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RUNNING HEAD: THE EFFECT OF EXTRACURRICULAR ACTIVITIES ON

The Effect of Extracurricular Activities on School Dropout

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Abstract

The purpose of this study was to examine the relation between participation extracurricular activities and school dropout. Social and classroom engagement were analyzed as possible mediating factors in the relation. Longitudinal data from a study conducted by French, Conrad, and Turner (1995) was used in the analysis, along with extracurricular data collected from school yearbooks. Hierarchical binary logistic regressions were used to assess the effect of participation in five types of extracurricular activities (athletics, fine arts, academic clubs, interest groups, and leadership positions) on school dropout rates as well as to assess the role of engagement in the relation. Participation in athletics emerged as the only significant predictor of school dropout. Social and classroom engagement were found to have significant effects in the relation between participation in athletics and school dropout, but the effect of participation in athletics remained significant also, indicating that participation in athletics has a unique effect on school dropout, independent of engagement.

Although school dropout rates appear to be declining, many students continue to drop out of high school (Schwartz, 1995). In today's competitive economic market, the current smaller numbers may actually be more alarming than those of the past. Dropouts earn about one-third less a year than do graduates, which works out on average to be under \$13,000. The Federal Poverty Guidelines for 2002 show that a yearly income of that size falls below the poverty level for a family of three or more (Federal Register, 2003). On average, high school dropouts barely make enough to adequately support themselves, let alone a family. With the overall poverty rate increasing yearly and the highest poverty rate for children of any developed country (Procter & Dalaker, 2001), the United States must begin doing what it can to prevent more families from falling under the poverty threshold. Decreasing rates of school dropout would no doubt contribute to the solution of this problem. In order to accomplish this, one must first understand the dynamics of school dropout.

School Dropout

A good deal of past research on school dropout has focused on demographic characteristics of students. For example, most researchers find higher dropout rates among male populations (Ekstrom, Goertz, Pollack, & Rock, 1986; Ensminger & Slusarcick, 1992). Even within high risk groups, boys still are proportionally more likely to drop out than are high risk girls (Cairns, Cairns, & Neckerman, 1989). Ethnicity also predicts school dropout. Hispanic students are at a much higher risk for dropping out than are those in other races or ethnicities (Pursley, Munsch, & Wampler, 1998; U.S. Department of Education [USDE], 1997). Additionally, students in the lowest 20 percent

of the income distribution are more likely to drop out than students with higher socioeconomic status (Rumberger, 1983; USDE, 1997).

Characteristics of children's friends and family have also been associated with school dropout. Students who drop out tend to have only one parent at home, have mothers who have lower levels of education and are more likely to be working outside of the home, and have parents who are less likely to monitor their activities (Ekstrom et al., 1986; Ensminger & Slusarcick, 1992). School dropouts were also more likely to have friends that were alienated from school. Campbell and Duffy (1998) found that dropouts have friends that are dropouts.

Poor performance in school, both academically and behaviorally, has also been linked with school dropout. Students with lower GPAs and achievement scores are more likely than those with higher GPAs and achievement scores to drop out of school (Cairns et al., 1989; Ensminger & Slusarcick, 1992; Lloyd, 1978; Pursley et al., 1998). Additionally, truancy and disciplinary problems appear to predict school dropout (Robins & Ratcliff, 1980; Wehlage & Rutter, 1986).

Because most of the past research on school dropout has focused on demographics, an incomplete picture of the process leading to school dropout has emerged. These issues need to be addressed in order to advance knowledge about what kinds of changes can take place in school policy to prevent school dropout (Cairns et al., 1989; Campbell & Duffy 1998; Doll & Hess, 2001; Parker & Asher, 1987). Demographics merely provide a picture of the average school dropout, but can not be manipulated by changes in school policy. Recent research has proposed that it is important to study participation in

extracurricular activities as a possible predictor of school dropout because this can be manipulated by school policy and funding.

Extracurricular Activity Participation

Although the suggestion has been made that participation in extracurricular activities protects against school dropout, there has not always been universal agreement that participation in extracurricular activities is beneficial. Perhaps the most well known argument against extracurricular activities was advanced by Coleman (1961) who concluded that adolescent subcultures focus on such features as athleticism and popularity, which take away from academic responsibility. Because many extracurricular activities do not focus on academics, some may argue that they are detrimental.

It has since been found that participation in extracurricular activities can be somewhat beneficial to academic outcomes. Waxman and Sulton (1984) studied the effect of non-class experiences on educational aspirations and academic achievement. They found that extracurricular participation negatively contributed to academic achievement. They, however, also found that such participation is associated with high educational aspirations.

Eccles and Barber (1999) offered an explanation for the conflicting results of Waxman and Sulton (1984) by stating that different extracurricular activities provide different benefits. They obtained self-report information on the participants' involvement in extracurricular activities and divided the activities into five different types: sports, prosocial, school involvement, academic, and performing arts. Many effects of participation in extracurricular activities depended upon which type the participant was involved in. Namely, they found that what they labeled prosocial involvement, such as

church and community groups, protected against engaging in risky behaviors, while involvement in sports increased the chance that a student would engage in one risky behavior, specifically drinking alcohol. However, all five extracurricular activities, including sports, predicted higher than expected GPAs and sports uniquely predicted increases in school attachment.

There is now general agreement that participation in extracurricular activities has beneficial outcomes. Marsh (1992) examined correlations between the total number of extracurricular activities a student is involved in and many different outcomes. He found that higher extracurricular activity participation scores correlated with a positive social and academic self-concept, taking more advanced courses, spending more time on homework, post-secondary educational aspirations, higher GPA, more parental involvement, less absenteeism, better college attendance, and higher occupational aspirations. Marsh stated that although the effects of participation in extracurricular activities may be small, they are consistently positive.

Extracurricular activities have been found to be substantially more beneficial than most other activities that children participate in after school. Cooper, Valentine, Nye, and Lindsay (1999) studied the connections between five different after school activities and academic achievement. They found that, when compared with time on homework, watching television, working, and other structured after-school groups, structured school-based extracurricular activities were the only ones that correlated with all of the positive academic outcomes. McHale, Crouter, and Tucker (2001) found that that, although watching television, hanging out, or playing outside were detrimental to children's adjustment in early adolescence, more structured activities, such as sports and hobbies,

were quite beneficial. Specifically, participation in sports at age 10 was connected to higher grades and a lower incidence of depression.

The link between extracurricular activities and academic success is increasingly becoming clearer. Gerber (1996) and Camp (1990) discovered that participation in extracurricular activities was associated with greater academic achievement. Camp also found the correlation between extracurricular participation and achievement was actually double the size of that of study habits. Silliker and Quirk (1997) found that the GPA of male and female soccer players was significantly higher during the soccer season than it was out of season. This provides a strong argument against Coleman (1961), by suggesting that extracurricular activities, including athletics, do not distract students from academics, but rather may be associated with increased motivation and concentration on their studies.

Extracurricular activities may also be associated with decreased antisocial behavior. Mahoney (2000) conducted a longitudinal study examining antisocial behavior and extracurricular participation at either fourth or seventh grade, twelfth grade, and at 20 to 24 years of age. He found that participation in extracurricular activities may actually moderate previous antisocial behavior. Mahoney suggests that extracurricular activities may provide students with the opportunity to interact with normal peers, which in turn diminishes antisocial behavior.

Extracurricular activity participation has also been linked with protection against deviant behaviors, such as substance abuse. Borden, Donnermeyer, and Scheer (2001) using self-report measures, found that school activity was negatively correlated with all measures of substance use. Shilts (1991) used questionnaires to assess participation in

extracurricular activities and substance use and divided participants into three categories: nonusers, users, and abusers. He found that the non-using group reported significantly higher participation in extracurricular activities than did the abusing and using groups.

The Connection between Extracurricular Activities and School Dropout

With a clear link between participation in extracurricular activities and academic and social benefits, such as decreased antisocial behavior and substance use, as well as a clear link between these benefits and school dropout, it only seems natural to examine the connection between participation in extracurricular activities and school dropout.

McNeal (1995) analyzed existing data, taken from the first wave of High School and Beyond, collected by the National Center for Educational Statistics in 1980. Data was collected from the 14,249 students during their sophomore and senior years in high school. McNeal examined the extracurricular activities that the students were participating in and separated them into four sub-groupings: athletics, fine arts, academic clubs, and vocational clubs. Students who participated in both athletics and fine arts extracurricular activities were found to be less likely to drop out than were those who did not participate. McNeal did not find significant correlations for the other two categories.

Davalos, Chavez, and Guardiola (1999) compared assessments of Mexican-American students who dropped out of school and Mexican-American students who were still enrolled in school. A group of 2,621 randomly selected dropouts and enrolled students completed self-report instruments about extracurricular participation in athletics, band or music, and other activities. Findings showed that those Mexican-American students who were involved in any extracurricular activity, excluding band, were more likely to be enrolled in school than were those not involved in extracurricular activities.

Most relevant is a longitudinal study that was conducted by Mahoney and Cairns (1997). They collected data on 392 children from seventh grade until their senior year of high school. They obtained information from school yearbooks regarding extracurricular activity participation in 64 activities. These were categorized into nine domains: athletics, academics, fine arts, student government, school service activities, press activities, school assistants, vocational activities, and royalty activities. Because of this technique, they were able to account for participation at four levels: involvement in specific activities for each year, total number of activities participated in each year, number of activities within each domain participated in each year, and total number of activities participated in across all years for each activity domain. Dropout was assessed using personnel reports, school records, and self-report interviews. Mahoney and Cairns also utilized teacher ratings to assess competence and determined categories of student risk.

Mahoney and Cairns (1997) argued that engagement was reflected in participation in extracurricular activities and attributed school dropout to a lack of engagement. They found that dropouts participated in significantly fewer extracurricular activities at all grades than did non-dropouts. All categories of extracurricular activities, with the exception of fine arts, were associated with reduced rates of dropout, especially athletics. Additionally, they found that at-risk students only showed a significantly higher dropout rate than students in more competent clusters when there was no extracurricular involvement. The trend that extracurricular involvement prevents school dropout was strongest in the high-risk clusters. Mahoney and Cairns suggest that this finding may be due to the fact that competent students are already engaged in the school environment,

whereas high-risk students need mediating factors, such as extracurricular activities, in order to become engaged in school.

Engagement as a Mediator between Extracurricular Participation and Dropout

Because participation in extracurricular activities appears to protect against school dropout, the next step is to explore the process by which this occurs. Engagement has been proposed as a mediating factor in the relation between extracurricular activities and school dropout (Mahoney & Cairns, 1997). The importance of considering engagement as a possible mediating factor between participation in extracurricular activities and school dropout was noted in a report published by the American Psychological Association in 1996. They brought attention to the lack of information about disengagement from school, an important antecedent to school dropout (Doll & Hess, 2001). To understand more about engagement and its role as a possible mediator in this relation, we must first examine how extracurricular activities may lead to engagement and then how engagement may lead to lower dropout rates.

Engagement and extracurricular activities. Participation in extracurricular activities may contribute to both social and academic engagement. Social engagement involves the connection between students and their classmates, while classroom engagement examines the relation between the actual school environment and the student. Ryan and Powelson (1991) stated that disengagement from the school arises from a lack of contact and alliance with peers. Therefore, programs to foster engagement should afford students the opportunity to integrate with other students. Extracurricular activities accomplish this because they are sponsored and supported by the school itself, but also provide a connection between participants.

Participation in extracurricular activities has been found to increase engagement. Holloway (2002) suggested that a main reason that students participate in extracurricular activities is that they connect the students to the school. Haensly, Lupkowski, and Edlind (1986) found that high achieving and low achieving students consistently stated that extracurricular activities made school more enjoyable and low achieving students stated that they also developed greater involvement in school through participation. Gilman (2001) found that students with higher levels of extracurricular activity participation reported more school satisfaction than did students with lower levels of participation.

Social engagement and dropout. A large body of research exists on the connection between school dropout and the aspects of social engagement. One such aspect of social engagement is antisocial behavior, which tends to discourage peer acceptance and interaction (Coie & Kupersmidt, 1983; Dodge, 1983; Dodge, Coie, & Brakke, 1982; French, 1988). French and Conrad (2001) conducted a longitudinal study that found that antisocial behavior uniquely predicted achievement and school dropout. French and Conrad pointed out that these findings do not causally explain the connection between antisocial behavior and school dropout and noted the possibility of mediating factors, such as engagement. Perhaps, antisocial behavior leads to disengagement from peers, which eventually leads to school dropout.

Aggression can interfere with social engagement because it is associated with difficulties in peer interaction and can lead to friction between students and school personnel. Aggression has also been linked to school dropout by Ensminger and Slusarcick (1992). They conducted a longitudinal study of a poor, African American community on the South Side of Chicago and found that those who exhibited aggressive

behavior in the first grade were more likely to eventually drop out. Cairns et al. (1989) found that aggressive behavior predicted school dropout. They also found that, at the time students dropped out, they reported having friends. When considering the findings of Campbell and Duffy (1998), we may be able to assume that these friends are also destined to drop out. From these findings, we can speculate that aggressive behavior may alienate and disengage students from the peer social system, which may be a common path to dropout.

The most obvious aspect of social engagement is peer acceptance, or popularity, because popularity is based on the number and quality of peer relationships. Parker and Asher (1987) completed an extensive study of the connections between problems in peer social relationships and later negative outcomes. They reported a strong negative correlation between popularity and school dropout.

Association with deviant peers is another possible aspect of social engagement because popular students, who are socially engaged, are less likely to interact with deviant peers (French, Conrad, & Turner, 1995). Therefore, if popular, socially engaged students are less likely to drop out (Parker & Asher, 1987) and popular, socially engaged students are less likely to interact with deviant peers (French et al., 1995) then there exists the possibility of a connection between interaction with deviant peers and school dropout.

Antisocial behavior, aggression, popularity, and interaction with deviant peers, are all components of social engagement because they affect the level of engagement that any child experiences in the social system. Hymel, Comfort, Schonert-Reichl, and McDougall (1996) reviewed the findings on the relationship between social relationships

and dropout to assess the overall effect that social engagement may have on educational success. They examined many aspects of the role of peers in early withdrawal from school, essentially viewing social disengagement as a continual process that eventually ends in school dropout. Through their summary of existing research, they concluded that lack of social engagement is a risk factor for school dropout, but found nothing to suggest that dropouts are rejected or feel socially isolated at the time they drop out. Therefore, they took the position that social and academic factors combine to predict school dropout most effectively. They additionally acknowledged the complexity of the issue and warranted the need for further research to examine the many paths to disengagement and dropout.

Classroom engagement and dropout. If social engagement alone can not account for school dropout, then academic factors must also be taken into consideration. Researchers have found a connection between classroom engagement and school dropout, introducing the possibility that disengagement from the school environment may be an underlying cause of school dropout. Fagon and Pabon (1990) surveyed dropouts and students still enrolled in school to examine the differences in attitudes between the two groups. According to the responses of participants in each group, students still enrolled in school reported much more school integration, a measure of school attachment and involvement, than did dropouts. Wehlage and Rutter (1986) found that dropouts, as compared to stay-ins or college bound students, felt that their teachers were not interested in them and that the discipline system was neither effective nor fair to them. This implies that certain students feel rejected by and disengaged from the school-system.

Hunt et al. (2002) attempted to show that schools could prevent dropout by developing programs that increase engagement. They interviewed and surveyed students, parents, and school personnel to obtain feedback on what factors most contribute to school dropout. They found that factors relating to school connectedness were rated highest, implying that programs fostering school connectedness would be the most effective in preventing school dropout.

Other Possible Mediating Variables

Because participation in extracurricular activities has been linked with variables other than engagement, different possible mediating factors must be taken into consideration. Other possibilities include academic achievement, antisocial behavior, and substance abuse.

Overview of the Present Research

The present research will study the relationship between extracurricular activities and school dropout separately by gender and also for a low achievement sample. Aspects of social engagement, as well as classroom engagement, will be examined as possible mediators. Substance abuse will be explored as an alternate possible mediating variable. The results come from a secondary analysis of a data set collected from a four-year longitudinal study conducted by French et al. (1995), along with data collection from school yearbooks assessing school dropout.

When studying participation in extracurricular activities, attendance can emerge as a confounding variable. Self-report or school records could indicate that a student participated in a certain extracurricular activity. However, if a participant does not attend school, they are prohibited from participating in the extracurricular activity. Thus, a

comprehensive study of the relation between extracurricular activities and school dropout must address the question of attendance.

We addressed this issue by only including students who fell into the 90th percentile of absences in our analyses. When examining the data, the 90th percentile appeared to be an appropriate cut-off because most students fell into it, therefore indicating that those not in the 90th percentile were extreme cases.

Other variables are also possibly confounded with extracurricular activities. Because there are many known predictors of dropout, such as sex, absences, achievement, and antisocial behavior, we must do our best to ascertain that these variables do not confound the results of analyses assessing a different variable, such as extracurricular activity participation. Once again, a comprehensive study must control for variables that possibly confound with extracurricular activities.

We addressed this issue by utilizing hierarchical binary logistic regression analyses. This method is appropriate for analyzing the effects of either categorical or continuous independent variables on a dichotomous dependent variable. Because our independent variables were all categorical or continuous and our dependent variable, dropout, is dichotomous, this method was appropriate for our analyses. A hierarchical model was used in which variables were entered in blocks. In the first block, any possible confounding variables were included and their effects on dropout were assessed. In the second block, each type of extracurricular activity was added separately to see its unique effect on dropout after the confounding variables had already been taken out and accounted for.

This study had many goals. First, we expected to find that participants in all five types of extracurricular activities would have lower dropout rates than non-participants, but that athletes would be the only participants to have significantly lower dropout rates than non-athletes. This prediction was consistent with the collective findings of Mahoney and Cairns (1997) and McNeal (1995), who both found athletics to be a predictor of school dropout.

Additionally, we hypothesized that the low achieving athletes would have lower dropout rates than low achieving non-athletes, while the high achieving athletes would not differ from the high achieving non-athletes on dropout rates. This prediction was consistent with the findings of Mahoney and Cairns (1997), who conducted separate analyses on a high risk sample and found that participation in extracurricular activities was only a predictor of dropout for high risk students when differentiating between risk groups.

We also hypothesized that low achieving athletes would have higher scores on the two aspects of social engagement, popularity and deviant peer involvement, and higher classroom engagement scores than low achieving non-athletes. This prediction was based on the suggestion by Mahoney and Cairns (1997) that engagement is a mediating variable in the relation between extracurricular activities and school dropout.

Finally, we hypothesized that the two aspects of social engagement, popularity and deviant peer involvement, along with classroom engagement would cancel out the effect of extracurricular activities on school dropout, indicating that engagement acted as a mediator in that relationship. This prediction was also based on the suggestion that

engagement is a mediating variable in the relation between extracurricular activities and school dropout (Mahoney & Cairns, 1997).

Method

Participants

Participants from this study came from a sample recruited by French et al. (1995). In this study, students from two suburban middle schools in the Pacific Northwest region of the United States were divided into two cohorts, separated by one year, both of which were later assessed at the 10th grade level. The 10th grade sample that was used for the following analyses included 1,489 students.

Detailed information about the demographics of the participant sample can be obtained from French et al. (1995). They report that the sample was 94% European American, while African Americans, Hispanics and Asian Americans equally accounted for the remaining 6% of the sample. They also found that the sample was economically diverse, with regard to the occupation of the head of the household. The sample was mostly working class, with few professionals or executives.

Because the study was sponsored by the school district, French et al. (1995) obtained high participation rates. Of those solicited to participate in the study, 88% of eighth graders and 87% of tenth graders consented. Of the original eighth grade sample, 77% participated again at the tenth grade level. The participants had to provide informed consent in order to be included in the research. The Lewis and Clark Institutional Review Board approved this study.

Measures

Extracurricular participation. Information on school-based extracurricular activities was collected from high school yearbooks that were obtained from the two high schools at the time of 10th grade testing. The school yearbooks from the two high schools participating in this study contain sections profiling every major extracurricular organization. Contained in these sections are group pictures and corresponding names of the students who participate in that particular activity.

School dropout. French et al. (1995) utilized school records to determine the graduation status of all participants. Dropout was the only variable additionally established at the end of the 12th grade. The school district updated its records regularly and also had information on the status of those who had not graduated for various reasons, resulting in a comprehensive review of the status of most of the former students. School district commencement lists were reviewed to ascertain the graduation status of all children who had participated in the study.

The following five categories were determined after examining many different cases of former students: graduates, dropouts, moved or unknown status, graduate of alternative program, and continued enrollment. Data was entered by signifying into which category each participant fell. Only those students in the graduates or dropouts categories were used in the following analyses.

Absences. Attendance data was obtained through school records. An attendance number was derived by converting the number of missed class periods recorded by the school to day units. That number was entered as absences data.

Achievement. Achievement data was obtained from yearly-administered California Achievement Test scores. The tenth grade scores were divided into separate math, reading, and language scores. A total achievement score, consisting of the mean of all three scores, was computed and converted into a z score.

Antisocial behavior and popularity. Classmates rated the extent to which a student exhibited antisocial behavior and was liked or disliked by peers using a four point scale on a 37 item measure that was constructed by French et al. (1995). The measure included items, such as “starts fights,” “disrupts others,” and “hard to get to know” for antisocial behavior and items, such as “well-liked,” “has many friends,” and “liked by most kids” for popularity (See Appendix A). The internal consistency of this scale was .93 for antisocial behavior and .91 for popularity.

Tobacco and alcohol use. French et al. (1995) constructed a ten item self-report questionnaire to assess tobacco and alcohol use. The measure included items inquiring about whether or not students had ever used tobacco, how many times in a given time period students had used tobacco, and how many drinks of alcohol students had in a given time period (See Appendix D).

Deviant peer involvement. French et al. (1995) obtained data on deviant peer involvement through a 14 item measure that inquired about the extent to which their friends engaged in deviant behaviors. The measure included items inquiring about how many of a student’s friends use tobacco and alcohol, get into trouble a lot, and get into fights (See Appendix B). The internal consistency of the scale was .87.

Classroom engagement. French et al. (1995) used a self-report questionnaire that was administered by graduate students in a single class period to acquire data on

classroom engagement. It contained 13 questions regarding different classroom attitudes and behavior of the participants, such as how they feel, how hard they try, and how interested they are in class (See Appendix C). This questionnaire contained items originally developed by Wellborn (1991), which have been found to have an internal consistency of .80 (Skinner & Belmont, 1993)

Procedure

Yearbook data collection. School yearbook data were obtained from the yearbooks of two high schools. Each high school had similar extracurricular opportunities, allowing for a common system of categorizing the available activities. The activities from both high schools were grouped into the following five categories: student leadership, academics, fine arts, athletics, and interest groups (See Appendix E).

A database was created that listed the names of each of the participants and the five categories of extracurricular participation. Research assistants typed up the list of names for every extracurricular activity profiled in the yearbooks and one point was entered under the corresponding category in which they were recognized for participation. Zeros were entered for students who were not recognized for participation in a corresponding category.

Selection of low achievement group. Students were assigned to an achievement group based on the z scores computed from achievement scores data. Students who fell below the group achievement mean were classified as low achieving.

Results

For all of the following analyses, only those students who missed 15 or fewer days throughout their 10th grade year were included. This cutoff point was arrived at because

15 absences was at the 90th percentile of student absences overall. This was done because students who are frequently absent can not actively participate in extracurricular activities. The resulting sample size was 1,140 students (600 male, 540 female).

Of the remaining students, frequencies were computed on how many students participated in each category of extracurricular activities. The largest number of students participated in athletics (415), while fine arts (84), academic clubs (8), leadership positions (48), and interest groups (40) had fewer students participating.

Frequencies were also computed on how many low achieving students participated in each type of extracurricular activities. Again, athletics had the largest number of participants (141), while fine arts (24), leadership positions (21), and interest groups (8) had fewer participants. No low achieving students participated in academic clubs.

In Table 1, frequencies of participants and non-participants who graduated and dropped out are shown. Note that 139 students are excluded because they did not either dropout or graduate. Those students either moved away from the district, were still enrolled in school, attended an alternative program, or their graduation status was unknown. Although there were fewer participants, non-participants tended to drop out more than participants in each type of extracurricular activity. Also shown in Table 1 are frequencies of dropout and graduation for only the low achieving sample. Once again, even in a smaller sample, there was a greater tendency for non-participants than participants to drop out.

Frequencies were computed on the number of male and female students who dropped out. Males dropped out more often than females [36 (6%) vs. 27 (5%)]. Of the

low achieving sample, 20 (7.7%) males dropped out, while 17 (8.8%) females dropped out.

Frequencies were also computed on the number of male and female students who participated in athletics. Males participated slightly more often than females [240 (40%) vs. 206 (38%)]. Of the low achieving sample, 96 (37%) males participated in athletics, while 59 (30.5%) females participated in athletics.

The Effects of Five Types of Extracurricular Activities on Dropout

Binary logistic regression analyses were conducted to assess the effects of participation in each type of extracurricular activity on dropout. This method is appropriate for analyzing the effects of either categorical or continuous independent variables on a dichotomous dependent variable. Logistic regressions allow us to control for possible confounding variables. A hierarchical model was used in which variables were entered in blocks. In the first block, sex, absences, achievement, and antisocial behavior were included because they have all been found to be predictors of school dropout and could be possible confounders. In the second block, each type of extracurricular activity was added separately to assess its effect on dropout after controlling for other confounding variables.

Before these analyses were conducted, preliminary analyses were run to look at interaction effects with sex. Interaction effects were not significant and, therefore, were not included in the analyses. Thus only main effects were tested in the logistic regression analyses.

The results from the logistic regression analyses are presented in Tables 2 through 6. Table 2 shows that, even after controlling for sex, absences, achievement, and antisocial

behavior, participation in athletics still predicts dropout. In Tables 3 through 6, logistic regression analyses show that participation in fine arts, academic clubs, leadership positions, and interest groups does not significantly predict school dropout.

Logistic regressions were then conducted separately for males and females. Table 7 shows that, after controlling for absences, achievement, and antisocial behavior, participation in athletics was a significant predictor of dropout for males, but not for females. In Tables 8 through 10, logistic regressions show that participation in fine arts, academic clubs, and leadership positions was not a significant predictor of dropout for males or females. Table 11 shows that participation in interest groups was not a significant predictor of dropout for males, but was a significant predictor of dropout for females.

Logistic regressions were then conducted separately for the low achieving sample. Results showed that, after controlling for sex, absences, achievement, and antisocial behavior, participation in extracurricular activities did not predict dropout for low achieving students. This was true for athletics (Wald = 3.683, $p > .05$), fine arts (Wald = .080, $p > .05$), academic clubs (Wald = .028, $p > .05$), leadership positions (Wald = .025, $p > .05$), and interest groups (Wald = .453, $p > .05$).

Alcohol and Drug Use of Low Achieving Participants and Non-participants

Chi square analyses were conducted to compare low achieving students who participate in extracurricular activities with low achieving students who chose not to participate in extracurricular activities on tobacco and alcohol use. Chi square results showed that participants in athletics ($n = 368$, $\chi^2 = .047$, $p > .05$), fine arts ($n = 368$, $\chi^2 = 1.829$, $p > .05$), leadership positions ($n = 368$, $\chi^2 = 1.067$, $p > .05$), and interest groups (n

= 368, $\chi^2 = 1.010$, $p > .05$) did not score significantly different than non-participants on tobacco use. Results also showed that participants in athletics ($n = 367$, $\chi^2 = .596$, $p > .05$), fine arts ($n = 367$, $\chi^2 = .047$, $p > .05$), leadership positions ($n = 367$, $\chi^2 = 1.242$, $p > .05$), and interest groups ($n = 367$, $\chi^2 = 1.010$, $p > .05$) did not score significantly different than non-participants on alcohol use.

Engagement of Low Achieving Participants and Non-participants

In order to understand the relation between extracurricular activities and dropout and possible explanations, we assessed the effects of engagement. Multiple dimensions of engagement include classroom and social (i.e. popularity and interaction with deviant peers). The characteristics of low achieving students who did and did not participate in extracurricular activities were compared.

In Table 12, the results of the t-tests show that participants in athletics scored significantly lower in deviant peer involvement, significantly higher in popularity, and significantly lower in low classroom engagement. Table 12 also shows that participants in fine arts, leadership positions, and interest groups did not score significantly different than non-participants for any of the characteristics.

The Effect of Participation in Athletics on Dropout When Controlling for Engagement

Binary logistic regression analyses were conducted to assess the effects of participation in athletics on dropout after controlling for the confounding variables and also after controlling for possible mediating variables. The first block included sex, absences, achievement, and antisocial behavior. The second block added the mediating variables that were discussed as components of engagement, which were classroom engagement, popularity, and deviant peer involvement. The third block added

participation in athletics. As Table 13 indicates, deviant peer involvement and classroom engagement were significant predictors of dropout, even after controlling for the confounding variables. When athletics is added in Block 3, engagement variables remain significant. Athletics remains a significant predictor despite the control of these other predictors. Thus, athletic participation appears to be a unique contributor to early school dropout.

Discussion

The Relation between Extracurricular Participation and Dropout

As expected, participants in all five categories of extracurricular activities had lower dropout rates than non-participants, but athletics was the only type of extracurricular activities that was a significant protective factor for school dropout. This was consistent with the findings of McNeal (1995) and Mahoney and Cairns (1997) who found that those who participated in athletics had lower dropout rates than those who did not. These two previous studies, however, found that participants in other types of extracurricular activities also had lower dropout rates, which are effects that were not found in this study.

We then conducted a separate analysis of males and females because of the possibility that participation in extracurricular activities affected male and female dropout differently. In this separate gender analysis, we found that male athletes had significantly lower dropout rates than male non-athletes, while female athletes and non-athletes did not show a significant difference in dropout rates. Also, female interest group participants showed significantly lower dropout rates than female non-participants, whereas male interest group participants did not differ from male non-participants.

The final analysis on the relation between extracurricular participation and dropout

was conducted separately on a sample of low achieving students. Although we did not find that participation in athletics significantly predicted school dropout in this sample, our effect was close to being significant. This result is very similar to the findings of Mahoney and Cairns (1997), who did find that athletics significantly predicted dropout in a high risk, low achievement sample, even more than in a low risk sample.

Explanations of the Link between Extracurricular Participation and Dropout

Although the original sample was quite large, few students participated in extracurricular activities, other than athletics. In the analysis of low achieving students, the numbers were even smaller. This could have resulted from students in this particular school district not being interested in these other extracurricular activities or from the school yearbooks not accurately reporting the participation in these other extracurricular activities. Either way, this issue must be considered when examining these results. It is very likely that athletics was the only extracurricular activity for which participation significantly protected against school dropout because it was the only type of extracurricular activity with enough participants to provide sufficient statistical power.

Some explanations of the link between extracurricular participation and dropout are specific to athletics. It has been suggested in past research that traits learned through athletics support individualism and competitiveness, which are also traits that are beneficial in graduating from school (Eder & Parker, 1987; McNeal, 1995). It is reasonable to assume that competitiveness is especially learned through competition in sporting events and that it could easily be applied to competitiveness in academics, which would mean striving for completion of school. This idea is a definite possibility, but other reasonable explanations exist.

Another proposed idea is that athletics are the most prominent extracurricular activity in the school and peer culture, which motivates students to stay in school (McNeal, 1995). Athletic programs provide a public event, which can lead to a greater interest in sporting events than events revolving around other extracurricular activities. Students gain pride, confidence, and get noticed because of the attention and praise given to athletic programs. These benefits of participation motivate a student to stay involved and stay in school.

Substance use has continually been associated with extracurricular participation and school dropout and it, therefore, must be considered in any examination of the relation between these two variables. We did not find any differences between the level of tobacco and alcohol use for low achieving athletes and non-athletes. This finding adds to the inconsistent past results of research on substance use and its association with extracurricular participation and dropout. Some researchers have found that participation in all types of extracurricular activities leads to less substance use, while others have found that participation in certain activities, such as athletics, may actually lead to more substance use (Borden, Donnermeyer, & Scheer, 2001; Eccles & Barber, 1999; Shilts, 1991). It is likely that the inconsistency in research on substance use stems from local differences in attitudes and moral beliefs about substance use. The locality of the sample can have a substantial effect on the results when dealing with an issue that is more acceptable in some areas than in others.

Because limited research has been conducted on gender differences in the effects of participation in extracurricular activities, explanations for possible gender differences are not so clear. However, it is likely that some extracurricular activities provide different

benefits for males and females. Therefore, possible explanations must be explored in order to understand these differences and allow extracurricular activities to benefit male and female students.

An explanation for the difference in athletic participation for male and female dropout rates may be that the data is not current enough to account for recent gender equity in athletics. Thirty years ago, one in 27 females participated in sports, today that number is one in 2.5 (The State, 2003). Because of this increasing presence of females in high school athletics and a subsequent increase of recognition of female athletes, participation in athletics may impact females today much differently than it did, even just ten years ago. Because this data was collected over ten years ago, it is possible that there were fewer females participating and also that their participation may not have impacted them in the same way that it may impact females today.

An explanation for the difference in participation in interest groups for male and female dropout rates may be gender differences in forming social bonds. Interest groups include activities, such as the school newspaper staff and the school yearbook staff. It is obvious that such activities would provide valuable reading and writing skills that would be beneficial to academic success and graduation, however, it is not entirely clear why these skills would be more beneficial to females than to males. It may be that females can easily form social bonds when involved in these types of activities, while males form social bonds more easily around athletics (Adler & Adler, 1998). These social bonds, formed in interest group activities, are a component of social engagement, which is a possible mediator between participation in extracurricular activities and school dropout.

Finally, the explanation for the gender differences or lack of gender differences in

any extracurricular activity and its effect on dropout rates may be related to the small number of participants in many of the categories of extracurricular participation. Many of the effects were very close to being significant and may not have reached significant levels because of the small numbers that were included in certain analyses.

More research is needed in the area of extracurricular activities and their different effects on males and females. More knowledge on this issue would assist policy makers on the necessity of certain extracurricular programs. For example, because interest groups do not seem to protect against dropout overall, it does not mean that they are worthless. Eliminating interest group activities may be detrimental to female students. More information on gender differences in the effects of extracurricular activities and their effects on school dropout would further our knowledge on the benefits of certain school programs.

A similar problem with small numbers of participants may have been why we did not achieve significant effects when analyzing the low achieving sample. The already small numbers were cut by more than half when the low achieving sample analyses were conducted. Nevertheless, even with this small number of participants, our results were very close to being significant, which means that our results are quite comparable to those of Mahoney and Cairns (1997). They found the relation that we almost found in that their at-risk, low achieving sample did have lower rates of school dropout for participants in extracurricular activities than for non-participants. This finding suggests that participation in extracurricular activities, such as athletics, provides something that is very salient for low achieving students.

It has been proposed that engagement is the benefit of participation that affects low

achieving students and keeps them in school because low achieving students have a greater need of engagement than other students. Competent students probably have other ties to school, such as academics, and are not in as much need of the engagement provided by participation in extracurricular activities (Mahoney & Cairns, 1997). Therefore, the possibility has been suggested that engagement is a mediating factor in the relation between participation in extracurricular activities and school dropout.

Examining Engagement as an Explanation for the Relation

To begin to examine the role that engagement plays in the relation between extracurricular participation and dropout, we tested the relation between participation in athletics and the two domains of engagement. We hypothesized that low achieving athletes would have higher scores for the two aspects of social engagement, popularity and deviant peer involvement, as well as higher classroom engagement scores than low achieving non-athletes. This provides evidence for the link between participation in extracurricular activities, such as athletics, and increased engagement. This evidence is also consistent with the possibility that engagement is a mediating variable between extracurricular activities and dropout, as suggested by Mahoney and Cairns (1997).

This data is correlational and can not provide directional evidence that participation in extracurricular activities leads to higher engagement. Nor does it test for the possibility that engagement leads to lower dropout rates. We have provided findings, however, that support the idea that engagement may be a mediating variable in the relation between participation in extracurricular activities and school dropout.

To further understand the role of engagement in the relation between extracurricular participation and dropout, we examined the extent to which engagement explains that

relation in a logistic regression. We found that athletics still significantly uniquely predict dropout when aspects of social engagement, antisocial behavior, popularity and deviant peer involvement, as well as aspects of classroom engagement, the classroom engagement measure and academic achievement, were controlled for. In other words, after taking the effect of engagement and other variables on dropout into account, the effect of athletic participation remains. Because participation in athletics still had an effect on dropout after taking engagement into account, it appears as though athletics has a unique on school dropout.

The finding that participation in athletics has a unique effect on school dropout is inconsistent with the idea that engagement could explain the connection between extracurricular activities and school dropout (Mahoney & Cairns, 1997). Our analyses indicate that, although the effect of participation in athletics may be somewhat explained by aspects of engagement, it can not be completely explained by these possible mediators. It may be that other possible mediating factors, not taken into account in these analyses may be able to better explain the relation or that the relation is best explained directly. Perhaps it is the love of participating in athletics that retains student athletes. It is possible that athletes simply enjoy playing the sport and will not drop out because that would mean that they would have to give up playing that particular sport that brings them so much joy. The connection between athletics and school dropout may be just that simple and direct.

Implications of Research

More research is needed on the direct relation between participation in athletics and school dropout. Participation in athletics consistently emerges as a predictor of school

dropout, but this relationship is often not considered to be a direct pathway. Our findings suggest that a direct pathway may exist between these two variables. If this finding continues to emerge in future research, it would be very strong evidence in the argument for keeping athletic programs in school because of their unique benefit to students. Perhaps their benefit is so unique that it could not adequately be replaced by other programs, proposing that funding is needed for retaining athletic programs.

A major limitation of this study is that we can not determine the direction between variables that were only assessed at the 10th grade. Therefore, although we can say that athletes tend to be more engaged, have fewer deviant peers, and be more popular than non-athletes, we can not say that it was the participation in athletics that lead to these positive characteristics. These kinds of studies can not provide a full picture of what must be done to prevent school dropout or what kind of intervention strategies may be successful (Doll & Hess, 2001).

To be able to determine direction, these variables would have to be assessed over a period of time, perhaps beginning as young as elementary school. If such an assessment were conducted, a much better understanding would be reached of which variable leads to other variables later in a student's academic career. This would give us more evidence to either support or reject the idea that participation in athletics actually leads to students staying in school, rather than some third variable causing both. Thus, more research is needed that not only assesses dropout longitudinally, but also the variables surrounding dropout.

The implications of this study revolve around social policies and the distribution of funding in education. If participation in athletics does actually directly affect school

dropout, more attention needs to be given to the benefits of athletic programs in schools. Athletics are already a prominent extracurricular activity, but are often viewed as competing against academics. The attention that is given to athletics in schools should expand from the community and parents of the athletes to also include school policy makers. School policy must begin to take into consideration that athletic programs provide a way to retain students, especially those at risk.

Additionally, school policy makers should begin to examine ways to draw low achieving and at-risk students to participate in athletics. Since they are a risk group for early dropout and participation in athletics does appear to retain students, it should be a goal to get these students to participate. Perhaps there are types of athletics that at-risk students are more likely to participate in and funding should be increased for those programs. Perhaps an outreach program could be started that went into classrooms where at-risk students were likely to be and gave informational sessions about participation in athletics. Regardless of the methods, funding and attention needs to be given to athletic programs and attracting at risk students the programs that are provided.

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Appendix A:
Antisocial Behavior and Popularity Peer Rating Scale

The following items describe things that many adolescents do. Think about the person that you are rating with regard to these items. If the item is not at all like the person, circle a "1". If it is only a little like the person, circle a "2". If it is moderately like the person, circle a "3". If it accurately describes the person, circle a "4". If you are unsure about an item, then take your best guess. Leave no items blank.

1. liked by most kids
2. starts fights
3. unpopular
4. helps others
5. disrupts others
6. wanted as a friend by others
7. always in trouble
8. understands other's feelings
9. rejected by others
10. popular with same sex kids
11. makes fun of others, teases
12. hard to get to know
13. has many friends
14. praises/ compliments others
15. is disliked by same-sex kids
16. doesn't have many friends
17. thoughtful and considerate
18. threatens others, bullies
19. annoys others
20. rarely talks to opposite sex
21. shares
22. seems unhappy or depressed
23. good listener
24. bosses kids around
25. seems upset a lot
26. caring
27. keeps to themselves
28. doesn't seem to want friends
29. well-liked
30. tries to get others into trouble
31. avoids looking at people (eye contact)
32. often spends free periods alone
33. rarely laughs or smiles
34. lies
35. blames others for mistakes
36. often cheats in games or school work
37. is avoided by others

Appendix B:

Deviant Peer Involvement Self-Report Instrument

Think about the people that you spend time with, and those whom you would describe as friends, and members of your social crowd. Picture this group in your mind, and then answer the following questions about them.

- | | | | |
|---|------------|------|---------|
| 1. How many participate in organized athletics? | Almost all | Many | FewNone |
| 2. How many smoke cigarettes regularly (once a day)? | Almost all | Many | FewNone |
| 3. How many get into fights? | Almost all | Many | FewNone |
| 4. How many are planning to go to college? | Almost all | Many | FewNone |
| 5. How many get drunk with alcohol regularly? (one or more times a month)? | Almost all | Many | FewNone |
| 6. How many of our friends are older than you? | Almost all | Many | FewNone |
| 7. How many of your friends get into trouble a lot? | Almost all | Many | FewNone |
| 8. How many of your friends are younger than you? | Almost all | Many | FewNone |
| 9. How many of your friends don't get along with adults? | Almost all | Many | FewNone |
| 10. How many of your friends have ruined or damaged something on purpose that did not belong to them? | Almost all | Many | FewNone |
| 11. How many of your friends have suggested that you do something against the law? | Almost all | Many | FewNone |
| 12. How many of your friends don't like schoolwork? | Almost all | Many | FewNone |
| 13. How many of your friends have stolen something worth less than \$5.00? | Almost all | Many | FewNone |
| 14. How many of your friends have drunk alcohol in the last week? | Almost all | Many | FewNone |

Appendix C:

School Engagement Self-Report Instrument

When I'm in class, I feel nervous.

Almost Always Some of the Time Not Very Often Almost Never

When I'm in class, I feel angry.

Almost Always Some of the Time Not Very Often Almost Never

When I'm in class, I feel discouraged.

Almost Always Some of the Time Not Very Often Almost Never

When I'm in class, I feel happy.

Almost Always Some of the Time Not Very Often Almost Never

I try very hard to do well in school.

Almost Always Some of the Time Not Very Often Almost Never

When I'm in class, I participate in class discussion.

Almost Always Some of the Time Not Very Often Almost Never

I pay attention in class.

Almost Always Some of the Time Not Very Often Almost Never

When I'm in class, I concentrate on doing my work.

Almost Always Some of the Time Not Very Often Almost Never

When I'm in class, I work as hard as I can.

Almost Always Some of the Time Not Very Often Almost Never

I don't try very hard in school.

Almost Always Some of the Time Not Very Often Almost Never

When I'm in class, I usually think about other things.

Almost Always Some of the Time Not Very Often Almost Never

When I'm in class, I just act like I'm working.

Almost Always Some of the Time Not Very Often Almost Never

I only pay attention to things that interest me when I'm in class.

Almost Always Some of the Time Not Very Often Almost Never

Appendix D:

Tobacco and Alcohol Use Self-Report Instrument

1. Have you ever smoked a cigarette or used chewing tobacco?
Yes_____ No_____
2. How many cigarettes have you smoked or how many times have you used chewing tobacco in the last 24 hours? _____
3. How many cigarettes have you smoked or how many times have you used chewing tobacco in the last week? _____
4. How many cigarettes have you smoked or how many times have you used chewing tobacco in the last month?
 - 1) none
 - 2) one or two
 - 3) three to 5
 - 4) 5 to 10
 - 5) 10-20
 - 6) more than 20
5. Did you drink alcohol (beer, wine, or hard liquor) in the last 24 hours?
Yes_____ No_____
6. How many drinks of alcohol did you have in the last 24 hours? _____
7. In the last week, how many drinks of alcohol did you have? _____
8. In the last month, how many drinks of alcohol did you have? _____
9. In the last month, did you have five or more drinks of alcohol at one time?
 - 1) Yes
 - 2) No
10. In the past month, how many times have you been drunk or intoxicated?

Appendix E:

Extracurricular Activities Participated in 9th and 10th Grades by CategoryFine Arts

Choir
Drama
Band
Musicals

Academics

National Honor Society
Spanish club
French club
Japanese club

Student Leadership

ASB
Homecoming Court
Prom Court
Mr. Irresistible
Snoball Court
Go-For-It Court
Class officers
Natural Helpers
Rat Pack

Student Interest

School newspaper
Yearbook staff
Speech team
Mock trial
Wrestling rally
Ski club
Color guard

Athletics

Dance team
Cheerleading
Football
Volleyball
Soccer
Cross-country
Water polo
Basketball
Wrestling
Skiing
Swimming
Track
Baseball
Softball
Golf
Tennis

Table 1

Frequencies of graduates and dropouts as a function of participation in five extracurricular activities

	Participants	Non-Participants
Athletics- Total		
Graduates	410	528
Dropouts	5	58
Athletics- Low Achieving		
Graduates	137	224
Dropouts	4	33
Fine Arts- Total		
Graduates	81	857
Dropouts	3	60
Fine Arts- Low Achieving		
Graduates	23	338
Dropouts	1	36

Table 1 cont.

	Participants	Non-Participants
Academic Clubs- Total		
Graduates	8	930
Dropouts	---	63
Academic Clubs- Low Achieving		
Graduates	---	360
Dropouts	---	37
Leadership- Total		
Graduates	46	892
Dropouts	2	61
Leadership- Low Achieving		
Graduates	19	342
Dropouts	2	35
Interest Groups- Total		
Graduates	38	900
Dropouts	2	61
Interest Groups- Low Achieving		
Graduates	7	354
Dropouts	1	36

Table 2

Summary of Logistic Regression Analysis of Effect of Participation in Athletics on Dropout

Variable	<u>B</u>	<u>SE B</u>	Beta	Wald.
Block 1				
Sex	.078	.337	1.082	.054
Absences	.016	.004	1.016	16.435***
Achievement	-.575	.180	.563	10.200**
Antisocial Behavior	.238	.156	1.269	2.346
Block 2				
Sex	.005	.338	1.005	.000
Absences	.013	.004	1.013	11.542**
Achievement	-.486	.181	.615	7.201**
Antisocial Behavior	.237	.156	1.268	2.319
Athletics	-1.602	.542	.201	8.750**

Note: n = 843

* = $p < .05$

** = $p < .01$

*** = $p < .001$

Table 3

Summary of Logistic Regression Analysis of Effect of Participation in Fine Arts on Dropout

Variable	<u>B</u>	<u>SE B</u>	Beta	Wald.
Block 1				
Sex	.078	.337	1.082	.054
Absences	.016	.004	1.016	16.435***
Achievement	-.575	.180	.563	10.200**
Antisocial Behavior	.238	.156	1.269	2.346
Block 2				
Sex	.080	.337	1.083	.057
Absences	.016	.004	1.016	16.509***
Achievement	-.582	.181	.559	10.312**
Antisocial Behavior	.241	.156	1.272	2.387
Fine Arts	.227	.633	1.255	.128

Note: n = 843

* = $p < .05$

** = $p < .01$

*** = $p < .001$

Table 4

Summary of Logistic Regression Analysis of Effect of Participation in Academic Clubs on Dropout

Variable	<u>B</u>	<u>SE B</u>	Beta	Wald.
Block 1				
Sex	.078	.337	1.082	.054
Absences	.016	.004	1.016	16.435***
Achievement	-.575	.180	.563	10.200**
Antisocial Behavior	.238	.156	1.269	2.346
Block 2				
Sex	.083	.337	1.087	.061
Absences	.016	.004	1.016	16.300***
Achievement	-.573	.180	.564	10.113**
Antisocial Behavior	.237	.156	1.267	2.318
Academic Clubs	-3.105	13.277	.045	.055

Note: n = 843

* = $p < .05$

** = $p < .01$

*** = $p < .001$

Table 5

*Summary of Logistic Regression Analysis of Effect of Participation in Leadership**Positions on Dropout*

Variable	<u>B</u>	<u>SE B</u>	Beta	Wald.
Block 1				
Sex	.078	.337	1.082	.054
Absences	.016	.004	1.016	16.435***
Achievement	-.575	.180	.563	10.200**
Antisocial Behavior	.238	.156	1.269	2.346
Block 2				
Sex	.073	.337	1.076	.048
Absences	.016	.004	1.016	16.295***
Achievement	-.574	.180	.563	10.204**
Antisocial Behavior	.234	.156	2.243	.134
Leadership Positions	-.442	1.041	.643	.180

Note: n = 843

* = $p < .05$ ** = $p < .01$ *** = $p < .001$

Table 6

Summary of Logistic Regression Analysis of Effect of Participation in Interest Groups on Dropout

Variable	<u>B</u>	<u>SE B</u>	Beta	Wald.
Block 1				
Sex	.078	.337	1.082	.054
Absences	.016	.004	1.016	16.435***
Achievement	-.575	.180	.563	10.200**
Antisocial Behavior	.238	.156	1.269	2.346
Block 2				
Sex	.068	.337	1.071	.041
Absences	.016	.004	1.016	16.680***
Achievement	-.590	.181	.554	10.667**
Antisocial Behavior	.246	.156	1.279	2.478
Interest Groups	.745	.773	2.106	.929

Note: n = 843

* = $p < .05$

** = $p < .01$

*** = $p < .001$

Table 7

Summary of Logistic Regression Analysis of Effect of Participation in Athletics on Dropout Conducted Separately for Males and Females

Variable	<u>B</u>	<u>SE B</u>	Beta	Wald.
Males				
Block 1				
Absences	.013	.005	1.013	5.992*
Achievement	-.518	.229	.595	5.134*
Antisocial Behavior	-.057	.237	.944	.059
Block 2				
Absences	.010	.005	1.011	4.027*
Achievement	-.476	.231	.621	4.239*
Antisocial Behavior	-.073	.243	.930	.090
Athletics	-1.399	.641	.247	4.766*

Table 7 cont.

Variables	<u>B</u>	<u>SE B</u>	Beta	Wald.
Females				
Block 1				
Attendance	.022	.006	1.022	12.260***
Achievement	-.647	.293	.524	4.890*
Antisocial Behavior	.533	.213	1.704	6.238*
Block 2				
Attendance	.019	.006	1.019	9.260**
Achievement	-.493	.295	.611	2.796
Antisocial Behavior	.527	.211	1.695	6.221*
Athletics	-2.027	1.053	.132	3.710

Note: n = 444, males

n = 399, females

* = $p < .05$

** = $p < .01$

*** = $p < .001$

Table 8

Summary of Logistic Regression Analysis of Effect of Participation in Fine Arts on Dropout Conducted Separately for Males and Females

Variable	<u>B</u>	<u>SE B</u>	Beta	Wald.
Males				
Block 1				
Absences	.013	.005	1.013	5.992*
Achievement	-.518	.229	.595	5.134*
Antisocial Behavior	-.057	.237	.944	.059
Block 2				
Absences	.013	.005	1.013	6.111*
Achievement	-.534	.231	.586	5.357*
Antisocial Behavior	-.056	.238	.946	.055
Fine Arts	.413	.783	1.511	.279

Table 8 cont.

Variables	<u>B</u>	<u>SE B</u>	Beta	Wald.
Females				
Block 1				
Attendance	.022	.006	1.022	12.260***
Achievement	-.647	.293	.524	4.890*
Antisocial Behavior	.533	.213	1.704	6.238*
Block 2				
Attendance	.022	.006	1.022	12.243***
Achievement	-.646	.293	.524	4.862*
Antisocial Behavior	.532	.214	1.703	6.170*
Fine Arts	-.046	1.086	.955	.022

Note: n = 444, males

n = 399, females

* = $p < .05$

** = $p < .01$

*** = $p < .001$

Table 9

Summary of Logistic Regression Analysis of Effect of Participation in Academic Clubs on Dropout Conducted Separately for Males and Females

Variable	<u>B</u>	<u>SE B</u>	Beta	Wald.
Males				
Block 1				
Absences	.013	.005	1.013	5.992*
Achievement	-.518	.229	.595	5.134*
Antisocial Behavior	-.057	.237	.944	.059
Block 2				
Absences	.013	.005	1.013	6.000*
Achievement	-.516	.229	.597	5.072*
Antisocial Behavior	-.057	.237	.945	.058
Academic Clubs	-2.429	22.245	.088	.012

Table 9 cont.

Variables	<u>B</u>	<u>SE B</u>	Beta	Wald.
Females				
Block 1				
Attendance	.022	.006	1.022	12.260***
Achievement	-.647	.293	.524	4.890*
Antisocial Behavior	.533	.213	1.704	6.238*
Block 2				
Attendance	.022	.006	1.022	12.119***
Achievement	-.648	.293	.524	4.900*
Antisocial Behavior	.530	.214	1.699	6.158*
Academic Clubs	-3.503	22.841	.030	.024

Note: n = 444, males

n = 399, females

* = $p < .05$ ** = $p < .01$ *** = $p < .001$

Table 10

Summary of Logistic Regression Analysis of Effect of Participation in Leadership Positions on Dropout Conducted Separately for Males and Females

Variable	<u>B</u>	<u>SE B</u>	Beta	Wald.
Males				
Block 1				
Absences	.013	.005	1.013	5.992*
Achievement	-.518	.229	.595	5.134*
Antisocial Behavior	-.057	.237	.944	.059
Block 2				
Absences	.013	.005	1.013	5.848*
Achievement	-.528	.228	.590	5.358*
Antisocial Behavior	-.081	.239	.922	.114
Leadership Positions	-6.210	20.106	.002	.095

Table 10 cont.

Variables	<u>B</u>	<u>SE B</u>	Beta	Wald.
Females				
Block 1				
Attendance	.022	.006	1.022	12.260***
Achievement	-.647	.293	.524	4.890*
Antisocial Behavior	.533	.213	1.704	6.238*
Block 2				
Attendance	.022	.006	1.022	12.314***
Achievement	-.659	.295	.517	4.995*
Antisocial Behavior	.536	.213	1.709	6.305*
Leadership Positions	.772	1.129	2.164	.468

Note: n = 444, males

n = 399, females

* = $p < .05$

** = $p < .01$

*** = $p < .001$

Table 11

Summary of Logistic Regression Analysis of Effect of Participation in Interest Groups on Dropout Conducted Separately for Males and Females

Variable	<u>B</u>	<u>SE B</u>	Beta	Wald.
Males				
Block 1				
Absences	.013	.005	1.013	5.992*
Achievement	-.518	.229	.595	5.134*
Antisocial Behavior	-.057	.237	.944	.059
Block 2				
Absences	.013	.005	1.013	5.994*
Achievement	-.496	.230	.609	4.632*
Antisocial Behavior	-.068	.237	.934	.083
Interest Groups	-5.776	23.603	.003	.060

Table 11 cont.

Variables	<u>B</u>	<u>SE B</u>	Beta	Wald.
Females				
Block 1				
Attendance	.022	.006	1.022	12.260***
Achievement	-.647	.293	.524	4.890*
Antisocial Behavior	.533	.213	1.704	6.238*
Block 2				
Attendance	.024	.007	1.024	13.080***
Achievement	-.685	.296	.504	5.375*
Antisocial Behavior	.569	.219	1.766	6.763**
Interest Groups	1.725	.859	5.612	4.028*

Note: n = 444, males

n = 399, females

* = $p < .05$

** = $p < .01$

*** = $p < .001$

Table 12

Means, Standard Deviations, and Ns of Characteristics of Low Achieving Participants and Non-participants Arranged by Extracurricular Activity

Characteristic	Participants	Non-participants	t
Deviant Peer Involvement			
Athletics	.0455 (.918) [129]	.1241 (1.051) [239]	3.988*
Fine Arts	-.2265 (.754) [24]	.1191 (1.018) [344]	1.934
Leadership	.3462 (.969) [18]	.0837 (1.008) [350]	.007
Interest Groups	.1105 (1.204) [9]	.0962 (1.003) [359]	.006
Popularity			
Athletics	.3498 (.861) [131]	-.2471 (1.012) [248]	4.626*
Fine Arts	-.0431 (.933) [23]	-.0407 (1.008) [356]	.252
Leadership	.6529 (.853) [17]	-.0734 (.998) [362]	.993
Interest Groups	.1096 (1.158) [9]	-.0445 (1.000) [370]	.271

Table 12 cont.

Characteristics	Participants	Non-participants	t
Low School Engagement			
Athletics	1.9331 (.359) [128]	2.0395 (.446) [236]	8.896**
Fine Arts	1.9332 (.454) [24]	2.0069 (.419) [340]	1.540
Leadership	2.0035 (.385) [18]	2.0020 (.423) [346]	.145
Interest Groups	1.8634 (.343) [9]	2.0056 (.422) [355]	.742

Note: there were no low achieving students participating in academic clubs

Standard Deviations are in parenthesis and Ns are in brackets

* = $p < .05$

** = $p < .01$

*** = $p < .001$

Table 13

Summary of Logistic Regression Analysis of Effect of Participation in Athletics after Controlling for Possible Mediating Variables

Variable	<u>B</u>	<u>SE B</u>	Beta	Wald.
Block 1				
Sex	.386	.272	1.471	2.013
Absences	.009	.001	1.009	42.582***
Achievement	-.473	.141	.623	11.301**
Antisocial Behavior	.317	.119	.1.373	7.115**
Block 2				
Sex	.150	.281	1.162	.286
Absences	.008	.001	1.008	32.466***
Achievement	-.446	.144	.640	9.548**
Antisocial Behavior	.140	.133	1.150	1.116
Deviant Peer Inv.	.341	.141	1.407	5.870*
School Engagement	.806	.349	2.239	5.331*
Popularity	-.147	.142	.863	1.073

Table 13 cont.

Variables	<u>B</u>	<u>SE B</u>	Beta	Wald.
Block 3				
Sex	.309	.286	1.362	1.165
Absences	.008	.001	1.008	30.020***
Achievement	-.350	.147	.705	5.633*
Antisocial Behavior	.253	.139	1.288	3.294
Deviant Peer Inv.	.294	.142	1.342	4.281*
School Engagement	.761	.351	2.140	4.696*
Popularity	.072	.156	1.075	.216
Athletics	1.700	.444	5.474	14.688***

Note: n = 930

* = $p < .05$ ** = $p < .01$ *** = $p < .001$