# The Correlation between Extracurricular Activities and Grade Point Average of Middle School Students

By

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#### **ABSTRACT**

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This correlational study was an examination of students' grade point averages in relation to participation in after school sponsored activities. The sample consisted of 111 students from three different small Midwestern rural eighth grade classes. Students' G.P.A.s were recorded along with whether or not they participated in extracurricular activities, including athletics and extra academic opportunities. Student gender was also included in the analysis. The activities included football, basketball, golf, track, wrestling, volleyball, swing choir, jazz band, and forensics. A two-way Analysis of Variance was used to examine the relationship between gender, extracurricular participation, and their interaction with G.P.A. As expected, extracurricular participation showed a significant relationship with G.P.A. for both male and female students. The correlational evidence found showed students' participation was associated with higher

grade point averages. The study showed no causal evidence that students' participation affected their grades point average. Possible reasons for the results are that student involvement in after school activities may have encouraged students to excel in academics, teacher bias toward participating students, parents' influence on their sons or daughter's participation, and students choosing to participate because of interest and achievement in the academics.

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# CHAPTER ONE

#### INTRODUCTION

#### Introduction

In the past twenty years we have seen the new generation of adolescents being directed toward participating in school activities, mainly athletics. Today athletics and other activities play an important part in adolescents' lives. Generation Y parents are making sure their children have all the opportunities that other children have, either by driving them to soccer practice every morning or signing them up for several summer camps. Is all this participation benefiting the students, or is it harming their academics? "One starting place is to examine the role of extracurricular activities. These schoolsponsored activities have long been identified as being central to adolescents' social concerns" (Eder & Kinney, 1995, p. 2). It is clear that more students are participating in activities after school, but what are the effects for each student? We need to examine the relationship between participation and students' academic performance. Is all the time, money, and resources schools are investing in after school programs improving children's all around academic success?

Schools offer after school activities for the benefit of the children. Some argue that activities take away from educational learning and are too much for adolescents to handle. In this day and age there are so many activities for the child to choose from that being engaged in more than one activity on a school night is not rare. Others, including Stephens and Schaben (2002), stated, "The fact remains that students involved in cocurricular activities, especially interscholastic sports, perform better than those who are

not involved" (p. 39). Studies have shown a positive association between activities and academics. Gholson (1985) stated, "there is a positive correlation between student involvement in cocurricular activities and success in nonacademic pursuits following high school and college" (p.19). It is evident that children who participate well in these activities have greater success in school, as well as, later in life. Joekel (1985) pointed out that achievement in cocurricular activities is a factor that can predict success in life beyond school (Stephans and Schaben, 2002, p. 35). However, not all students are great athletes or have exceptional talents. Are these students still benefiting academically from these activities? Stephens and Schaben (2002) found numerous studies linking academic success to cocurricular participation, indicating that "educators should encourage students to be involved in interscholastic sports, intramurals, or other cocurricular activities" (p. 40).

What role do parents play in their child's decision to participate, and what is more important to the parents, athletics or academics? According to Jacobsen and Hoffmann (1997), who studied children's grade point average in schools, "A child who has experienced supportive parents is likely to develop an internal representation of others as helpful and responsive, as well as a model of the self as worthy of respect and care" (p. 703). There is the case of parents who are over supportive and want their child to succeed at all costs. Reports of parents writing threatening letters and attacking coaches have become prevalent in our society. Also, parents pushing their child to succeed beyond his or her capability has had negative effects on the child's self-esteem.

Another factor that is affecting athletics is peer relationships. Being on a team or group allows students to feel more involvement in school (McNeely, et. al, p.140). "The

main development needs of middle and high school students include steadily increasing opportunities for autonomy, opportunities to demonstrate competence, caring and support from adults, developmentally appropriate supervision, and acceptance by peers" (McNeely, et. al., p.140). Peer status has become very important in schools today, especially at the middle school level. Students gaining self-image through team sports or group activities has been proven to help develop life skills. Participation can help students to set goals, time manage, and build self-esteem.

# Statement of the Problem

The purpose of this study is to document middle school students' G.P.A. relative to their participation in school sponsored activities such as athletics and music groups.

Data will be collected during the spring of 2003. Student records at four Midwestern middle schools will be compiled.

### Hypothesis

There will be statistically significant higher G.P.A. of students who participate in extracurricular activities than those who do not participate in these activities.

# Definition of Terms

# G.P.A. -Grade Point Average

#### Assumptions

This researcher assumed that this study of Midwestern middle schools included an ample and representative sample of eighth grade students attending small schools (grade size up to 45 students) throughout rural, agricultural areas of the Midwestern states.

Furthermore, this researcher assumed that all the middle school students at each participating school had equal opportunity to participate in these activities. Finally, this

researcher assumed the academic staff at each school graded all participants fairly.

#### Limitations

The researcher expected the sample size to be large enough to be able to make generalizations to small Midwestern schools. He was aware the sample included small schools with the class sizes ranging from 26 to 45 students. This allowed students to participate at their own will and not be cut from teams, which happens at larger size schools. However, uncontrolled circumstances, such as students' intellectual capacity and effort also may have affected students' G.P.A. levels. Most importantly, the study showed correlation evidence and not causal evidence linking extra curricular participation with G.P.A.

# CHAPTER TWO

#### LITERATURE REVIEW

In order to analyze the trend of the relationship between extracurricular activities and grade point averages, historical perspectives were explored. This chapter addresses why grade point averages have become so vital to students' future success. Association among peer acceptance, positive behaviors, character building, and G.P.A. are also included. Finally, the proven benefits of curricular activities found in recent studies will be described.

In the 1960's, studies revealed that athletic participation had a negative impact on academics. One team of researchers reviewed over 40 studies and concluded that non-athletes performed slightly better in academics than students participating in athletics (Stephens & Schaben, 2002). Many high school students were not concerned about keeping a high G.P.A. for collegiate acceptance. They were more likely to maintain a G.P.A. that would allow them to participate in athletics or other activities. These after school activities shaped who they were. The activities provided social status among peers and helped students establish self-esteem and confidence. Being popular outweighed grades for most students back then. A study by Coleman in 1961 confirms this notion; he found that "getting good grades ranked relatively low in the value hierarchies of adolescents" (Eder, 1995, p.298).

Middle and high school sports were also limited during the 1960's and 1970's.

Schools at this time offered fewer sports and less opportunity to engage in athletics. Title IX was not yet in place, and female sports were almost non-existent, especially at the

middle school level. It wasn't until the next generation that after school activities and sport programs became mainstream.

During their adolescent years, students' peer acceptance is valued the most. Even in the 1950's adolescents' popularity and their athletic ability were more important than their grades in school. Gordon (1957) found that students were more interested in peer status and social acceptance than in academic performance. Schwartz and Merten (1967) also found that adolescents they studied "were mainly concerned with social status, as well as with areas in which they could actively participate such as friendships, relationships with the opposite sex, and expressive activities" (in Eder & Kinney, 1995, p.298). Later studies showed the same results--students attending school to be with friends rather than to gain an education. Students wanted to be involved in activities with peers in order to gain acceptance. Willis (1977) also found that peer activities were the most relevant aspect of attending school. Students in his study "went to school to be with friends and to make sure they did not miss some central peer activity" (In Eder & Kinney, 1995, p.299).

The 80's brought a booming economy to the United States, and everyone wanted to be a part of it. Society realized that in order to earn money, one needed a college education. The competition for acceptance into college grew as more students applied.

G.P.A.'s among those students accepted to college continued to increase with each year.

College acceptance committees also began looking at applicants' extracurricular activities. Did the committees think that because the students were involved in diverse activities that they would fit into any situation, or that the students would gain valuable characteristics that would enable them to achieve and compete at high standards? Two

studies from 1985, one by Gholson and one by Joekel, both agreed that these cocurricular activities were predictors of success for students. The committees concurred. Students that were active in school participation were found to be most likely to succeed at a chosen profession and make contributions to their community.

McCarthy (1997) found that high school students who participated in interscholastic activities had an overall grade point average of over 3.0 on a 4.0 scale, while the non-participants' average G.P.A. was under 2.5 on the 4.0 scale (National Federation of State High School Association, 2002). Another study done in 2000, reported statistical significance in the higher G.P.A.s of athletes compared to non-athletes. Data collected also indicated that athletes' academics improved during their season of play. Females reporting high-participation had higher G.P.A.'s and class ranks than those male and female students with low participation or no participation (Stephens & Schaben, 2002).

Today, universities continue to compete with one another, as well as with foreign competition. We want our students to be the best and the brightest, in hopes that they will bring success to our country. College bound high school students realize that they have to be involved and maintain a high G.P.A. right from the start if they hope to attend their desired college. Through interviews with high school students at an affluent suburban school, Quiroz (2000) found that the school's "emphasis on admission to prestigious colleges and universities both stimulated and reflected a clientele intent on making the most of available opportunities to enhance the probability of success in the academic effort." Although this study is from an prosperous school, those of working class and poverty level realize they too must work hard to gain scholarships to attend

college. Whatever the purpose of promoting extracurricular activities, the outcome is normally beneficial. Many students gain many positive qualities and characteristics from activities, which can carry over into the academic side.

The National Federation of State High School Association (NFHS) believes sports have a positive impact not only on grades, but citizenship, teamwork skills, pride and self-discipline. Benefits include higher grade point averages, higher attendance, and less discipline problems. "Activity programs provide valuable lessons for practical situations - teamwork, sportsmanship, winning and losing, and hard work" (NFHS, 2002). Students build strong characters, build self-confidence, and gain experience in the completive world. All of these qualities help shape individuals for becoming a successful member of society.

A survey of 4,800 high school students in Minnesota discovered that 91 percent of the students reported those who participate in school athletics and activities tend to be the school leaders and role models. Ninety-two percent reported that activities provided an opportunity to develop self-discipline (NFHS, 2002). In addition to the positives effects of participation, lack of participation has been shown to have damaging effects. An analysis of national data showed that "students who have not spent any time in extracurricular activities are 57 percent likely to have dropped out of school by the time they were seniors; 49 percent more likely to have tried drugs; 37 percent more likely to have become teen parents; and 27 percent more likely to have been arrested than those who spend over four hours per week in extracurricular activities" (NFHS, 2002).

Feelings of acceptance or belonging to a group can have positive effects on students' success. Extracurricular activities are one of the main sources of groups and

provide a sense of belonging for most students. "Because middle schools often offer fewer opportunities for involvement in extracurricular activities, participation in those activities may be even more important for obtaining popularity and status among peers" (Eder & Kinney, 1995, p. 301). Therefore, extracurricular activities might be the key for students to obtain self-esteem and other characteristics that enable them to succeed academically.

We are now in a period of school reform, where test scores are the measure of success. Schools have started to ignore extracurricular activities as an aid in students' success in and out of the classroom. Budget cuts in school districts have ended many athletic teams and other school funded activities. Looking at school budgets, activity programs are an exceptional bargain when compared against the overall school education budget. Activity programs make up only one to three percent of the overall education budget. Sometimes that figure is even less. "In 1992 the Chicago Board of Education budget was \$2.6 billion, and the activity programs received only \$2.9 million, a miniscule one-tenth of one percent" (NFHS, 2002).

School violence and gang-related incidents are on the rise. Is this a coincidence or are students seeking acceptance outside of school? If the goal of administration is to increase test scores, then should more extracurricular activities be available? McNeal (1995; in Holloway, 1999/2000) demonstrated that "different kinds of activities have varying abilities to control school dropout rates." He concluded that "students who participate in athletics, fine-arts activities, and academic organizations were an estimated 1.7, 1.2, and 1.15 times, respectively, less likely to drop out than those who did not participate." The probability that any person in his sample would drop out of school was

0.0487, but if this same person participated in athletics, the probability would be 0.0299. Fine-arts participation for any person reduced the probability of dropping out from 0.0487 to 0.0415 (15%). McNeal concluded that, in order to be a competitive school system, the school must combine enough extracurricular activities with the right amount of academic skills training.

A team from the National Education Longitudinal Study (NELS) reported students in Wyoming who participated in sports are more likely to look forward to core curricular classes. This study also found these students to be less likely to show misbehavior and social problems in school. Core values of these Wyoming students were also tested in by the NELS. A Wyoming statewide survey showed only 25 percent of those playing sports reported tobacco use as compared to 40 percent who did not actively play. The percent dropped down to 13 percent for students participating in both athletics and other extracurricular activities. Survey findings suggested that students in athletics were less than half as likely to consume alcohol more than once a week compared to nonathletic students. All the recent data suggests that participating in after school activities helps to shape students' character in a positive manner, whether in the classroom or outside of school. These students demonstrate many positive lifestyle behaviors and remove themselves from negative situations. It should be noted that hazing does sometimes occur, particularly in sports, and might deter some students from participating in these activities. This appears to occur mostly at the high school level, though, and was not a concern in the present study. School officials might be concerned with the ongoing rise of extracurricular activities in our schools and think it takes away from each individuals' academics. The question of whether there is enough time to allow students

to do both activities and homework is a concern. John Paton, executive director of Alberta Schools' Athletic Association (ASAA), indicates that studies dispute concerns indicated by administrators, teachers, and parents that school sport programs compete for students' attention and participation with other co-curricular activities (NFHS, 2000).

Teachers also play a role in student achievement. Many coaches are teachers in the school district, and they interact with students not only in the classroom but in after school programs as well. Some teachers may become biased toward students who participate outside the classroom, forming bonds that may affect the grades of the individual students. However, this researcher believes that most teachers evaluate student academic performance as objectively as possible, especially through middle school.

In summary, recent data has indicated benefits for students participating and competing in many different after school activities. Another positive outcome has been team building skills and cooperative behavior. Students are learning what it takes to work together and strive for the same goal. Extracurricular activities also support well being for students, even after graduation. This is a goal of all institutions. Not only do the activities promote self-image, they also endorse sense of community, citizenship, and sportsmanship. These characteristics are used the rest of the students' lives to help them in their careers, families, and communities.

# **CHAPTER THREE**

#### **METHODOLOGY**

#### Introduction

This chapter includes the sample selection process, a description of how the data was collected, the procedure by which the data was compiled, and the methods that were used for analyzing the statistical data. Finally, the chapter concludes with the methodological limitations.

# **Participants**

Archival data was collected from three Midwestern middle schools' eighth grade classes. Each school was located in a small rural town with no more than 2,000 total residents which were mainly Caucasians. The names of the three schools are not disclosed. Eighth grade class size ranged from 26 to 45 students. The students were primarily Caucasians. There were 68 total male participants (60.6 percent) and 43 female participants (39.4 percent).

#### Procedure

Permission to collect data for the purpose of this research was sought from the University of Wisconsin-Stout. Permission was also sought from each school administrator and principal. The school secretaries were involved in collection of the data. The secretaries listed students' G.P.A.'s and marked the activities in which the students participated. Activities for participation included: football, basketball, golf, track, wrestling, volleyball, swing choir, jazz band, and forensics. They also replaced the students' names with a number—to keep confidentiality. The data came from the spring

and fall semesters of the 2002-2003 school year. The data was then analyzed during the summer of 2003.

#### Data Analysis

The data was analyzed using a computerized statistics package called SPSS-X for the PC. All appropriate descriptive statistics were utilized. In addition, cross tabulations (frequency counts and percentages) were compiled and a 2 x 2 chi square analysis conducted between gender (males / females) and participation (participation in extracurricular activities - - yes / no). Also a two-way Analysis of Variance (ANOVA) was done to compare grade point averages of male and female students who participated in after school activities with those who did not participate.

#### Limitations

One limitation of the data collection instrument is that it had no measure of validity or reliability. Also, three relatively small school districts participated in this study, therefore results should be used cautiously in reference to more populated areas and larger school districts. Some schools require a certain G.P.A. for their students to participate in many of these activities. This may affect students' ability and desire to join activities. The schools in this study did not have this requirement and allowed students with any grade point average to participate. Most importantly, this study used a correlational design, and does not provide evidence regarding a causal link between the variables.

# CHAPTER FOUR

#### **RESULTS**

#### Introduction

This chapter includes the results of this study, and concludes with the summary of findings.

#### Findings

The data was expected to be normally distributed. In the male group, 66 students participated in the study and 42 of them participated in activities. As expected, the  $X^2$  analysis was not significant,  $X^2(1) = .166$ , p=.684. In the female group, 43 students participated in the study and 29 of them participated in activities. All three schools used a 12 point grading scale (10-12=A, 7-9= B, 4-6=C, 1-3=D).

A two-way Analysis of Variance was used to examine the effect of gender and extracurricular participation and their two way interaction on G.P.A. As expected, the participation of the students had a significant effect on G.P.A., F(1,105) = 5.716, p = .019. (See Figure 2 in Appendix). The mean G.P.A. for participants was 8.75 (SD = 8.750) and 7.62 (SD = 7.672) for non participants. Gender had a significant effect on G.P.A., F(1,105) = 11.854, p = 0.001. (See Figure 1 in Appendix.) The mean was 9.266 for females (SD = 9.2660) and 7.794 for males (SD = 2.340). The two-way interaction was not significant, F(1,105) = .209, p = 0.648.

# Summary of Findings

The hypothesis that there would be a significantly higher G.P.A. for students who participate in extracurricular activities than those who do not participate in these activities was supported.

Both male and female students' participation in athletics and other activities was positively associated with G.P.A.

# CHAPTER FIVE

#### DISCUSSION, CONCLUSION, AND RECOMMENDATIONS

#### Introduction

This chapter includes a discussion of the results presented in Chapter Four.

Incorporated in this chapter is a discussion of the importance of participation in afterschool activities, as well as the role of gender in relationship to G.P.A. The chapter
addresses the question of whether after school activities help or harm students' success in
school, as discussed in Chapter Two. This chapter concludes with recommendations for
further study in this area.

Discussion of Participation versus Nonparticipation in After School Activities

The results provided evidence that participation in school activities at these schools was positively related to academic standing. The results confirmed previous research by McCarthy (1997), in which students participating in interscholastic activities reported an overall grade point average of over 3.0 on a 4.0 scale, while the non-participants' average was under a 2.5. The schools participating in the present study used a 12-point grading scale, the students who participated in activities had over a full point higher G.P.A. than those who did not participate.

The results also confirmed Stephens and Schaben's (2002) study, which reported participating females' G.P.A to be higher than both male and female non-participants. On average, females' G.P.A.s were higher than that of their male counterparts. There was no interaction between gender and participation, therefore, gender was not an issue in this case. Both groups performed better in school when participation was involved.

All of the studies reviewed in this paper support the positive benefits of afterschool activities. As reported in Chapter Two, The National Federation of State High School Association believes that sports have a positive impact not only on grades, but citizenship, teamwork skills, pride and self-discipline.

#### Conclusion

Participation in extracurricular activities provides many important outlets for students in today's world. It provides them with challenges, alternative resources, and life-long learning experiences. Women have made strong gains in developing opportunities to join co curricular teams and activities. Women's interscholastic sports have opened many doors that were closed just a generation ago.

Some of these activities enable students to belong to a team, which aids in developing social skills. It also teaches them how to cooperate and work as a single unit which is a vital strength needed in today's work force. It is also evident that the extra time spent on these activities does not harm one's academic performance, but is positively associated with grades. This trend may continue through life as the skills learned as a young individual grow through time.

The question of why are athletes and others students participating in academic activities are getting these better grades was not answered. Aside from the positive character building benefits of participation, other possible explanations exist. One possible reason could be the relationship the student has with his or her teacher. Teachers might be in favor of these activities and engage or coach them. This bond between teacher and student could show favoritism inside the classroom. These students might have better rapport and get the benefit of the doubt from teachers, whereas other students

may not. A more likely explanation is that students doing well academically in school might seek out other ways to excel in school. These activities may provide another way to show their talents, whereas students who are doing poorly might not be interested in these activities since school is already difficult for them. Schools may also place a minimum G.P.A. to participate in these activities which would disallow lower scoring students to join programs. However, this was not the case in the present study. Athletes are rewarded at the college level with scholarships and some students in our middle schools may have aspirations for both academic and sports scholarships in the future. Finally, some parents may encourage their children to participate or not participate depending on the grades they receive.

Extracurricular activities are one of the first things cut due to shrinking budgets in our schools today. Across the U.S. programs and coaches are being taken away from the youth of America in a time when they are needed the most. Adolescents need opportunities to experience and participate in programs outside of the classroom. Today there are so many negative paths for children to take. If we don't provide more positive alternative activities, there won't be much choice for them. Being involved in sports and other programs allows individuals to show effort and learn teamwork skills. These abilities may be some of the keys to being successful as a student or in everyday life. *Recommendations for Future Research* 

One improvement for this line of study is to have a larger population including more grade levels such as elementary and high school students. Larger samples at each school level are needed. Also, testing for changes in G.P.A. from before to after participation in activities would help elucidate whether there is a causal relationship

between participation and G.P.A. Future studies should include other important factors to success besides G.P.A., such as state test scores. Another suggestion is to examine each activity separately in relationship to G.P.A..

# References

- The case for high school activities. (2002). *National Federation of State High School Association*. Retrieved October 17, 2002 from: <a href="www.nfhs.org/case.htm">www.nfhs.org/case.htm</a>.
- Girls active in sports do better in classroom. (1997). *New York Times*, 146(50746), 10. Retrieved July 17, 2003 from: EBSCOhost.
- Eder, D., & Kinney, D. A. (1995). The effect of middle school extracurricular activities on adolescents' popularity and peer status. *Youth & Society*, 26, 298-325.
- Gholson, R. E. (1985). Student achievement and cocurricular participation. *NASSP Bulletin*, 69 (483), 17-20.
- Glover, Chuck. (2000). The faulty logic behind competitive school sports. *Education Digest*, 65, 65-69.
- Harris, J. R. (1995). Where is the child's environment? A group socialization theory of development. *The American Psychological Association*, *102*, 458-489.
- Holloway, J. H. (1999/2000). Extracurricular activities: the path to academic success? *Educational Leadership*, 57, 1-3
- Jacobson, T., & Volker, H. (1997). Children's attachment representations: Longitudinal relations to school behavior and academic competency in middle childhood and adolescence. *Developmental Psychology*, *33*, 703-710.
- Joekel, R. G. (1985). Student activities and academic eligibility requirements. *NASSP Bulletin*, 69 (483), 3-9.
- Kerrigan, C. (2000). Thoroughly good football: teachers and the origins of elementary school football. *History of Education*, *29*, 517-542.

- McNeely, C. A., Nonnemaker, J. M., & Blum, R. W. (2002). Promoting school connectedness: Evidence from the national longitudinal study of adolescent health. *Journal of School Health*, 72, 138-147.
- Mihoces, G. (1996). Athletes adept at getting jump on their studies. *USA Today*, May 16, pp. 1c, 2c.
- Quiroz, P. (2000). A comparison of the organizational and cultural contexts of extracurricular participation and sponsorship in two high schools. *Educational Studies*, *31*, 249-276.
- Stegman, M., & Stephens, L. J. (2000). Athletics and academics: Are they compatible?

  The High School Magazine 7(6): 36-39.
- Stephens, L. J., & Schaben, L. A. (2002). The effect of interscholastic sports participation on academic achievement of middle school students. *NASSP Bulletin*, 86(630), 35-41.
- Thomas Jr., R. (1989). Study finds athletics don't lift grades of some. *New York Times*, 138 (47964), D21. Retrieved on July 17, 2003 from: EBSCOhost.

# Appendix

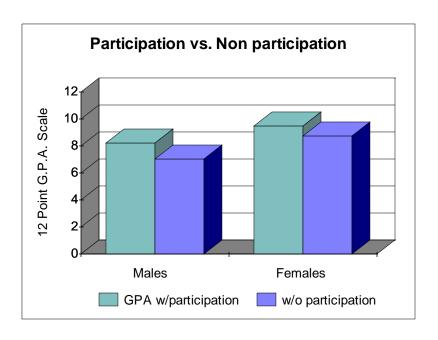


Figure 1 G.P.A. as a function of participation and gender

# Participation vs. Nonparticipation

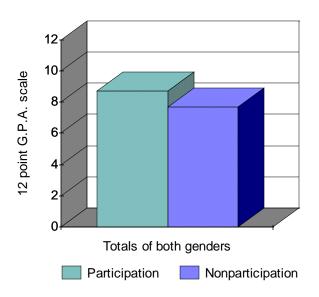


Figure 2 G.P.A. as a function of participation of both genders