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THE IMPACT OF EXTRACURRICULAR ACTIVITIES ON THE HIGH SCHOOL
ACADEMIC ACHIEVEMENT OF AVERAGE AND BELOW AVERAGE
STUDENTS DURING THE IMPLEMENTATION OF THE TEXAS
NO PASS-NO PLAY RULE (1983-1986)

DISSERTATION

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By

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The State of Texas implemented the No Pass-No Play Rule within House Bill 72 in the spring semester of 1985. The addition of this section to the state education code was a part of the state's efforts toward educational reform. The perceived rationale implied in House Bill 72 is that extracurricular activities can inspire student motivation and increase student achievement. The No Pass-No Play Rule seems to imply that there is a relationship between student achievement and extracurricular activities, and further implies that a student can be motivated to achieve by the desire to continue to participate in extracurricular activities.

The problem of this study was a comparison of academic achievement for high school pupils involved in extracurricular activities and those who did not participate in extracurricular activities under the Texas No Pass-No Play Rule.

The purpose of this study was to determine the impact of extracurricular activities on the academic achievement

of high school students, specifically looking at the years 1983 through 1986, when the No Pass-No Play Rule was implemented.

This study was an ex post facto study with data obtained from a cooperating Texas school district. Students were matched on critical variables, and their scores on a measure of achievement were analyzed to determine if there was any relationship between extracurricular activities and achievement. Repeated measures of achievement were also analyzed to determine if students involved in extracurricular activities scored differently from those not involved in extracurricular activities over this time period in which the No Pass-No Play Rule was implemented.

Results indicated that for those students involved in this study, there was no significant difference on a measure of achievement for students involved in extracurricular activities and those who did not participate. Results also indicated that in the years 1983 through 1986 all students involved in the study declined slightly in their achievement scores, regardless of involvement with extracurricular activities.

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CHAPTER 1

INTRODUCTION

The State of Texas implemented the No Pass-No Play Rule within House Bill 72 in the spring semester of 1985, under article IV, part F, section 21.920 of the State Education Code. The addition of this section was a part of the state's educational reform effort. The academic world perceived that the basis for the legislature's implementation of this rule was to encourage students to work more diligently at keeping their grades up, thus increasing their academic achievement, to stay active in their chosen extra-curricular activities. The exact wording of the bill states:

(b) A student, . . . enrolled in a special district in this state shall be suspended from participation in any extra-curricular activity sponsored or sanctioned by the school district during the grade reporting period after a grade reporting period in which the student received a grade lower than the equivalent of 70 on a scale of 100 in any academic class. The campus principal may remove this suspension if the class is an identified honors or advanced class. A student may not be suspended under this subsection during the period in which school is recessed for the summer or during the initial grade reporting period of a regular school term on the basis of grades received in the final grade reporting period of the preceding regular school term (Texas Legislature, 1984, p. 157).

The legality of this issue was decided by the Texas Supreme Court on June 10, 1985, when its members ruled unanimously

that a student's right to participate in extracurricular activities is not a basic right equal to the freedom of speech and the freedom of religion. The court also upheld the right of the State of Texas to regulate extracurricular activities. The court found the rule rationally related to the legitimate state interest in providing a quality education to Texas' public school students (Flygare, 1985).

The interpretation by public high school personnel of the rationale implied in House Bill 72 is that extracurricular activities can inspire student motivation and increase student achievement. The Texas Supreme Court upheld this legislation. The decision by the court makes this rule a mandate in support of the proposed rationale for this law. According to proponents of higher eligibility standards, which are the basis for the No Pass-No Play Rule, the higher standards provide the impetus needed to motivate students to achieve better grades and to make the sacrifices necessary to retain their eligibility. The desire to participate and to succeed motivates the students to meet the academic standards (Brown, 1988). This rationale implies that there is a relationship between student achievement and extracurricular activities, and further suggests that a student can be motivated to achieve by the desire to continue participation in extracurricular activities. According to Fryans (1980), each achievement is directly related to motivation, as the student must do

something, react to the instruction in some positive way, to be able to achieve the goals of the instruction. Thus, the logic behind the development of House Bill 72, as perceived by educators, is that the enforcement of the No Pass-No Play Rule causes extracurricular activities to become a motivating force for students. Thus students work harder to maintain grades that will keep them active in their chosen activities. The idea that this motivation created by the student's desire to remain in extracurricular activities has an impact on student achievement, is also perceived as a part of the rationale of the No Pass-No Play Rule by educators. However, research in the areas of achievement and extracurricular activities fails to address this underlying rationale of the No Pass-No Play Rule. Are students achieving more as they strive to maintain involvement in extracurricular activities? After reviewing the related literature, it should be clear that additional research is needed to address this question, and to establish the validity of the perceived logic behind this legislation that affects the lives of so many students in the State of Texas.

Statement of the Problem

The problem of this study is a comparison of academic achievement for high school pupils involved in extracurricular

activities and those who do not participate in extracurricular activities during the implementation of the Texas No Pass-No Play Rule.

Purpose of the Study

The purpose of this study is to determine the impact of extracurricular activities on the achievement of high school students during the implementation year (1985) of the No Pass-No Play Rule.

Hypotheses

To carry out the purposes of the study, the following hypotheses were tested:

1. Average and below average students involved in extracurricular activities will score significantly higher on a measure of academic achievement than similar students who are not involved in extracurricular activities.

2. There will be a significant increase in academic achievement for average and below average students involved in extracurricular activities during the years of 1983 through 1986 (the time period over which the Texas No Pass-No Play Rule was implemented).

Significance of the Study

The apparent relationship between academic and extracurricular activities is noted in the many studies that have been completed in these areas. Yet there is a

need to look at the impact of these activities as a motivating force, and investigate the possible repercussions of the denial of such activities. If extracurricular activities provide the stimulus for achievement, how does the removal of the stimulus affect achievement? It seems logical to assume that a student with above average academic achievement prior to the implementation of the No Pass-No Play Rule will remain motivated, and never face withdrawal from extracurricular activities. Therefore, it seems prudent to investigate average and below average students, who are at risk of losing their extracurricular activity privileges.

The State of Texas designed the No Pass-No Play Rule in response to pressure from the citizens to improve education throughout the state. This law assumes that there is a causal relationship between extracurricular activities and student achievement. At this time, the Texas No Pass-No Play Rule is not supported by evidence that affirms it is indeed improving student achievement within the state, or that any observable gains in student achievement to date can be attributed to the implementation of the No Pass-No Play Rule. Such information would be valuable to both the school district and the legislature of Texas, supporting the law with some empirical evidence. It would also be beneficial to states that are considering

similar legislation to have access to data on this rule and its effects.

This study is significant in that it (a) investigates the relationship between involvement in extracurricular activities and student achievement, and (b) attempts to verify that the No Pass-No Play Rule positively has an impact on student achievement.

Definition of Terms

Extracurricular activities are all school-sponsored activities which involve students in activities outside the classroom (i.e., athletics, musical groups, theatrical and speech organizations, newspapers, yearbooks, and any clubs such as mathematics club or science club, etc.) as defined by the Texas University Interscholastic League (Graham, 1969; Texas State Legislature, 1984).

Academic achievement is the score on the California Achievement Test (CAT), forms C and D.

Average and below average designations of students were determined by using data from cooperating school districts in order to group students into definitive categories of "average" and "below average," based on grade-point averages, an ability indicator such as an IQ test, and achievement test scores. These categories are used to match students participating in the study according to the definition of an ex post facto design (Spector, 1981). The average group typically

has scores that are one standard deviation above and below the norm, while below average students typically score lower than one standard deviation below the mean. It should be noted that according to the No Pass-No Play Rule, any grade below 70 is considered below average and is not a passing grade (Texas State Legislature, 1984).

Above average student describes students in the initial population who had any of the following: a GPA above 90, an IQ score above 110, and a CAT percentile ranking above 85.

Limitations

One limitation which must be recognized is that involvement in extracurricular activities can only be assessed by reviewing student records and through yearbook analysis. This is due to the fact that most districts, including the one participating in this study, do not keep historical files on extracurricular activities other than what is listed on the students' records. Although most large urban schools try to accurately identify involvement in extracurricular activities in yearbook listings, and to identify most extracurricular activities with a corresponding class listing on student records, it is possible that some students involved in activities were overlooked when these two sources were consulted.

Another limitation is that the entire study is restricted by the impossibility of randomly selecting students for participation in extracurricular activities. This research

employs an ex post facto design to resolve the problem of randomization, as this type of design creates a pseudo-experimental design out of a nonexperimental one.

The fact that many school districts in the State of Texas do not administer an achievement test on a regular basis is also a limitation, as it created difficulty in locating a cooperating district for this study. Complicating this is the fact that major group-administered test publishers update tests periodically. A new test form was written for the 1985-1986 school year by many publishers. Because many districts change test publishers when new instruments are introduced, it was difficult to locate a district that administered the same test, or an equivalent form of that test, during the years covered by this study. In addition, few districts administer any type of ability indicator to students. This created difficulty in locating a district with student IQ scores or its equivalent on file.

The district involved in this study offers only athletics, band, art, and choir to seventh and eighth graders. High school students are offered the full range of student activities. The difference in offerings between high school and junior high is a limitation.

The final limitation is that there can be no guarantee that there is an identifiable cause for change in student achievement. In some cases, changes in achievement cannot be attributed to any specific factor.

Basic Assumptions

It is assumed that data gathered from the cooperating school district accurately report the students' grade-point averages, IQ (ability indicator), and achievement test scores. It is further assumed that the analysis of student records and yearbooks used to identify students involved in extracurricular activities is also accurate, and a true reflection of those students who participated in extracurricular activities. A final assumption is that the socioeconomic status of the students, gathered from census reports and school district demographics, is also accurate.

CHAPTER 2

REVIEW OF RELATED LITERATURE

Introduction

The review of related literature is divided into four sections focusing on (a) achievement motivation, (b) extracurricular activities, (c) extracurricular activities and student achievement, and (d) extracurricular activities and motivation. The first section focuses on research that provides an overview of the studies relating to achievement motivation in general. The second section provides a look at the general areas of research in the field of extracurricular activities. In the third section a synthesis of studies which focus on the relationship between extracurricular activities and student achievement is presented. The last section looks at studies that highlight the relationship between extracurricular activities and the motivation of students.

Achievement Motivation

Achievement motivation is a difficult concept to define. Various researchers have attempted to discover what encourages the drive for achievement. Identified factors include cultural values, status structure systems, educational processes, peer group interactions and child

rearing practices (Grossnickle, 1988). As defined by Fyans (1980), achievement motivation is that behavior which allows the student to achieve, fulfilling the student's achievement need. Bar-Tal (1978) argues that there is a possibility of maximizing achievement behavior by providing students with instruction and feedback that encourages them to make internal attributions for success. Weiner (1972, 1979, 1985) states that attribution theory assumes that the search for understanding (information seeking) is a main-spring of human motivation. Weiner further states that the emotions of an individual can affect motivation. Attribution theory relates the structure of thinking to the dynamics of feeling and action.

Nicholls (1984) refocuses the attribution theory and indicates that student involvement is an important part of creating motivation within the student. In the argument of self-motivation versus external motivation, Alexander and Schuldt (1984) state that few studies have shown self-reinforcement procedures to result in a superior performance as compared to external reinforcement procedures. According to Ball (1982), one of the main purposes in using the attribution theory in an educational setting is to make students want to make a greater effort, in other words to make them want to achieve. However, as Covington and Omelich (1979) state, effort is a "double-edged sword."

Despite attempts by teachers through incentives and verbal rewards to encourage student effort, there is, in many schools, a palpable lack of success, which amounts to no increases in student achievement.

Other research into achievement motivation states that achievement-oriented behavior is seen to be a function of a number of factors, including the motive to succeed, the motive to avoid failure, the perceived probability of success, and the incentive value of success (Atkinson & Feather, 1966; Atkinson & Raynor, 1974). Atkinson's theory of achievement motivation suggests that there are two kinds of individual differences--the need to achieve success and the need to avoid failure--that combine to produce an individual's motivation to approach or avoid learning and problem-solving tasks (Atkinson & Raynor, 1987; Snow, 1986). Atkinson and Feather (1966) and Heckhausen (1967) collected data that indicated that the strength of an individual's tendency to seek success and of his tendency to avoid failure have a profound effect on scholastic achievement. Lens (1983) has completed studies that indicate that an intermediate level of both kinds of needs, the need to achieve success and the need to avoid failure, are necessary, and that too little or too much of either need is counter-productive.

Feather (1982) developed the Expectancy X Value Theory of motivation that suggests that the effort people will

expend on a task is a product of the following: (a) the degree to which they expect to be able to perform the task, (b) the degree to which they value participation in the task itself, and (c) the degree to which they value the benefits or rewards that successful task completion will bring to them. This theory assumes that no effort is applied toward accomplishing a task if either factor is missing entirely (Brophy, 1987).

The role of anxiety as a motivating force for student achievement is discussed by Sullivan (1948) and Hansen (1977). Hansen points out that anxiety has long been regarded as a less-than-rational, debilitating response to a situation that may or may not be threatening. Alpert and Harbor (1960) argue that anxiety can be facilitating as well as debilitating. If preparation for life is a positive goal (and life is regarded as a competitive struggle), then students have to be presented stressful, anxiety-producing situations to adapt gradually (Ball, 1982).

Self-esteem also plays a role in a student's achievement. Correlations between self-esteem and academic achievement are usually positive, although conclusive studies are yet to be completed (Wylie, 1979). Curiosity as a motivator for student achievement also must be considered, as curiosity motivates exploratory behavior which often leads to greater learning, and increases a student's level of aspiration (Berlyne, 1963).

It is apparent that there are wide-ranging influences on student achievement. Atkinson and Birch (1970) performed a study which shows that success leads to better performance for failure-oriented subjects than failure does for success-oriented subjects (Kuhl & Blankenship, 1979). Ralph and Salganik (1988) looked at achievement in relation to the dropout rate. They suggest that as the literature on effective schools states, the emphasis of academic excellence, with higher standards and higher expectations for all students may result in youngsters who learn more, have a positive attitude toward school and who are more likely to continue in school through high school graduation.

Other factors influencing achievement are identified in Elizur's study (1979), as he defines the content of the achievement motive as having three domain facets: behavior modality (the behavior itself), type of confrontation (what is the situation in which the behavior must be performed), and time perspective (how long or how quickly must the behavior be performed). Studies of the relationship between students' time on-task and their academic achievement (Brophy, 1971; Denham & Lieberman, 1980; Frederick & Walberg, 1980; Good, 1979; Rosenshine, 1980) point out that time on-task is an essential, but not a sufficient, condition for student achievement (Wang and Lindvall, 1983).

The individual differences of students are also factors affecting student achievement and motivation (Snow, 1986). In a study designed to investigate the relationship between academic achievement and personality characteristics, Kifer (1975) found strong evidence to suggest that the influence of histories of successful academic achievement had a positive effect on students' feelings of efficacy and perceptions of their own competence for learning. According to research done by Alexander and Schuldt (1984), individual choice of goals results in increased academic performance over external imposition of goals. Castenell's study (1983) of academic achievement points out that all adolescents do not have a need to achieve and do not perceive academic achievement as being necessary for success in life.

According to a synthesis of the research on achievement motivation (Brophy, 1987), there appear to be strategies that can be applied in the classroom to encourage students to learn. Brophy's research suggests that there are some essential preconditions that must be established before achievement motivation can be stimulated. There must be (a) a supportive environment, (b) an appropriate level of challenge or difficulty, (c) meaningful learning objectives, and (4) the motivation strategies must be used in moderation in order to stimulate motivation. Brophy also categorizes the methods for motivating into three groups: (a) motivating by maintaining success expectations,

(b) motivating by supplying extrinsic incentives, and
(c) motivating by capitalizing on students' intrinsic motivation. Further research by Weiner (1984) suggests that effort and persistence are greater in individuals who attribute their performance to internal or controllable (intrinsic) causes rather than to external or uncontrollable ones.

As indicated by this overview of research, there are numerous influences on student achievement. The exact relationship of achievement motivation and extracurricular activities is a subject that needs further investigation.

Extracurricular Activities

Extracurricular activities represent an important feature of both the instructional program and the morale building of the school (Allen, 1981; Griffin, 1988; Kline & McGraw, 1974). These activities are identified as athletics, clubs, musical organizations (band, choir, orchestra), school publications, dramatics, and student council (Holton, 1982).

The question of the value of extracurricular activities and their role in the curriculum has long been debated. During the early 1900s the report on the Seven Cardinal Principles of Secondary Education, formulated by the National Education Association, provided the impetus for the student activities movement (Joekel, 1985). Programs

related to worthy use of leisure time, citizenship, ethical character and health, as identified in the Seven Cardinal Principles, were deemed particularly appropriate for student activities, according to Joekel.

At least four purposes are formally identified by Parelius and Parelius (1978), and reiterated by Trent and McPartland (1982), as being serviced by extracurricular activities: (a) to channel youthful energy into appropriate directions, (b) to promote cohesion within and between schools and communities, (c) to provide alternate means of achievement and success experiences for the less academically inclined, and (d) to promote socialization. Many principals and teachers may have seen in student activities a means where some of the reluctant learners, trapped in school by a compulsory education, could have their interest in attending school stimulated (Graham, 1969).

Scott and Damico (1983) state that the student activity program increases student attachment to the school, reduces student alienation, and provides alternate channels for students to develop self-esteem (Crain, 1981). The 1969 National Society for the Study of Education's Evaluative Criteria (Tyler, 1969) states that student activities are considered to be an important part of the secondary school experience in the United States, and add that the student activities program is generally the major means of

fulfilling these objectives that are not adequately served by regular classroom instruction. This is reinforced by the research of Vornberg et al. (1982).

Research by Dawis and Yong (1984) indicates that participation in extracurricular activities leads to strong interests and the development of certain competencies. This study, drawn from a survey of students involved in extracurricular activities, indicates that a student's achievement level for a particular activity may be increased by participation, and that a variety of activities can provide the same ability development. A report from the New York State Education Department (1983) states that school activities programs expand on what students learn in the classroom, develop students' personal interests, and augment formal instruction.

Many research studies support the concept that extracurricular activities contribute to students' self-concepts, socialization and future success (Grady, 1981; Hanks & Eckland, 1976; Long, Buser & Jackson, 1977; Landers, et al., 1978; Nover, 1981; Serow, 1979; Synder & Spreitzer, 1978; Yarworth & Gauthier, 1978). Opinion papers (Alley, 1974; Beeman & Humphrey, 1970; Kline & McGraw, 1974) also support the correlation between self-esteem and extracurricular activities.

There is some research, however, that questions the theory that student activities are beneficial to students

(Balazs, 1975; Campbell, 1974; Coleman, 1961; Dubois, 1979; Knicker, 1974; Stevenson, 1975). These writings focus on the fact that it is difficult to discern whether student activities aid a students' development, or whether well-adjusted, motivated students are the primary type of students attracted to extracurricular activities. These studies also question whether extracurricular activities may be taking up students' time that could otherwise be spent on academics. All-in-all, there has been very little written in the last ten years, either pro or con, on student activities in relation to self-concept and socialization (Wegner, 1980). However, students seem to value extracurricular activities. A comprehensive study of co-curricular activities in secondary schools (Gholson & Buser, 1983) and a National Association of Secondary School Principals national study (Long et al., 1977) indicate that almost one-third of the students considered extra-class activities more important than course work in their school lives.

Much has been written about how extracurricular activities are incorporated into the perception of the elementary school curriculum and secondary school curriculum (Frith & Clark, 1984; Gholson & Buser, 1981; Huling, 1980; Norris, 1981; Roider, 1981; Stein, 1983). These writings focus on the following issues: (a) extracurricular

activities seem to help develop students' self-esteem, (b) extracurricular activities assist in socialization, and (c) the importance that students place on extracurricular activities.

According to Holland and Andre (1987), extracurricular activities relate to a number of desirable characteristics, but the extent to which participation contributes to such characteristics or whether participants and non-participants differ a priori in such characteristics is yet to be determined. Holland and Andre cite the need for research that compares students prior and subsequent to participation in a given activity. They indicate that this type of study could address the issue of using extracurricular activities as an incentive for academic achievement.

Extracurricular Activities and Student Achievement

There have been some attempts to link student achievement and extracurricular activities, although few of these are experimental studies. A comparative study by Hedgpeth (1981) and a similar study done earlier by Laughlin (1978) found that, generally, students who participate in extracurricular activities, either in school or outside of school, have higher grades (i.e., a higher level of achievement) and a lower number of absences than students who do not participate. This information was compiled from a survey of students' grade-point averages and attendance

records. A study by Levy in 1982, and another by Sulton in 1983, investigated the effects of extracurricular involvement on students' academic achievement and educational aspirations. These studies used survey instruments and analysis of grade-point averages and achievement test scores, and reached similar conclusions--that students' extracurricular involvement has some limited positive influences on achievement. A report by Weber and McBee (1982) points to a similar expected outcome of some limited influence on achievement when looking at the effects of extracurricular activities on student effort.

The perceived effects of discontinuing extracurricular activities are considered in a study by McBride (1980). His study involved the analysis of a school district which was left without any extracurricular activities for a year due to budget problems. The data revealed that a year without extracurricular activities produced a significant difference in students' academic performance. As indicated on a survey instrument, both teachers and students felt that student academic performance was better when extracurricular activities were offered and participated in by students.

A follow-up study was conducted of college graduates (Fellows et al., 1986) in which former students who had participated in extracurricular activities were perceived by instructors and the students as having higher levels of

self-improvement in the areas of organizational skills, human relations skills, and team leadership and management ability than students who had not been involved in extracurricular activities. Another descriptive study by McNamara (1985) concludes that students not involved in extracurricular activities are less likely to earn higher degrees.

A study by the Illinois State Board of Education (1985), which looked at the effects of participation in extracurricular activities, posed this question,

Without statistical data to determine cause and effect, how will it be determined whether students with positive responses (better grades) and positive characteristics are drawn to increased participation in extracurricular activities; or whether increased participation is a contributing factor in the development of positive student responses (better grades) and positive student characteristics? (p. 23).

Athletics is another aspect of these studies. A study by Henschen, Edwards and Mathinos (1982) presents the results of their research which indicate that female athletes possess significantly greater achievement motivation than nonathletic females. These results were obtained using Mehrabian's Scale of Achieving Tendency. Dowell, Badgett and Hinkler (1972) classified college freshmen into the upper and lower 20% of those athletically involved in high school and reported that the high school grade-point averages for those involved in athletics was slightly, but significantly, higher than those of the nonathletic group.

On the other hand, studies by Rehberg and Schafer (1968) and Spreitzer and Pugh (1973) failed to find a significant relationship between grade-point average and athletic involvement.

Several other studies have found a positive relationship between athletic participation and educational aspirations and achievements (Rehberg & Schafer, 1968; Schafer & Armer, 1972; Spreitzer & Pugh, 1973), while other studies have gone further to suggest that service or scholarly groups are more likely to foster these qualities of achievement and educational aspirations than are athletics (Handel, 1986; Rehberg & Cohen, 1975; Spady, 1970).

Other studies (Feltz & Weiss, 1984; Hanks & Eckland, 1976) have indicated that sports involvement may be providing those students who are involved a means of achieving social recognition and status, thereby helping them gain academic aspirations and a higher level of scholarship. Shanahn and Walberg (1985) conducted a survey in which students, teachers and parents indicated that extracurricular activities, especially athletics, were one of the positive influences on achievement.

Another group of studies conducted in relation to extracurricular activities was concerned with the effects of extracurricular activities and poor achievement resulting in student drop outs. It was found that a lack of

participation in extracurricular activities has often been demonstrated by dropouts (Bell, 1964; Coombs & Cooley, 1968; Havighurst et al., 1962; Kelly, Veldman & McGuire, 1964; Moritz, 1977; Stroup & Robins, 1972). Doss (1986) conducted an informal, longitudinal study which indicated that participation in varsity sports tends to encourage students to stay in school. However, Buser, Long and Tweedy (1975) concluded that students who might benefit most from student activities probably were not participating.

Extracurricular Activities and Motivation

When considered in the light of studies on achievement motivation, a link can be observed between extracurricular activities and motivation. Studies by Brophy (1987) and Feather (1982) support the use of extrinsic incentives for use in student motivation. Being able to participate in extracurricular activities or being banned from those activities can be a powerful extrinsic incentive for motivating students.

Writings by Gholson (1985), while not statistically based, logically argue that there is value in extracurricular participation as a direct motivator for student achievement. Gholson cites the American College Testing Program's study entitled "Varieties of Accomplishment after College: Perspectives on the Meaning of Academic Talent" (Iowa City, Iowa: ACT, 1974). This study concluded that

adult accomplishments are related to comparable high school non-academic accomplishments. Better academic performances, as indicated by higher grade-point averages, have been associated with participation in extracurricular activities according to studies by Edwards (1967), Phillips and Schafer (1971), and Eidsmore (1964). Thus, extracurricular activities appear to have significant and lasting value as one moves from the formal classroom into the world beyond.

Frith and Clark (1984) examined the possible impact of the 1982 Los Angeles City School Board policy prohibiting students in grades four through twelve from participating in all extracurricular activities unless maintaining a "C" average. Frith and Clark (1984) and Ostro (1980, 1984) discuss the impact of barring students from extracurricular activities, questioning the underlying assumption that all students could or should attain a "C" average or better in the academic curriculum. They question the policy of punishing students for poor grades, and state that barring students from extracurricular activities might lead to inflation of grades by teachers, higher student drop out rates for those who cannot make the grade, and easier course load selections by students. No follow-up study and no statistical analysis has been conducted to evaluate the information provided by the Los Angeles policy.

From an educational psychologist's point of view, the imposition of a "C" average rule is the application of the

Premack Principle (Tauber, 1988). This principle states that educators should use more-favored activities to reinforce less-favored activities. Thus the participation in extracurricular activities is used to reinforce the studying required to maintain the required grade.

Joekel (1985) writes that the motivation of the extracurricular activity may be just the stimulus needed by students to meet their academic responsibilities, and the withdrawal of the activity may remove the motivation. His arguments come in response to current regulations, such as the Los Angeles policy, aimed at establishing eligibility requirements for extracurricular activities.

A report by the Office of Educational Research and Improvement (1986) used data from the United States Center for Statistics' longitudinal study "High School and Beyond," to conclude that an overwhelming majority of extracurricular activity participants would meet the requirement of a cumulative 2.0 (C) grade-point average. They also stated that the more activities students are involved in the higher they rank academically, indicating that extracurricular activities attract many bright, high-performing students. Ballantine's 1981 study reviews all of the materials on extracurricular activities in an attempt to establish the existence of a relationship between extracurricular athletic activities and academic achievement.

He concludes that all of the studies examined indicated a correlation between participation in sports and academic achievement. Ballantine cites Armer and Schafer (1968) as one of the most significant studies to date that finds a positive correlation between athletic participation and grade-point average.

Harvanick and Golsan (1986) have produced the most significant recent study focusing on the relationship between academic success and participation in extracurricular activities. Official ACT score reports from incoming college freshmen for the fall of 1984 were used. ACT scores, self-reported high school grades and self-reported participation in extracurricular activities as indicated on the ACT form were analyzed and the relationship among the variables was studied. The most significant positive correlation occurred between the high school average and high school extracurricular activities. This study seems to establish that there exists a statistically significant correlation between academic success and participation in extracurricular activities.

If there exists a relationship between extracurricular activities and student academic achievement, it appears to be when the extracurricular activities assume the role of an extrinsic motivator for achievement. Research indicates, however, that the use of an extrinsic incentive is only one

of many factors that are necessary to effectively help motivate students to learn (Brophy, 1987).

Conclusion

Although there have been many studies of extracurricular activities in general terms, and although there appears to be a link between these activities and academic achievement, there have been few studies which evaluate this possible cause-and-effect relationship. Now that the State of Texas has enacted a law that assumes causality, it is appropriate to further investigate this hypothesized relationship between extracurricular activities and academic achievement, and to determine the impact of the No Pass-No-Play Rule as an extrinsic incentive for motivating student achievement.

CHAPTER 3

METHODOLOGY

Research Design

This study was an ex post facto study, due to the fact that students could not be randomly assigned to extracurricular activities (Spector, 1981). Several critical variables were matched to determine if achievement was greater at the end of the study for those involved in extracurricular activities.

According to Spector, the logic of the ex post facto design is to match subjects on several critical variables, providing two or more groups, and then to analyze data from only the matched subjects. Students were thus matched into two groups, those who did participate in extracurricular activities and those who did not. Any differences between the groups in the achievement variable at the end of the study could then be attributed to involvement or non-involvement in extracurricular activities. The groups were further divided into a group of above average students and a group of average and below average students, thus enabling the data to reflect the effects of involvement or non-involvement in extracurricular activities on the group that appeared most in need of increasing achievement scores: the average

and below average group. The level of achievement prior to the No Pass-No Play Rule (1983-1984) was compared to the level of achievement after the implementation of the No Pass-No Play Rule (1985-1986) in order to determine the impact of extracurricular activities as a motivating force for student achievement during this time period.

Population

The population for this study consisted of students from a Texas school district, large enough to have two divergent high schools within the district. The population consisted of all students who attended those high schools from 1983 through 1986, which was the time period during which the No Pass-No Play Rule was implemented.

The students involved in this study comprised the class of 1988. These students were identified for the study as eighth graders and were followed, via their records, through the tenth grade. The population was comprised of students who were enrolled in the district throughout the three years of the study, beginning as eighth-grade students in the 1983-1984 school year and completing their sophomore year in 1985-1986.

The Sample

Due to the fact that participation in extracurricular activities could not be randomly assigned, the sample was drawn from students who attended the cooperating school

district between 1983 and 1986. Students were matched on the specific variables of demographics, extracurricular activities, IQ scores, grade-point averages, and achievement scores. The students who matched on all five dependent variables at the end of the study, became the sample. Students identified as participants in extracurricular activities were only those who remained involved in activities for the duration of the study. Confidentiality was maintained by the use of student identification numbers and codes to assure that individual students were not identified.

The control group was defined as students who were never involved in extracurricular activities throughout the duration of the study. The experimental group was defined as students who were identified as being involved in extracurricular activities consistently throughout the three years of this study. Even with the loss of students through moving out of the district during the three-year time span of the study, and with the removal of students who did not have complete student records (only one score for the CAT or IQ), the initial numbers were as follows: School A--157 students; School B--360 students. These students were the initial sample groups before students were matched on the critical variables. After the removal of the above-average group, School A had 101 students remaining for use in the study, and School B had 109

students. These groups were used to determine the experimental and control groups. After matching the students, School A had 22 students in the control group and 79 in the experimental group. School B had 29 students in the control group and 80 in the experimental group. The determining factors used to match the students and create the groups were based on the following critical variables. These variables were used to delineate the sample.

Demographics

The school district selected for this study was a large urban school district with a total enrollment of 30,836. The city was a rapidly-growing metropolitan area with a population of 185,370. The ethnic composition was 13.83% Black, 34.68% Hispanic, 50.28% Anglo and 1.21% other nationalities. The district was composed of 40 elementary schools, 8 junior high schools, and 5 senior high schools.

Students were matched by demographics using The 1987 Sourcebook of Demographics and Buying Power of Every Zip Code in the USA, published by CACI, Inc., the official census summary tape processing center. This reference provided a listing of demographic descriptors for residences within the zip code areas for students attending the two schools identified by the school district as divergent populations. This source and the school

districts' demographics provided a description of school A as an area of lower middle-class residency, with home values ranging from \$16,648 to \$32,538, and household incomes ranging from \$14,154 to \$25,267. Ethnic makeup for the academic year 1987-1988 (the year students involved in this study graduated) was 55.85% Black, 39.5% Hispanic, and 4.65% Anglo population. Thus, all students attending school A were considered to be matched on the demographic variable, as the description identified a similar population group.

It should be noted that in 1987 the school district involved in this study was comprised of 25.9% households with an effective buying power of \$10,000 to \$19,999, 27.2% households with an effective buying income of \$20,000 to \$34,999, 14.8% households which were within the \$35,000 to \$49,999 range of buying power, and 11.4% which were in the \$50,000 and up range. This provided a framework in which to place the demographic data for each identified school.

School B was also analyzed and a description provided. The school B attendance area was determined to be a section of upper middle-class residences, with home values ranging from \$34,734 to \$66,530 and household incomes ranging from \$22,261 to \$38,526. School B was described as having an ethnic makeup of 3.78% Black, 11.52% Hispanic, 82.07% Anglo, and 2.62% other, for the same time period. Thus, students attending school B were also considered to be matched on

the demographic variable as the description indicated a similar population group. The schools determined the match on the demographic variable, as their populations were identified as upper middle-class for school B, and lower middle-class for school A, and these identifiers were verified by the census data.

Extracurricular Activities

All students identified as eighth-grade students in the two schools were evaluated as to participation in extracurricular activities throughout the eighth, ninth, and tenth grades. Junior high records were used to identify students' previous involvement in extracurricular activities. Because the few activities that were available to students involved graded class involvement, participation was indicated on students' records. Most activities at the high school level were also identified via class involvement and were listed on the students' permanent records. To be sure that all involved students were identified, a yearbook analysis was also conducted, which located all students who participated in various clubs and other organizations not listed on permanent records. The combination of these two methods of evaluation produced a list of students who were involved in extracurricular activities throughout the three years of the study, and

also identified students who had never participated in any extracurricular activities.

Grade-Point Average

All student records were evaluated and grade-point averages computed for the end of the eighth-grade year and again at the end of the tenth-grade year for students attending the two schools involved in the study. The standards established by the No Pass-No Play Rule created the basis for determining the grade-point averages of the groups used in the study. These grade-point groups are identified in the definition of terms described earlier in this study. As stated in the No Pass-No Play Rule, a grade-point average lower than 70 is below average. Using school district standards, a grade-point average between 70 and 90 (one standard deviation above and below average) was determined to be the average group using a mean of 80 and a standard deviation of 10. A grade-point average more than one standard deviation above the mean (above 90) was identified as above average. It was observed that most students in the above average group were already motivated and thus the issues discussed in this study do not pertain to them, as it is likely that they will remain motivated regardless of motivational techniques being implemented. Therefore, those students who were in the above average group were not included in the sample.

Achievement Score

The participating school district used the California Achievement Test (Forms C and D) for the years spanning this study. This test was administered in the spring of the eighth-grade year and again in the spring of the sophomore year. Using the national percentile rankings (the only comparable score for both years), students were again matched into the average and below average groups as well as the above average group for the eighth-grade year only. The second CAT score obtained at the end of the sophomore year is the dependent variable and is used to test the hypotheses. The tenth-grade CAT score is not used in the matching of groups for this study.

As indicated in the definition of terms, using standard deviation equivalent for percentile rankings as a delineator, student scores that were one standard deviation above and below the mean were determined to be within the average group of scores for this test. This is based on the fact that when normal scores are transferred to percentile rankings the mean is 50 and standard deviation is approximately 34. Thus the national percentile rankings are 85 for one standard deviation above and 17 for one standard deviation below the mean when transformed from normal scores with a mean of 50 and a standard deviation of approximately 21 (California Achievement Tests, 1978). Scores which fell more than one standard deviation below the mean (16 and

below) were identified as below average, while those scores more than one standard deviation above the norm (above 85) were identified as above average. Again the average and below average groups were retained for the study, while the students with above average scores were eliminated from the study.

IQ

When the participating district administered the CAT to students, it also administered the ability indicator which accompanies the CAT, the Short Form of Academic Aptitude. This provided an IQ score for students which could be used to further match the students into groups to be used for this study. The test norms stated that the mean was 100 and standard deviation was approximately 15. The raw IQ score was then placed onto a scale using the normal curve devised by Karl Gauss to show the theoretical distribution of intelligence within the population (Lutterjohann, 1980). This scale, which runs from below 60 to above 140, has a mean of 100 and a standard deviation of 10. This scale identifies the range of IQ scores for average intelligence as falling between the scores of 90-110. Below average intelligence is identified by scores below 90, while IQ scores above 110 are identified as falling into the above average range of intelligence. Therefore, scores of 89 and below were identified as below average. Scores of 110

and above were identified as above average. Again, students identified as above average were withdrawn from the study

Treatment of Data

After all information was gathered, the data were categorized and matched. Each hypothesis was restated in the null form for testing at the stated .05 level of significance. The first null hypothesis states that "there will be no significant difference between the scores on a measure of academic achievement for average and below average students involved in extracurricular activities and similar students who are not involved in extracurricular activities."

Hypothesis 1 was tested using a one-way analysis of variance (ANOVA) to determine the significance of the difference between posttest achievement scores of the groups. Each school was then tested with an independent samples t-test on the difference between the pretest and posttest scores to determine if there was a significant difference between students' scores in the two activities groups. These tests provide an analysis of the difference between the pretests and posttests for both groups.

Hypothesis 2 was tested by a repeated measures ANOVA to determine if the group means of the achievement scores increased significantly during the time period of this study. These results were rechecked by a matched t-test and by using univariate and multivariate repeated measures

analysis. A t-test was then performed on the difference between the pretest and posttest scores for each school, and an analysis of covariance (ANCOVA) was run to see if the two groups differed using the first achievement test scores (CAT1) as a covariate. These tests provide an analysis of the posttests for both groups to determine if one group had increased their achievement scores from 1984 to 1986.

A table presents each aspect of the analysis for each hypothesis.

CHAPTER 4

PRESENTATION AND ANALYSIS OF DATA

Hypothesis One

Hypothesis one states that the mean score on a national achievement test administered to average and below average students involved in extracurricular activities will be significantly higher than the mean score of similar students who were not involved in extracurricular activities. This hypothesis was restated in the null form for testing in an attempt to determine if students who were involved in extracurricular activities scored higher than those who did not participate in extracurricular activities on a measure of academic achievement. All achievement scores were reported as percentile rankings. The first test was administered in the spring of 1984 and the second in the spring of 1986. The results show that the group that participated in extracurricular activities had a mean score on the second CAT test (measure of achievement) of 47.516, while the group that did not participate in extracurricular activities had a mean score of 46.0 on the same measure. These mean scores are shown in Table 1. The results of the ANOVA are presented in Table 2. ANOVA tests the significance of the difference between the posttest

scores. As Table 2 shows, the null hypothesis is retained, as there was not a significant difference between the scores on the posttest for the extracurricular activities group and the no-extracurricular-activities group. Students involved in extracurricular activities did not score significantly higher in academic achievement than those students who were not involved in extracurricular activities. As indicated, students involved in extracurricular activities scored slightly higher than students who were not involved, but this difference could be attributed to sampling error, as the difference was not significant.

Table 1

Posttest Scores on Achievement Test by Activity Group

Activity Group	<u>N</u>	Mean	Standard Deviation
Involved in extracurricular activities	159	47.516	20.070
Not involved in activities	51	46.000	20.747

As Table 2 indicates, the level of significance was 0.642, which supports the null hypothesis that there was no significant difference between the posttest scores for the two activity groups.

Table 2

Effect of Participation in Extracurricular Activities on Measure of Achievement Posttest

Source of Variance	Sum of Squares	DF	Mean Square	F-Ratio	Significance of F (P)
Activities	88.713	1	88.713	0.217	0.642
Error	85163.711	208	409.441		

An analysis was done for each school to determine if there was any difference between the two activity groups for each school. The mean scores on the pretests and posttests are given for each activity group for School A in Table 3. As Table 3 shows, there was no increase in scores on the measure of achievement for either group. The means indicated a decline in achievement scores for each group.

An independent t-test was then run on the difference between achievement scores for the students involved in extracurricular activities and those who were not involved for each school. To do this, the difference between the pretest and posttest scores was calculated (CAT2 - CAT1). The results of the independent samples t-test for School A are presented in Table 4. As Table 4 shows, there was no significant difference between the pretest and posttest for students in the two activity groups for School A.

Table 3

Mean Scores for School A by Activity Groups

Activity Group	<u>N</u>	Pretest Mean	Posttest Mean
Involved in extra-curricular activities	79	43.506	38.709
Not involved in activities	22	40.636	35.409

Table 4

Effect of the Difference Between Achievement Scores for School A

Group	<u>N</u>	Mean Difference	SD
Involved in extra-curricular activities	79	-4.227	10.415
Not involved in extracurricular activities	22	-4.797	13.404
Separate variances <u>t</u> =	.160	DF = 42.4	<u>P</u> = .874
Pooled variances <u>t</u> =	.139	DF = 99	<u>P</u> = .890

As indicated by the data in Tables 3 and 4, there was a slight decline in achievement scores for both groups, but

this difference is not significant and can be attributed to sampling error.

The mean scores for School B are given in Table 5. This table shows that there was also an insignificant decline in the scores on a measure of achievement for both activity groups for this school.

The results for the independent samples t -test for School B are presented in Table 6. As indicated in Table 6, there was no significant difference between the difference of the two scores (CAT2 - CAT1) of School B for the two activity groups, even though there was a decline in scores.

Table 5

Mean Scores for School B by Activity Group

Activity Group	<u>N</u>	Pretest Mean	Posttest Mean
Involved in extra-curricular activities	80	57.238	56.213
Not involved in activities	29	55.414	54.034

Tables 5 and 6 show that although there was a decline in scores for the two activity groups, this difference between the scores was not significant and can be attributed to sampling error.

Table 6

Effect of the Difference Between Achievement Scores for School B

Group	<u>N</u>	Mean Difference	SD
Involved in extra-curricular activities	80	-1.025	12.430
Not involved in extracurricular activities	29	-1.379	10.459
Separate variances <u>t</u> =	.148	DF = 58.6	<u>P</u> = .883
Pooled variances <u>t</u> =	.137	DF = 107	<u>P</u> = .891

Hypothesis Two

Hypothesis two states that there will be a significant increase in academic achievement for average and below average ability students involved in extracurricular activities during the years of 1983 through 1986 (the years covered by this study).

This hypothesis was tested by a repeated measures ANOVA which tests the significance of the difference between the means on repeated measures. The results of this test are presented below. However, the means of the first achievement test (CAT1) and the second achievement test (CAT2) indicate that the overall CAT mean declined for

students involved in extracurricular activities. This is enough to retain the null hypothesis; as there is no increase, there can be no significant increase. These mean scores for all students involved in extracurricular activities are 50.415 for CAT1, and 47.516 for CAT2, the second measure. This pretest mean of 50.415, followed by the posttest mean of 47.516 shows the decline in scores for all students involved in extracurricular activities. The repeated measures ANOVA was run on these data to verify the results. These results, which show a significant decline in achievement (CAT scores) for all students involved in extracurricular activities, are presented in Table 7.

Table 7

Effect of Extracurricular Activities on Repeated Measures of Achievement

Source	Sum of Squares	DF	Mean Square	F-Ratio	P
Hypothesis	668.305	1	668.305	7.884	0.006
Error	13393.195	158	84.767		

The findings represented by the mean scores and the data presented in Table 7 indicate that while there was no significant increase in the means on a measure of achievement for all students involved in extracurricular activities, there was a significant decrease in the means. The results

identified in Table 7 were then double checked with a matched-samples t-test. The results of this test are shown in Table 8 and verify the findings which indicate a significant decrease in achievement scores for both schools for all students involved in extracurricular activities.

Table 8

Effect of Extracurricular Activities on Achievement by t-Test

Source	Mean Difference	SD Difference	<u>t</u>	DF	<u>P</u>
Paired samples <u>t</u> -test	-2.899	13.021	2.808	158	.006

Table 8 shows that the decrease (mean difference) for all students involved in activities from both schools was -2.899. This was a significant decrease in the means on a measure of achievement.

After examining the differences between achievement scores for students involved in extracurricular activities, the scores of all students were evaluated; both those involved in extracurricular activities and those who were not involved. This was done to determine if the decline in achievement was only for students involved in extracurricular activities or if it extended to all students.

Table 9 shows the differences between the pretest and posttest mean for the achievement scores of all students.

Table 9

Mean Scores for Pretest and Posttest on Achievement for All Subjects (Both Activity Groups)

Source	<u>N</u>	CAT1	CAT2
Dependent variables means	210	50.081	47.148

As shown in Table 9, all student mean scores declined from CAT1 to CAT 2 regardless of involvement in extra-curricular activities.

Table 10 presents the results of the repeated measures analysis of variance (ANOVA). Table 10 shows that this decline in achievement test scores was a significant decrease in the measure of achievement for all subjects, regardless of participation in extracurricular activities. Table 10 shows a P value of 0.001, which indicates that the decrease in the means on a measure of achievement from the pretest to posttest was significant for all students taken as a whole, regardless of participation in activities.

A new variable representing the difference between pretest and posttest scores was identified (CAT2 - CAT1).

Table 10

Effect of Extracurricular Activities on Repeated Measures of Achievement for All Subjects

Source	Sum of Squares	DF	Mean Square	<u>F</u>	<u>P</u>
Hypothesis	903.467	1	903.467	11.687	0.001
Error	16156.533	209	77.304		

A negative difference reflects a decrease in achievement; a positive score reflects an increase in achievement. Table 11 shows the difference for the scores of students involved and those not involved in extracurricular activities. Both scores show a decline in achievement scores. Table 11 also shows that students who were not involved in extracurricular activities declined in their CAT (achievement) scores more than those who were participating in extracurricular activities. The results of the t-test on the difference of the two scores shows that although there was a decline in scores, this decline was not significant. Therefore, as previously stated, all students declined in achievement regardless of involvement in extracurricular activities.

As Table 11 indicates, the decline in the mean on a measure of achievement was greater for students who were not involved in extracurricular activities. However, as

Table 11

Difference in Pretest and Posttest Scores for Involvement and Non-Involvement in Extracurricular Activities

Source of Difference	<u>N</u>	Mean Difference
All students involved in activities	159	-2.899
All students not involved in activities	51	-3.039
<u>t</u> Statistic = .070 Overall Mean = -2.933 <u>P</u> = .944		

the P value of .944 shows, the decline for both groups was not significant when each group was identified separately. When reviewing the data by school (Tables 4 and 6), the decline for each activity group at each school was also not significant. Although there was a decline for both groups in both schools, and these declines were not significant, Table 11 shows that students who were involved in extracurricular activities declined less than similar students who were not involved in activities. Figures 1 and 2 illustrate the decline in the means for each activity group for each school.

As all students declined in achievement regardless of involvement in extracurricular activities, an independent t-test was administered on the difference between the schools to determine the effect for each school. Table 12

Figure 1: Mean Scores for Both Activity Groups for School A

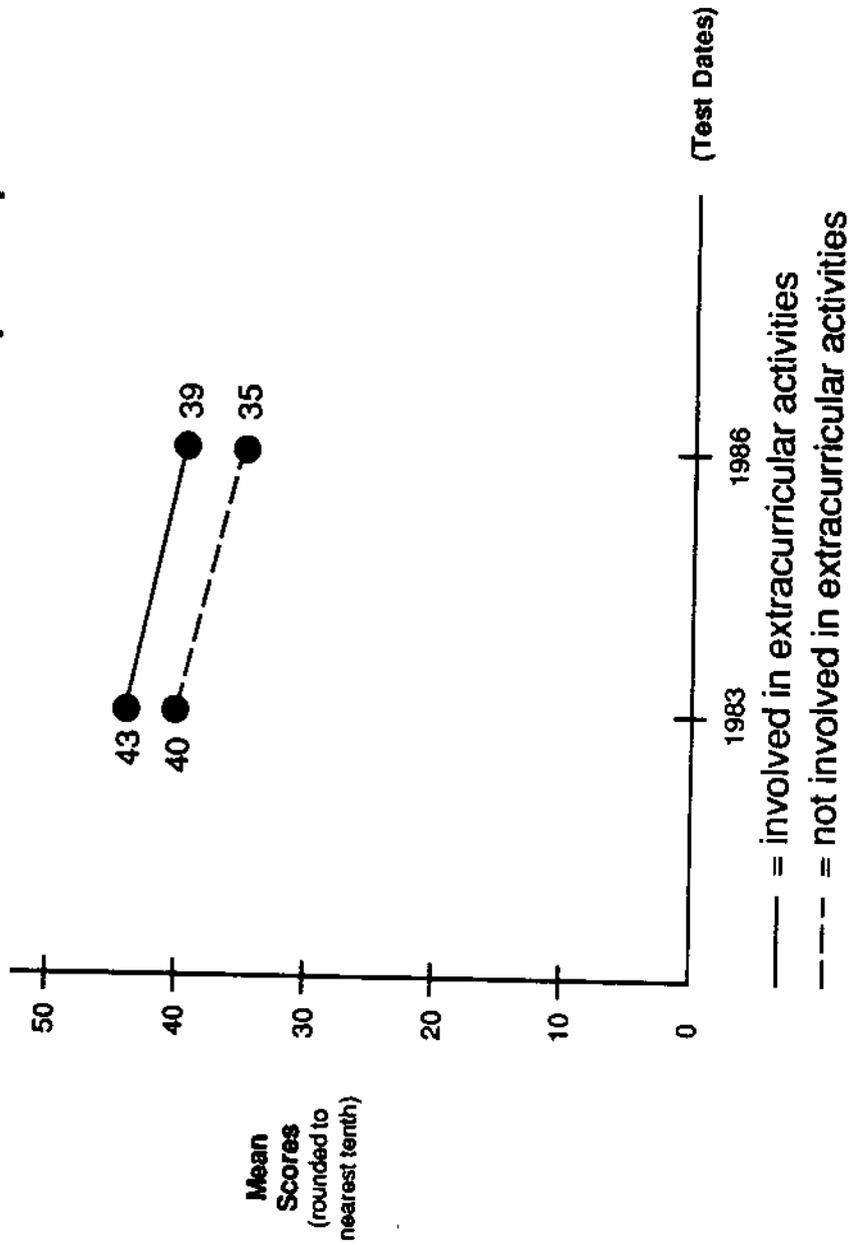
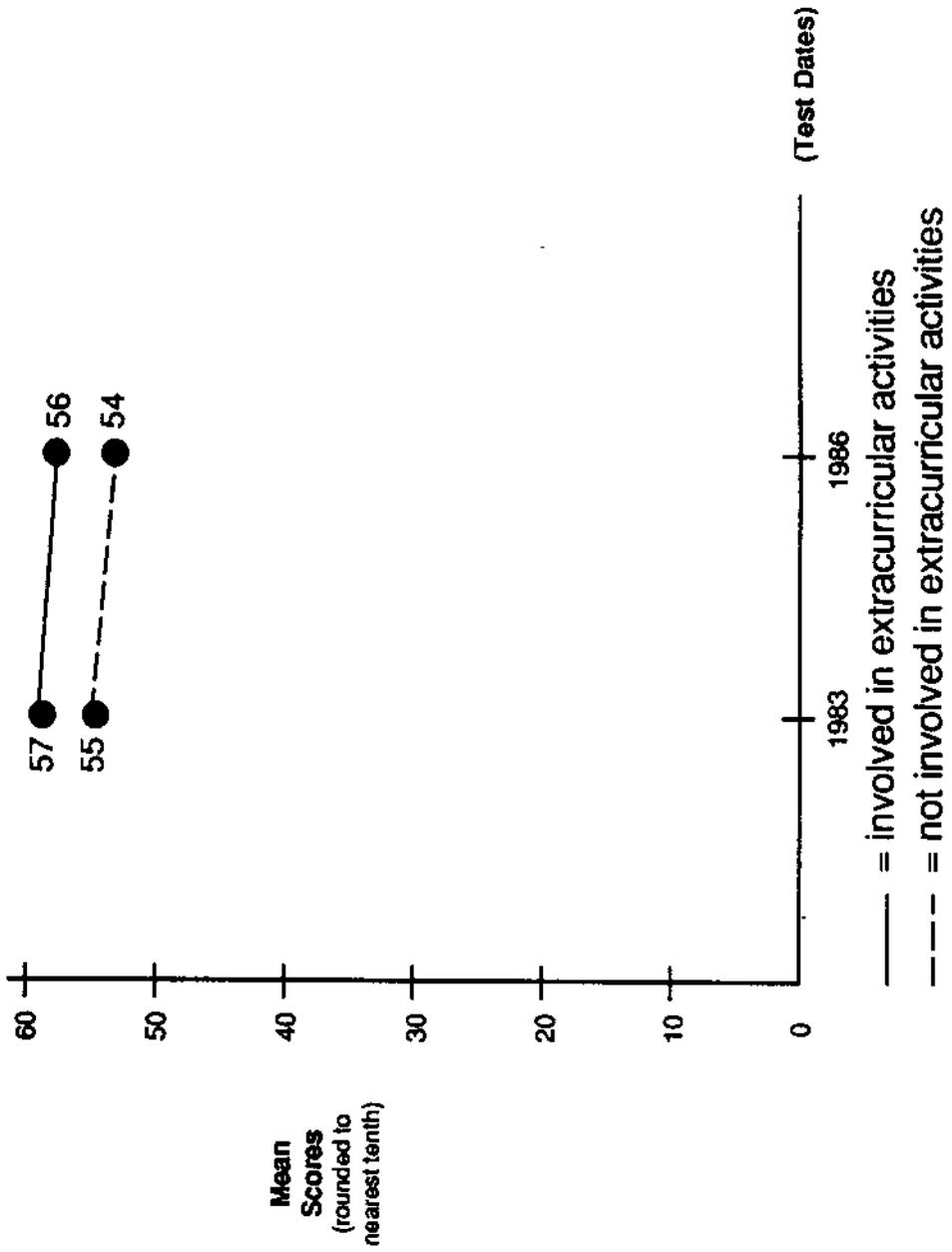


Figure 2: Mean Scores for Both Activity Groups for School B



presents the results, which show a significant difference between schools in the decline in achievement, as $t = 2.211$ and $P = .028$.

Table 12

Posttest Means by School for Both Activity Groups

Source	<u>N</u>	Mean	SD
School A	101	-4.891	12.766
School B	109	-1.119	11.891
Separate variance $t =$	2.211	DF = 203.6	<u>P</u> = 0.28

As Table 12 shows, School A declined in achievement significantly more than School B. A review of Tables 4 and 6 shows that there was no significant difference between students in the two activity groups for each school. However, data presented in Table 12 show that when looking at all groups from each school, School A declined significantly more than School B.

Using an independent samples t -test on the difference between the means on the measure of achievement for both schools, it was discovered that there was a significant difference between the achievement test scores for each school. Even though all students declined in achievement

scores, School A had a significant difference between the first and second achievement tests, indicating a significant decline in achievement scores. School B results indicate that there was not a significant decline in achievement scores. These results are reported in Table 13.

Table 13

Decline in CAT Scores by School

Source	Pretest Mean	Mean Diff.	Posttest Mean	SD Diff.	<u>t</u>	DF	<u>P</u>
School A	42.881	-4.891	37.990	12.766	3.851	100	p<.001
School B	56.752	-1.119	55.633	11.891	.983	108	.328

As Table 13 shows, the decline in the mean for the achievement test scores from pretest to posttest was significant for School A, but not for School B, when looking at both activity groups.

An analysis of covariance (ANCOVA) was run on the data to determine if the two groups differed significantly on the second achievement test (CAT2), using the first achievement test (CAT1) as a covariate. All activity groups were coded "yes" and "no" for this test. First the interaction between CAT1 and involvement in extracurricular activities was determined to be nonsignificant by a two-tailed test (t = .883 and P = .378). These results are

presented in Table 14. As Table 14 shows, a normal ANCOVA could be run as the assumption of the homogeneity of slopes was plausible.

Table 14

Effect of Interaction Between CAT1 and Activities

Variable	Coeff.	STD Error	STD Coef.	Tolerance	t	P (2 tail)
Constant	11.595	5.897	0.000	1.0000000	1.681	.094
ACT	-4.609	5.166	-0.098	.1400283	-0.892	.373
CAT1	0.718	0.129	0.701	.1073418	5.583	.000
ACT	0.086	0.097	0.141	.0665470	0.883	.378

Due to the fact that no significant interaction was found between CAT1 and extracurricular activities (as indicated in Table 14), an ANCOVA could be run on the data.

The results of the ANCOVA, as shown in Table 15, indicate that involvement in extracurricular activities is not a significant predictor ($P = .844$) of the posttest (CAT2), when controlling for the pretest. This reinforces the previously presented findings.

The results of the repeated measures ANOVA indicate that there was no influence by activities on the results of the posttest.

Table 15

Effect on Achievement Scores Using Activities as a Covariate

Variable	Coeff.	Std Err.	STD Coef.	Tolerance	t	$\frac{P}{2}$ tail)
Constant	6.274	3.349	0.000	1.0000000	1.873	0.062
CAT1	0.826	0.042	0.806	.9991002	19.589	0.000
ACT	-0.380	1.933	-0.008	.9991002	-0.196	0.844

In summary, the results for hypothesis two state that all students in the study, regardless of involvement in extracurricular activities, declined in achievement test scores during the years of this study (1983-1986). Thus the null hypothesis was retained, as there was no significant increase in academic achievement for similar students involved in extracurricular activities during the years of this study. There was, instead, a decrease in achievement scores. These data suggested a need for further testing than originally indicated by this study, as an attempt was made to isolate which particular group was creating the significant decrease in achievement scores. It was found that all students in this study from School A declined significantly in achievement test scores, when considered as a whole. All students in this study from School B declined in achievement scores, although not

significantly. And while achievement scores for students from both schools who were involved in extracurricular activities declined less than those who were not involved in activities, this difference was not significant and can be attributed to sampling error.

CHAPTER 5

SUMMARY OF FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS

This research study was an investigation of the impact of extracurricular activities on high school academic achievement. This study used achievement levels of two groups as a basis of comparison to determine if extracurricular activities were an effective motivational force, or had any other impact on student achievement. This study spanned the school years from 1983 through 1986, which was the time period over which the Texas No Pass-No Play Rule was implemented. Differences in achievement for the two groups, those involved in extracurricular activities and those who were not involved in extracurricular activities, were the focus of this investigation.

Summary of Findings

Data were gathered on the graduating class of 1988 from a Texas school district with demographics that provided two high schools of divergent populations. Students were grouped by the data into homogeneous categories, which identified students who had participated in extracurricular activities during the time period of this study and students who had not been involved in any

extracurricular activities. School A had 79 students in the experimental group (who had participated in extracurricular activities) and 22 in the control group (who had not participated in any activities). School B had 80 students in the experimental group and 29 in the control group.

After students were categorized, the initial data (pretest), which were the achievement test scores for the eighth-grade level, were identified. The posttest data were collected from tenth-grade achievement test scores. The scores were statistically analyzed by computer using analysis of variance (ANOVA), repeated measures (ANOVA), t-tests and analysis of covariance (ANCOVA) to examine each hypothesis in the research study. The statistics used for each procedure also controlled for uneven sample size.

Findings

The major findings resulting from the analysis of the statistical data presented in this study were the following:

1. No significant statistical difference was found between the mean scores of average and below average students involved in extracurricular activities and the scores of similar students who had not participated in extracurricular activities as indicated by achievement tests administered at the end of the study.

2. There was a significant difference in the mean of achievement scores for all students involved in the study,

regardless of involvement in extracurricular activities. This difference was identified as a significant decline in the achievement scores.

3. There was a significant difference in the mean of achievement scores for students from School A, regardless of involvement in extracurricular activities. This difference was identified as a decline in the achievement scores.

Conclusions

Based on the findings of this research study, the following conclusions seem justified:

1. As measured by the CAT, achievement was not higher for average and below average students involved in extracurricular activities during the time period investigated.

2. Taken as a whole, all average and below average students involved in the study declined in achievement as measured by the CAT, although students involved in extracurricular activities declined less than those who were not involved in extracurricular activities.

3. All students from School A (identified as a lower middle-class population), declined more in achievement than similar students from School B (identified as an upper middle-class population) as measured by the instrument in this study, regardless of involvement in extracurricular activities.

4. The use of extracurricular activities as a motivating force did not appear to have a positive impact on the achievement scores of students involved in this study.

5. The implementation of the No Pass-No Play Rule as an external motivating technique to increase student achievement did not appear to positively impact achievement for students in this study during the time period from 1983 through 1986.

Recommendations

Based on the findings and conclusions of this study, the following recommendations are made:

1. The use of one test to determine the increase or decrease of achievement levels should be expanded. Additional tests should also be administered to determine the accuracy of the achievement scores.

2. Additional studies of similar design should be conducted to verify the results and conclusions of this study.

3. A longitudinal study should be conducted to determine if extracurricular activities have impacted student achievement since 1986.

4. A study should be conducted comparing the use of extracurricular activities as an external motivating force to the use of other external motivating devices.

5. Studies should be done using other populations to determine the impact of extracurricular activities on student achievement for different groups, such as rural, larger urban and other ethnic populations.

6. Studies should be conducted to determine if the use of extracurricular activities as an external motivating force would be more effective when coupled with other motivational techniques.

7. Studies should be conducted comparing other mandated motivational plans to the Texas No Pass-No Play Rule to determine the overall effectiveness of such plans.

8. A study should be conducted in Texas to determine the effects of possible grade inflation by teachers attempting to keep students involved in extracurricular activities as a result of the implementation of the No Pass-No Play Rule.

9. A study should be conducted in Texas to identify any rise or fall in the drop out rate for students involved in extracurricular activities as compared to those who were not involved in extracurricular activities since the implementation of the No Pass-No Play Rule.

10. An evaluation of the motivational techniques used by Texas school districts should be conducted to ascertain whether other motivational techniques are being used in conjunction with the No Pass-No Play Rule.

Although this study did not produce any significant statistical difference between students involved in extracurricular activities and students who were not involved in extracurricular activities with regards to achievement, many interesting statistics emerged. More research needs to be done in this area to answer the questions raised by the data. For example, Why did all students, as a whole, decline in achievement scores during the time period of this study? Why did the school with the lower middle-class population decline significantly in achievement scores?

It should also be noted that because the scores of these average and below average students involved in extracurricular activities declined less than similar students who were not involved in extracurricular activities, this might be interpreted as a result of the influence of extracurricular activities. Therefore, although no significant impact on achievement due to the decline in all achievement scores is apparent, the fact that students involved in extracurricular activities declined less could be interpreted as a positive result. The fact that involved students declined less could indicate that extracurricular activities serve as an external motivational force, as involvement appears to slow students' decline in achievement. Perhaps, then, the No Pass-No Play Rule is working

as a motivational tool. Much additional research needs to be conducted before these questions are answered satisfactorily.

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