VIDEO GAME USAGE AND ACADEMIC SUCCESS

by

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I want to thank my family for supporting me an extremely long time while I completed school.

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ABSTRACT

This study examined video gaming habits and how that associates with a student's grade point average. A survey was administered to a random sample of Texas State University students. Questions collected students' gaming habits and grade point averages and then correlations were made. Primary analysis focused on how people classify themselves as gamers, what types of games are played and how many hours are spent playing. These key areas are compared with grade point average and how it is affected. Results of the study imply that GPA is virtually unaffected by video game play. If affected, it is in a very minimal negative way.

CHAPTER I

Introduction

Problem/topic

This research is designed to find any correlations between video game usage and academic performance. Video games in the current age have become interactive, immersive experiences that involve the user to solve a multitude of problems, manage resources and make evaluated decisions that define one's outcome of success. Understanding the effects that come from using this new emerging medium in a responsible manner can lead studies in an abundance of new directions such as understanding better implemented game design, culturally significant computer programs that change the way we live, and enhanced childhood learning/development.

Justification

After conducting an examination of research leading up to the current time frame, it is clear that there are cognitive effects from playing video games. What's lacking is the existence of solid correlations showing performance enhancement when it comes to general academics. That's where this research contributes. While all the connective research points to advancements in cognitive technique and use, research in the area of academic achievement effects is still lacking. Are these games having an impact on the users when they are registered in graded academic courses? That's what this research sets out to examine.

Significance

This research suggests that video games and academic performance are not closely related. Grades are not heavily impacted by game usage in either a positive or negative manner. It is common knowledge that video games are a cognitive exercise. From the results of this study, we can assume their influence does not translate noticeably into academics. Results show that neither limitation nor promotion of game use be recommended for a change of grades in students. If games are affecting the GPA of a student, it may be an issue of time management and not the games themselves.

Research Questions

R_1: What effect does playing video games have on the grade point average of users?

R_2: How do different types/genres of games differ in their effect on academic performance of users?

R_3: How does the number of hours playing video games affect the academic performance of users?

CHAPTER II

Theory and Review of Literature

Theory

Research herein analyzes data through the lens of the Uses and Gratifications Theory. By assessing the use of individuals looking at their true intended selections and natural outcomes/gratifications, one can truly evaluate the correlation between these video game players and their academic success. When observing results obtained by the users, correlations can be made in accordance to the type of games people actively select and whether their academic success is in accordance.

According to Katz, Blumler and Gurevitch (1973), gratifications provided by the media to their respective public have been of value since empirical mass communication research just began. Approaches in the initial studies shared several similar traits and patterns. This included being very systematic in asking questions where respondents received open-ended questions giving them a pretty unrestricted response system. Responses were then gathered into a tagged name scheme with their frequency distributions in the populace for the most part ignored. Connections between the discovered gratifications and the underlying needs that caused them in the first place had a lack of emphasis in the early research. Finally, any interdependencies amid the roles played by the media that could lead to any sort of hidden formation of media gratifications being discovered were overlooked.

Katz et al. (1973) operationalize uses and gratifications research as: (1) the social and psychological origins of (2) needs, which generate (3) expectations of (4) the mass media or other sources, which lead to (5) differential patterns of media exposure (or engagement in other activities), resulting in (6) need gratifications and (7) other consequences, perhaps mostly unintended ones.

Blumler (1979) defended criticisms of uses and gratifications research. It's given how it came to be a research tool in the late era of the 1950's and the early 1960's when researchers wanted to see what effects mass media campaigns had on people who witnessed them. The aim was to see how individuals interacted with media and repurposed it as their own. There was a will to diminish the thought of a passive audience member. Dependence on assuming there were compelling differences in individuals with the positioning of media was present. It was further assumed that these differences would convey other significant variables such as (a) people's social circumstances and roles, (b) their personality dispositions and capacities, (c) their actual patterns of mass media consumption, and (d) ultimately, the process of effects itself.

Ruggiero (2000) calls for a more integrated form of uses and gratifications but stresses its importance as we move into the future. Aside from traditional classification tools, it's suggested we also include forms of uses in the likes of interactivity, demassification, hypertextuality and asynchroneity. The idea of a passive audience is refuted with the surfacing of newer technology. A perception of an active audience is gaining traction as greater media options are available to individuals. Users are able to choose and interact with media that is more relevant and of interest than what was available in prior times.

Sundar and Limperos (2013) explain how the interpretation of "media" is not the same as it used to be. As the idea of media referenced outlets such as the newspaper, television/film and radio at the time. It's elaborated that technology of now includes things that didn't exist in the playing field then. Now, we have mobile devices like the smart phone and different accessible avenues, such as internet and cable. This all breaks down even further into channels, sites and apps, which all offer different ways of satisfaction.

As discussion continues, Sundar and Limperos (2013) consider uses and gratifications theory to be less evolved than its surrounding technology. Current research is based on preceding needs from traditional media. With trending new media such as social media and the microblog, opportunities for a new generation of needs to be gratified have arisen. Classifying a need as information seeking is too broad in the way that it encloses the entire realm of online participation. It is suggested that moving forward with uses and gratifications that more specific uses and gratifications be put in place. Some potential measures on new gratifications include play/fun, dynamic control, responsiveness, activity and interaction.

Several gratifications were discovered by Lucas & Sherry (2004) that were related directly to video game play. Using a methodology similar to Greenberg's original television uses and gratifications scale back in 1974, six principal reasons why people play video games were revealed. These included competition, challenge, social interaction, diversion, fantasy and arousal. It was noted that females were less likely to play games for social interaction.

Review of Literature

A relatively new and blossoming field is the area of academic effects pertaining to video gaming. A lot of research and work has been devoted to negative effects of video games such as violence and addiction, but not as much on the positive end of things (Griffiths, 1999; Kuss & Griffiths, 2011).

Ventura, Shute & Zhao (2012) found that video games led to increases in performance-based measures of persistence. When presented with anagrams and riddles, gamers spent the longest time on the unsolved problems. The researchers noted that these results were meaningful in that what they referred to as a "stigma," towards video games and poor academic performance still exists.

Strobach, Frensch, & Schubert (2012) found a relation between practicing action video games and executive control skill optimization. They referred to real-life situations being similar to the complexity of video games. Video games showed to be an acceptable environment for honing skills that involved "dual-task" and "task switching" challenges presented to the tested participants.

Taking a narrower approach, Thirunarayanan and Vilchez (2012) looked at video game players that have actually played in a video game tournament setting. While the results expanded beyond only pertaining to strictly academic subsets of skills, the skills could be applied in an academic setting. These included social skills of giving directions, leading a group, coordinating activities and functioning as a member of a team. While more academic based skills as improved arithmetic skills and information memorization showed to be evident as well.

Oei and Patterson (2013) looked into the effects of smaller mobile device games. These games included fewer and more repetitive tasks. Action related games showed improvements in test subjects such as superior cognitive control and better object tracking of more than one object. It was concluded that training with video games that involved similar demanding tasks will result in improvement in the counterpart of the non-gaming task.

Glass, Maddox & Love (2013) fine-tuned their search specifically to cognitive flexibility and the effects video games have on it. Results in the study illustrated that cognitive flexibility is a skill that can be trained. Participants were trained using the real-time strategy (RTS) game Star Craft. The game required members of the study to manage multiple active information sources simultaneously. Cognitive flexibility measured during non-gaming tasks after training with the RTS showed to have great increases.

In research done by Adachi and Willoughby (2013), it was considered that video games may help enable better learning principles and encourage better problem solving skills. More specifically, it was examined to see if strategic video games would predict self-reported skills at problem solving amongst adolescents.

The study revealed that larger amounts of strategic video game playing resulted in higher self-reports of skills involving problem solving. It was added that an indirect link is present with strategic video game play and academic grades.

Looking beyond the observations of mental traits of video game players, Kuhn et al. (2014) observed physical characteristics of the brain in individual video game players. Excessive video game play showed to have no cortical thinning in any of the regions of the brain. Video game play did show to result in thickening of the brain in the dorsolateral prefrontal cortex (DLPFC) and the left frontal eye fields (FEFs). The DLPFC is the portion of the human brain associated with executive control function and planning that involves strategy. FEFs are the part of the brain that is in charge of processing visuo-spatial attention and eye movement.

Ypsilanti et al. (2014) examined games in the sense of a tool for intergenerational learning. More specifically, they looked at games as an effective tool within an organization. Games created as a one-on-one teaching environment, can pass on critical knowledge within a workplace. Benefits in addition to this were the elevation of multiple cognitive skills. Research showed that a few hours trained with a video game, motivated the learning process. Specifically, attention and working memory were heightened.

Not necessarily looking at the effects of video games themselves, Hamlen (2014) dove into the exploration in similarities of overcoming challenge between homework and playing video games. Results showed that GPA and strategies toward video games did have a relationship. Students with strategies that included looking at and utilizing online resources such as walkthroughs, reading the packaged-in manual and asking for help were linked with having more academic success. They were contrasted with students who looked at these "walkthroughs" before even attempting the games themselves having poorer academic success.

Researching the effects of games on cognition in older adults, Toril, Reales & Ballesteros (2014) put together a report favoring the functions of video game play. Noting a decline in cognitive function in older age, they report that training with video games can have a positive effect on these cognitive losses. Beyond overall cognition improvement, more specifically, reaction time, general executive functions, attention and memory were affected positively. It was noted that these effects were greater as the participants got older.

Matching up to the intellectual game of chess, Granic, Lobel & Engels (2014) examined the benefits of playing video games. Refuting the notion that playing video games is "intellectually lazy and sedating," these games showed to promote an array of cognitive skills. Most notably, the "shooter" style of games showed mental enhancement. People with little to no experience with this type of game were given training sessions containing this particular game play style while others were assigned to play a different genre. Participants in the shooter category illustrated faster, more accurate attention placement, faster visual processing and more robust mental rotation capabilities.

While comparing the popular video game Portal 2 and Lumosity, Shute, Ventura & Ke (2014) tested subjects on cognitive and non-cognitive skills. More specifically, the participants were tested on problem solving, spatial skills and persistence. In all three instances, the Portal 2 players outperformed the Lumosity users. While Lumosity users showed no gains in any of the measures, the Portal 2 players showed gains in all with gains in spatial skills being significant. The results were noted to be more powerful, since Lumosity is a program designed by neuroscientists to specifically enhance cognitive skills.

Blacker, Curby, Klobusicky and Chein (2014) researched the improvement of visual working memory (VWM). This was done by looking at the effectiveness of action video game use. VWM pertains to how well the brain is able to maintain visual information after a brief delay. Through the use of action video game training, capacity in VWM was extended. Precision at which VWM took place also saw a small improvement.

Deveau, Lovcik and Seitz (2014) investigated the effectiveness of video games when it comes to multiple perceptual learning approaches. To do this, researchers created a video game of their own that implemented the elements of study. Participants who had normal vision saw a drastic improvement to both their central and peripheral acuity. Contrast sensitivity also saw large improvement. A control group saw no such advancement.

Drugas (2014) evaluated the value of educational video games (EVGs) amongst a small non-random sample of three groups. The groups consisted of gamers, parents and psychologists. Research displayed that undertaking use of EVGs could have positive results when carried out in educational settings deployed as educational tools. Asked about their opinion on EVGs, the group was divided with gamers and parents both considering them valuable. Psychologists remained skeptical about EVGs ability even with the experiment showing promise

Gackenbach, Darlington, Ferguson and Boyes (2013) studied video games as a therapeutic use. This was done by examining male and female university students and the correlation between their gaming trends and amount of nightmares they had. Males with higher amounts of serious game time had fewer nightmares than females who played more casually. Results that females had an increased amount of nightmares were ascribed to the sex-role conflict in video game protagonists. Majority of violent game lead controllable characters are male that game players take on the role.

Jalink, Heineman, Pierie and Hoedemaker (2014) performed a study analyzing the baseline skill of surgeons and the effect video games had on their ability to conduct laparoscopic surgery. Surgeons played an unrelated video game before enacting the skills needed for surgery. Though the game was disassociated, hand-eye coordination and visuospatial recognition were enriched. In turn, this improved the skills surgeons needed to perform their real-world tasks. Seemingly, video games can transfer shared skills with a non-game related task.

Whitaker (2014) conducted a study on finding any correlation video games that involve shooting mechanics to real-life shooting accuracy while firing a weapon. Evidence in the study revealed that video games of this nature have effects of developing real-world skills and holding influence in a real-life situation.

Real-world skills of firing a weapon were developed by interacting with games with shooting mechanics. Influence was seen in targeting habits of gamers who target heads in a video game would also aim at the heads of targets.

Whitbourne, Ellenberg and Akimoto (2013) conducted research to find the different uses between middle-aged and older adults in the way they interacted with casual video games (CVGs). Middle-aged adults tended to play more for the challenge, while the older participants played games for a way of social interaction. Benefits the younger crowd perceived to gain from playing CVGs were in the sense of feeling sharper and having an improved memory. Older adults thought their visuospatial skills were improved and had better response time from playing these games.

Colzato, Leeuwen, Wildenberg and Hommel (2010) investigated the way first person shooter (FPS) games affected non-gaming cognitive control tasks and task switching. The team used video game players (VGPs) and individuals with little to no experience (NVGPs). Findings revealed an association between videogame experience and cognitive flexibility. VGPs adhered to a lower switching cost than NVGPs, which reflected better cognitive control skills. It was assumed that playing FPS games could lead to better cognitive flexibility no matter what the situation entailed.

Donohue, Woldorff and Mitroff (2010) conducted a two-step study. Part one of their study consisted of examining effects action video games had on temporal perception of auditory and visual information. Part two involved if any visual benefits in part one carried over to modalities of different structure. It was found that people with video game experience could distinguish auditory and visual stimuli more distinctly at closer intervals than non-video game playing counterparts. It was deemed possible participants who lacked video game experience have trouble dispersing attention through modalities correspondingly.

Li, Ngo, Nguyen and Levi (2011) looked into the effects video game play had on plasticity to the visual system of adults who have amblyopia. Researchers piloted a study that included a small group of people. Results were positive in the effect that video games did play a role in improving spatial vision functions. After only brief interaction with video games, participants saw quick and considerable development. Normalization took place in visual acuity, positional acuity, spatial attention and stereoacuity. After running a cross-over control experiment, evidence suggested that it was video games themselves that caused improvement in amblyopic vision.

Blacker and Curby (2013) analyzed if any enhancements were gained by playing action video games to the user's visual short-term memory (VSTM). The researchers described VSTM as limited in capacity, but able to bend shape. It was affirmed that past wide-ranging experience with action games did give VSTM a boost, where experience was lacking received no boost. When it came to encoding a memory selection, action video game experience led to an advantage over their non-action game experience counterparts, no matter how much time was given, whether short or long. Also, complexity of the memory selection never produced a difference in the game player holding advantage in VSTM.

Gerber and Scott (2011) searched for relationships, if any, critical thinking had to playing video games. Results for the study showed that critical thinking did not differ significantly between video game players and non-gamers. When comparing lower level gaming activity in people to gaming addiction, individuals with addictive behavior showed an association to less open-minded thinking. This association wasn't as strong though when the game was in the strategy genre. Players of this game type were not strongly affected in open-mindedness in their long play hours. This made it harder to pinpoint longer playing hours to addiction.

Cain, Prinzmetal, Shimamura and Landau (2014) studied the effects that action video games had on players and non-game players. The goal was to see the different role's external factors played in attention capture. Game players had the best resistance against outside distractions. They were also able to enact an "anti-cueing effect" that allowed them to direct focus to the plausible target positions. These same individuals were observed as to not be ignoring the task at hand, but able to offset these cues used as interferences.

Metcalf and Pammer (2014) looked at gaming addiction and impulsivity correlation. Specifically, they used first person shooter (FPS) games as their as their focus to look for impulsivity. Researchers used a trait measure test of impulsivity and found a positive correlation with FPS addiction. When comparing FPS addicts to the control group, FPS addicts had a level of trait impulsivity that was significantly higher. It was made note that higher levels of impulsivity could result in inhibition of any positive effects that are offered through regular FPS gameplay, such as decision making.

S. Yildiz and E. Yildiz (2011) reviewed research to find effective uses of games in a learning environment. With youth spending high amounts of time on computers, researchers elaborate how the appropriate suggested game can create an effective personal learning space for the individual's needs. They continue with how the role of games is key in a course dependent on cutting-edge technology. Students are aided to reach a goal more quickly with personal interaction with relevant program material. Students are able to solve problems and correct mistakes on their own.

Ferguson and Garza (2011) wanted to find a correlation, if any, how violence in action video games affected youth and their civic behavior. What they found was that there was no significant correlation between action/violent video games and civic engagement. When parents became involved with their children and over saw their engagement with these games, then the results became significant. These children were much more involved with civic engagement. It was concluded that parents being involved in their children's activities was the strongest influencing factor. Also, researchers noticed that even though violence may be in action games, prosocial behavior is too.

Mishra, Zinni, Bavelier and Hillyard (2011) watched for differences in action video game players and non-players in their abilities of visual attention. Participants were given rapid visual presentation (RSVP) sequences that involved using their left, right and central visual fields. During these presentations, participants were asked to find targets. Game players were better than their non-gaming peers in detecting targets in accuracy and the speed in which it was done. This was the case for both peripheral and central RSVP tests. Accuracy detection in action gamers was significantly higher in all target types.

Chiappe, Conger, Liao, Caldwell and Vu (2013) wanted to see if any effects took place in improvement of multi-tasking skills as a result of playing action video games. Performance showed advance in the departments of communication and system monitoring. More precisely, more time spent with action games led to higher consistency and speedier response times in communication. Participants who were able to complete larger amounts of games obtained most development. Gamers outweighed controls in system monitoring where they could monitor and react to lights and dials more proficiently.

Powers, Brooks, Aldrich, Palladino and Alfieri (2013) inspected the impact of playing video games on information processing skills. Effects on these skills were seen as significant when experience with video game play was held. Mid-range to more extensive effects were seen in regions of visual and auditory processing during the quasi-experimental studies. Though, when true experiments were run, motor skills were the leading effect. Researchers indicated their results exhibited the rounded ability of video game interactivity to develop different effects across multiple areas.

Pohl et al. (2014) wanted to detect any associations action video gaming had with the processing of masked stimuli. Using game player's and non-players, researchers used masked pictures for measuring response to stimuli. Primes were presented at a duration 20 and 60 ms. Game players were better able to identify masked stimuli than their non-playing peers at both duration sequences. Players were even more adept at identification when duration was at the shorter 20 ms duration. It appeared evident that experienced game players are more capable at stimulus response translation and visual stimuli identification.

Baniqued et al. (2014) looked to casual video games and their relationship to cognitive training. What the researchers saw in their study was that while participants did improve on the games that they were training, the ability of transmission to other areas of untrained tasks was much lower. After 15 hours of playing casual games, the majority of cognitive traits was not improved. When playing games that involved reasoning and working memory, improvement in divided attention was seen.

Boot et al. (2013) wanted to find any correlation that may exist in counteracting the deterioration in cognitive functions due to aging. Researchers had participants play action and brain fitness games, while the control group played none. When comparing players to the control group, no noticeable differences took shape. Ratings by the participants for the action titles were significantly less than the brain fitness games. Asked about their thoughts about the effectiveness of the action style play games, participants felt that the games had no transferrable effects to everyday tasks.

Bavelier, Green, Pouget and Schrater (2012) did a study on action video games and what they do in affecting the player. It was determined that playing action games doesn't necessarily teach any exact skill. What they do is help the player to grow in their capacity to identify patterns or repeating circumstances in the gaming environment. It was pointed out that game players are better at manipulating information that is pertinent to their current task. Simultaneously, players are able to subdue extraneous material that could otherwise be distracting to the task at hand.

Wilms, Petersen and Vangkilde (2013) studied the effects in young males that video games had on visual short-term memory and the speed that it was encoded. Mimicking the structure of a test used to study gamers in 2003, it was found that non-gamers were able to perform the same as highly experienced gamers from ten years prior. It was said to be possible that modern technology and the more common role it plays with youth could be the main influence here. Timeline comparisons aside, current video games that involve extreme visual attention were origin for quicker and more effective short-term memory.

Badurdeen et al. (2010) wanted to find out how well someone's ability to use the Nintendo Wii predicted their level of laparoscopic skill. Participants played the game Wii Play for the Nintendo Wii. Scores of the participants on the Wii game were in strong correlation to their scores on a laparoscopic surgical trainer. Results illustrated a significant overlay of skills for the two tasks.

Researchers suggested the use of the Nintendo controller in a three-dimensional space to interact with a two-dimensional viewing space was similar to the model of laparoscopic surgery.

Ventura, Shute and Kim (2012) did an experiment involving play style and academic performance. Play styles analyzed were habitual, selective and diverse. Each category was broken up into sub-categories of three different groupings of total hours or total games. The stand-out relationship with GPA was that of the selective player. Those who spent a “medium” level of hours, 11-50 hours of gameplay with their favorite games in a year, held significantly higher GPA’s than those who were labeled as “low,” 0-10 hours. Wondering why those labeled as “high” didn’t perform as well, it was suggested that they may have the same trouble with time-management as the “habitual” players.

Clark, Fleck and Mitroff (2011) performed their study on the subject of detection of change in action video players. When participants were given a change detection task, game players outperformed their non-playing peers. As participants were presented a stimulus of change, game players were alert to its presence in a less of amount of exposures than non-players. Researchers claimed the key find in their experiment was the different methods used by players and the control group. Players were able to cover much more visual space when searching for visual cues to signify change.

Masson, Bub and Lalonde (2011) studied the effects that video games had on naïve reasoning of object motion. This was done by using a game that involves interactivity with controlling the outcome of trajectories. After intense training with Enigmo, which required participants to observe and then interact to initiate, an association with participants being aware during the learning process was made. It was observed that participants advanced during their progression. This led to assuming that a procedural skill was developed while playing the game. Researchers thought this skill could be transferred to circumstances that involved trajectories other than ones presented during gameplay.

Molins-Ruano et al. (2014) focused their research on how well motivation was improved in students by allowing them to create their own video game. The goal was to improve skills that reside outside traditional learning. Phases of development were broken into two parts that consisted of programming and storytelling. Students without programming skills were placed in storytelling. When compared to traditional teaching methods, the game design process accrued higher motivation amongst students.

Barko and Sadler (2015) analyzed how well learning took place in the classroom using a video game focused on biotechnology. Three classrooms were used in the study. Curriculum-aligned tests had all three classes showing significant improvement after exposure and utilization with the game. It was given that an expectation of two to three weeks be spent with the program before expecting these types of results. It was concluded that the ability of the game to be an effective classroom aid was supported in the experiment.

Scharkow, Festl, Vogelgesang and Quandt (2015) applied the uses and gratifications approach through a survey asking “which gratifications were most sought” and “how they were inter-related.” Main elements included exploring, which resided as a content type component and improving self-ability, which was ego-focused. A stand out item from the survey involved all of the respondents having some affiliation with all genres included in the questionnaire. Game genres with more sophisticated gameplay were generally played by gamers with more experience.

Collins and Cox (2014) wanted to find out how video games operated as an aid to post-work strain. This was the first time a study has been conducted on work home interference (WHI) and video/digital games. Games showed to have some benefit in the recovery of WHI to prepare for another day at work, but on the total outcome, they appeared to have no discernable consequence. Research findings stressed a need to separate games into individual genres, but this study didn't go far enough to yield these certain aspects.

Hussain, Williams and Griffiths (2015) put their gaze on online gaming and its association with motivations of enjoyment and addiction. This particular examination of addictive gaming illustrated addiction as not a two-way road of addicted and non-addicted, but more of a continuous plane of increasing risk. It was noted that addictive like experiences can be seen when there are troubled emotions at play and binge gaming is used to manage those emotions. But, these instances are not often enough to label as officially addicted.

Wu et al. (2012) looked to see how neuroplastic change is induced while playing a first-person shooter (FPS) video game. Results of the study exhibited a direct causal relationship betwixt FPS play and neural movement associated with spatial selective attention. Aside from behavioral gain, FPS players with top performances actually had their electrophysiological substrates altered. Data from this study shows FPS gameplay can change how the brain processes visual attention.

Green, Sugarman, Medford, Klobusicky and Bavelier (2012) focused their attention on associations between action video game play and task-switching. Action game players showed that they required less of a task-switching cost than non-gaming peers. More than the exceedingly over-worked manual response mode of action gamers, reduced vocal response task-switching also took place. It was mentioned that vocal response is not necessarily identified as being part of the action game scenario. The strong correlation portrayed by all participants amongst manual and vocal response led to the assumption there most likely is an elemental connection between the two processes.

Blumen, Gopher, Steinerman and Stern (2010) did a study on the game Space Fortress and its effectiveness with elderly individuals on instructions and basic motor skills. The game uses a substantial level of cognitive management and had several effects on the participants. After time and use with the game, participants' learning, persistence and coping were all better than before starting the experiment. There was a correlation between motor skills and the learning pace of the game. Though, elderly players continued to develop better playing habits and skills over the course of time spent with the game, they still were not able to perform on the same level as younger players.

Correlating time usages spent playing video games and grade point average, Anand (2007) found a negative effect between the two. Results were significant at a ($0.005 < p < 0.01$) confidence level. As more time was spent with video games, grade point average decreased. While low hours made little effect, excessive hours made a much larger one. These excessive hours were linked with addiction and time management.

In total, research reviewed showed a wide array of skills and gratifications received from video game usage. This included multitasking, task-switching and problem solving. Also attention placement was improved and faster visual processing occurred. Physical characteristics of the brain were observed and seen to change. Game skills transferred to other non-gaming skills and games showed to be an effective intergenerational learning tool. Gratifications in gaming were seen in the form enjoyment, challenge, social interaction and academic success.

CHAPTER III

Methodology

Participant Selection

A survey was administered through Snap software using Bobcat Mail. The targeted demographic was enrolled Texas State University students in the Fall 2015 semester. The University Survey Committee has a requirement that only a limited subset of the student body be used as a sample. Currently, the limit is 3,800 students. This research sent out a total of 3,800 surveys. Emails were gathered from the Email List Management Tool and the required sample size was created using Excel to randomly generate a list of students. Surveys aimed to find out if students play video games and what grades they get on average. Further questions sought to obtain quantity of playtime, how many years of experience the players have and genres of games with which individuals generally spend their time.

Design of Study

The survey was made up of 35 individual questions developed by the researcher based on his own experience as a video game player (see Appendix A). Thirty-two of those questions were multiple choice. Three questions were fill-in-the-blank. The survey tried to determine how one classifies oneself as a gamer, their academic setting and the demographic make-up.

Video game habits were defined by question one by allowing participants to classify oneself as a "Hardcore Gamer," frequent play, "Casual Gamer," infrequent play, or "Non-Gamer," no play. This question was used for research question one and a few "Research Validity" correlations to help gauge the level of participant truthfulness when answering survey questions.

Question two of the survey wanted to know what types/genres of games were played by participants and was the basis for research question two. Six options were given and included "1st Person Shooters," in which views are seen from the in-game character perspective and involves surviving with weapon use. "Platform" games, where users most often guide a character through a treacherous domain relying upon jumping mechanics. "Strategy" games, where a user commands a large group of units and either attacks another or defends itself. Another was "3rd Person Action" games, in which characters are seen from the player's perspective and involve, in large part, weapon use to survive dangerous scenarios. Role-Playing Games or an "RPG," are games that involve fantasy locations in most scenarios and have characters growing through skill acquisition and managing a large item inventory through their journey. The last option was "Racing" games, where players maneuver vehicles on some course and the majority of time compete against other vehicles in speed and precision.

Other questions wanted to quantify hours spent playing, and where. These were used primarily in research question three. Also, academic questions included grade point average, major, minor and what subjects survey participants thought they received the best grades.

Coding

For the purpose of running a Pearson's r, several questions were relabeled into numbers matching their rank in that answer subset within each question used. Questions that involved multiple choice answers listed in an ascending order would be reclassified as their number rank counterpart when applicable. This was relied upon most heavily in research questions one and three.

Variables included were gamer classification and GPA. Items that were lowest are given a one and highest are given largest ascending numeral for each category. This would be a one for a "Non-Gamer," a two for a "Casual Gamer" and three for "Hardcore Gamer." For calculating GPA, category of "below 2.0" is a one, "2.0-2.49" is a two, "2.5-2.99" is a three, "3.0-3.49" is a four and "3.5-4.0" is five.

More variables reclassified in numerical order were total amount of unique games played in a year, total amount of years playing video games and total hours spent playing video games each week. Responses for the total amount of different games played in a year were recoded as a one for "I don't play video games," a two for "1-4 games," three for "5-10 games," four for "11-20 games," and a five for "more than 20 games." For the length of time someone has played video games, responses were recoded as a one for "I don't play video games," a two for "less than 4 years," three for "4-10 years," four for "11-20 years," and a five for "more than 20 years." Relabeling hours spent playing video games each week, “less than 1 hour” was recoded as a one, “1-3 hours” as a two, “4-6 hours” as a three, “7-10 hours” as a four and “more than 10 hours” as five.

Two more variables reclassified as numerical ones were console platform generation and television screen size. Console platform generations were ranked and recoded as a one for “Older Models,” a two for “Last Gen.,” and a three for “Current Gen.” Television screen size is relabeled as a one for “less than 30 inches,” two for “30-49 inches,” three for “50-64 inches,” four for 65-80 inches” and five for “more than 80 inches.”

CHAPTER IV

Results and Discussion

Results

Demographics

Out of the 3,800 survey distributions, 203 individuals responded. The survey had more female respondents than male, making up 63.5% of the respondents with a population of 129. Males made up 36% of the population with 73 respondents. One respondent left the response as blank, resulting in 0.5%.

Classification as a student had a mix. Sixty-two freshmen responded making up 30.5%. Thirty-seven people at the sophomore level responded, making up for 18.2% of the population. Forty-one people out of the junior population responded, making up 20.2%. Seniors accounted for 30.5% of the population with 62 respondents. One master's level student responded, making up 0.5% of the population.

When it came to labeling themselves as a gamer, 27.1% said they were a "Non-Gamer." This accounted for 55 of the survey takers. One-hundred-twenty-five respondents claimed to be a "Casual Gamer," which resulted in 61.6%. "Hardcore Gamer" was claimed by 22 participants, resulting in a total of 10.8%.

Asked what their major was, participants gave a wide array of answers via fill-in-the-blank (see Figure 4.1). Answers were grouped into overarching categories to help lineate responses.

When self-reporting minors, a large amount of varying answers was given. Answers were grouped into a larger field to help categorized results. Respondents reported minors in 28 different fields (see Figure 4.1).

Self-reported responses were given for what subjects the participants thought they received the best grades. Answers were grouped into larger departments. This resulted in 26 fields (see Figure 4.1).

Table 4.1. Majors, minors and best grades of participants from sample (n=203).

Major		Minor		Best Grades	
Accounting	4	Agriculture	2	Anthropology	1
Agriculture	3	Anthropology	2	Art and Design	5
Anthropology	1	Art and Design	4	Biology	12
Art and Design	6	Biology	4	Blank	16
Biology	21	Blank	31	Business Administration	6
Blank	1	Business Administration	13	Chemistry & Biochemistry	4
Business Administration	9	Chemistry & Biochemistry	13	Communication Studies	5
Chemistry & Biochemistry	3	Communication Studies	3	Computer Science	4
Communication Studies	3	Computer Science	1	Criminal Justice	7
Computer Science	8	Criminal Justice	3	Curriculum and Instruction	1
Criminal Justice	6	Curriculum and Instruction	5	Engineering Technology	2

Table 4.1 (Cont.)

Curriculum and Instruction	12	Diversity and Gender Studies	1	English	39
Engineering Technology	4	English	9	Geography	3
English	4	Family and Consumer Sciences	2	Health and Human Performance	4
Family and Consumer Sciences	5	Geography	5	Health Professions	1
General Studies	1	Health and Human Performance	1	History	14
Geography	7	Health Professions	1	Journalism & Mass Communicatio n	3
Health and Human Performance	12	History	4	Mathematics	21
Health Professions	17	Honors College	2	Modern Languages	5
History	10	Journalism & Mass Communicatio n	1	Music	3
International Studies	2	Mathematics	9	N/A	11
Journalism & Mass Communicatio n	14	Military Science	1	Philosophy	3
Marketing	5	Modern Languages	7	Physics	1
Mathematics	4	N/A	26	Political Science	8
Music	2	none	17	Psychology	20
N/A	1	Occupational, Workforce, and Leadership Studies	1	Social Work	1

Table 4.1 (Cont.)

Occupational, Workforce, and Leadership Studies	1	Philosophy	1	Sociology	1
Political Science	1	Political Science	2	Theatre and Dance	2
Psychology	21	Psychology	15	Total	203
Social Work	4	Sociology	3		
Sociology	2	Theatre and Dance	2		
Theatre and Dance	5	Undecided	12		
Undecided	4	Total	203		
Total	203				

RQ1

Research question one asked what effect does playing video games have on the grade point average of users? To correlate someone's level of gamer classification and their GPA, these levels were recoded from string variables into numeric ones in rank order as to run a Pearson's r test. Running a Pearson Correlation between these two data sets results in a very low negative correlation at -.091 strength (see Figure 4.2.1).

Table 4.2.1. Participant level of Gaming Habits correlated with their GPA.

	Gaming Habits	GPA
Gaming Habits		
Pearson correlation		-.091
Significance		.201
N	202	199
GPA		
Pearson correlation	-.091	
Significance	.201	
N	199	200

Correlating GPA and the total number different unique games played in a year, a Pearson r test is used. String variables were recoded into numeric ones. This resulted in a very low negative correlation with a -.096 level of strength (see Figure 4.2.2).

Table 4.2.2. Total Games Played in a Year correlated with GPA.

	Games in Year	GPA
Games in Year		
Pearson correlation		-.096
Significance		.178
N	202	199
GPA		
Pearson correlation	-.096	
Significance	.178	
N	199	200

Looking for a correlation between GPA and how big of a screen one plays games, a Pearson's r was used. String variables were recoded into numeric ones. Results came in the form of a very low positive correlation with a .025 strength (see Figure 4.2.3).

Table 4.2.3. Television Screen Size used for games correlated with GPA.

	TV Size	GPA
TV Size		
Pearson correlation		.025
Significance		.765
N	145	144
GPA		
Pearson correlation	.025	
Significance	.765	
N	144	200

RQ2

Seeking to understand how different types/genres of games differ in their effect on academic performance of users is research question two. A close pattern sticks to GPA and each genre of video game. All genres are associated with the same GPA pattern, except for "Racing." It is tied at its second and third GPA rank (see Figure 4.3).

Table 4.3. Genres/Types of Games and their associated GPA Rank.

	FPS	Platform	Strategy	3rd Person	RPG	Racing
GPA Range 1	3.0-3.5 (n=35)	3.0-3.5 (n=44)	3.0-3.5 (n=15)	3.0-3.5 (n=33)	3.0-3.5 (n=26)	3.0-3.5 (n=16)
GPA Range 2	2.5-3.0 (n=22)	2.5-3.0 (n=25)	2.5-3.0 (n=12)	2.5-3.0 (n=24)	2.5-3.0 (n=24)	2.5-3.0 (n=7) 3.5-4.0 (n=7)
GPA Range 3	3.5-4.0 (n=11)	3.5-4.0 (n=19)	3.5-4.0 (n=10)	3.5-4.0 (n=18)	3.5-4.0 (n=16)	

“First Person Shooters” had the majority of participants who play them, GPAs in the “3.0-3.5” range. This includes 35 individuals accounting for 17.2%. Twenty-two (10.8%) were in the “2.5-3.0” range and eleven (5.4%) in the “3.5-4.0” spectrum.

Majority of participants who play “Platform” games had a GPA in the “3.0-3.5” range. This includes 44 individuals accounting for 21.7%. Twenty-five (12.3%) were in the “2.5-3.0” range and 19 (9.4%) in the “3.5-4.0” spectrum.

“Strategy” games also had the majority of participant who play, a GPA in the “3.0-3.5” range. This includes 15 individuals accounting for 7.4%. Twelve (5.9%) were in the “2.5-3.0” range and ten (4.9%) in the “3.5-4.0” spectrum.

“Third Person Action” games had the majority of participants who play them, GPAs in the “3.0-3.5” range. This includes 33 individuals accounting for 16.3%. Twenty-four (11.8%) were in the “2.5-3.0” range and 18 (8.9%) in the “3.5-4.0” spectrum.

“RPG” games had the majority of participants who play them, GPAs in the “3.0-3.5” range as well. This includes 26 individuals accounting for 12.8%. Twenty-four (11.8%) were in the “2.5-3.0” range and sixteen (7.9%) in the “3.5-4.0” spectrum.

“Racing” games also had the majority of participants who play them, GPAs in the “3.0-3.5” range. This includes 16 individuals accounting for 7.9%. Ranges of “2.5-3.0” and “3.5-4.0” had seven (3.4%) a piece.

RQ3

Research question three wants to understand how the number of hours playing video games affects the academic performance of users. In order to better understand the relationship between amount of hours spent playing video games each week and GPA, data was recoded to be compatible with a Pearson Correlation. This involved a transition out of string variables into numeric variables. Using a Pearson Correlation, there is a very low negative correlation with a strength of -.065 between GPA and total hours spent playing video games during a week (see Figure 4.4.1).

Table 4.4.1. Hours Spent Playing Games in a Week correlated with GPA.

	Hours / Week	GPA
Hours / Week		
Pearson correlation		-.065
Significance		.368
N	198	195
GPA		
Pearson correlation	-.065	
Significance	.368	
N	195	200

Examining what effect which console platform generation is used most hours spent playing has on GPA, items were recoded from their string variables into numeric ones in rank order. Specifically, this question is looking at how newer generations of consoles that house more powerful hardware and produce more complex games affects the user. A Pearson Correlation test results in a very low negative correlation at a strength of -.025 (see Figure 4.4.2).

Table 4.4.2. Console Generation Played Most Hours correlated with GPA.

	Platform	GPA
Platform		
Pearson correlation		-.025
Significance		.777
N	131	129
GPA		
Pearson correlation	-.025	
Significance	.777	
N	129	200

This set of correlations compared one's GPA to total hours spent in a week with three different play styles. These included playing games as a "solo experience," a "cooperative experience" or "competitively." String variables were recoded into numeric ones. All three correlations resulted in a weak negative correlation. "Solo experience" had the weakest negative correlation strength at -.030 (see Figure 4.4.3), "competitively" was second at -.084 (see Figure 4.4.4) and "cooperative experience" was the strongest negative correlation, but still very low with a strength at a -.105 level (see Figure 4.4.5).

Table 4.4.3. Hours Spent as Solo Gameplay correlated with GPA.

	Solo	GPA
Solo		
Pearson correlation		-.030
Significance		.677
N	199	196
GPA		
Pearson correlation	-.030	
Significance	.677	
N	196	200

Table 4.4.4. Hours Spent as Competitive Gameplay correlated with GPA.

	Competitive	GPA
Competitive		
Pearson correlation		-.084
Significance		.241
N	200	197
GPA		
Pearson correlation	-.084	
Significance	.241	
N	197	200

Table 4.4.5. Hours Spent as Cooperative Gameplay correlated with GPA.

	Cooperative	GPA
Cooperative		
Pearson correlation		-.105
Significance		.143
N	200	197
GPA		
Pearson correlation	-.105	
Significance	.143	
N	197	200

The next comparison wanted to know what the correlation was between the two items of one's GPA and how long they've played video games in regards to years. To be compatible with the Pearson Correlation test, items were reclassified as numerals in rank order. A Pearson's r results in a very low negative correlation at a -.083 strength level (see Figure 4.4.6).

Table 4.4.6. Total Years Spent Playing Video Games correlated with GPA.

	Years Played	GPA
Years Played		
Pearson correlation		-.083
Significance		.245
N	201	198
GPA		
Pearson correlation	-.083	
Significance	.245	
N	198	200

Participant Perception of Benefits

When it came to acknowledging whether participants claimed video games to be intellectually beneficial, the majority of survey-takers thought so. One-hundred-forty-one respondents said, “yes,” to video games relating to an intellectual benefit. This resulted in a culmination of 69.5% of survey-takers. The remaining 62 respondents said, “no,” to this question, which made up 30.5% of survey-takers.

Asked if whether or not participants thought their study habits were improved by playing video games, the majority disagreed. One-hundred-sixty-one respondents said, “no,” which accumulated to 79.3% of survey-takers. This left the 41 survey-takers who answered, “yes,” in the minority at 20.2%. One person left this question blank, which resulted in 0.5% of the participants.

Whether or not video games provide a mentally active break away from studying, 88.7% of participants agreed that they do. One-hundred-eighty survey-takers said, “yes.” The minority, 11.3%, said, “no.” This included 23 of the survey-takers.

Survey Validity

Looking at the correlation between gamer classification and which platform gamers spent the majority of their time playing, items were recoded as numerals in rank order to perform a Pearson Correlation. Results were a total positive correlation in a Pearson's r test with a significance level of 0.01 (two-tailed).

To find out if any association was between gamer classification and how many hours are spent each week playing video games, a Pearson Correlation was used. For compatibility with the test, string variables were recoded into numeric ones. Result of the Pearson Correlation was a total positive correlation and significant at the 0.01 level (two-tailed).

This correlation looked to see the relationship between how long someone has played video games and what they rank in gamer classification. To be compatible with a Pearson Correlation, responses were recoded from string variables into rank order numeric ones. A Pearson Correlation results in a total positive correlation with results significant at the 0.01 level (two-tailed).

Interpreting any association between gamer classification and how many different games are played in a year, a Pearson Correlation test was used. String variables were recoded into numeric ones in ascending order. The result of the Pearson Correlation was a total positive correlation and significant at the 0.01 level (two-tailed).

Correlating how long someone has played video games to how many games they play in a year, a Pearson Correlation was used. To be compatible with a Pearson Correlation, responses were recoded from string variables to numeric ones in rank order. The result of the Pearson Correlation was a total positive correlation and significant at the 0.01 level (two-tailed).

To see if a correlation existed between how long someone has played video games and how many hours are spent playing games in a week, a Pearson Correlation was used. All string variables were recoded into numeric ones. Result of the Pearson Correlation was a total positive correlation, significant at the 0.01 level (two-tailed).

Discussion

Theory

Where Ruggiero (2000) calls for a more integrated form of uses and gratifications theory and the importance of that moving into the future, he could very well be right. He says traditional classification tools do not include the likes of interactivity, which is such a large key role in the function of video games. Sundar and Limperos (2013) discuss how “media” in uses and gratifications references the likes of newspapers, television/film and radio.

Uses and gratifications theory was used in research produced by Scharkow, Festl, Vogelgesang and Quandt (2015) asking participants directly what type of gratifications they sought. Gamers in the study were affiliated with all genres listed in their questionnaire. Gratifications were self-proclaimed being exploration, content based, and self-improvement, ego based. The gratification of self-improvement could very well be linked to the current Texas State study in terms of a pursuit for higher performance in academics amongst video game players.

RQ1

The findings from this research indicate there is either no effect or a very weak one from video games on academic performance. Completing several correlations in the survey validity section helped reveal how reliable some of these results could be. From what Thirunarayanan and Vilchez (2012) studied, it seems that playing in video game tournaments could lead to skills such as leading a group and coordinating activities. This seems to relate more to individuals who play in an online "cooperative" experience in this study. Overall, social skills seemed to be at play in that study over academic ones. Though, in college, group work and team work do play a role in success.

How Glass, Maddox & Love (2013) studied in what way a real-time strategy game can enhance cognitive flexibility by training it, this did not appear to show any improvement amongst Texas State students who play them and their GPA. Also, Kuhn et al. (2014) discovered video game play did show to result in thickening of the brain in the dorsolateral prefrontal cortex, the portion of the human brain associated with executive control function and planning that involves strategy.

Results from the survey taken at Texas State University showed very weak negative results for all games, including ones outside of strategy games. A game may fall into a strategy genre, but all games generally involve some form of strategy for success. A lot of students thought video games were intellectually beneficial, but not necessarily an aid in their study habits.

Where Drugas (2014) looked at the value of educational video games in an educational setting, the participants in this current Texas State study used games in a completely different venue. Educational games teach a direct topic of information. The games played in this study are unrelated. This may be why there is a very weak negative to almost no correlation between GPA and video game play in this study. Jalink, Heineman, Pierie and Hoedemaker (2014) found that an unrelated game helped surgeons perform real-world tasks. Before a proper implementation of educational video games, there would be a need of better understanding the transfer effects of non-course related games, if they exist.

Bavelier, Green, Pouget and Schrater (2012) found that playing action games didn't necessarily teach any one specific skill, but grew their capacity in identifying repeating circumstances. Whether Texas State students see this taking effect in mathematical instances, where someone needs to recognize how to solve an equation or seeing repeated information on a test to cue their memory better wasn't supported by the results.

Whatever it is that video games are doing to their users, it seems that the results are negative and weak. Possibly, a negative relationship isn't even existing outside of irresponsible use causing distractions. From multiple correlations computing into how GPA is affected by these games, it seems most likely it may not be affected at all. The results showing how television size can reverse the very weak negative effect of playing games into a very weak positive one makes debate whether the relationship is there at all. Evidence in this study supports that video games and GPA have little effect on each other.

RQ2

When it came to effects that different genres of games had on academic performance, there were similar results across the board. Each genre had the same pattern of results in GPA rank. Racing was the exception, but the only difference was that second and third place rankings were tied instead of one giving way to the other. For the genres/types of games, the “3.0-3.5” range ranked first, “2.5-3.0” ranked second and “3.5-4.0” was third. With such a similar pattern between all the genres/types, there is little difference in effect that each plays over the other on the academic performance of users.

RQ3

This current study showed that increasing amounts of hours spent with video game use led to very slight decreases in GPA. Conclusions were made from several Pearson Correlation tests. Ventura, Shute and Kim (2012) found increases in GPA with higher sums of game play hours until an excessive point. Too many hours with video game play amongst Texas State students may be a deterrence from homework and proper study. This could be the cause of slightly lowering GPAs as gamer classification gets higher. Gamer classification involves more hours of gameplay. Less study time may be implemented as more hours are spent gaming.

Ypsilanti et al. (2014) found video game use for just a few hours motivated the learning process. Most specifically, attention and working memory are enhanced. Toril, Reales & Ballesteros (2014) found similar results of positively affected attention and memory. These traits are highly valuable for someone looking to excel in their coursework. This makes definite sense in how students felt games gave them mental benefits, but not necessarily in their habits of studying. If any, effects could be more passive and automatic.

Regardless of whether survey participants quoted themselves as playing solo, cooperatively or competitively, all hours led to slightly decreased GPA. When raising the perspective to years playing video games, this also led to a subtle decrease in GPA score. An interesting note is that when participants quoted themselves as spending the majority of their hours playing video games on the latest game systems which hold the higher technology, GPAs also slightly decreased. This leads back to the possible distraction factor of games. Majority of new games are only released on newer machines. If someone does not have these systems, they have no new games to play and cause extra distractions away from school. Evidence from these correlations involving hours playing video games and GPA are interrelated in a very weak negative way. This does make sense. Hours spent playing video games are hours not spent doing school work.

Anand (2007) found similar results of hours spent with video games and decreasing GPAs. Only, results in that study were much more severe. When compared to this study, it definitely seems plausible any negative effects that video games may be causing on academic success can be attributed to time management issues. Rather than games themselves, it appears excessive hours spent with games away from proper academic study is the culprit.

Overall

While attention has focused on negative effects of video game use in past research, the focus of this research was to observe any positive effects that may be inherent with use. In terms of uses, players used games solo, competitively and cooperatively. Little difference in academic performance resulted between the different play styles.

With no correlation between video games and academic success, it promotes an idea that parents do not need to be concerned about their children's use. What slight negative correlation that does exist is most likely due to time management factors more than actual direct correlation between gameplay and school work. Any time spent away from academic work is less beneficial than studying directly with school and academic material. If homework is completed, then there should be no concern about too much time spent with gaming devices.

While video games provide mentally engaging material, that material is not directly related to course work in an academic program. Video games may provide an outlet for learning in users, but that outlet is ineffective for academic success if the learning material does not teach what is demanded by the academic institution in which an individual is involved.

<u>Limitations and Suggestions</u>

This study shows that video game usage and academic success are related in a very weak negative way or not at all. It poses the question whether the sample size in this study was too small to really get a solid read amongst gamers and non-gamers. Results can't be generalized to the main population with such a small sample size in this study. Past research has supported that video games can and do have positive cognitive effects. This research at Texas State showed little comparison to those studies. If the effects are there, this study wasn't built or able to find them.

The way this particular study used self-reported data to find conclusions may have impacted the end result. Survey validity questions did show that answers may be reliable. However, there may be discrepancies to how individuals labeled themselves as gamers.

This study found a Pearson's r to be adequate. Reasoning being that there was no correlation between data. If the study were to be reconstructed, a Spearman Rho may be used for more precision. The study at hand and its results did not require such precision.

Suggestions for future studies would include a larger sample size. Possibly cross reference data between samples of different student populations from different schools. Experiments of game use involving before and after tests with a large participant base could be useful.

APPENDIX SECTION

APPENDIX A: Questionnaire

This email message is an approved request for participation in research that has been approved or declared exempt by the Texas State Institutional Review Board (IRB).

This is a research project conducted for a thesis study on video games and their effect on students' academic performance. Participants were selected as being part of the student body. Research does not involve the disclosure of participants. Completion time should take 4 – 7 min. Participation is not required, but is much appreciated. Funding does not exist for the project, so good karma is the best I can offer for your time. Thank you for your help.

Please click the link to take the survey.

1. Which of the following best describes your video gaming habits?
   a) Hardcore Gamer
   b) Casual Gamer
   c) Non-Gamer
2. What games do you typically spend the most time playing?
   a) 1st Person Shooters (ex. Halo, Call of Duty)
   b) Platform (ex. Super Mario, Rayman)
   c) Strategy (ex. Pikmin, Supreme Commander)
   d) 3rd Person Action (ex. Grand Theft Auto, Resident Evil)
   e) RPG (ex. Final Fantasy)
   f) Racing (ex. Gran Turismo, Need for Speed)
   g) Other
3. How long have you been playing video games?
   a) More than 20 years
   b) 11-20 years
   c) 4-10 years
   d) Less than 4 years
   e) I don't play video games
4. How many different games do you play in a year?

a) More than 20 games
b) 11-20 games
c) 5-10 games
d) 1-4 games
e) I don't play video games

5. How many hours per week are spent playing games?
    a) More than 10 hours
    b) 7-10 hours
    c) 4-6 hours
    d) 1-3 hours
    e) Less than 1 hour
6. How much time is spent playing as a solo experience?
    a) More than 10 hours
    b) 7-10 hours
    c) 4-6 hours
    d) 1-3 hours
    e) Less than 1 hour
7. How much time is spent playing as a cooperative experience with others?
    a) More than 10 hours
    b) 7-10 hours
    c) 4-6 hours
    d) 1-3 hours
    e) Less than 1 hour
8. How much time is spent playing competitively against others?
    a) More than 10 hours
    b) 7-10 hours
    c) 4-6 hours
    d) 1-3 hours
    e) Less than 1 hour
9. Do you consider video games to be intellectually beneficial?
    a) Yes
    b) No
10. Do you consider video games to aid you in your study habits?
    a) Yes
    b) No
11. Do you think video games provide a mentally active break away from studying?
    a) Yes
    b) No
12. How much do you spend financially in a year on gaming?
    a) More than $300
    b) $150-$300
    c) $80-$149
    d) 1¢-$79
    e) none

13. How do you acquire your games? **Mark all that apply**
    a) New
    b) Used
    c) Digital
    d) Rent
    e) Other
14. Do you stay current on the latest gaming news?
    a) Yes
    b) Somewhat
    c) Not Really
    d) No
15. What gaming systems do you own? **Mark all that apply**
    a) Current Gen (ex. PS4, Xbox One)
    b) Last Gen (ex. PS3, Xbox 360)
    c) Handheld (ex. 3DS, PS Vita)
    d) Older Models (ex. PS1, NES)
    e) none
16. What type of platform do you spend the majority of your time playing?
    a) Current Gen
    b) Last Gen
    c) Handheld
    d) Older Models
    e) none
17. How much time is spent working for financial income in a week?
    a) More than 20 hours
    b) 11-20 hours
    c) 1-10 hours
    d) I don't work
18. How much time do you spend on homework and/or studying in a week?
    a) More than 10 hours
    b) 7-10 hours
    c) 3-6 hours
    d) 1-2 hours
    e) Less than an hour
19. What is your major? **Please Specify**
20. What is your minor? **Please Specify**
21. *Complete this statement:* I am a _____.
    a) Full-time student
    b) Part-time student
    c) Non-student
22. How many hours do you generally take each semester?
    a) More than 12 hours
    b) 10-12 hours
    c) 7-9 hours

d) 4-6 hours
e) 1-3 hours
f) none

23. What is your grade point average?
    a) 3.5-4.0
    b) 3.0-3.49
    c) 2.5-2.99
    d) 2.0-2.49
    e) Below 2.0
24. Do you put a focus on taking notes in class?
    a) Most of the time
    b) Sometimes
    c) Not really
25. How are *<u>most</u>* of your notes taken?
    a) Pen/Paper
    b) Laptop/Tablet
    c) Recorder
    d) Other method
    e) I don't take notes
26. Do you utilize the school library?
    a) Very Often
    b) Occasionally
    c) Not too much or none
27. Do you utilize The Student Learning Assistance Center (SLAC)?
    a) Very Often
    b) Occasionally
    c) Not too much or none
28. Do you like to primarily study by yourself?
    a) Yes
    b) No
29. How do you consider group study sessions compared to working on your own?
    a) More helpful
    b) About the same
    c) Less helpful
30. In what subject do you get the best grades? **Please specify**
31. What is your home internet speed?
    a) More than 100 Mbps
    b) 50-100 Mbps
    c) 20-49 Mbps
    d) Less than 20 Mbps
    e) I use my phone
    f) I don't have internet
32. On what size TV do you play video games?
    a) More than 80 inches

b) 65-80 inches
c) 50-64 inches
d) 30-49 inches
e) Less than 30 inches
f) I don't play games on a television

33. Do you have an external sound system connected to your gaming television?
    a) Yes
    b) No
    c) I don't play games on a television
34. Gender
    a) Male
    b) Female
35. Classification as a student
    a) Freshman
    b) Sophomore
    c) Junior
    d) Senior
    e) Master's
    f) Doctoral
    g) Non-student

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