

**THE EFFECT OF EXTRACURRICULAR ACTIVITIES ON ACADEMIC
ACHIEVEMENT**

**A Thesis
Presented to
the School of Education
Drake University**

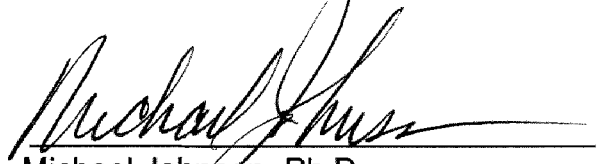
**In Partial Fulfillment
of the Requirements for the Degree
Specialist of Education**

**by James W. O'Dea
May 1994**

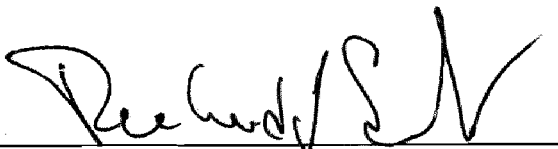
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THE EFFECT OF EXTRA-CURRICULAR ACTIVITIES ON ACADEMIC ACHIEVEMENT

An abstract of a Thesis by
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May 1994
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The problem. Is there a difference in the grade point average between students who participate in extracurricular activities and those who do not participate?

Procedure. Four hundred twenty-four seniors at Valley High School in West Des Moines, Iowa made up the study group. Each senior completed the Fall Senior Information Sheet which gathered information about their participation in extracurricular activities. The grade point averages were obtained from office records. Specific criteria were developed to establish a group of involved students and a group of those not involved in extracurricular activities. The difference between groups was statistically analyzed using a t-test.

Findings. The probability of the t-test was less than 0.000499. A significance level of 0.01 was established for this study.

Conclusions. There is a significant difference between the grade point averages of those involved in extracurricular activities and those not involved in extracurricular activities.

Recommendations. Additional research is recommended to determine if extracurricular activities have an effect on such variables as attendance, discipline, school size, and self-esteem. Do the types of activities have an effect on GPA? A study of the effects that withdrawal from extracurricular activities has on the previously mentioned factors could be interesting.

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Chapter 1

Introduction

Extracurricular activities play an important role in today's secondary education programs (Holland & Andre, 1987). When one considers the large number of activities available, one realizes the diversity of the programs. Included are athletics, publications, student government, fine arts, academic clubs, service organizations, and special interest activities.

There has been a considerable amount of research devoted to studying the relationship between student involvement in activities and student academic achievement. Although a positive correlation has been shown in many of these studies, there is still a fierce battle among educators concerning the need for extracurricular activities.

Two positions appear to be prevalent in today's academic community. These are referred to as either the *academic* or *developmental* perspective. The academic perspective considers extracurricular activities as purely leisure and not part of the purpose of schools. The developmental perspective considers extracurricular activities necessary to the total development of the student in today's schools (Holland & Andre, 1987).

Educators who believe in the academic perspective argue that time spent away from the classroom decreases the student's chances for success. Even those activities that don't require loss of classroom time are perceived to take away study time. These educators support cutting or eliminating activities for budgetary reasons.

The state of Iowa, like many states, has faced enormous challenges in the recent legislative sessions to fund education. Special interest groups supporting consolidation, decrease in funding, and sharing of programs add fuel to the academic perspective.

School boards and legislatures enacted "no pass - no play" rules throughout the country during the 1980's. These rules were designed to pacify the back-to-basics trends that were and are prevalent in today's education systems.

Educators who believe in the developmental perspective see activities as an extension of the educational program. Activities allow students to develop skills such as leadership, sportsmanship, self-discipline, self-confidence, and the ability to handle competitive situations. Extracurricular activities offer an opportunity to interact in ways that allow the previously mentioned skills to blossom. The developmental minded believe that many of these skills would be impossible or very difficult to develop in a classroom setting.

Marsh (1992) stated:

According to different theoretical perspectives, extracurricular activity participation may be posited to (a) divert attention from academic pursuits, as evidenced by its negative effects on narrowly defined academic goals; (b) have little or no effect on academic outcomes but contribute to desirable nonacademic outcomes; or (c) have positive effects on nonacademic outcomes and facilitate academic growth, perhaps indirectly, as well. (p. 553)

Statement of the Problem

This research sought to study the relationship between extracurricular activities and student achievement. The study was designed to determine if there was a significant difference in grade point average between students involved in extracurricular activities and students not involved in extracurricular activities.

Significance of the Study

The results of this study add to the body of information regarding the value of extracurricular activities. It provides educators and parents with information to assist their high school students in making more informed choices in their high school programs .

Chapter 2

Review of Literature

The Educational Resources Information Center (ERIC) was used for the primary search of literature pertaining to the research question. The following descriptors were used for the first search: grade point average, achievement, learning, and extracurricular activities. This search located 61 references which produced a limited number of primary sources. Another search was conducted using the following key words: extracurricular, learning, achievement, and affect. This search produced another 58 references.

A request to the Iowa High School Athletic Association located 4 reports. A dissertation from the Drake library completed the search.

The information search was conducted by the Area Education Agency. The information supplied with the ERIC search was used to determine which articles were appropriate for the research question. The information search document has two sections which supplied the necessary material to determine which references would answer the research question. The section called *document type* was used to eliminate secondary resources. The abstract was utilized to determine if extracurricular activity and its effect on student performance was a main theme of the reference.

The chosen references included research reports, conference papers, evaluative reports, reviews of literature, a dissertation, and articles pertaining to extracurricular activities and their influence on student achievement.

Criteria for Selection of Articles

The criteria used for article selection were as follows:

1. The article was classified as a research document and extracurricular activity was the independent variable in the study.
2. The variable grade-point average was involved in the study.

3. Extracurricular activity was compared to other adolescent development.

The search and the criteria selection methods produced 41 articles which were used in this study.

As the search progressed it became apparent that extracurricular activity, as compared to adolescent development, involved a wide variety of areas. Academic achievement was not always reported as grade point average. To allow for these differences, the following changes were made in the criteria.

1. The article was classified as a research document and extracurricular activity was the independent variable in the study.

2. Academic achievement was compared to extracurricular activity.

3. Articles addressed extracurricular activity and academic achievement.

These articles may not correlate the two variables.

The second criterion produced 14 articles which compared extracurricular activities to academic success. A set of 6 articles was selected if extracurricular activity and/or academic success was studied in the article even if academic success was not the dependent variable.

Results

Articles that showed a positive or negative relationship

The research question was to determine if there was a relationship between extracurricular activity and academic achievement. As mentioned in the criteria section, there were 14 articles that met this requirement. Seven of those articles reported either a positive or negative relationship between the variables.

All 7 articles were research articles. One article used the national ACT to sample 10,758 students (Dvorak, 1989). One article sampled 3,125 college students from the same school (Henriksen, 1989). One article used the National Longitudinal Transition Study with a sampling of 10,369 students (Newman, 1991). The remaining 4 articles sampled students from school districts in Texas,

Mississippi, California, and Wisconsin. These 4 studies used samples of less than 1000 (Brown & Steinberg, 1991; Gifford & Dean, 1990; Ligon, 1988; McNamara, 1985).

The analytical techniques varied from simple survey and personal interviews to the use of effect sizes. Percentages were used in two studies. Two articles reported using analysis of variance and Pearson correlation coefficients, but neither study had any tables showing the results.

Six articles found a positive(+) relationship between extracurricular activity and academic achievement while only one found no significant relationship.

Articles that display a regression coefficient in the results.

Seven research articles reported Pearson correlation coefficients using extracurricular activity as the independent variable and academic achievement as the dependent variable.

Three of the studies used the High School and Beyond national data base (Brown & Steinberg, 1991; Gifford & Dean, 1990; Ligon, 1988; McNamara, 1985). This data base generated 10,613 and 7,668, and 5,209 students respectively for these two studies. One study used ACT information for the incoming freshman class of a small college (Harvancik, 1986). The three remaining studies were from individual high schools in the midwest, south, and intermountain regions of the country (Castle, 1986; Leonardson, 1986; Neish, 1993).

All seven articles reported a positive correlation between extracurricular activity and academic achievement. The correlation coefficients had a range from .209 - .56. Three studies used the same data base and two of the studies reported identical r values of .231. The third study reported a value of .432, which is almost twice the other two studies. Table 1 summarizes the information presented in the prior results section.

Table 1

Articles That Pertain Directly to the Study

<u>Author</u>	<u>Sample</u>	<u>Analytic Technique</u>	<u>+/- r</u>	<u>Threats to Validity</u>	<u>Conclusion</u>
Gifford, V. Dean, M.M.	31 ninth grades N= 771 in junior high 33 ninth grades N=825 in senior high	Analysis of Variance (MANOVA)	+	population	9th grade students in junior high participated in more ECA and higher GPA than 9th grade students in a senior high setting.
Dvorak, J.	N=10758 college fresh info. from ACT	Pearson Correlation	-	population instrumentati on	Participation in high school newspaper or yearbook staff showed no significant influence on freshman college GPA
Marsh, H.W.	High School and Beyond database N=10613	Pearson Correlation	+	population	Participation in ECA has a positive effect on academic achievement.
Camp, W.G.	High School and Beyond database N=7668	Multiple Correlation	+	population	Student activity level has a significant effect on academic achievement. The effect was twice as great as study habits.
Leonardso n, G. R.	Students in private high school in the Intermount ain West N=165	Correlation Coefficient s	.46 5 .01	population instrumentati on	Significant correlation between GPA and participation in ECA

Neish, M.A.	Students at Marysville High School N=288	Pearson Correlation	.56 31 %	Population	Significant correlation between high participation in ECA and GPA vs. no participation in ECA
Castle, T.D.	1985 senior class in midwestern high school N=374	Pearson Product Moment Coefficient	.45 9 .01	Mortality Maturation Population	Those that participate in ECA achieve higher academic success, miss fewer days of school and experience fewer discipline problems
Brown, B.B. Steinberg, L.	3 Wisconsin and 6 San Francisco High Schools N=8000	Survey and Personal Interviews	+	Mortality Maturation Instrumentation	Students in ECA had greater academic success than those who did not participate - found students in athletics with lower GPA than those in leadership activities.
Newman, L.	303 schools and 22 special ed. schools across the U.S. N=10369	Survey and personal interviews	+	Mortality	Those special education students involved in ECA had a significant decrease in failed classes.
Harvancik, M.J.	Incoming freshmen at small southwestern college. N=1067	Pearson Product Moment Coefficient	.20 9 .01	History Population instrumentation	The positive correlation is questioned because of self- reporting of grades and ambiguous ACT questions concerning ECA.

Ligon, G.	Data base of Austin Independent School District	Percentages	+	Population Mortality	Study showed significant improvement in academic success for those in ECA after implementation of no pass - no play rule.
McNamara, J.F.	Seniors from 3 high school in central Texas N=515	Percentages	+	Mortality Population	Students that participated in high, moderate, or low numbers of ECA had higher GPA than those who didn't participate.
Henriksen, L.	Ball State University students N=3125	SPSSX MANOVA effect sizes	+	History Maturation Population	The GPA and graduation rates were higher for students involved in ECA
Howley, C. Huang, G.	High School and Beyond database N=5209	Regression Analysis	.23 1	Population	ECA in some form can enhance student achievement across all categories of school size.
			.00 1		

Selected articles that support the research question.

A total of 5 articles that did not directly relate extracurricular activity to academic achievement were analyzed for the support they added to the research question. These are summarized in table 2. Two articles compared extracurricular activities to self-concept and/or self-esteem. One study found a positive effect and the other no significant effect (Simeroth, 1987; Steitz & Owen, 1988). Two studies compared work to participation in extracurricular activities and academic achievement. Both studies agreed that a significant negative effect occurred (MacArthur, 1989; Marsh, 1991).

Table 2

Articles That Support The Study

<u>Author</u>	<u>Sample</u>	<u>Analytical Technique</u>	<u>+/- r</u>	<u>Threats to validity</u>	<u>Conclusions</u>
Marsh, H.W.	High School and Beyond data base N=477	Regression coefficient	-	population	Work during high school had a negative effect on ECA and academic achievemen t
Laing, J. Sawyer, R. Noble, J.	Students that took the ACT in Feb. or April of 1986 N=477	percentage s	+	instrumentati on population	High level of accuracy for self-reported information
Simeroth, N.J.	High school girls in Alaska- single school N=166	regression coefficient	+	instrumentati on selection population	Females in ECA had higher self concept
Steitz, J.A.	High school in Memphis TN. N=445	multiple regression	-	population instrumentati on	No significant difference between ECA and Self-esteem
McArthur, S.S.	Juniors in 3 high schools in a southern city N=851	percentage s	-	population instrumentati on	Work had a significant negative effect on GPA and participation in ECA.

Threats to internal validity.

All 19 studies were scrutinized for threats to internal validity as described by (Borg & Gall, 1989).

The most common threat to internal validity was instrumentation. This threat emerged in 9 of 19 studies. The threat in most of these studies was caused by lack of information about the instrument. An example of this threat occurred in a study that used the Piers-Harris Children's Self-Concept Scale (Leonardson, 1986). There was no mention of the validity or reliability of this test in the study. This may account for the fact that these studies did not report any statistical analysis in their results.

Mortality was a threat in 6 of 19 studies. This threat was common in the longitudinal studies as subjects were lost over a period of time. An example of this threat was in the study done in Wisconsin using a self-reporting survey given in two parts. Between the fall and spring surveys there was a high attrition of minority students (Brown & Steinberg, 1991). Maturation, regression, selection, testing, and history did not account for any significant threats to internal validity.

Conclusions

The zero-sum model was developed to demonstrate a negative relationship between academic achievement and extracurricular activities. Participation in extracurricular activities was said to detract from academic pursuits (Coleman, 1961). If participation in extracurricular activities is harmful to academic achievement, then research studies should show a negative correlation between these variables (Camp, 1990).

The opposite of the zero-sum model is the premise that extracurricular activities enhance academic achievement. The results of this study show that 17 of the 19 studies had a positive correlation between the two variables.

Participation in extracurricular activities is positively associated with many student characteristics. Participation is associated with higher levels of self-esteem (Marsh, 1992; McNamara, 1985; Simeroth, 1987). Participation is associated with lower delinquency/absenteeism rates (Castle, 1986; Marsh, 1992; Newman, 1991). Howley and Huang, (1991), using the High School and Beyond data base, found that extracurricular activity across all sizes of schools exhibited a positive correlation on academic achievement.

The *academic perspective theory* considers extra-curricular activities as purely leisure and not part of the purpose of schools. Those educators that profess to the *academic development theory* argue that work is a deterrent to academic achievement. In his 1991 study, Marsh found that work during high school had a negative effect on academic achievement and also had a negative effect on participation in extracurricular activities. McNamara (1985) concluded in his study that students benefit academically if they participated in high, moderate, or low numbers of extracurricular activity. He suggested a possible explanation might be that students who participate in extracurricular activities enhanced their commitment to the school, while students that work do not have that commitment.

Camp (1990), using the High School and Beyond data base, found a significant effect on academic achievement when students participated in extracurricular activities. He did an effect size calculation which found the effect size for student achievement vs. extracurricular activity was twice as great as the effect size calculated for student achievement vs. study habits.

Correlation considerations

The correlation coefficient is used to express mathematically if a relationship exists between two or more variables. A positive value indicates a direct relationship, a negative value an indirect relationship. No relationship

would have a value of zero. The amount of significance of a correlation coefficient is determined by the number of cases the correlation is based (Borg & Gall, 1989).

This review of literature found 11 of the 19 studies using correlation as the analytic technique. The five studies that reported an r coefficient represented a unique sampling of the population. Three studies were high schools, one was a small college, and the fifth used the High School and Beyond data base.

Five studies with a total sampling ($N=7103$) found statistically significant results. Three of the 5 studies reported that the r value was statistically significant at the .01 level ($N=1606$) (Castle, 1986; Harvancik, 1986; Leonardson, 1986). This would allow the researchers to reject the null hypothesis that there is no difference between involvement in extracurricular activity and academic achievement.

The study by (Howley & Huang, 1991) was significant at the .001 level ($N=5209$), and the 5th study (Neish, 1993) reported only the r value of .56 ($N=288$). The square of the r value yields the explained variance. The variance for this study is .31. This can be interpreted to mean that in this study, extracurricular activity can explain 31% of the variance in academic achievement.

The results of this study show that participation in extracurricular activity has a small but consistently positive effect on academic achievement. The studys represented all regions of the country: small schools, large schools, colleges, and a national survey. The results indicate that extracurricular activities play a significant role in the development of a student's academic achievement.

Research limitations

Fourteen studies presented the findings of their research as either a positive relationship between extra-curricular activity and academic achievement, or a negative relationship between extra-curricular activity and academic achievement. Poor instrumentation used to collect data might account for the lack of reportable data as a Pearson Correlation Coefficient. The reported findings would have more credibility if the authors were limited by publishing restrictions. Some of the data may have been omitted in the final writing. Another problem was the use of surveys, interviews, and self-reporting of factors such as GPA and participation in extracurricular activities. (Harvancik, 1986) questioned in his study whether the self-reporting of grades was reliable. He also questioned the ambiguous questions concerning extracurricular activity that the ACT uses in its self-assessment section. Laing, Sawyer, and Noble (1988) found just the opposite in this study. They found a high level of accuracy in self-reported information taken from ACT information. Researcher developed surveys that did not provide information about reliability and/or pilot testing were problematic in these studies.

Mortality would have a significant effect on the results. If the subjects that dropped out during the study were academically unsuccessful students, this would skew the results in favor of extracurricular activity benefiting academics. The opposite would be true if the missing data were of academically successful students.

The most serious threat to external validity was sampling threats caused by self-selection of subjects. Extracurricular activity by its very nature is self-selecting. Therefore, the most significant question facing any researcher: "Is extracurricular activity the determining factor in academic achievement, or is there some other factor that is influencing behavior?"

Summary

A body of literature does exist that provides an understanding of the relationship between academic achievement and extra-curricular activity. The literature points to a positive influence on student performance for those students involved in extra-curricular activity.

Many of the studies compared activities to self-esteem, work habits, study habits, high school size, and parents' marital status. These factors are loosely associated with academic achievement. This study will focus on participation in extracurricular activity and its effect on grade point average.

Chapter 3 Procedures

Purpose

The purpose of this study was to determine if students in extracurricular activities had a higher grade point average than students who did not participate in extracurricular activities. This chapter includes research methodology information such as sampling process, instrumentation, collection of data, definitions of terms, statistical hypothesis, and treatment of data.

Population and Sample

Valley High School is located in West Des Moines, Iowa, and is part of the West Des Moines Community School District. The district serves more than 45,000 people who live in the Polk County areas of the western suburbs of West Des Moines and Clive, in parts of Urbandale and Windsor Heights and nearby rural areas. Covering 36.6 square miles, the district has grown up around a former railroad center, Valley Junction, and the farmland north and south of the Raccoon River. This area offers an ever-increasing number of professional and retail services. Valley High School serves all of the students of the West Des Moines Community School District and has a student population of nearly 2200. Valley High School offers over 200 courses, and is accredited by the North Central Association. Traditionally the graduating class sends over 80% of its students to a college, university, or other post-high school educational program.

The sample used in this study was the 1994 graduating class of Valley High School. There were 421 students in the senior class.

Instrumentation and Collection of Data

In September, the Fall Senior Information Sheet was completed by all members of the senior class at Valley High School. A copy of this instrument is found in Appendix A. The survey sheet asked seniors to check every activity in which they participated during their high school career. This information was entered into the computer for each student.

Grade point average was measured using a 4.0 scale. An assumption was made that grade point average was comparable from student to student. A further assumption was made that grading among teachers was comparable. In addition the size of the sample of the study was assumed to reduce the effects of extraneous concomitant variables.

Student information was collected using the Query function of the SIMM software package on the IBM AS/400 computer system. Student confidentiality was maintained by assessing the data using student identification numbers. No individual student results were analyzed or reported by the researcher. Grade point average and extracurricular activities listed on the Senior Information Sheet were generated by the computer system. The data were current through the end of the first semester of the senior year.

Definition of Terms

The following terms are applicable to this study.

Extracurricular activity. Any nongraded activity that requires students to extend their school day. These activities took place either before school, after school, weekends, or during holiday vacations. See appendix for a complete list of activities.

Grade Point Average. The average resulting from the conversion of letter grades to a numerical value from all courses taken in grades nine through twelve. The computation was on a four point scale.

Participation. Involvement in an activity that met at least twice a week. The activity duration was a minimum of two months and the student did not receive a grade for the activity. The student was to have participated in the activity for three years at Valley High School.

Statistical Hypotheses

This study was designed to answer the following problem: Is there a difference in grade point average between students who are involved in extra-curricular activities and those who are not?

The following null hypothesis was an outgrowth from this question: There is no relationship between student grade point average and student involvement in extracurricular activities.

Treatment of Data

It was the intent of this study to determine if a difference existed between grade point average and those who participated in extra-curricular activity and those who did not participate. Therefore specific criteria were established to differentiate between participation and nonparticipation. A student that participated was defined as having been involved in an activity that met at least twice a week for a minimum of two months. The student must have participated during a minimum of three years at Valley High School. Activities that met these criteria were athletics, cheerleading, drill team, class officers, debate, drama, newspaper staff, yearbook staff, dramatics, and KWDM radio.

The independent variable was participation in extracurricular activities. The dependent variable was grade point average.

The statistical analysis and data management system SPSS was used to analyze the data. Student I.D. number, grade point average, and involvement (yes or no) in extracurricular activities was entered into the computer.

A frequency distribution was obtained for grade point average. A t-test statistical analysis was conducted to test the null hypothesis.

CHAPTER FOUR

Analysis of the Data

Introduction

This study investigated whether students in extracurricular activities had a higher grade point average than students who did not participate in extracurricular activities. Grade point average was obtained from cumulative records in the registrar's office at Valley High School. Participation was determined using the Fall Senior Information Sheet. A total of 421 seniors were investigated in this study.

The study was designed to either accept or reject the null hypothesis. The null hypothesis for this study was: there is no difference between the grade point average of students involved in extracurricular activities and the grade point average of students not involved in extracurricular activities. It is the goal of this chapter to analyze the data and present an interpretation of the findings.

Results

The following results were obtained using the SPSS statistical analysis and data management system. Data were entered for 421 Valley High School seniors using information from the school's computer data system.

Table 3 is a frequency distribution of grade point averages of the 421 seniors at Valley High School. The average grade point average is 2.825. Nearly 24% of the students have a grade point average between 3.00 and 3.49.

Table 3

Frequency of Grade Point Average for All Students

Grade Point Average	Student Sample	Percent
0.00 - 0.49	1	.24
0.50 - 0.99	1	.24
1.00 - 1.49	19	4.51
1.50 - 1.99	55	13.06
2.00 - 2.49	72	17.10
2.50 - 2.99	78	18.53
3.00 - 3.49	101	23.99
3.50 - 3.99	77	18.29
4.00 - 4.49	<u>17</u>	<u>4.04</u>
Total	421	100.00

Mean = 2.825

Standard Deviation = .7847

Table 4 is a frequency distribution of grade point average for 176 students that participated in extra-curricular activities. The average grade point average for this group was 3.201. Thirty-one percent of these students have grade point averages between 3.00 and 3.49. Twenty-nine percent have a grade point average between 3.50 and 3.99.

Table 4

Frequency of Grade Point Average of Students Involved in Activities

Grade Point Average	Student Sample	Percent
0.00 - 0.49	0	0
0.50 - 0.99	0	0
1.00 - 1.49	1	.57
1.50 - 1.99	11	6.25
2.00 - 2.49	15	8.52
2.50 - 2.99	30	17.05
3.00 - 3.49	55	31.25
3.50 - 3.99	51	28.98
4.00 - 4.49	<u>13</u>	<u>7.39</u>
Total	176	100.00

Mean = 3.2011

Standard Deviation = .6346

Table 5 is a frequency distribution of grade point averages of 245 students that were not involved in extra-curricular activities. The average grade point average of this group is 2.556. Twenty-three percent of these students have a grade point average between 2.00 and 2.49.

Table 5

Frequency of Grade Point Average of Students not Involved in Activities

Grade Point Average	Student Sample	Percent
0.00 - 0.49	1	.41
0.50 - 0.99	1	.41
1.00 - 1.49	18	7.35
1.50 - 1.99	44	17.96
2.00 - 2.49	57	23.27
2.50 - 2.99	48	19.59
3.00 - 3.49	46	18.78
3.50 - 3.99	25	10.20
4.00 - 4.49	<u>5</u>	<u>2.04</u>
Total	245	100.00

Mean = 2.5556

Standard Deviation = .7722

Analysis of frequency tables establishes a pattern of difference between groups. The mean of 2.5556 which is the value of students not involved in activities falls below the mean of 2.8254 which is all students in the sample. The mean of 3.2011 which represents students involved in activities is above the mean of all students in the sample.

The statistical analysis used to determine if there is a significant difference between means was the t-test. Table 6 is a summary of data from the t-test.

Table 6

T-Test

Variable GPA	Cases	Mean	SD	SE Mean
Yes Involve	176	3.2011	.635	.048
No Involve	245	2.5556	.772	.049

Variiances	t-value	df	99% Sig.
Equal	9.10	419	.0004999
Unequal	9.39	411.42	.0004999

Three basic assumptions must be met when using the *t* statistic.

The assumptions are:

1. The values in the sample must consist of independent observations.
2. The population sampled must resemble the normal curve.
3. The populations from which the samples were drawn must have approximately the same variability.

The first assumption was satisfied by the criteria established for each group. It is not possible to be a member of the involved group and a member of the not involved group.

The *law of large numbers* states that the larger the sample the more probable that the sample mean will be close to the population mean. The standard error of the mean for both samples was small. This also is an indicator of a normal distribution.

The third assumption was satisfied by using the Levene Test for Equality of Variances. A value of $p=.000$ indicated that the variability between sample means was not equal. The SPSS statistical analysis and data management program calculated two t-tests based on the Levene Test. The unequal variance values in table 6 were used for the final evaluation of the null hypothesis.

The null hypothesis for this study was: There is no difference between the grade point average of students involved in extra-curricular activities and the grade point average of students not involved in extra-curricular activity. Table 6 presents the findings of the difference between grade point averages of students both involved in extra-curricular activity and those not involved. A t-test was computed to statistically determine if a difference exists. The t value for the 421 members of the sample is 9.39. The probability of the t-test is reported as less than .000499. A significance level of .01 was established for this study. Since the t-test value is less than the significance level of .01, the researcher concludes there is a significant difference between grade point averages. The null hypothesis is rejected.

CHAPTER 5

Summary, Conclusions, and Recommendations

Purpose of the Study

The purpose of this study was to determine if a difference existed between the grade point average of students involved in extra-curricular activity and the grade point average of those not involved in extra-curricular activity. The study was accomplished using the senior class of Valley High School in West Des Moines, Iowa.

Procedure

The procedure involved using the Fall Senior Information Sheet. This instrument supplied the information pertaining to student involvement in extra-curricular activities. The Valley High School computerized student data system supplied the grade point averages of the 421 seniors. The statistical analysis was done using the SPSS data management system.

This study was designed to answer the following question: is there a difference in grade point average between students who are involved in extracurricular activities and those who are not involved?

The following null hypothesis was an outgrowth from this question: There is no difference between the grade point average of students involved in extracurricular activities and the grade point average of students not involved in extracurricular activity.

Conclusions

The results of this investigation indicate that students involved in extracurricular activities have a significantly higher grade point average than

students not involved in extracurricular activities. The mean GPA of students involved was 3.2011. The mean GPA of students not involved was 2.556.

A t-test was used to determine if a significant difference existed between the two means. A 99% confidence level was established. The results ($p < .000499$) of the t-test clearly allows the researcher to reject the null hypothesis.

The results of this study are consistent with the review of literature. Not all of the literature studied used the t-test as an analysis tool. The most widely used analysis was correlation studies. Several investigators (Castle, 1986; Harvancik, 1986; Howley & Huang, 1991; Leonardson, 1986; Neish, 1993) found positive correlations between grade point average and participation in extracurricular activities which support the findings of this study.

Self-selection is a factor that must be addressed in any study of extracurricular activities. Self-selection in this study may be the result of student choice. Over half the senior class did not meet the criteria for involvement. The question any researcher must ask is: Why do students elect not to participate?

Self-selection may also be the result of institutional selection. Valley High School has a student population of nearly 2200. Ninth grade students in a smaller junior high setting have been found to participate in greater numbers than ninth graders in a larger senior high setting (Gifford & Dean, 1990). This may indicate that a smaller senior high school might allow a greater number of students to participate in extracurricular activities.

Recommendations for Further Research

The following suggestions are submitted by this researcher for further study.

1. The researcher is concerned that 245 students, or nearly 58% of the senior class, were not involved in extracurricular activities at Valley High School.

Research designed to establish if size of the school is a contributing factor for nonparticipation may shed light on this problem.

2. Design a study that factored out behaviors that might influence academic achievement in addition to extracurricular activity.

3. Many studies lumped all extracurricular activities into one category. Studies might be done to see if particular types of extracurricular activities have an effect on academic achievement.

4. This study indicates that participation in extracurricular activity is related to grade point average. Research might prove helpful to determine if withdrawal from activities have an effect on academic achievement and/or study students who have high grade point averages but do not participate in extracurricular activities.

5. A study should be conducted to determine if extra-curricular activities during elementary and junior high school have the same effect as participation has on academic achievement in high school.

6. A replication of this study should be made to determine if participation in extracurricular activity has an effect on factors such as attendance, discipline, self esteem, and I.Q. What effect does socioeconomic status have on participation? Does dropping extracurricular activities affect these factors?

7. A study should be made of self-selection for extracurricular activities. Determine what factors contribute to self-selection and analyze their effect on academic achievement.

8. A study should be made comparing those who participate in extracurricular activities and those who don't and the career paths and progress.

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Appendix A: Data for Sample

<u>Student I.D.</u>	<u>Grade Point Average</u>	<u>Activity Involvement</u>
1	3.91385	no
2	2.00000	no
3	1.96633	no
4	3.04167	yes
5	3.79487	no
6	1.67742	yes
7	2.36486	yes
8	2.68013	yes
9	2.44689	no
10	3.92453	no
11	4.02623	no
12	3.24919	no
13	3.32660	yes
14	3.96166	no
15	3.69435	no
16	4.01384	yes
17	3.12088	yes
18	3.75801	yes
19	3.61290	yes
20	3.73422	yes
21	3.81308	no
22	2.69039	no
23	2.84906	no
24	1.94810	no
25	3.55709	yes
26	3.38113	yes
27	2.81712	no
28	2.96029	no
29	2.51852	yes
30	3.41053	yes
31	2.70107	no
32	2.03367	yes
33	3.30450	no
34	3.75092	yes
35	3.51601	no
36	3.93266	yes
37	2.47619	yes
38	3.20623	no

<u>Student I.D.</u>	<u>Grade Point Average</u>	<u>Activity Involvement</u>
39	3.68683	no
40	2.76923	no
41	3.79553	yes
42	1.49481	no
43	3.48822	yes
44	3.35531	yes
45	2.92835	no
46	3.76080	no
47	2.04016	yes
48	1.19865	no
49	3.07071	no
50	2.93776	yes
51	2.44027	no
52	1.94810	no
53	3.66330	no
54	2.29181	yes
55	4.04040	yes
56	2.89808	no
57	3.85185	yes
58	3.32660	yes
59	2.84429	yes
60	3.57093	yes
61	2.24221	no
62	4.02768	yes
63	4.02768	no
64	2.36981	no
65	3.32660	no
66	0.70466	no
67	1.92256	yes
68	4.03519	yes
69	2.84000	no
70	1.52249	no
71	2.85348	yes
72	2.90311	yes
73	3.44781	no
74	3.30897	yes
75	1.85348	no
76	2.42215	yes
77	2.87379	yes
78	3.50207	yes

<u>Student I.D.</u>	<u>Grade Point Average</u>	<u>Activity Involvement</u>
79	4.00000	yes
80	3.50178	yes
81	3.44151	yes
82	4.00000	yes
83	1.73684	yes
84	4.00000	yes
85	3.74721	yes
86	3.75758	yes
87	3.49785	no
88	2.79245	no
89	2.08304	yes
90	2.98868	no
91	2.22667	no
92	1.42169	no
93	2.97819	no
94	3.72161	no
95	2.37722	no
96	3.44291	yes
97	1.86084	no
98	2.87938	yes
99	2.16342	no
100	2.69434	yes
101	3.79783	no
102	2.58824	yes
103	2.15953	no
104	3.12840	no
105	2.93846	yes
106	2.28374	no
107	4.00000	yes
108	2.32526	no
109	3.16955	yes
110	1.40000	no
111	2.97509	no
112	3.91054	no
113	3.15018	no
114	3.80723	yes
115	3.48638	yes
116	2.89273	yes
117	3.40214	yes
118	2.05364	no

<u>Student I.D.</u>	<u>Grade Point Average</u>	<u>Activity Involvement</u>
119	2.23488	no
120	3.45741	yes
121	2.77705	yes
122	3.03297	no
123	3.54896	no
124	1.95018	no
125	3.92429	yes
126	2.81319	yes
127	3.80377	yes
128	2.65660	no
129	3.36700	no
130	1.83908	no
131	1.56757	no
132	3.45946	no
133	2.89320	no
134	3.20539	yes
135	3.87220	yes
136	3.33218	no
137	3.19414	no
138	3.94464	no
139	4.04984	no
140	2.06406	no
141	3.14377	no
142	3.06415	yes
143	2.76457	no
144	4.09639	no
145	2.34343	no
146	3.16955	yes
147	1.97924	yes
148	3.34520	yes
149	1.62667	no
150	2.87213	no
151	3.50164	yes
152	3.27273	yes
153	2.94081	no
154	2.31776	no
155	3.35738	yes
156	4.00000	yes
157	2.83737	yes
158	1.65201	no

<u>Student I.D.</u>	<u>Grade Point Average</u>	<u>Activity Involvement</u>
159	3.46326	no
160	4.01311	yes
161	2.25979	no
162	1.38721	no
163	2.18361	no
164	2.79842	yes
165	2.92830	no
166	1.57239	no
167	3.52218	yes
168	2.23549	no
169	2.15385	no
170	3.70370	yes
171	4.07671	yes
172	2.94505	yes
173	3.02804	no
174	3.75078	yes
175	2.54804	yes
176	3.79798	no
177	3.71930	yes
178	2.59341	no
179	2.41176	no
180	1.97578	no
181	2.64151	no
182	2.70588	no
183	1.89324	yes
184	2.92042	no
185	2.49110	no
186	2.48754	no
187	3.10963	no
188	3.94306	yes
189	3.91696	yes
190	2.51852	no
191	2.06406	no
192	1.30622	no
193	3.58478	no
194	3.16955	no
195	2.82784	no
196	2.23293	yes
197	3.65836	no
198	3.15472	no

<u>Student I.D.</u>	<u>Grade Point Average</u>	<u>Activity Involvement</u>
199	3.91919	yes
200	1.70189	yes
201	3.14187	yes
202	3.43434	yes
203	2.46367	no
204	3.58478	yes
205	1.49822	no
206	3.32601	yes
207	1.68498	yes
208	2.17438	no
209	3.46326	no
210	3.31803	no
211	3.69231	no
212	1.77143	no
213	3.62617	yes
214	3.66454	no
215	3.17193	yes
216	3.06227	yes
217	2.31884	no
218	3.08418	no
219	3.69550	yes
220	3.65495	yes
221	2.91815	yes
222	3.48525	no
223	3.01805	yes
224	4.00000	yes
225	3.98722	yes
226	2.97436	no
227	3.48754	yes
228	3.72318	yes
229	3.54579	yes
230	2.17794	yes
231	3.23323	no
232	1.94030	no
233	3.09825	yes
234	3.23132	no
235	1.36678	no
236	1.73529	no
237	3.53114	no
238	3.78451	yes

<u>Student I.D.</u>	<u>Grade Point Average</u>	<u>Activity Involvement</u>
239	1.36546	no
240	2.08333	no
241	3.59596	yes
242	3.20819	yes
243	2.26389	no
244	3.97568	no
245	3.95415	no
246	1.68592	no
247	2.10040	no
248	3.06050	yes
249	3.03396	yes
250	3.21107	yes
251	3.87879	yes
252	1.85714	no
253	2.55410	yes
254	2.90110	yes
255	2.27509	no
256	2.06615	no
257	2.32028	yes
258	3.11744	yes
259	1.67547	yes
260	3.74441	yes
261	2.90657	yes
262	3.91919	yes
263	2.63345	yes
264	3.54325	yes
265	3.25979	yes
266	2.47619	no
267	1.26180	no
268	2.86505	no
269	4.01246	yes
270	2.37722	no
271	2.02951	no
272	2.88146	no
273	2.63385	no
274	3.17438	yes
275	1.71429	no
276	1.66148	no
277	1.68571	no
278	3.79822	yes

<u>Student I.D.</u>	<u>Grade Point Average</u>	<u>Activity Involvement</u>
279	2.13278	no
280	3.30796	yes
281	3.46886	yes
282	1.87549	no
283	1.91321	no
284	1.65217	no
285	3.78022	no
286	2.06061	no
287	2.54545	no
288	2.51557	no
289	2.38384	no
290	1.68864	no
291	4.07869	yes
292	3.40214	yes
293	2.68016	no
294	3.05724	yes
295	3.94569	yes
296	2.94810	yes
297	3.97444	yes
298	2.17794	yes
299	1.79710	yes
300	3.34098	yes
301	2.91575	yes
302	3.44637	yes
303	1.54545	no
304	3.12088	yes
305	1.67509	no
306	3.27402	yes
307	2.69550	no
308	3.48718	yes
309	2.14286	no
310	3.04319	no
311	2.61644	no
312	3.83383	yes
313	3.88612	no
314	2.31518	no
315	2.67766	no
316	3.93266	yes
317	2.11744	yes
318	2.62951	no

<u>Student I.D.</u>	<u>Grade Point Average</u>	<u>Activity Involvement</u>
319	3.03114	yes
320	3.83838	yes
321	2.29032	no
322	2.95208	no
323	3.77855	yes
324	2.87365	no
325	2.83509	no
326	3.31673	yes
327	1.47253	no
328	2.12451	no
329	1.21875	no
330	1.31556	no
331	2.05387	no
332	1.49466	yes
333	2.50173	no
334	2.37049	yes
335	2.09524	no
336	1.77224	yes
337	1.92490	no
338	3.29966	yes
339	2.83391	no
340	1.90038	yes
341	2.94810	yes
342	3.31313	no
343	2.30267	no
344	3.29670	yes
345	3.33546	no
346	2.94505	yes
347	3.06920	no
348	2.36111	no
349	3.14801	no
350	3.49832	yes
351	2.34432	yes
352	1.03333	no
353	3.80071	yes
354	0.00000	no
355	2.87213	yes
356	2.53287	no
357	2.48485	no
358	1.54579	no

<u>Student I.D.</u>	<u>Grade Point Average</u>	<u>Activity Involvement</u>
359	2.80427	no
360	2.98901	no
361	1.70242	no
362	1.86505	no
363	3.12069	no
364	1.89591	no
365	2.14947	no
366	3.23875	no
367	2.13253	no
368	3.03114	no
369	2.58113	no
370	1.84116	no
371	1.31692	no
372	2.32967	no
373	3.82918	yes
374	2.17297	no
375	3.35275	no
376	1.67442	no
377	2.33333	no
378	3.48754	no
379	1.66557	no
380	1.94444	no
381	2.23132	no
382	3.08418	yes
383	1.52778	no
384	3.13514	no
385	1.76557	no
386	3.44828	no
387	1.47985	no
388	2.78201	yes
389	3.06137	no
390	3.57509	no
391	3.67173	no
392	3.33564	no
393	2.78201	no
394	3.47604	yes
395	3.10820	no
396	2.99634	no
397	3.66387	yes
398	3.00346	no

<u>Student I.D.</u>	<u>Grade Point Average</u>	<u>Activity Involvement</u>
399	2.84175	no
400	3.32353	yes
401	3.02950	no
402	3.08304	yes
403	3.89591	yes
404	1.72000	no
405	1.32872	no
406	2.13443	no
407	3.32075	yes
408	1.79623	yes
409	1.67547	no
410	2.58361	yes
411	2.29304	no
412	2.06228	no
413	3.15018	yes
414	3.48822	no
415	1.97509	no
416	2.11148	no
417	3.02941	yes
418	2.37500	no
419	1.56491	no
420	1.87938	no
421	1.08986	no

Appendix B: Fall Senior Information Sheet

FALL SENIOR INFORMATION SHEET

NAME _____ SEX _____ STUDENT # _____
Last First
ADDRESS _____ PHONE NO. _____
STREET CITY
FATHER'S NAME _____ OCCUPATION _____
MOTHER'S NAME _____ OCCUPATION _____

EXTRACURRICULAR ACTIVITIES: INDICATE THE YEAR YOU PARTICIPATED (9th, 10th, 11th, 12th). IF AN OFFICER, WRITE WHICH OFFICE YOU HELD BESIDE THE ACTIVITY.

_____ AFS	_____ Football	_____ Science Club
_____ Ambassador	_____ French Club	_____ Shakespeare Club
_____ Amnesty Intrntl	_____ Future Nurses	_____ Soccer
_____ Art Club	_____ German Club	_____ Softball
_____ Baseball	_____ Golf	_____ Spanish Club
_____ Basketball	_____ Intl. Club	_____ Student Senate
_____ Care Communicator	_____ Intramurals	_____ Swimming
_____ Cheerleader	_____ Journeyman Staff	_____ Syncro Swim
_____ Class Officer	_____ KWDM	_____ Tennis
_____ Cross Country	_____ Latin Club	_____ Thespian
_____ D.A.R.E..	_____ Mimes	_____ TLC
_____ Debate	_____ Nat'l. Honor Soc.	_____ Track
_____ Dramatics	_____ Newspaper Staff	_____ Volleyball
_____ Drill Team	_____ Peopel Coach	_____ Wrestling
_____ Environmental Club	_____ Russian Club	_____ Yearbook Staff
_____ FCA	_____ SADD	