esteem in gamers. The study “predicted that character attachment would moderate the relationship between self-esteem and videogame playing.” The findings of the study indicated that individuals with low self-esteem had “high character attachment,” or high parasocial connections to their virtual characters (Lewis, Weber & Bowman, 2008, p. 517).

Self-esteem is also an important factor in friendships/relationships with others. Several studies have indicated that those with low self-esteem tend to play alone rather than with others. In a study of high school students, it was found that “those who were not part of any crowd were effectively excluded from many of the facets of high school life that can bolster self-concept... these outsiders *were* especially deficient in self-esteem (Cusick, 1973).

Other studies have shown that the quality of friendships and the level of trust among friends is directly correlated with individuals own self-esteem. “The more

adolescents trusted their friends and the lower the deviant behavior of the friends, the higher the level of self-esteem they reported” (Wissink, Dekovic & Meijer, 2009, p. 416). This research indicates that those with low self-esteem have relatively few if any close relationships/friendships with their peers.

In recent years, researchers in the field of psychology have developed the social surrogacy hypothesis. This hypothesis states that “parasocial relationships in favored television programs can provide the experience of belonging” (Derrick, Gabriel & Hugenberg, 2009, p. 352). Since many individuals with low self-esteem tend to have few close friendships, they cling to virtual friendships. These parasocial relationships can “provide people with feelings of belonging, even in the face of low self-esteem or after being rejected by friends or family members” (Derrick, Gabriel & Hugenberg, 2009, p. 354). An article about social surrogacy stated that, “The research provides evidence for the 'social surrogacy hypothesis,' which holds that humans can use technologies, like television, to provide the experience of belonging when no real belongingness has been experienced,” declares Shira Gabriel, UB assistant professor of psychology. “We also argue that other commonplace technologies such as movies, music, or interactive videogames, as well as television, can fulfill this need” (Seeking Solace in Television, 2009, p. 6-7).

As indicated in the quote by Professor Gabriel, videogames, like television, can provide a feeling of friendship and belonging to those who don’t experience these feelings from other sources.

Based on this research on self-esteem and relationships/friendships, the assumption can be made that there is a correlation between gamers who play alone and their self-esteem.

### **Self-efficacy.**

Like self-esteem, the variable of self-efficacy has significant implications in gamers, and the games they choose. “Self-efficacy is defined as people's beliefs about their capabilities to produce designated levels of performance that exercise influence over events that affect their lives. Self-efficacy beliefs determine how people feel, think, motivate themselves and behave.” (Bandura, 1994, p. 72).

Although self-efficacy and self-esteem have many similarities, self-esteem is based more on how an individual feels about himself/herself, whereas self-efficacy focuses more on the individual's perspective as to whether he/she can or cannot accomplish a specific task. Questions related to self-esteem address things like, “At times I often feel useless,” whereas a question for self-efficacy would be phrased like, “I'm confident that I could learn to play guitar if I wanted to.”

Klimmt, who has done several studies on self-efficacy and game selection, states, “The design of typical computer games is therefore able to address the self-efficacy factor in players' motivation processes: They offer mastery experiences even to novice players and thus support the development of game-specific efficacy expectations” (Klimmt & Hartmann, 2006, p. 139). Essentially, videogames offer tasks that are challenging, but accomplishable to increase the game-efficacy of the player, and keep them playing.

Videogames allow individuals to do things in the “virtual world” that they may not have the efficacy to accomplish in the real world. An individual may not believe that he/she has the talent and skill required to play guitar, yet he/she can experience a similar level of satisfaction by playing *Guitar Hero*.

### **Playing alone versus playing with others.**

Another factor that will be looked at in this study is whether an individual plays games alone, or whether they play games with others. Many ‘casual’ gamers play solely for the social aspect of playing. Although virtually every videogame console has offered the ability to have more than one player, the concept of multi-player, or party games wasn’t solidified until Nintendo’s N64, which was the first system to allow four players to play at once (IGN, 2010).

The multi-player concept of the N64 was inviting to many individuals who were not typically gamers because it allowed them to play with friends and created a social experience. Games like *GoldenEye 007*, *Super Smash Brothers*, and *Mario Kart 64* became instant hits because they created an environment in which individuals were competing against their friends rather than a computer (IGN, 2000). Consequently, almost every game system that has entered the market since the N64 has allowed for four controllers. Some of the systems have allowed multiple consoles to be linked together allowing 8, 12, 16 or more players.

Although the idea of “party games” has been popular among many individuals, not everyone enjoys the experience of having others in the room with them while playing. In the early 2000’s Massive Multiplayer Online Games (MMOG’s) started to appear on

the internet. Games like *EverQuest* and *World of WarCraft* invited those individuals who like the idea of multi-player games, but would prefer the other players to be on their own consoles somewhere else in the world. Some of these games, like *World of WarCraft* were adaptations from earlier single player games (Massive Multi-Player Online Role Playing Game [MMORPG]).

In a study by John Davies (2007), it was found that exposure/dependency to television was lower in individuals who watched alone rather than those who watched with others. This study agrees with the research previously discussed under self-esteem, that individuals with low self-esteem are more likely to play alone rather than with others. Based on the research, it can be assumed that those with low self-esteem would likely align themselves with either single player games or MMOG's, rather than play console multiplayer games.

Based on the connections that exist between fantasy, self-esteem, and an individual friendships, four hypotheses were created to measure the different correlations.

*Hypothesis 1 (H1) - If an individual scores low on Fantasy, he/she is likely to Play Videogames with Others.*

*Hypothesis 2 (H2) - If an individual scores high on Fantasy, he/she is likely to Play Videogames Alone.*

*Hypothesis 3 (H3) - If an individual scores high on Playing With Others, he/she is also likely to score high on Self-Efficacy/Esteem.*

*Hypothesis 4 (H4) - If an individual scores high on Play By Self, he/she is also likely to score low on Self-Efficacy/Esteem.*

## **Theoretical Framework**

From a theoretical perspective, two main theories have been selected to explain why individuals play videogames such as *Guitar Hero* and *Rock Band*. The theories selected are uses and gratifications, and social cognitive theory, specifically deficient self-regulation (LaRose, Lin, & Eastin, 2003), which is a hybrid version of Bandura's work (Bandura, 1962). These theories, along with portions of others that are applicable to videogamers and their motivations will be discussed in greater detail below.

### **Media selection.**

Several theories and studies have been used to explain why individuals select certain types of media. As previously mentioned, from the perspective of this paper, player's fantasy of being a rock star tends to lead their media selection towards games that will help fulfill this need.

### ***Mood management.***

One such theory is the theory of mood management; also known as affect dependent theory of stimulus arrangements (Zillmann & Bryant, 1985). "Mood management theory states that, to the extent possible, individuals tend to arrange their environment so that a good mood (commonly pleasure) is maximized or maintained, and a bad mood (commonly pain) is diminished or alleviated... Since entertainment provides its audience with the opportunity to symbolically arrange the environment, mood management theory states that people's entertainment choices should similarly serve the management of moods" (Oliver, 2003, p. 90).

Bryant and Davies argue that mood management may play a role in a gamers' desire to play; they say, "One possibility is that videogames are more important to people whose emotional experiences are subjectively stronger than others, because game playing represents a potentially powerful means to alter negative moods and achieve positive feelings" (Bryant & Davies, 2006, p. 184).

The reasoning or motivations behind an individual using videogames to create a *good mood* could be one factor that leads to media dependency, or deficient self-regulation. As previously discussed under self-esteem, videogames can lead to a sense of accomplishment for individuals who do not succeed at other activities. Essentially, a person who suffers from low self-esteem, depression, anxiety, etc., plays to relieve themselves of these bad feelings. Thus, there is little incentive to regulate their game playing because they can escape those bad feelings and consequently they end up playing for long periods of time. As the duration of play time, or frequency of use increases, the individual becomes more dependent on the media, and can ultimately experience deficient self-regulation.

### *Uses and gratifications.*

In addition to mood management, several of the studies cited suggest the communications theory of uses and gratifications as an explanation for playing certain types of videogames.

Uses and gratifications is a media theory that is based around the belief that individuals have needs, and they seek out media to gratify these needs. Blumler and Katz defined four reasons individuals choose media, these reasons are diversion (or escape),

personal relationships (media for companionship), personal identity (reassurance or self-understanding, and surveillance (gathering information) (Blumler & Katz, 1974).

Since the early 1980's, which was the beginning of main-stream gaming, uses and gratifications has been used to explain why individuals play videogames. Most of the earlier studies focused specifically on arcades, since they were popular among teenagers before home consoles were developed (see Selnow, 1984 & Wigand, Borstelmann, & Boster, 1985). Myers' 1990 study on videogames used uses and gratifications to understand the significance of game play on console systems in the home. He found the following four reasons for significant game use: fantasy, curiosity (novelty), challenge, and interactivity (Myers, 1990).

In regards to an individual's selection of videogames, states, "In the case of media, an individual's media use and the effects of that media use are largely (though not completely) a function of the individual's purpose for using the media" (Sherry, Lucas, Greenburg, & Lachlan, 2006, p. 214). This statement coincides with Myers' four game uses.

One recent study found that "like television, different patterns of relationships exist between the gratifications of videogame play and genres. In other words, various game types satisfy different needs for the users." These researchers also state that, "these results indicate that game users sort themselves by the types of pleasures a game genre offers" (Lucas & Sherry, 2003, p. 20). These findings coincide with early studies on videogames and uses and gratifications.

All of these studies agree with the basic tenants of media selection as stated in uses and gratification. In greater detail, "the theory suggests that media users play an

active role in choosing and using the media. Users take an active part in the communication process and are goal oriented in their media use. Media user seeks out a media source that best fulfills the needs of the user. Uses and gratifications assume that the user has alternate choices to satisfy their need” (University of Kentucky [UKY], 2001).

The theory of uses and gratifications differs from several of the other communication theories. “In contrast to the concern of the 'media effects' tradition with 'what media do *to* people' (which assumes a homogeneous mass audience and a 'hypodermic' view of media), U & G can be seen as part of a broader trend amongst media researchers which is more concerned with 'what people do *with* media', allowing for a variety of responses and interpretations” (Blumler & Katz, 1974).

From the stance of uses and gratifications and the studies that have already taken place, the assumption can be made that some *Guitar Hero* players have selected this specific game because it is fulfilling a need or fantasy.

### ***Media addiction.***

Although there is strong evidence to indicate that uses and gratifications concept of fulfillment of needs is a good explanation for the motivations of *Guitar Hero* players, one recent study by the European Youth Music Foundation would indicate that this is only a partially true assumption. Their findings indicate that approximately 20% of *Guitar Hero* and *Rock Band* players in Europe have picked up a real instrument (Youth Music, 2008). This research indicates that although videogames may be partially fulfilling one's fantasy, they are not fulfilling one's goal of becoming a rock star.

Therefore, some players feel the need to take their fantasy one step farther and make it, in some sense, a reality.

Several studies have taken place which explain addiction to media. Once such study by McIlwraith explains how individuals can become addicted to television. “It has further been suggested that television's ability to command attention leads to disuse of imagination and underdevelopment of imaginative play among young viewers, which then leads to more television watching. (Singer, 1993; Singer & Singer, 1983) The idea that television creates a problem for which watching more television is the solution clearly draws a parallel with substance dependence” (McIlwraith, 1998, p. 374).

### ***Deficient self-regulation.***

Bandura's social cognitive theory touts three tenants. The first, “Response consequences (such as rewards or punishments) influence the likelihood that a person will perform a particular behavior again in a given situation.” Second, “Humans can learn by observing others, in addition to learning by participating in an act personally. Learning by observing others is called vicarious learning.” Lastly, “Individuals are most likely to model behavior observed by others they identify with” (Stone, 2009).

The theory of deficient self-regulation is essentially a hybrid version of social cognitive theory, and focuses specifically on “media addictions.” explains, “Deficient self-regulation is defined as a state in which self-control is diminished” (LaRose & Lee, 2007, p. 633). When individuals suffer from deficient self-regulation, they “no longer judge their behavior against acceptable personal or social standards for “normal” amounts of game play and no longer apply self-reactive influences as self-administered rewards

for moderating consumption or indulging feelings of guilt for excessive play” (LaRose & Lee, 2007, p. 633). Essentially, the individual fails implementing the normal processes of self-monitoring, judgmental process, and self-reaction, (LaRose, Song, Eastin, & Lin, 2004) resulting in diminished self-control. This lack of control can lead to a psychological addiction to the medium. A psychological addiction occurs when the individual’s self-constraints fail to operate, and the individual no longer analyzes his/her behavior against that which is considered to be “normal.”

It should be noted that LaRose, one of deficient self-regulations main researchers, does not believe that media creates a true addiction; he states, “To be “truly addicted” persons must experience serious life consequences as a result of their addictive behavior, such as the loss of employment or the dissolutions of a marriage” (LaRose, Song, Eastin, & Lin, 2004, p. 384). Other researchers disagree, believing that media can cause a “true addiction.”

One notable article which has caused concern for many appeared in *The Washington Post* in 2005. The article states that 10 people in Korea died from causes related to game addictions. The article looks specifically at one man who was found dead in an internet café after playing for nearly 50 hours straight with only a few short breaks (Khazan, 2006).

Searle looks at game addictions like other addictions, and believes that their main cause comes from personality traits. His research states, “Online gaming is a process addiction, which is conceptually different than a substance addiction” (Searle, 2007, p. 17). He then explains that the difference between process addictions and substance

addictions is the involvement of actual chemicals, although the effects are essentially the same.

Regardless of whether media forms a true addiction or a habitual process addiction, it is still relevant in regards to the frequency which an individual uses a specific media. By using deficient self-regulation, the assumption can be made that not all individuals have their needs or fantasies fulfilled by videogames; instead some individuals experience an intensified need or fantasy and essentially develop an addiction to the videogame. This increased level of game play essentially leads the player to one of two choices. The first being increased game play. Through this choice, the fantasy or need may temporarily be fulfilled while playing, but game play is not a permanent solution. The second choice is to take the fantasy one step further by leaving the “virtual world” and actually purchasing an instrument and learning to play in the real world. Through this choice, the individual is essentially working towards living the fantasy, and making it a reality.

Since uses and gratifications makes the assumption that the need is satisfied, it does not contain an additional explanation for consumer behavior. The Youth Music Foundations study has shown that the need is not being satisfied for all players. Because of this, additional theoretical explanations and research are needed to understand why 20% of *Guitar Hero* players are purchasing instruments.

The strength of this research is based on the assumption that the theory of deficient self-regulation will be able to explain consumer behavior. This new found understanding of consumer behavior can then be used to cater marketing strategies used

by guitar manufacturers and the music industry in conjunction with the *Guitar Hero* and *Rock Band* franchises.

### **Fulfillment of needs.**

It is clear that a segment of *Guitar Hero* players are in fact looking to fulfill an internal need, fantasy, or desire. One clear example is the sheer number of players who feel the need to share their accomplishments with others. The researcher went to Google Video (Google Video A) to see the number of videos containing the key words “Guitar Hero.” Approximately 170,000 results were found in less than three seconds. The same key words were typed into YouTube (YouTube A) which brought up nearly 200,000 entries. To illustrate the increasing desire of *Guitar Hero* players to share their results, the same key words were again entered into YouTube and Google Video on October 12, 2009, over a year after the initial entry. As of that date, YouTube has 302,000 results (YouTube B), and Google Video had an astounding 551,000 videos (Google Video B). Clearly there is something to be said for the mass volume of videos made, primarily by teenagers, about their accomplishments on *Guitar Hero*. As previously quoted from Gibb’s article, “Games lend to a sense of mastery to those who do not excel at other pastimes” (Gibb, Bailey, Lambirth & Wilson, 1983, p. 163).

The assumption can be made that some videogame players have low self-esteem, and they use the game to give themselves a greater sense of self-worth. Although an individual may not be the star athlete, valedictorian, or prom king/queen, he or she can become a “guitar hero” and broadcast his or her accomplishments to millions of other *Guitar Hero* enthusiasts around the globe. Many of the videos viewed contained pages

and pages of positive reviews from other *Guitar Hero* players, which contained messages like, “Awesome Playing!” and “You Rock!” As previously stated, Videbeck’s research indicates that positive messages and praise may raise an individual’s self-esteem (Videbeck, 1960). Having 50, 100 or 1000+ positive messages could be very rewarding for an individual with low self-esteem.

It is clear the companies that produce these games understand, to some extent, the psychological reasons that direct an individual to choose to play one of these music based games. The first thing encountered on the *Guitar Hero I or II* website, is the phrase “Unleash Your Inner Rockstar” (*Guitar Hero I*, *Guitar Hero II*). *Guitar Hero III: Legends of Rock* carries the tagline “Unleash Your Inner Rock Legend” (*Guitar Hero III*). It is very apparent that *Guitar Hero*’s publisher RedOctane understands that their target market has an internal desire to be a rock star. Going back to the theory of uses and gratification, we can see that even the promotional taglines for these games are indicating that this game will fulfill an internal need that the player has.

This concept of fulfilling a need can be seen throughout the marketing materials and product descriptions found on the different *Guitar Hero* websites; these include taglines like, “Crank Up the Volume and prepare to rock around the globe with *Guitar Hero*® *III*; *Legends of Rock*. Battle against some of the greatest legends to ever shred on a guitar and become one yourself! Take your skills online against *Guitar Hero*® players from around the world,” and “Realize a true rock concert experience with all new venues, incredible lighting effects, authentic instruments and sick character moves” (*Guitar Hero III*).

*Uses and gratifications versus deficient self-regulation.*

The uses and gratifications model explains that the player has the fantasy or need to be a rock star; this fantasy needs to be gratified, so media is selected. In the case of this study, the chosen media is *Guitar Hero*. The game then fulfills this need, value is found and the player is gratified. Now he or she can move on and select more media as needed.

Deficient self-regulation agrees with the idea of fantasy and the need to resolve internal desires through media selection. The defining difference between deficient self-regulation and uses and gratifications is that deficient self-regulation does not see the media selection as a permanent solution to the need or fantasy. Although the media will temporarily gratify the need, specifically when played, this is not a permanent solution. The media essentially creates a false gratification.

The idea that the fantasy is resolved is the key difference between the two theories. Uses and gratifications states that the fantasy is resolved *need is gratified*, whereas deficient self-regulation states it is only temporarily resolved while the individual is playing. Afterwards, the individual knows that they are not a rock star and has a choice to make. One route is to continue fueling the fantasy and playing the game more and more, essentially creating a media addiction. The second route is to actually take a step towards becoming an actual musician and possibly, some day, a rock star. This route would indicate that an individual has found a way to break the “addiction” cycle by making their fantasy more of a reality.

Several hypotheses were created based on the concepts of deficient self-regulation, frequency of use, and play/purchase an instrument. These hypotheses are as follows:

*Hypothesis 5 (H5) - If an individual scores high on Self-Efficacy/Esteem, he/she is also likely to Play/Purchase an Instrument.*

*Hypothesis 6 (H6) - If an individual scores high on Self-Efficacy/Esteem and Plays an Instrument, he/she is likely to score low on Game Play Frequency.*

*Hypothesis 7 (H7) - If an individual scores low on Self-Efficacy/Esteem, he/she is likely to score high on the Deficient Self-Regulation Scale.*

*Hypothesis 8 (H8) - If an individual scores high on the Deficient Self-Regulation Scale, he/she is likely to score high on Frequency of Play.*

### **Music purchases.**

Although there is very little research to indicate whether one specific group will purchase music over another, there has been research which indicates that *Guitar Hero* players purchase music used in the games. Much of this research was previously discussed in the “Marketing in *Guitar Hero/Rock Band*” section.

Because the intent of this thesis is to provide marketing insights and suggestions, the researcher would like to see if it is possible to identify a specific segment of *Guitar Hero* players who purchase music. The following hypotheses will be used to determine if one specific group is more likely to purchase music used over another group.

*Hypothesis 9 (H9) - If an individual scores high on Self-Efficacy/Esteem, he/she is likely to Purchase Music for enjoyment/entertainment.*

*Hypothesis 10 (H10) - If an individual scores high on Fantasy, he/she is likely to Purchase Music.*

*Hypothesis 11 (H11) - If an individual scores low on Self-Efficacy/Esteem, he/she is likely to Purchase Music.*

## **Hypotheses**

As previously shown throughout the literature review, several hypotheses have been created based on existing research. The hypotheses have been listed below in order for clarity. They are as follows:

*Hypothesis 1 (H1) - If an individual scores low on Fantasy, he/she is likely to Play Videogames with Others.*

*Hypothesis 2 (H2) - If an individual scores high on Fantasy, he/she is likely to Play Videogames Alone.*

*Hypothesis 3 (H3) - If an individual scores high on Playing With Others, he/she is also likely to score high on High Self-Efficacy/Esteem.*

*Hypothesis 4 (H4) - If an individual scores high on Play By Self, he/she is also likely to score high on Low Self-Efficacy/Esteem.*

*Hypothesis 5 (H5) - If an individual scores high on Self-Efficacy/Esteem, he/she is also likely to Play/Purchase an Instrument.*

*Hypothesis 6 (H6) - If an individual scores high on Self-Efficacy/Esteem and Plays an Instrument, he/she is likely to score low on Game Play Frequency.*

*Hypothesis 7 (H7) - If an individual scores low Self-Efficacy/Esteem, he/she is likely to score high on the Deficient Self-Regulation Scale.*

*Hypothesis 8 (H8) - If an individual scores high on the Deficient Self-Regulation Scale, he/she is likely to score high on Frequency of Play.*

*Hypothesis 9 (H9) - If an individual scores high on Self-Efficacy/Esteem, he/she is likely to Purchase Music for enjoyment/entertainment.*

*Hypothesis 10 (H10) - If an individual scores high on Fantasy, he/she is likely to Purchase Music.*

*Hypothesis 11 (H11) - If an individual scores high on Low Self-Efficacy/Esteem, he/she is likely to Purchase Music.*

## Chapter 3: Study

### Methodology

In order to answer the hypotheses, a survey was created to test all of the variables outlined in the *Guitar Hero/Rock Band* Model. The survey was then administered to *Guitar Hero* and *Rock Band* players; the method of distribution will be discussed in greater detail in the Chapter 4: Results. To view the entire survey, see Appendix 1.

#### Survey.

Each variable used in the model will be discussed in greater detail below, including both sample questions used, and the origin of the questions.

#### *Demographics.*

Basic questions were created by the researcher to define the demographics of the study's participants. This section included questions regarding the age, gender, ethnicity, etc. of the participants.

#### *Frequency of use.*

The frequency of use questions were based on an existing frequency of use scale for Internet usage (LaRose, Lin, & Easting, 2003). The questions were modified slightly for the context of the study. This section included questions like, "On a typical day how many minutes do you play *Guitar Hero/Rock Band*?" and "How many days per week do you play *Guitar Hero/Rock Band*?"

*Desire to play alone versus play with others.*

The questions for this section were created by the researcher, and were intended to identify whether individual play videogames alone or with others. Questions like “I mostly play Guitar Hero/Rock Band by myself,” and “Most of the time when I play videogames, I’m playing with friends,” were used.

*Fantasy.*

The questions in the fantasy section were based on pre-existing uses and gratification questions that have been used in studies on level of fantasy (Sherry, Lucas, Greenberg, & Lachlan, 2006). The questions were modified from their existing forms for the course of the study. This section included questions like, “I play Guitar Hero/Rock Band because it/they let me do things I can’t do in real life,” and “I enjoy the excitement of assuming an alter ego in Guitar Hero/Rock Band.”

*Deficient self-regulation.*

The questions in the deficient self-regulation section were based on LaRose’s pre-existing deficient self-regulation scale. The questions in LaRose’s scale were based on Internet usage, and were therefore modified for the course of this study to reflect game usage (LaRose, Lin, & Easting, 2003). This section included questions like, “I play Guitar Hero/Rock Band so much it interferes with other activities”, “I would miss Guitar Hero/Rock Band if I could no longer go and play,” and “Playing Guitar Hero/Rock Band is part of my usual routine.”

***Purchase/play instrument.***

All of the questions in this section were created by the researcher. The questions were used to determine whether an individual plays an instrument; if yes, whether they started playing the instrument before or after playing *Guitar Hero*, and to identify whether the individual feels that playing *Guitar Hero* helps them as a musician.

Individuals who don't currently play instruments were questioned about whether *Guitar Hero* makes them want to play an instrument, and whether they felt that playing *Guitar Hero* would help them learn to play more quickly than those who don't play *Guitar Hero*.

***Purchase music fantasy versus enjoyment.***

The researcher created the questions for this section, but based them on the same concepts used for the questions in the fantasy section. This section was created to support H9. It contains questions such as, "When I listen to these songs, they make me feel good about myself," and "I feel like a rock star when I listen to this music."

***Instrument/performance self-efficacy.***

The questions in this section were based on efficacy questions from research about computer/internet efficacy (Liu & LaRose, 2009). The original questions were modified for the context of the study, and contained questions like, "I'm confident that if I wanted to, I could learn to play a new instrument quickly," and "I'm confident that I could write songs that others would like to hear."

*Self-esteem.*

The questions in this section were taken directly from Rosenberg's established 10 point self-esteem scale (Rosenberg, 1965). This specific scale has been used in hundreds of studies, and contains questions like, "At times, I think I am no good at all", "I am able to do things as well as most other people," and "I wish I could have more respect for myself."

*Optional questions.*

The questions in the optional section were used to give the participant an opportunity to enter the prize drawing. The questions asked for an email address for contact if the individual won a prize, and which prize they would be most interested in.

## Chapter 4: Results

### Study Results

#### Survey Distribution.

The survey was administered from September 11, 2009 to September 26, 2009. The survey was offered through several websites including: [www.facebook.com](http://www.facebook.com), [www.hub.guitarhero.com](http://www.hub.guitarhero.com), which is *Guitar Hero's* official forum, [www.rockband.com/forum](http://www.rockband.com/forum), which is *Rock Band's* official forum, [www.utahreefs.com](http://www.utahreefs.com) which is a forum the researcher participates in frequently, the classified sections of both [www.ksl.com](http://www.ksl.com) and [www.craigslist.com](http://www.craigslist.com), and [www.weezer.com](http://www.weezer.com). The band Weezer posted the survey on the band's main website. Weezer has been featured in *Rock Band 1* and *2*, and *Guitar Hero 3*, *5* and will be featured in the upcoming *Guitar Hero: Van Halen*. Consequently many fans of the band play the game, and the band was gracious enough to help the researcher gain responses.

Additionally, the researcher emailed the survey to family members and friends, and asked them to take it and, then forward it on to others who play *Guitar Hero* and/or *Rock Band*.

#### Results.

The survey was taken 548 times. Of the 548 response, 471 were used for the course of the study. Results were removed for various reasons, including: the individual was under the age of 18, the individual only answered a few questions, and the individuals who took the survey more than once.

Of the results that were used, 71% of the respondents were male and 29% were female. The respondents were primarily white 91%, with 5% being Hispanic, 4% being Asian, and less than 1% being Native American, Black, or Other. The average age of the respondents was 25.7 with the youngest respondent being 18 (18 was the minimum age requirement to take the survey), and 56 being the oldest. The respondents were primarily from the United States, 89%, followed by Canada with 5%, and 3% from the U.K. The remaining 3% contained individuals from Australia, Germany, New Zealand, Sweden, Brazil, Guatemala, Denmark, Norway, and United Arab Emirates.

Once the survey was completed the questions for each of the variables were combined and tested for validity. Self-esteem had a Cronbach's alpha score of .89, fantasy had a Cronbach's alpha score of .87, and deficient self-regulation a Cronbach's alpha score of .90. Efficacy initially had a Cronbach's alpha score of .80, but by removing the question, "I'm confident that if I wanted to, I could learn to play a new instrument quickly," the score was raised to .82. The questions regarding fantasy and music purchases initially had a Cronbach's alpha score of .68, but by removing the question "These songs make me feel like a rock star," the score was raised to .75. Frequency of use was combined into two separate variables, the first being a combination of Q33, Q34 and Q35. For Q35 the number of hours were converted to minutes to coincide with the other two questions. Since Q36 asked for the number of days, it was left as a second variable for frequency of use. The other variables, purchase/play instrument and purchase music, were not combined. These questions were tested individually.

Once the reliability of the variables had been found to be statistically significant, the hypotheses were tested. In order to group the variables the questions were reverse coded where needed. A median split divided the variables of self-esteem (bottom 50% = low self-esteem, top 50% = high self-esteem), self-efficacy (bottom 50% = low self-efficacy, top 50% = high self-efficacy), play alone (bottom 50% = low on play alone, top 50% = high on play alone), play with others (bottom 50% = low on play with others, top 50% = high on play with others), fantasy (bottom 50% = low fantasy, top 50% = high fantasy), and deficient self-regulation (bottom 50% = low deficient self-regulation, top 50% = high deficient self-regulation). Those who scored low on the variables were assigned a 1; those who scored high were assigned a 2. The results are as follows:

The results indicate that those who scored low on fantasy ( $M = 14.03$ ,  $SD = 6.07$ ) were significantly more likely to play videogames alone than those who scored high on fantasy, ( $M = 15.33$ ,  $SD = 6.66$ ),  $t = 2.04$ ,  $df = 323$ ,  $p = .042$ . Thus, H1 and H2 are supported.

For all applicable tests, the variables of self-esteem and self-efficacy were tested separate from each other. The letter A is used to indicate self-esteem and the letter B is used for self-efficacy.

The results indicate that those who play videogames alone ( $M = 47.29$ ,  $SD = 10.51$ ) had significantly lower scores on self-esteem than those who played videogames with friends ( $M = 51.05$ ,  $SD = 8.12$ ),  $t = -3.86$ ,  $df = 278$ ,  $p = .00$ . Thus, H3A and H4A are supported.

The results indicate that there is not a significant differentiation between the self-efficacy of those who played videogames alone ( $M = 11.29$ ,  $SD = 4.91$ ) and those who

played videogames with others, ( $M = 10.41$ ,  $SD = 4.80$ ),  $t = 1.85$ ,  $df = 438$ ,  $p = .07$ . This is marginally significant with 93% probability, but from a statistical standpoint it is not supported. Thus H3B and H4B are not supported.

To test the hypotheses of H6 and H7, self-esteem and self-efficacy were both placed in Pearson Correlation tests with deficient self-regulation.

The results for self-esteem indicate there is a weak inverse relationship with deficient self-regulation,  $r = -.17$ ,  $p < .001$ . Thus, there is support for H6A and H7A.

The results for self-efficacy indicated that there is a weak positive relationship with deficient self-regulation,  $r = .15$ ,  $p < .001$ . Thus H6B and H7B are supported.

Deficient self-regulation was then placed in a Pearson Correlation test with both of the frequency of use variables. The first variable was the number of minutes an individual plays ( $r = .63$ ,  $p < .001$ ) indicating a significant positive correlation between deficient self-regulation and frequency of play. Q36, number of days in a week *Guitar Hero* is played ( $r = .70$ ,  $p < .001$ ) likewise had a significant positive correlation with deficient self-regulation. Thus H8 is supported.

In order to further test H8, the variables of self-esteem (A) and self-efficacy (B) were tested for correlations with frequency of use. Self-esteem and the number of minutes played ( $r = -.14$ ,  $p = .05$ ) indicated a weak inverse correlation between self-esteem and frequency of play. Self-esteem was then tested against the number of days an individual plays ( $r = -.07$ ,  $p = .14$ ), no correlation could be found. The same tests were then performed with self-efficacy. The frequency of use minutes variable ( $r = .10$ ,  $p = .20$ ) did not show a statistic correlation. Interestingly enough, the variable of days ( $r$

$r = .13, p = .01$ ) did show a weak positive correlation between self-efficacy and frequency of use. The results of these tests partially support H8.

Self-esteem and self-efficacy were then placed in t-tests and measured against purchase/play an instrument. There was no statistical difference found between those who play an instrument ( $M = 49.63, SD = 9.4$ ) or do not play an instrument ( $M = 49.28, SD = 9.53$ ), and the level of self-esteem ( $t = -1.762, df = 363, p = .12$ ). There is no significant difference for H6A.

Self-efficacy was tested against purchasing an instrument in the same manner, between those who play an instrument ( $M = 12.44, SD = 4.65$ ), and those who do not play an instrument ( $M = 8.56, SD = 4.21$ ),  $t = 3.24, df = 464, p = .08$ . These results indicate a marginally statistically significant difference with 92% probability. Unfortunately this is not considered significant from a statistical standpoint. Thus H6B is not supported.

The data also indicated that 56% of those surveyed currently play a musical instrument, 19% of those who play an instrument started playing after playing *Guitar Hero/Rock Band*. This equates to almost 11% of the total sample began to play an instrument after playing *Guitar Hero/Rock Band*.

A Pearson Correlation test was used to see if there was a correlation between the variables of self-esteem and self-efficacy, and the motivation for purchasing music being fantasy or entertainment. Self-esteem was first tested with fantasy ( $r = -.03, p = .65$ ) indicating that no significant correlation was found. Self-esteem was then tested with enjoyment ( $r = .01, p = .89$ ), once again no correlation was found. Next, self-efficacy was tested with fantasy ( $r = .21, p < .00$ ), and a weak significant positive correlation was found. Self-efficacy was then tested with enjoyment ( $r = .07, p = .24$ ) indicating that

there was not a significant correlation. Thus H9A was not supported, but H9B was partially supported.

Three separate Chi-Square tests were used to explain H9, H10, and H11. Fantasy was found to have a marginally significant relationship with the variables of purchasing music and not purchasing music,  $X^2 = 35.91$ ,  $df = 24$ ,  $p = .06$ . This indicates with 94% probability that those who scored high on fantasy purchase more music than those who scored low on fantasy. Unfortunately, this is not statistically significant, thus H10 was not supported.

Self-esteem failed to generate a significant relationship with those who purchase music and those who do not,  $X^2 = 44.12$ ,  $df = 41$ ,  $p = .34$ . Thus H9A and H11A were not supported.

Self-efficacy levels, like fantasy, displayed a moderately significant relationship between purchasing music and not purchasing music,  $X^2 = 26.85$ ,  $df = 18$ ,  $p = .08$ . Although this displays 92% probability, the probability is not high enough to be considered statistically significant. Thus H9B and H11B were not supported.

Although H9, H10, and H11 could not be supported from a statistical standpoint with the data, the results did show that 63% of the individuals surveyed purchased music used in *Guitar Hero/Rock Band*. Although no statistical significance could be found, it is still clear that music purchases made are substantial.

Since statistical significance couldn't be found for the variables used in H9, H10, and H11, several other tests were performed to see if the researcher had missed a significant relationship.

A Chi-Square was run with gender and purchasing music,  $X^2 = 11.36$ ,  $df = 1$ ,  $p = <.001$ , indicating a statistically significant relationship. After observing the expected and observed values, it was determined that males purchase significantly more music than expected (expected 202.2, observed 218), while females purchased significantly less (expected 81.8, observed 66).

## Chapter 5: Discussion

The intent of this research paper was to look at *Guitar Hero* players, their motivations in selecting this specific game/genre of game, and how this information can be beneficial to marketers. Two communications theories, uses and gratifications and deficient self-regulation, were used to attempt to explain the gamers' motivation. Based on the tenants of these theories, several variables were created for the study. These motivational variables included: playing alone versus playing with others, fantasy, self-esteem, self-efficacy, play/purchase instrument, purchase music, deficient self-regulation, and frequency of use.

By using the tenants of the theories and the variables that were measured, the researcher made theoretical assumptions to explain gamers motivation to play *Guitar Hero*. It was assumed that gamers who displayed high levels of fantasy, played videogames alone, and displayed low self-esteem/efficacy, would develop a media-dependency to *Guitar Hero*, and consequently display tendencies towards deficient self-regulation. Essentially these individuals would live their fantasy of being a rock star in the “virtual world.”

The assumption was made that players who displayed low levels of fantasy, played videogames with others, and scored high on self-esteem/efficacy, would tend to purchase/play a real instrument. These individuals would not display tendencies towards deficient self-regulation. Instead of living in the “virtual world,” these individuals would be doing something towards accomplishing their fantasy of becoming a rock star.

A theoretical model was then created to display the different paths individual players could follow based on how they scored on each of the variables. Eleven

hypotheses were offered to explain the connections between variables used in the theoretical model.

The variables were quantified and used in a survey to test the hypotheses. The survey was distributed and taken by 548 *Guitar Hero* players. The results of the survey and its implications for marketers will be discussed in this chapter.

### **Significant Findings**

*H1: If an individual scores low on Fantasy, he/she is likely to Play Videogames with Others.*

*H2: If an individual scores high on Fantasy, he/she is likely to Play Videogames Alone.*

As predicted in H1 and H2, fantasy is clearly a significant factor as to whether individuals play *Guitar Hero* alone or with others. It appears that those with a higher level of fantasy prefer to play alone.

One explanation for this is that the involvement of others could lessen the fulfillment of need by diminishing the strength of the fantasy. As stated in the literature review, “Games lend to a sense of mastery to those who do not excel at other pastimes.” The involvement of other players would clearly diminish an individual’s fantasy by introducing the reality that *Guitar Hero* is no more than a game. Although the individual may feel a “sense of mastery” in accomplishments through the game, it isn’t likely the “sense of mastery” would extend beyond this.

*H3: If an individual scores high on Playing With Others, he/she is also likely to score high on High Self-Efficacy/Esteem.*

*H4: If an individual scores high on Play By Self, he/she is also likely to score high on Low Self-Efficacy/Esteem.*

Likewise, the results of the study also confirmed that H3A and H4A, which correlated self-esteem with playing alone vs. playing with others, were accurate predictions. As explained in the literature review chapter, individuals with low self-esteem tend to have fewer close friends, and are often considered “outcasts.” This gives a clear explanation of why individuals with low self-esteem tend to play alone most frequently.

Additionally, the discussion of “self mastery” found under the findings for H1 and H2 would clearly be applicable for H3A and H4A. Simply stated, individuals with low self-esteem are more involved in their fantasies while playing because it gives them a sense of accomplishment.

Interestingly enough, the results for H3B and H4B were not found to be statistically significant at the 95<sup>th</sup> percentile, although they were approaching significance (93<sup>rd</sup> percentile). Initially this created concern for the researcher since the variables for self-esteem and self-efficacy were combined for the course of the study based on the assumption that individuals would answer these questions in the same manner. Upon further review, it is clear that this assumption was incorrect. Self-esteem is a measure of how an individual feels about him/herself, whereas self-efficacy is a measure of whether an individual believes he/she can accomplish a specific task. Individuals may have self-esteem, but these feelings do not necessarily correlate with whether the individual believes that he/she can play an instrument, or even whether he/she has the desire to play an instrument.

These results indicate that self-esteem is a much more important factor in whether an individual chooses to play videogames alone over playing with others.

*H5: If an individual scores high on Self-Efficacy/Esteem, he/she is also likely to Play/Purchase an Instrument.*

Interestingly, the results for self-esteem/efficacy and playing an instrument display findings that are opposite of those found when comparing self-esteem/efficacy and playing alone versus with others. No statistical significance can be found between self-esteem and purchasing/playing instruments. Yet significance can be found between self-efficacy and purchasing/playing instruments.

Individuals could have high self-esteem, but not have the efficacy required to learn to play an instrument, whereas there could be individuals with low self-esteem who do have the efficacy required to play an instrument. This concept will be discussed in greater detail below in the Professional/Marketing Suggestions section, but note should be taken, that building efficacy in players is an important construct for marketers to understand.

As previously stated, the data indicated that 56% of those surveyed currently play a musical instrument, 19% of those who play an instrument started playing after playing *Guitar Hero*. This equates to 11% of the total population. Although this percentage is smaller than the Youth Music Foundations 20%, it is still a significant number, and indicates that a significant portion of individuals who play *Guitar Hero* are interested in becoming a musician.

Another interesting insight is that when looking at the entire group who play an instrument, only slightly over 50% of those surveyed felt that *Guitar Hero* helps them be a better musician. When those who played an instrument before playing *Guitar Hero* were removed from the sample and only pull the data from the remaining individuals who started playing their instrument after *Guitar Hero* were evaluated, the number jumped to

an impressive 68%. Clearly those who started to play an instrument because of *Guitar Hero* feel that it helps them learn to play more quickly.

Additionally, 69% of those surveyed said that playing *Guitar Hero* makes them want to practice their instrument more.

Of those individuals who do not currently play an instrument, 74% indicated that playing *Guitar Hero/Rock Band* makes them want to learn. This is a huge number for marketers! Interestingly enough, only 21% of this population believes that playing *Guitar Hero* will help them learn to play faster than others. This is very interesting, since 68% of those who started playing an instrument after *Guitar Hero* do believe it helps them as a musician. This is just one more place where efficacy could be built, to help convince more *Guitar Hero* players to learn to play an actual instrument.

*H9: If an individual scores high on Self-Efficacy/Esteem, he/she is likely to Purchase Music for enjoyment/entertainment.*

*H10: If an individual scores high on Fantasy, he/she is likely to Purchase Music.*

*H11: If an individual scores low on Self-Efficacy/Esteem, he/she is likely to Purchase Music.*

None of the hypotheses displayed a statistically significant finding for why individuals purchase music that is used in *Guitar Hero*, although H9, H10B and H11B displayed over 90% probability. This finding may not be considered statistically significant, but the researcher believes that from a marketing standpoint it can be assumed that both fantasy levels and efficacy levels are important factors as to whether an individual purchases music or not.

As previously discussed in the results chapter, 63% of the individuals surveyed purchase music used in *Guitar Hero*, and although no statistical significance could be found between any of the variables used in H9, H10 or H11, purchasing music is still significant for marketers to understand.

Several additional variables were tested to find significance. The most significant finding was the number of males who purchase music. Although more males play *Guitar Hero* than females, it would be expected that the percentage making purchases would be relatively the same for both genders. Interestingly enough, slightly less than half of female *Guitar Hero* players purchase music, whereas with males the percentage is 67%.

Several assumptions can be made as to why males purchase more music than females. The most likely reasoning is that *Guitar Hero* is generally targeted at the male population, and consequently most of the music chosen for the games is more appealing to this demographic.

*H6: If an individual scores high on Self-Efficacy/Esteem and Plays an Instrument, he/she is likely to score low on Game Play Frequency.*

*H7: If an individual scores high on Low Self-Efficacy/Esteem, he/she is likely to score high on the Deficient Self-Regulation Scale.*

*H8: If an individual scores high on the Deficient Self-Regulation Scale, he/she is likely to score high on Frequency of Play.*

One very interesting finding was the relationship that deficient self-regulation has with the variables of self-esteem and self-efficacy. The assumptions made in the hypotheses grouped self-esteem and self-efficacy together, but the results showed self-efficacy to have a weak positive relationship with deficient self-regulation, while self-esteem had a weak negative relationship with deficient self-regulation. The results for

self-esteem follow the pattern that was assumed in the hypotheses, while self-efficacy goes the opposite direction.

In addition, the assumption was made that those who followed the path of high self-esteem/efficacy and played an actual instrument would have a negative correlation with frequency of play (see H6), whereas those who followed the path of low self-esteem/efficacy, towards deficient self-regulation, would have a positive correlation with frequency of play (see H8). Interestingly enough, those with low self-esteem displayed a significant positive relationship with the number of minutes variable, but did not have a significant relationship with the number of days played variable. A higher number of minutes played would indicate the theoretical assumption that an individual develops a media dependency to the game, and consequently experiences deficient self-regulation. These individuals would be those who are considered to be living in a “virtual world” to appease their fantasy of being a rock star. The lack of a relationship with the number of days played can be explained by multiple scenarios. For example, parents, spouses, or friends limiting the individuals play time because of the media addiction.

Interestingly enough, those who do play an instrument did not display a significant finding with the number of minutes played, but did have a weak positive correlation with the number of days played.

It is interesting to see that those who play instruments play *Guitar Hero* more days a week than those who do not, but at the same time play less minutes those who do not play an instrument. Since 69% of the individuals who play instruments said that *Guitar Hero* makes them want to practice their instrument, the assumption can be made that individuals who play an instrument only play *Guitar Hero* for a short amount of time

and then move on to their real instrument, possibly to practice songs they have been playing in *Guitar Hero*. These are the individuals who prefer to appease their fantasy of being a rock star in the real world with a real instrument, rather than looking for false gratification in the virtual world.

These results could be very beneficial, particularly for parents or others who are close to an individual who displays tendencies towards deficient self-regulation in their use of *Guitar Hero*. The results would indicate that limiting an individual's play time, or how many days of the week they can play, may treat the symptoms of deficient self-regulation but not solve the problem. It is likely that such an individual would rather play a real instrument, but lacks the self-esteem/efficacy required to do so.

Several studies have shown that playing an instrument increases an individual's level of self-esteem. According to one study, individuals create "musical identities" which are essentially a part of an individual's self-image, self-concept, and self-esteem. "Self-esteem can involve overall evaluations of ourselves, e.g. as a musician, or very specific aspects of our self-image, such as our aptitude as a piano improviser." These personal evaluations determine how an individual views himself/herself in comparison to others (MacDonald, Hargreaves, & Miell, 2002, p. 8). According to the research this paper proposes, instead of limiting an individual's game play time, it would be far more beneficial to encourage the individual to learn a new instrument. This would not only help increase an individual's level of self-esteem, but would also decrease the individual's game play time. Instead of trying to control the individual's media-addiction or deficient self-regulation, this approach would cure the problem by increasing self-esteem, and efficacy. Essentially, the individual's connection to the virtual world through his/her

fantasy would be diminished, and the individual could begin to work towards the fantasy in the real world.

### **Research Applicability/Professional Recommendations**

Although *Guitar Hero/Rock Band* have been/currently are being used as marketing tools, the results of this study indicate that they could be used much more effectively. As previously discussed, the Gibson Guitar Company had a presence in the first three versions of *Guitar Hero* only to drop their endorsement for all of the more recent renditions. Through their years with *Guitar Hero*, Gibson's marketing strategy was primarily product placement. All of the virtual guitar models a player could choose from were models made by Gibson or one of their subsidiaries, like Kramar. Additionally the guitar controllers were patterned to look like Gibson Explorer's, SG's, Flying V's, Les Pauls, and Kramar Striker's. The Fender Music Corporation has followed Gibson's example by placing their products throughout the *Rock Band* series.

The research of this paper suggests that more could be done to effectively market guitars and music throughout these games. Below are several areas the researcher believes could be improved upon.

#### **Brand loyalty.**

By understanding that musicians, like all consumers, tend to develop loyalty to specific brands; it is clear how important it is that instrument manufacturers persuade potential customers to buy their products over cheaper knock-off's and look-a-likes. Fender Stratocasters and Gibson Les Paul's are two of the most replicated guitar designs,

in fact several lawsuits were filed in the late 1970's and early 1980's in response to all the nearly identical knockoff guitars being manufactured (Glastetter, 2007). The researcher suggests usage of more brand specific cross promotions within the game. For example, when a player completes all of the songs on any level in *Rock Band*, a message might come up saying something like, "Wow, you really rock in the game world! How would you like to rock for real? Go to [www.rockband.com/fender](http://www.rockband.com/fender), and enter the following code XXXXXXXXXX to receive a 15% off coupon for any Fender/Squire/Starcaster/Gretch/Guild guitar or player pack!" Players might also be required to enter their zip code, so that a list of guitar stores that carry Fender products in the area could be provided to them.

By doing a cross promotion like this, gamers who want to learn to play guitar won't walk into a local guitar store looking for something that looks like a Strat, instead they'll walk in looking specifically for the guitars made by Fender or one of its subsidiaries.

The concept of cross promotions could be taken one step further, and player packs could be created that include both a guitar and the game. Success has already been seen with game player packs that included an instrument specific to the band (*Guitar Hero – Aerosmith* included a Aerosmith-branded Les Paul controller, and *Rock Band – The Beatles*, included a replica of Paul McCartney's Hofner bass, and a replica of Ringo Starr's Ludwig drums). This would be yet one more way to build the connection between the game and real guitars.

**Build efficacy.**

The results of this study indicate that those with a higher level of efficacy tend to play instruments. Based on the number of individuals who play *Guitar Hero/Rock Band* and also play a real instrument, the assumption can be made that there is a segment of gamers who would like to play a real instrument, but lack the self-efficacy needed to go out and purchase an instrument. To help counteract the low self-efficacy of these players, messages like, “You really nailed that solo! Did you know that more than half of the guitarists who play *Guitar Hero* say that it improves their real guitar playing?” or “You really have what it takes to make a killer lead guitarist and we’re not just saying that, 68% of guitarists who started playing because of *Guitar Hero*, agree that playing *Guitar Hero* improves their timing and finger dexterity,” could be used throughout the game to encourage gamers that they have what it takes to play a real guitar. This could be extremely beneficial to those who do not play an instrument since only 21% of that sample felt that playing *Guitar Hero* would help them learn to play an instrument. There is a clear disconnect between those who play instruments and those who don’t. By encouraging those who don’t play, this disconnect can be diminished.

As seen in the results section, 69% of those who already play an instrument want to practice more because of *Guitar Hero*. Additionally, 74% of those who don’t play an instrument would like to do so. The game could encourage learning/practicing by using the bands/guitarists featured throughout the game in tutorials about how to play their music.

Recently (October 2009), *Guitar Hero* and Yahoo have partnered up to create a series of mini-concerts that feature different bands used in *Guitar Hero 5* or the

forthcoming *Guitar Hero – Van Halen*. Although the researcher agrees that this is a great promotional tool for the game, additional special features could be included to strengthen the gamer's experience. For example, players could have the option to download a tutorial on how to play their favorite songs from the game, preferably taught by the guitarist/band who wrote the song. Not only could these tutorials create additional revenue (most bonus material for *Guitar Hero/Rock Band* can be downloaded for a few dollars) but it would help encourage the gamers to learn to play as well.

In both these tutorial videos and throughout the game, featured artists could make commentary about how they believe that *Guitar Hero/Rock Band* improves musicianship.

#### **Music purchase incentives.**

One thing that is hard to understand is the lack of marketing by music companies in *Guitar Hero/Rock Band*. As discussed in the Literature Review of this paper, bands like Aerosmith and Dragon Force saw increased sales after their music was featured in one of these games. It may be that music vendors are already capitalizing on the 63% of *Guitar Hero* players who are already buying music used in these games, without doing any marketing, but what about the other 37%?

The researcher suggests that iTunes, Amazon Music, or some other music download company might place free downloads throughout the game. Clearly those who already use these music services will use the code, but it is also likely that many of those who do not currently download music from the games, will use the code, and hopefully start a pattern of downloading music.

### **Effects on *Guitar Hero/Rock Band*.**

Several individuals have posed the question: will these additional marketing strategies used by guitar companies effect *Guitar Hero* sales? If so, why would *Guitar Hero* want to jeopardize their target audience by introducing them to a real instrument, and thus breaking the rock star fantasy in the virtual world?

By looking at the frequency of use results from the research, it is clear that although an individual may start playing an instrument, he/she won't stop playing *Guitar Hero*. The game continues to be enjoyable. Although the individual may play a lesser amount of time, he/she will likely still purchase new renditions of the game, just like those who do not play instruments.

Additionally, if the suggestion of incorporating tutorials on how to play songs used in the game were implemented, it can be assumed that individuals who play real instruments would see the game as a tool to help them improve their musicianship. Tools/features like this may even be appealing to individuals who play instruments, but do not currently play *Guitar Hero*.

### **Weaknesses**

The researcher recognizes several weaknesses that were discovered as the study progressed. The biggest weakness in the researchers mind is that none of the questions in the survey focused on brand loyalty. It would have been very interesting, and very beneficial to see if players have loyalty to the guitar brands featured in the games they play.

Although the sample size was large, there were far more casual players than the researcher would have liked. Much of this was due to the fact that all of the participants were volunteers who found the survey online. It would have been beneficial to have a more scientific approach to the sample.

The assumption was made by the researcher that the majority of *Guitar Hero* players purchase their music online. Through further review it appears that there are still more physical music sales per year than there are digital downloads. In retrospect, it would have been beneficial to question the participants about which format they prefer to purchase their music in.

It was also a little concerning to the researcher that the self-efficacy and self-esteem results did not follow the same path when tested against deficient self-regulation. Additional testing should have been performed on these questions, to test their reliability and validity.

The literature review included a section that focused on *Guitar Hero* players who post their accomplishments on YouTube. It would have been beneficial to the study, specifically self-esteem, if the survey had incorporated a few questions about posting accomplishments online, participating in forums, etc.

### **Future Research**

As mentioned in the previous section, the researcher would recommend more focus on actual brand loyalty in any future studies. Additionally, all of the suggestions in this research are purely recommendation based on the results of the survey. It would be

very beneficial to test the suggestions so that they could be modified and polished into strategic marketing tools.

This research shows that videogames can theoretically be strong marketing tools. However, without taking the research to the next step and implementing it, there is no way to know if it will actually hold true in a real world application.

The researcher would enjoy the opportunity of testing the suggestions/recommendations created by this research to prove that validity of the study and its findings in a real world environment.

## **Conclusion**

With each new form of media that enters into the marketplace, marketers have to make the decision to either embrace the new media and use it as an avenue to share their message, or let it pass by the wayside. Over the past decade, marketers have been flooded with new forms of media: social networking sites (Facebook, MySpace, Twitter, LinkedIn, etc.), PDA's, smart phones, text and instant messaging, blogs, and so forth. In many ways, videogames have been pushed to the wayside. Although their existence is acknowledged, little effort goes into using them to their full potential.

This research shows that videogames do have power as a marketing tool. As previously stated in the research, players sort themselves. Players create the strong niche-oriented demographics that have similar interests, wants, needs and desires. Now it is time for marketers to take the next step, embrace the medium of videogames, and take their marketing strategies up a notch. In other words, it's time to "turn it up to eleven."

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## **Appendix: Survey**

### **Informed Consent Form**

This survey is being conducted by Timothy Hemingway to determine reasons individuals play Guitar Hero and Rock Band.

Participants have been invited to participate in this survey through several social based websites. Participants must be at least 18 years old. Participants should also be familiar with (have played or currently play) Guitar Hero and/or Rock Band.

The survey consists of 50 questions and will take 15 to 30 minutes to complete.

There are minimal if any risks for participation in this study. Some of the questions are personal.

The benefits of participating are that researchers will better understand Guitar Hero and Rock Band players.

Involvement in this research project is voluntary. You may withdraw at any time without penalty or refuse to participate entirely.

There will be no reference to your identification at any point in the research, unless you would like to submit your email address for our drawing for a prize including Guitar Hero 5, Rock Band the Beatles, iTunes Gift Card, Amazon Gift Card, or MusiciansFriend Gift Card. Your email address will not be attached to your responses.

If you have questions regarding this study you may contact Timothy Hemingway at (801) 427-0945.

If you have questions regarding your rights as a participant in research projects, you may contact Christopher Dromey, Ph.D, Chair of the Institutional Review Board for Human Subjects, 133 TLRB, Brigham Young University, Provo, UT 84602; phone, (801) 422-6461; email, christopher\_dromey@byu.edu.

(Check Box) By checking this box, I'm confirming that I have read the Consent Form, and that I am at least 18 years old.

**Answer the following questions about your game playing habits on a scale of 1-7. 1 being Strongly Disagree and 7 being Strongly Agree.**

1 - I mostly play Guitar Hero/Rock Band by myself.

2 - Most of the time when I play videogames, I'm playing with friends.

3 - I prefer playing multi-player games that are online rather than having other players in the room with me.

**Answer the following questions on how well they describe you on a scale of 1-7. 1 being Strongly Disagree and 7 being Strongly Agree.**

4 - I play Guitar Hero/Rock Band because it/they let me do things I can't do in real life.

5 - Guitar Hero/Rock Band allow me to pretend I am someone else.

6 - I like to do something that I could not normally do in real life through Guitar Hero/Rock Band.

7 - I enjoy the excitement of assuming an alter ego in Guitar Hero/Rock Band.

**Answer the following questions about your game playing habits on a scale of 1-7. 1 being Strongly Disagree and 7 being Strongly Agree.**

8 - I play Guitar Hero/Rock Band so much it interferes with other activities.

9 - I get strong urges to play Guitar Hero/Rock Band.

10 - I have to keep playing Guitar Hero/Rock Band more and more to get my thrill.

11 - I feel my Guitar Hero/Rock Band playing is out of control.

12 - I would miss Guitar Hero/Rock Band if I could no longer go and play.

13 - I often spend longer playing Guitar Hero/Rock Band than I intend to when I start.

14 - I would go out of my way to satisfy my urges to play Guitar Hero/Rock Band.

15 - Playing Guitar Hero/Rock Band is part of my usual routine.

16 - Playing Guitar Hero/Rock Band is a habit that I have gotten into.

17 - I play Guitar Hero/Rock Band without really thinking about it.

**18 - Do you currently play a musical instrument? (Yes or No)**

If "Yes" was selected, the individual was asked the following questions:

Playing Guitar Hero/Rock Band makes me want to practice my musical instrument more.

Did you start playing your instrument before playing Guitar Hero/Rock Band? (Yes or No)

I feel that playing Guitar Hero/Rock Band makes me a better musician.

If “No” was selected, the individual was asked the following questions:

Playing Guitar Hero/Rock Band makes me want to learn to play a musical instrument.

I think I would learn to play an instrument quicker than others since I play Guitar Hero/Rock Band.

**The following questions are about purchasing music used in Guitar Hero/Rock Band.**

19 - I purchase music that is used in Guitar Hero/Rock Band (Yes or No)

If the individual selected “Yes” they were asked the following four questions, if they selected “No” the questions were skipped.

20 - I enjoy listening to these songs when I’m not playing.

21 - When I listen to these songs, they make me feel good about myself.

22 - I can identify with this music.

23 - I feel like a rock star when I listen to this music.

**Answer the following questions on how well they describe you on a scale of 1-7. 1 being Strongly Disagree and 7 being Strongly Agree.**

24 - I’m confident that if I wanted to, I could learn to play a new instrument quickly.

25 - I’m confident that I could write songs that others would like to hear.

26 - I’m confident that if I started my own Rock Band, we would be able to book local venues for live performances.

27 - If I performed in front of an audience, I would have a good stage presence and be entertaining.

**We are now going to ask several questions regarding how frequently you play Guitar Hero and/or Rock Band.** (all questions were answered using a slider bar)

28 - On a typical day how many minutes do you play Guitar Hero/Rock Band?

29 - How many minutes did you play Guitar Hero/Rock Band yesterday?

30 - On a typical weekend, how many minutes do you play Guitar Hero/Rock Band?

31 - How many days per week do you play Guitar Hero/Rock Band?

**We're now going to ask several questions about self-esteem, please remember that your answers are completely anonymous. Please answer on a scale of 1-7 on how well they describe you.**

**1 being Strongly Disagree and 7 being Strongly Agree.**

32 - On a whole I am satisfied with myself.

33 - At times, I think I am no good at all.

34 - I feel that I have a number of good qualities.

35 - I am able to do things as well as most other people.

36 - I feel I do not have much to be proud of.

37 - I certainly feel useless at times.

38 - I feel that I'm a person of worth, at least on equal plane with others.

39 - I wish I could have more respect for myself.

40 - All in all, I am inclined to feel that I'm a failure.

41 - I take a positive attitude towards myself.

**Please answer the following questions about yourself.**

42 - What is your age (please specify in years)?

43 - What is your gender?

44 - Which of the following best describes your racial or ethnic background? (Options included: Asian, Black/African American, Hispanic/Latino (Any Race), Native American, White, Other)

45 - What country do you live in?

**Optional Answer**

**Thank you for taking the time to take our survey on Guitar Hero and/or Rock Band. If you would like to be entered in our drawing please enter your email**

**address below. Three winners will be randomly selected once the survey has been completed.**

Please select the prize you would like. A follow up email will be sent to the winners for contact information and preferred game format (Wii, 360, PS2) if applicable. (Options included: Guitar Hero 5, Rock Band the Beatles, \$50 iTunes Gift Card, \$50 Amazon Gift Card, and \$50 Musicians Friend Gift Card)