A Study on the Impact of Extra Curricular Gamers

Club on the Academic Achievement of Middle School Students

By Joshua Faherty

Submitted in Partial Fulfillment of the Requirements for the

Degree of Master of Education

July 2014

Graduate Programs in Education

Goucher College

Table of Contents

List of Tables

Abstract

The purpose of this study was to determine the impact of an extracurricular Gamers Club on the academic achievement of middle school students. The measurement tool was Grade Point Average (GPA). The study used a pretest/posttest design to compare 2nd quarter grade before the club to the 3rd quarter grade after participants had participated in the club. There was no significant difference in students GPA scores pre/post participation in the Gamers Club. Further research should be conducted with larger sample sizes to further confirm the data collected in order to evaluate further the impact of extracurricular gaming on students' academic achievement.

CHAPTER 1

INTRODUCTION

Overview

For as long as students have been in a structured school environment, society has demanded enhanced academic performance of students. A variety of extracurricular activities have been utilized to keep students engaged in the school environment. Sports and other traditional after-school activities such as Student Government, chess club and newspaper clubs have been the standard fare for students in after-school time. It has been hypothesized that these activities lead to enhanced student performance and higher motivation.

The issue for some students, however, is that at this point some of these traditional extracurricular activities no longer meet their interests. In the current society, students have gravitated from the typical social constructs to more individualistic pursuits at home with technology. New ways have to be found to enhance student engagement and academic performance

Statement of the Problem

It is recognized that some of the traditional after-school activities no longer meet the needs of all students. A non-traditional after-school club, such as a Gamers club, may increase achievement in the same way as the more traditional clubs do.   This study will investigate this conjecture by comparing students 2nd quarter report card G.P.A to their 3rd quarter report card G.P.A after their participation in a Gamers club during the 3rd quarter of the school year.

Hypothesis

This study will examine the impact of non-traditional after-school clubs on academic achievement of students. The null hypothesis is that there will be no effect on students G.P.A after their participation in Gamers club during the 3rd quarter.

Operational Definitions

The *independent variable* in this research is student participation in an after-school Gamers club which is defined as attending at least six out of the eight after-school sessions and participating in gaming activities. The *dependent variable* is academic achievement as defined as total GPA at the end of the 3rd quarter. *Gaming* is defined as playing video games or board/card games either cooperatively or competitively with other students.

CHAPTER II

REVIEW OF THE LITERATURE

Introduction

American society is changing due to socio-economic factors and changing cultural values. Overall, students spend half of their waking time outside of school (Simpkins, Eccles, & Templeton, 2008). Typically, this time is spent in leisure activities such as watching television or in community-based or extracurricular activities. Such uses of time is defined as structured verses unstructured activities

Researchers posed the theory that structured time is more beneficial to students than unstructured activities (Simpkins et al., 2008). Over the last twenty years, research focused on the possible impact that adolescent involvement in structured afterschool activities have on functioning (Farb & Matjasko, 2012). The different areas that are thought to be involved include social, physical, and mental skills in addition to personal agency and networking (Simpkins et al., 2008). More specifically, extracurricular activities have been studied for various effects in academic achievement, substance use, sexual activity and delinquency.

The importance of discovering the link between structured after school activities and student development is not limited to the United States. Studies have been conducted in foreign countries to further research the effects of extracurricular activities (Won & Han, 2010). In all cultures the focus is on limiting the time students engage in risky behaviors, extending educational time, and allowing socialization to improve (Simpkins et al., 2008).

Different cultures have different concerns as to what activities occur in unstructured time. For example, Americans spent 27% of their time in sports, at home, or at a paid job, In contrast, Korean students spent 30 % of their time on the internet and playing computer games.

The terms "extracurricular programs" or "after school programs" are phrases used to describe a wide range of programs that have different focuses, attendance requirements, and offer many different components (Simpkins et al., 2008). These programs have even been classified into literary-oriented and non-literary oriented in different studies (Won & Han, 2010). The wide variety of programs strives to involve as many different demographic groups as possible in our school systems (Simpkins et al, 2008). Research into these different programs has only increased in the last ten years (Farb et al., 2012). The race to find links that advance student achievement in any way possible has caused federal dollars to go toward discovering the key components of extracurricular activities to make a positive impact on students

Research has gone far beyond examining the types of activities students are engaged in after their school hours. Further areas of focus have included the breadth and intensity of clubs since those factors can vary on a club-by-club basis (Farb et al., 2012). Time is a factor that must be considered and the time spent participating in extracurricular activities can make a positive impact on relationships with the adults involved in the activities. These effects on students are evident over time and are greater if students step into leadership roles in their selected extracurricular activities (Simpkins et al., 2008).

The first section of the following review of the literature presents a discussion of the specific impact of extracurricular activities. The second section focuses on positive outcomes of these activities on student achievement. The third section discusses the other benefits associated with student involvement in extracurricular activities. Areas of weakness in the present research are then discussed in the fourth section. Lastly, interventions are explored regarding extracurricular activities with the focus of video gaming.

Specific Impacts of Extracurricular Activities

Getting through the adolescent time period can be incredibly difficult, and research shows that students participating in extracurricular activities appeared to be better self-adjusted. . For example, students that were involved in ten hours or less of extracurricular activities were seen to have the lowest reports of depression (Farb et al., 2012). Beyond this, overall self–esteem was reported to improve in athletes especially as years of participating increased. During the 10th grade year, being in the presence of an adult, instead of in unstructured activities indicated positive academic outcomes (Cosden, Morrison, Gutierrez, & Brown, 2004).

Avoiding mental illness is not the only positive outcome found for extracurricular activities. Eleven different model programs were associated with lower tardiness, drug use and overall violent behavior (Simpkins et al, 2008). All eleven of those programs had common traits including the teaching of life skills and strong mentor support. The relationship between arrests and being involved in extracurricular activities was seen to be negative in Baltimore (Farb et al., 2012). Cosden et al. (2004) stated that, "remedial academic programs that focus on the deficits of student involvement in high interest, non-academic activities provide a gateway into conventional social networks . . .through the maintenance and enhancement of positive characteristics of the individual that strengthen the student-school connection." (p 223)

Improving self-esteem and lowering depression are not the only positive benefits for students in extracurricular activities. After school programs appear to improve student perception towards school as well. The increase in positive perception of school was correlated with increased student achievement while other homework programs that did not ensure student engagement did not increase student achievement (Cosden et al, 2004).

Some types of these extracurricular activities have even shown an increase for students in their academic achievement (Hunt, 2005). Hunt stated there is a direct causal link between 10th graders' participation in clubs and their subsequent 12th grade year academic performance. While the author did note that some clubs require a certain academic grade for students to participate in them, he accepted that the relationship was still significant. In addition to this specific instance, twenty-five other programs were found to have a positive impact on academic outcomes for students (Simpkins et al., 2008).

Positive Outcomes of Activities on Student Achievement

Student achievement can be quantified in various ways throughout school systems in America. Participation in extracurricular programs has been cited as only having a modest impact on student academic achievement (Steinberg & Others, 1998). However, in the past, schools have focused on students that fall behind with such legislated programs as Race to the Top and No Child Left Behind. These initiatives emphasize the need to push marginal academic students to higher gains (Bowie, 2010). Extracurricular activities have been shown to give an achievement boost to the students who were not as academically focused on entrance into the extracurricular activity (Steinberg et al.,1998).

The focus of after school programs cannot simply be on the students. Adult interactions with students are part of the student achievement process. However, it is crucial that these engagements involve adults who are proactively involved in student behaviors in order for the students to demonstrate higher achievement (Steinberg et al.,1998). Students who were identified as being marginal students without adult support had a further drop in academic achievement compared to peers. Motivating students to be involved can be important for their well-being. Parents were identified as key figures in pushing students into extracurricular activities. Many of

these programs include college students acting as mentors for students as effective role models (Simpkins et al., 2008).

In the context of extracurricular activities, the number of hours for maximum effect has been found to be between eight and fifteen hours. Students who participated in their activities for that duration were also found to be the highest achieving students (Fergunson, Clark, & Stewart, 2002). In particular, they reported a high level of enthusiasm for those activities that they were engaged in (Simpkins et al, 2008). In the pursuit of reaching across demographics, Hispanics and African Americans seemed to have the most gains in relation to academic achievement when they felt more invested in the teacher-student relationship than other subgroups (Fergunson et al., 2002). However, these relationships must be reciprocal. Teachers merely demanding more from students without recognizing student attitudes and emotional needs do not improve the teacher-student relationship.

Achievement is often directly related to the amount of time that students are in school. Attendance in school is shown to be higher when the involvement in extracurricular activities is also high (Reeves, 2008). New assessments such as the Partnership for Assessment of Readiness of Readiness for College and Careers will be utilizing group work on some of the sections.

Extracurricular activities have shown to lessen antisocial tendencies of students who partake in them (Simpkins et al, 2008). However, students do not necessarily have to participate in an abundance of activities to reap these benefits. Simply being involved in four extracurricular activities over the course of the year appears to maximize the positive effects (Reeves, 2008).

Clearly, there are a variety of positive effects for students and the overall effect on the school cannot be overlooked. The presence of many extracurricular options has assisted schools

in raising not only academic grades but test scores as well (Reeves, 2008). However, it is important to remember that students will get involved in activities that they believe that they have the requisite skills (Simpkins et al, 2008).

Other Benefits to Students' Participation in Extracurricular Activities

Academic achievement is not the only area in which students have seen gains. Other attributes can contribute to student success in the classroom. Part of the charge of being a teacher is preparing students for future educational opportunities. Students who are educationally vulnerable are more likely to go to college if involved in an after school club and even more likely if they participated in a combination of different extracurricular activities (Peck, Roeser, & Eccles, 2008). The study defined this ability as "educational resilience," since those vulnerable students possessed certain personal and societal risks that allowed them to enter college despite those challenges. Seventy percent of all students participate in two or more extracurricular activities over the years of their academic career (Simpkins et al, 2008).

Other than resilience, there are many factors that assist students such as increasing self-belief. This self-belief was described as incorporating an idea of their "future selves" into their current viewpoint. According to Valentine, Cooper, Bettencourt, and Dubois (2002) "Some possible selves stand as symbols for hope, whereas others are reminders of bleak, sad, or tragic futures that are to be avoided" (p. 253). The theory is that this hope is the reserve used by students to overcome failure. This influence on their own personal identity seems to be essential in their overall well-being (Simpkins et al, 2008).

Areas of Weakness in Extracurricular Research

There have been decades of literature on the impact of extracurricular activities. However, some questions remain that require further attention. One area in need of further

research is the lack of specificity in what factors influence student achievement. More research is needed in order to determine the exact mechanism influencing achievement from participation in after school programs (Steinberg et al., 1998).

Other limitations are evident throughout relevant research. There is also a lack of information on a student's level of achievement prior to participation in the extracurricular activity (Steinberg et al., 1998). This makes it difficult to draw more significant conclusions in some studies. Examining and defining the quality of the after school programs within the study can be difficult to determine as well (Simpkins et al., 2008). Another factor involved is the assumption of some researchers that extracurricular activities are the only factor in student achievement rather than as only one among many influences.

All demographics have not been well represented in studies (Simpkins et al, 2008). There is also an overall lack of empirical evidence to draw strong conclusions in the realm of self-beliefs and the role they play with extracurricular activities boosting that self-esteem/belief (Valentine et al., 2002). "One size fits all" activities are not the key to finding the influences between activities. Instead, studies focused on particular clubs will prove more relevant in discovering the link between the best activity and enhanced achievement (Peck et al., 2008).

Interventions

Many studies that have been discussed above have dealt with the category of traditional after school or extracurricular activities. These traditional activities such as sports, homework clubs or chess clubs may not capture all the information needed to assess the effectiveness of them. After all, over 94 % of the 12-17 age groups play some type of video game (Adachi & Willoughby, 2013). The lack of clubs that engage the existing population in participating in video gaming needs to be addressed.

The population of gamers influenced researchers to investigate the role video games play in learning and academic achievement (Adachi et al., 2013). Most of the research completed thus far has been focused on negative outcomes for student achievement and gaming. Some of these theories focus on the idea that the time spent playing games decreases time spent on academic tasks for students. Instead, Adachi and Willoughby's study focused on the idea that the type of games may affect the impacts they have:

"The results showed that more strategic video game play predicted higher self-reported problem solving skills over time than less strategic video game play. In addition, the results showed support for an indirect association between strategic video game play and academic grades, in that strategic video game play predicted higher self-reported problem solving skills, and, in turn, higher self-reported problem solving skills predicted higher academic grades" (p. 1041).

Other studies have been conducted on the variety of effects that gaming has on students. A side effect of educational reforms has been the fear of students not possessing the persistence needed to complete all of the required testing. Surprisingly, video gaming was found to be linked to higher persistence in students (Blumberg, Altschuler, Almonte, & Mileaf, 2013). Even though many games are not designed with education in mind, quite a few have sound educational principles behind them (Adachi et al., 2013). For example, some of these principles include the ability to analyze open-ended scenarios and allowing meaning to be more consistently interpreted (Gee, 2007).

Other areas of interventions on the topic of gaming in relation to students are academic grades. One study found an indirect relationship between participation in gaming and an increase in academic grades (Bowers & Berland, 2013). This indirect relationship is further reinforced by

the types of skills that students learn over time. Video games often involve understanding and manipulating complex systems. In addition, the context of how those systems are used in activities within the game defines the social and mental impact of the gaming (Gee, 2007).

Summary

Extracurricular activities have a long history of research and study. Increased academic achievement has been linked with participation in after school activities in the United States and in some cases, in other cultures as well. Improved self-esteem, persistence, and the improvement of specific subgroups have all been noted. Video games have had an indirect link to improved academic performance in addition to higher persistence and the ability for students to apply educational principles they utilize in school in a different context. The relationship between academic achievement and time spent in computer gaming activities requires further research in the context of extracurricular activities and its impact on student achievement.

CHAPTER III

METHODS

Design

This study used a pre-experimental design where one group of students received the intervention and academic data was examined before and after the intervention. The independent variable was involvement in the afterschool club which, in this case, was a Video Game club Requirements for this club included attending at least six out of the eight afterschool sessions and participating in the video gaming activities. The dependent variable was academic achievement, defined as total GPA at the end of the 3rd quarter. The sampling technique was a convenience sample of students in the researcher's classroom interested in joining a Video Gamers' club.

Participants

The participants in the study were students from a middle school in the Mid-Atlantic area. There were seventeen participants in the study, fifteen of them boys and two girls. There were students from each of the three grades - sixth, seventh and eighth. Participants each attended the Video Gamers' club a minimum of six times during the quarter. Each club session was an hour-long after school once a week.

Instrument

This study used the school systems' student information and grade reporting system as the instrument to collect student achievement data in the form of grade point average (GPA) for participants in the study. Each student's GPA was calculated for the 2nd quarter and the 3rd quarter. The standard GPA calculation used was four points per class for an earned A, three for a B, two for C, one for a D and zero for a E. The total score for the quarter was then divided by the

number of classes the student had in the quarter. There is no validity or reliability information for this instrument.

Procedures

Participants were identified through the use of announcements in the school and word of mouth about the establishment of a Video Gamers' club at the school. Participants and their parents signed permission slips for them to attend the club after school and explained the expected content of the video games and behavioral expectations for the club. A sign-in sheet was used at the start of each club activity to track attendance for the purposes of data collection. For an hour after school on Wednesdays, students played a variety of video games. Student report cards were used as the tool to collect the GPA data for the pre-treatment and post-treatment periods of time.

CHAPTER IV

RESULTS

This study examined the possible effects of a Gamers Club on the achievement of students who participated. The null hypothesis was there would be no effect on students G.P.A after their participation in Gamers club during the 3rd quarter. This study had participants who were present at Gamers Club and engaged in gaming activities at least six weeks during the third quarter. Students Achievement was measured by using G.P.A for the second quarter as the control quarter and then G.P.A for the third quarter for the treatment period. As the data in Table 1 indicates, there was no significant difference in students GPA scores pre participation in the Gamers Club to active participation in the Club.

Table 1

Mean and Standard Deviations of GPA for the Group

GPA	Mean (Standard Deviation)
Quarter 2	2.90 (.636)
Quarter 3	2.74 (.782)

A dependent *t*-test was run to examine the difference in second quarter GPA as compared to third quarter GPA. Results showed no significant difference [$t(9) = 1.687$, P > .05]. Students did not see an increased in GPA as a results of the intervention (See Table 1). These results and their implications will be discussed in Chapter V.

CHAPTER V

DISCUSSION

Implications of Results

The results supported the original hypothesis that the after-school Gamers club would not have an impact on academic achievement for students who were involved.   While the results did not show an increase for students' academic achievement, neither did it harm student's academic achievement. Students still need a variety of after-school activities to enhance and ensure that they receive a total school program even beyond academic achievement. Gaming can also provide other benefits beyond just academic achievement and other skills involved in the research, such as persistence and problem-solving, could still apply.

Threats to Validity

There are various internal and external threats to the validity of the study. First an internal threat is the amount time that the study encompassed. The Gamers Club ran for eight weeks of the third quarter and that may not have been sufficient time to gain an accurate reading of the impact of the Gamers Club. In addition, the research requirement of being involved in six of the eight weeks further eliminated students from being considered in the study and decreased the sample size available for the study. Another possible internal threat was the rescheduling of Gamers club days due to snow and other factors. Twice the scheduled day had to be moved due to outside factors and that may have had an impact on attendance.

External threats are present in the study as well. First, the gender split of the club - 8 males to 2 females. This split may not correspond to the general gaming population. The sample size in the study was ten students which is limited and these were a mix of 6th, 7th and 8th students. In addition, since game choices were selected by students within set guidelines, other

studies may not use the same games or game types that the students here engaged in. Overall, the study should be able to be replicated but not to the same detail depending on factors highlighted in the study.

Connections to Previous Studies/Existing Literature

The major connection to previous studies is the search for finding more information on increasing student achievement. Other studies had followed a more indirect route to this question by focusing on problem-solving skills as far as gaming was concerned (Adachi et al.,2013). The present study instead made academic achievement the major focus in order to see how gaming would affect a key measure that schools and the community easily can recognize quickly. Studies had mostly focused on academic achievement with other extracurricular activities (Steinberg et al.,1998). Other studies had focused on academic achievement with gaming but only focused on looking for negative outcomes to be associated with it. The current hypothesis focused on having no impact on academic achievement.

Implications for Future Research

The major implication for future research is increasing the sample size and diversity and increasing the research period of the study in order to make firmer conclusions on the impact of extracurricular gaming on student academic performance. Previous research had claimed a slight decrease in academic achievement while this study saw no impact on student academic achievement. A longer time period along with a larger, more diverse sample size would assist future studies in forming firmer conclusions. Further data would verify these results and give teachers and administrators more guidance in planning extracurricular activities for students in school. In addition, other areas could be studied related to extracurricular gaming including the

possible impact on students socially or impact on students' academic achievement over a greater period of time.

Conclusion

Extracurricular gaming clubs for students is worthwhile area of study for the future. The number of students who are engaged in gaming will increase in future years. As teachers and other stakeholders try to find more ways to enhance student achievement, atypical thinking may be required to finding solutions to increase student achievement in new and novel ways. The lack of a negative trend in GPA gives hope that focus can instead be given on which specific genre of games might enhance student motivation and success in school.

REFERENCES

Adachi, P., & Willoughby, T. (2013). More than just fun and games: The longitudinal
relationships between strategic video games, self-reported problem solving skills, and
academic grades. *Journal of Youth & Adolescence, 42*(7), 1041-1052. doi:10.1007/s10964-013-9913-9

Blumberg, F. C., Altschuler, E. A., Almonte, D. E., & Mileaf, M. I. (2013). The impact of
recreational video game play on children's and adolescents' cognition. *New Directions for
Child & Adolescent Development, 2013*(139), 41-50. doi:10.1002/cad.20030

Bowers, A. J., & Berland, M. (2013). Does recreational computer use affect high school
achievement? *Educational Technology Research & Development, 61*(1), 51-69.
doi:10.1007/s11423-012-9274

Bowie, L. (2010), August 24th). Maryland Wins Race to the Top Funds. *Baltimore Sun*. August
24

Cosden, M., Morrison, G., Gutierrez, L., & Brown, M. (2004). The affects of homework
programs and after-school activities on school success. *Theory into Practice, 43*(3), 220-
226. Retrieved from
http://search.ebscohost.com/login.aspx?direct=true&db=a9h&AN=14361320&site=ehost
-live

Farb, A. F., & Matjasko, J. L. (2012). Recent advances in research on school-based

    extracurricular activities and adolescent development. *Developmental Review, 32*(1), 1-48.

    doi:10.1016/j.dr.2011.10.001

Ferguson, R. F., Clark, R., Stewart, J., & North Central Regional, E. L. (2002). *Closing the*

    achievement gap in suburban and urban school communities. policy issue. Retrieved from

    http://search.ebscohost.com/login.aspx?direct=true&db=eric&AN=ED473122&site=ehost-

    live

Gee, J. P. (2007). *Why are video games good for learning*? Retrieved from

    http://www.academiccolab.org/resources/documents/MacArthur.pdf

Hunt, H. D. (2005). The effect of extracurricular activities in the educational process: Influence

    on academic outcomes? *Sociological Spectrum, 25*(4), 417-445.

    doi:10.1080/027321790947171

Peck, S. C., Roeser, R. W., Zarrett, N., & Eccles, J. S. (2008). Exploring the roles of

    extracurricular activity quantity and quality in the educational resilience of vulnerable

    adolescents: Variable- and pattern-centered approaches. *Journal of Social Issues, 64*(1),

    135-156. doi:10.1111/j.1540-4560.2008.00552.x

Reeves, D. B. (2008). The extracurricular advantage. *Educational Leadership, 66*(1), 86-87.

    Retrieved from

    http://search.ebscohost.com/login.aspx?direct=true&db=a9h&AN=34061029&site=ehost-

    live

Simpkins, S., Eccles, J. S., & Templeton, J. L. (2008). Non-School Curriculum: Supporting

   Positive Development Through Structured Activities. *21st Century Education: A*

   Reference Handbook, 3-19.

Steinberg, L., Others, A., (1998) Non-instructional influences on high school student

   achievement: The contributions of parents, peers, extracurricular activities, and part-time

   work Retrieved from

   http://search.ebscohost.com/login.aspx?direct=true&db=eric&AN=ED307509&site=ehos

   t-live

Valentine, J. C., Cooper, H., Bettencourt, B. A., & DuBois, D. L. (2002). Out-of-school activities

   and academic achievement: The mediating role of self-beliefs. *Educational Psychologist,*

   37(4), 245-256. Retrieved from

   http://search.ebscohost.com/login.aspx?direct=true&db=a9h&AN=7922397&site=ehost-

   live

Won S. J., Han S., (2010). Out of school activities and achievement among middle school

   students in the U.S and South Korea. *Journal of Advanced Academics, 21(4),* 628-661.