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Do Extracurricular Activities Protect Against Early School Dropout?

Joseph L. Mahoney and Robert B. Cairns
University of North Carolina at Chapel Hill

This study examined the relation between involvement in school-based extracurricular activities and early school dropout. Longitudinal assessments were completed for 392 adolescents (206 girls, 186 boys) who were initially interviewed during 7th grade and followed up annually to 12th grade. A person-oriented cluster analysis based on Interpersonal Competence Scale ratings from teachers in middle schools (i.e., 7th–8th grades) identified configurations of boys and girls who differed in social–academic competence. *Early school dropout* was defined as failure to complete the 11th grade. Findings indicate that the school dropout rate among at-risk students was markedly lower for students who had earlier participated in extracurricular activities compared with those who did not participate ($p < .001$). However, extracurricular involvement was only modestly related to early school dropout among students who had been judged to be competent or highly competent during middle school.

North American public secondary schools are unique in terms of the number and range of pursuits that they support in the classroom and beyond. In addition to offering a broad academic curriculum, middle schools and high schools encourage students to participate in various extracurricular activities; these include organized sports, special-interest academic pursuits, vocational clubs, supervised student government, newspapers, yearbooks, and various other activities. Extracurricular activities differ from standard courses in school because they are optional, ungraded, and are usually conducted outside the school day in school facilities.

Although "extra" to the curriculum, many activities are closely linked to academic achievement and performance (e.g., math club, French club, national honor society). It seems reasonable to expect that participation in these clubs and organizations should enhance and extend classroom instruction. Other activities—such as football and other interscholastic athletics—have little obvious connection to academic achievement. It has been proposed that participation in the latter nonacademic extracurricular activities may be beneficial nonetheless. Participation could, for example, raise an individual's status within the school, extend her or his social affiliations in the school community (e.g., Csikszentmihalyi, Rathunde, & Whalen, 1993; Eder, 1985; Eder & Parker, 1987; Kinney, 1993), or enable both to occur. The impact would be to render school a more meaningful and attractive experience for students who have experienced few successes in academic subjects.

Do extracurricular activities have beneficial effects for the individual and the school? Or do they simply maintain the status quo and, possibly, offer attractive diversions that compete with serious academic involvement among less competent students (Marsh, 1992)? The second possibility follows from early studies that demonstrate that extracurricular involvement is closely associated with socioeconomic class status, with the exception of athletics (e.g., Coleman, 1961; Hollingshead, 1949). Accordingly, extracurricular activities could consolidate socioeconomic differences outside the classroom that were present within and thereby accentuate socioeconomic divisions.

The theoretical model that guided the present research presupposes that the trajectories of individual lives are supported by a network of influences, for good or for ill (Bronfenbrenner, 1995; Cairns & Cairns, 1994; Magnusson, 1995). Development is viewed as a holistic process involving biological, psychological, and social–environmental influences that become fused over ontogeny (Cairns & Cairns, 1994). Single aspects—whether biological, behavioral, or environmental—gain their meaning through their functional relation with other features and with the whole individual. The effect of any single factor, such as involvement in extracurricular activities, is expected to be relative to the network of constraints that have operated in the past and are likely to operate in the future.

Given these considerations, we anticipated that the influence of extracurricular involvement in the reduction of school dropout would not be evenly distributed across persons. But in contrast to the *attractive diversion* hypothesis, we anticipated that the least competent students would benefit most from extracurricular involvement in terms of dropout reduction.

This expectation reflects two assumptions, one substantive and one statistical. First, we presumed that marginal or at-risk children differ from highly competent ones in terms of the range and breadth of the influences that keep them in school. Hence we expected that extracurricular involvement could shift the

Joseph L. Mahoney and Robert B. Cairns, Center for Developmental Science, University of North Carolina at Chapel Hill.

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Correspondence concerning this article should be addressed to Joseph L. Mahoney, Center for Developmental Science, University of North Carolina, Chapel Hill, North Carolina 27599-8115.

balance in the direction of heightened school engagement for children who are marginal or at risk in their school adaptations. In contrast, highly competent children—as judged by social–academic performance in the school—are already firmly embedded in the system and the values that it represents. For these students, extracurricular participance may be redundant insofar as school involvement is concerned. Second, there should be very few early school dropouts among highly competent children, regardless of their participation in optional activities. This low dropout rate would yield a statistical "floor effect" and render it difficult if not impossible to show beneficial effects of extracurricular involvement with respect to dropout. In brief, we propose that an interaction between extracurricular involvement and risk will occur, such that marginal and high-risk boys and girls should show the greatest influence in dropout reduction.

An overview of the educational and psychological literature on the effects of extracurricular activities indicates, curiously, that only modest attention has been given to the effects of extracurricular activities for marginal students (e.g., Brown, 1988; Holland & Andre, 1987). In contrast, a large amount of work has focused on the role of extracurricular activities for the brightest and the most privileged students. Specifically, (a) activities and positions of leadership may represent only a small number of individuals (Coleman, 1961; Haensley, Lupkowski, & Edlind, 1986; Hollingshead, 1949; Jacobs & Chase, 1989), (b) students of high socioeconomic class tend to report more involvement than lower class students and show greater leadership and talent within these activities (Csikszentmihalyi, Rathunde, & Whalen, 1993; Hollingshead, 1949), (c) girls tend to participate in more activities than boys (Coleman, 1961; Hollingshead, 1949; Jacobs & Chase, 1989), (d) those individuals who participate in high profile activities tend to be popular with peers, are school leaders, and may be influential in directing the status norms of the school social system (Coleman, 1961; Eder, 1985; Eder & Parker, 1987; Evans & Eder, 1993; Kinney, 1993), and (e) participation in academically linked activities is associated with somewhat higher levels of academic performance and educational attainment (Brown, Kohrs, & Lazzaro, 1991; Marsh, 1992; McNeal, 1995; Otto, 1975; Otto & Alwin, 1977).

Research has shown that extracurricular participation is associated with leadership, academic excellence, and popularity. Because most of these studies have been cross sectional, it is unclear whether extracurricular involvement contributes to successful school adaptation or is an outcome. For example, extracurricular activities may be more open to highly competent students than to less able ones. Alternatively, competent students may be actively sought out by the institution to participate in the activities and fill leadership roles. Unfortunately, a parallel criticism applies to retrospective accounts of linkages between extracurricular involvement and school dropout, in which autobiographical constructions may confound the sequence and significance of historical events (e.g., Bell, 1967; Ross, 1989). To evaluate the directionality of the relationship between extracurricular activity and school dropout, research should prospectively track individuals beginning at a point in which there were little or no opportunities for extracurricular involvement and prior to dropout.

In this study, we examine the relation of extracurricular involvement to early school dropout. Participants were interviewed annually, and information was obtained from teachers and peers on a range of social and academic dimensions. In addition, annual information on extracurricular involvement was available from school yearbooks. In summary, the three purposes of the study were (a) to describe the normative pattern of extracurricular activity across the years of middle school and high school, (b) to identify persons in the 7th and 8th grades who are marginal or at risk for early school dropout, as determined by configurations of behavioral and academic performance that are based on teacher evaluations, and, (c) to assess the relation between extracurricular activity participation and early school dropout across students showing different levels of risk for school dropout. We expected that greater extracurricular activity involvement would be negatively related to early school dropout. We further expected that this effect would be strongest for students at greatest risk for early school dropout.

Method

Participants

The research sample consisted of 392 children (206 girls, 186 boys) who were part of a broader population of 475 participants (227 boys, 248 girls) involved in a longitudinal investigation beginning in 1982–1983 (Cairns & Cairns, 1994). Of this broader sample, two middle schools had adequate accounts of extracurricular participation to be included in this study. As a result, one middle school (n = 83) was excluded from the analyses.

The sample was recruited in the 1982–1983 and 1983–1984 school years. In the 1982–1983 school year, all students in the seventh grade in Middle Schools 1 and 2 were invited to participate. In the following year (1983–1984), all seventh grade students in Middle School 2 were invited to participate. The participation rate was approximately 70% across the schools. No significant differences were found between participants and nonparticipants in terms of ethnic status or gender. Twenty-five percent of the participants were African American. The average age was 13 years 4 months in the 7th grade, and 18 years 4 months in the 12th grade. Between 89–99% of the original sample of participants were recovered each year.

Participants were interviewed annually for 6 years, from 7th through 12th grade. Participants not in school were interviewed in their homes or other locations of their choosing. The interview schedule and assessment measures have been described in detail elsewhere (Cairns & Cairns, 1984, 1994; Cairns, Cairns, Neckerman, Fergusson, & Gariépy, 1989; Cairns, Cairns, Neckerman, Gest, & Gariépy, 1988).

We used school yearbooks to estimate school size. At the beginning of the study, 638 and 444 students were enrolled in Middle Schools 1 and 2. Ninety-two percent of students from Middle Schools 1 and 2 attended High School 1 or High School 2, respectively. The size of these two high schools was approximately 745 students for High School 1 and 570 students for High School 2 at the time of graduation in 1988. The sample as a whole was enrolled in 29 different high schools across the nation, including one penal institution, and one participant was located in South America. At grade 12 in 1987–1988, we interviewed 99% of the original sample (466 of 472 students). Three participants had died during the ensuing years.

Measures

Yearbooks. We obtained information regarding extracurricular involvement for each participant from school yearbooks. These books

are published annually in most American middle schools and high schools and are typically available to students for purchase near the end of each school year. Yearbooks are subdivided into several sections including (a) individual photographs of students attending the school shown by grade, (b) a record and photograph of participants in extracurricular activities, including positions of status within the activity (e.g., president, team captain), (c) featured profiles of individual students, and (d) descriptions and photographs of other activities portraying the school culture.

High school seniors are commonly given a special summary section that lists their comprehensive extracurricular activity involvement, awards and honors received, and additional achievement information over the entire 4 years of high school. Yearbook information regarding extracurricular activity participation was submitted annually by the activity advisors and teachers within each school.[1]

One middle school yearbook provided photographs of the children involved in extracurricular activities but failed to include the participants' names. In this case, two researchers fully acquainted with all participants provided the names, using yearbook photographs of the individuals and of the activity participants.

Yearbook information was obtained from 2 middle schools during the 7th and the 8th grades and from 8 of 29 high schools that participants attended during Grades 9 through 12. Yearbooks provided complete information for an average of 94% of the sample across Grades 7 to 12, ranging from 100% in 7th grade to 88% in 12th grade. Extracurricular activity involvement did not differ significantly between students attending Middle Schools 1 and 2 or High Schools 1 and 2.

Students participated in a total of 64 extracurricular activities during secondary school. Extracurricular information was coded dichotomously, wherein 1 indicated *participation in a given activity,* and 0 indicated *no participation.* Kappa coefficient estimates of reliability for the dichotomous coding were performed on approximately 10% of the sample. For this reliability sample, only two instances of interrater disagreement were noted across all the six grades and 64 activities. Specifically, disagreement occurred for coding of cheerleading involvement in 12th grade ($\kappa = .72$) and track involvement in the 10th grade ($\kappa = .73$). As a result, kappa estimates of reliability averaged .99 across all activities and grades.

The 64 activities were categorized into nine mutually exclusive, nonoverlapping, activity domains including athletics, academics, fine arts, student government, school service activities, press activities, school assistants, vocational activities, and royalty activities (see Appendix). Four independent raters classified each activity into the nine domains described above. Raters were chosen because of their knowledge of both the participant population and the participants' schools as well as their personal experiences as students or teachers in the state the sample represents. Overall agreement on category classification was 92%, with specific domain agreement as follows: academics, 86%; athletics, 97%; fine arts, 100%; student government, 100%; service, 88%; press activities, 83%; school assistants, 94%; vocational activities, 78%; and royalty activities, 100%.

We determined a yearly activity participation score for each participant across each of the 64 activities described above. Yearly scores in each activity were then aggregated across the nine broader activity domains. Finally, each activity domain score was summed to provide an overall score of activity participation for a given year. Thus, the number of activities an individual participated in was accounted for at four levels: (a) involvement in specific activities for each year, (b) total number of activities participated in during a given year, (c) number of activities participated in within each activity domain for each year, and (d) total number of activities participated in across all years for each activity domain.

Children who were retained in school for 1 or more years were included in the study, but participation scores were taken from the nonretained year or years only. For example, if an individual repeated ninth grade, activity information was taken from the original ninth-grade year and not for the repeated year. This decision was based on the overall lack of student participation during a repeated year or years. Of the 44 students who repeated at least 1 year of school from Grades 7 to 12, only 4 students participated in extracurricular activities during their retained year or years, each in a single activity.

Academic and behavioral competence. As part of each annual assessment, participants' teachers completed the Interpersonal Competence Scale (ICS; Cairns, Leung, Gest, & Cairns, 1995). The ICS includes 18 items relating to social behavior and academic competence. Each item on the ICS was rated on a 7-point scale in which either end of the scale represents a polar opposite. Positive and negative endpoints of the scale were randomized by item. The ICS has been used with diverse samples and settings and has been demonstrated to be highly reliable across items and consistent over time (Cairns & Cairns, 1994; Cairns et al., 1995).

Three general factors were used in the current study. These factors, followed by specific constituent items in parentheses, include Aggression (gets into trouble, gets into fights, argues), Popularity (popular with boys, popular with girls, lots of friends), Academic Competence (good at spelling, good at math). ICS scores were coded such that higher scores indicate more positive characteristics (i.e., lower aggression, higher popularity, and academic competence; for a further description of psychometric properties, reliability, and factor construction of the ICS, the reader is directed to Cairns et al., 1995).

Early school dropout. To determine dropout rates, we consulted multiple information sources (cf. Cairns, Cairns, & Neckerman, 1989). First, at the end of annual data collection, we visited each school and queried school personnel (including both teachers and school counselors) regarding student enrollment status. Second, each year we examined school enrollment rosters to determine whether a student's name was listed. Third, all students were individually interviewed each year and questioned regarding their school enrollment status. Finally, official commencement lists were used to establish the veridicality of prior enrollment sources.

School dropout was determined to have occurred if a student left school prior to completing the 11th grade. Whether students subsequently reenrolled or completed a General Equivalency Diploma (or equivalent degree) did not alter their initial dropout classification.

Demographic and socioeconomic information. Information concerning parental occupation, place of employment, and student's race was obtained during annual interviews. Parental employment was coded with the Duncan–Featherman scale (Stevens & Featherman, 1981) to provide an index of socioeconomic status (SES). SES was based upon the child's initial interview in the seventh grade. The Duncan–Featherman scale ranges from 0 (*unemployed*) to 88 (*physician, dentist, lawyer*). Family SES ranged from 12 to 87, with a mean of 29.8 and median of 25 (e.g., equipment operator, child-care worker, machine operator).

Statistical Procedures

Cluster analysis. We chose five factors for the cluster analysis that were linked to several areas of competence and demonstrated a relation to school dropout. These were Socioeconomic Status, Grades Retained

[1] A comparison of high school yearbook information supplied by school personnel with activity photos in yearbooks revealed a high degree of overlap. Where discrepancy existed, high school photographs typically contained errors of omission, rather than commission. Independent of yearbooks, student participation in many activities was verified through participant interview questions surrounding friendship, social network, and crowd membership.

(Age), Aggressive Behavior, Academic Performance, and Popularity With Peers.

A variety of studies have shown that SES and poverty are predictors of school failure and dropout (Cairns, Cairns, & Neckerman, 1989; Ekstrom, Goertz, Pollack, & Rock, 1986; Ensminger & Slusarcick, 1992; Frase, 1989; Kaufman, McMillan, & Bradby, 1992). In addition, differences in age, relative to peers, resulting from school retention is a strong predictor of dropout (Cairns, Cairns, & Neckerman, 1989; Kaufman et al., 1992). Finally, school-related behavior in terms of academic performance (Cairns, Cairns, & Neckerman, 1989; Ensminger & Slusarcick, 1992; Kaufman et al., 1992; Simner & Barnes, 1991), aggression (Cairns, Cairns, Neckerman, Fergusson, and Gariépy, 1989; Ensminger & Slusarcick, 1992; Kaufman et al., 1992) and popularity (Cairns, Cairns, & Neckerman, 1989; Kaufman et al., 1992) have been associated with subsequent dropout.

Ethnic status was not included in the computation of the clusters. Although Hispanic and African American students generally have been shown to have higher rates of school dropout, the finding is not universal. In this investigation, African American students had equivalent or marginally lower school-dropout rates than White students, suggesting that the effects of ethnic status may vary as a function of sample, region, and urban–rural differences. Moreover, the effects of ethnic status on school dropout are diminished or eliminated when socioeconomic status is taken into account (Kaufman et al., 1992). Hence we did not include ethnic status as a variable in identifying the clusters, but we report the proportion of African American and White participants who were placed in each cluster.

Following the developmental model outlined above and detailed in other sources (e.g., Bronfenbrenner, 1995; Cairns & Cairns, 1994; Magnusson, 1995), we employed a person-oriented approach to identify homogeneous configurations of individuals who were similar along several dimensions that we deemed relevant for school adaptation. The clustering techniques that we adopted have been described elsewhere (e.g., Bergman, Eklund, & Magnusson, 1992; Bergman & Magnusson, 1992; Cairns, Cairns, & Neckerman, 1989; Gustafson & Magnusson, 1991; Magnusson, 1988; Magnusson & Bergman, 1988). This strategy allowed us to define a starting point, based on differential levels of competence, from which to plot the developmental trajectories of extracurricular activity participation. The relation between activity involvement and early school dropout could then be evaluated with respect to these configurations that were identified in the seventh and eighth grades.

In the cluster analysis for the person-oriented classification, we used the SLEIPNER program for pattern analysis (Bergman & El-Khouri, 1995). The number of cluster solutions was determined by three criteria, namely (a) expectations of cluster patterns identified in previous analyses with similar methods and variables (e.g., Cairns, Cairns, & Neckerman, 1989) (b) meaningfulness of each additional cluster solution in providing distinctly new and relevant patterns across cluster variables, and (c) reduction in error sums of squares and increase in variance accounted for by additional cluster solutions.

We obtained the cluster solutions using Ward's method in the SLEIPNER program and were subject to an iterative, reclustering procedure. This procedure relocated individuals who were placed in a given cluster, if transferring an individual resulted in a significant reduction of error sums of squares. Iterations proceeded until the cluster solution was stable such that further relocations produced a nonsignificant reduction in error sums of squares. For boys and girls, an eight-cluster solution was identified, each accounting for 58% of variance in cluster variables. (For a further discussion of cluster analytic procedures, the reader is directed to Aldenderfer & Blashfield, 1984; Bergman & Magnusson, 1992; Blashfield & Aldenderfer, 1988; Legendre & Legendre, 1983, pp. 219–259; and Magnusson, 1988.)

We then grouped resulting clusters into three more general levels of competence, namely, high competence, marginal competence, and low competence or at-risk clusters. High competence clusters were characterized by positive scores on the cluster variables and the absence of any extreme negative scores on ratings of academic–behavioral competence. Marginal competence clusters had a mix of one or more positive scores on the cluster variables and one negative score on academic–behavioral competence ratings (e.g., low popularity, low achievement, high aggression). Low competence, at-risk clusters generally showed a profile of negative characteristics across the cluster variables, including high levels of aggression. Unlike the marginal competence clusters, at-risk clusters did not have any academic–behavioral competence ratings in a positive direction (i.e., no redeeming features).

Growth curve analysis. To model activity growth over time for the three competence-based clusters, we used a hierarchical linear model (HLM; Bryk & Raudenbush, 1987; Raudenbush & Chan, 1992). HLM has at least two advantages over traditional linear modeling procedures (e.g., regression; analysis of variance, ANOVA; multivariate analysis of variance, MANOVA): (a) HLM provides direct comparisons on the coefficients concerned with polynomial terms (e.g., linear, quadratic, etc.) among subclasses of participants (e.g., competence-based clusters), and (b) HLM makes use of all available observations of each participant, avoiding participant deletion resulting from data missing at any time-point (i.e., listwise deletion) common to traditional within-subject analysis (e.g., MANOVA). We used the MIXED procedure in SAS (SAS Institute Inc., 1988) to estimate growth curves separately for boys and girls. A backward elimination strategy was used whereby nonsignificant higher order parameter and intercept terms were removed in successive steps (Piexoto, 1990).

Results

In this section, we describe the patterns of extracurricular involvement that were observed from middle school through high school and then present the results of our evaluation of the primary hypotheses, conducted with person-oriented longitudinal analyses.

Extracurricular Involvement: Gender and Ethnic Effects

We observed few ethnic differences in overall activity participation, and the differences identified were modest. In this regard, African American students participated in slightly more activities than did White students, that is, ninth-grade difference, $F(1, 342) = 4.62$, $p < .05$. But these differences did not hold for all activity domains. White students were more involved in student government activities than African American students, $F(1, 387) = 3.78$, $p < .05$, whereas African American boys participated in interscholastic sports more often than White boys, $F(1, 387) = 4.65$, $p < .05$.

One striking finding was the number of students who were involved in only one or no activity. An average of 59% of girls and 68% of boys participated in one or no school activities each year. In middle school, only 8% of the boys and 13% of girls participated in more than one activity. During high school, extracurricular involvement increased substantially. Across the 9th through 12th grades, 48% of boys and 65% of girls participated in more than one activity.

Competence Configurations

Cluster analysis provides statistically based homogeneous subsets of individuals across variables of interest. Boys and girls were clustered separately with the broader, population-based

Table 1
Person-Oriented Configurations During Middle School

Cluster	*n* (White/Black)	Description	Cluster variables									
			Age		ACA		POP		AGG		SES	
			M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
			Boys									
1	17 (16/1)	High competence—A	12.99	0.31	5.43	0.97	5.20	0.82	2.40	0.71	59.65	12.76
2	28 (20/8)	High competence—B	13.02	0.46	5.59	0.92	4.92	0.76	1.73	0.59	19.07	6.47
3	36 (24/12)	High competence—C	13.12	0.37	4.62	0.70	4.88	0.47	3.68	0.71	22.44	8.61
4	22 (21/1)	Unpopular	13.04	0.49	4.37	1.00	3.68	0.56	2.55	0.83	42.50	11.98
5	9 (8/1)	Aggressive–popular	13.07	0.49	3.83	0.72	5.05	0.79	5.04	0.80	51.33	12.27
6	24 (13/11)	Low achievement	13.37	0.37	2.80	0.86	4.13	0.69	2.44	0.86	20.63	8.75
7	21 (13/8)	Aggressive risk	13.05	3.39	3.39	0.74	3.64	0.53	4.68	0.64	19.68	8.46
8	24 (15/9)	Multiple risk	14.72	0.50	2.95	1.07	3.97	0.81	4.90	0.87	21.75	10.76
Total sample (boys)	186 (133/53)		13.38	0.73	4.17	1.33	4.41	0.87	3.30	1.38	28.91	17.22
			Girls									
1	30 (28/2)	High competence—A	12.91	0.25	5.52	0.90	4.70	0.54	1.88	0.76	57.40	11.30
2	44 (36/8)	High competence—B	13.01	0.29	5.99	0.69	5.73	0.51	1.67	0.55	32.61	11.81
3	37 (22/15)	High competence—C	13.02	0.34	5.59	0.79	4.27	0.57	1.95	0.69	18.87	6.65
4	26 (16/10)	Popular–aggressive	13.01	0.30	4.98	0.67	5.35	0.44	3.41	0.57	35.96	13.43
5	13 (8/5)	Low achievement	13.48	0.54	2.90	0.83	4.47	0.51	2.00	0.95	22.08	9.96
6	29 (17/12)	Aggressive risk—A	12.83	0.31	4.33	0.89	4.19	0.50	4.11	0.85	20.76	9.74
7	11 (6/5)	Aggressive risk—B	14.26	0.31	4.16	0.61	5.06	0.77	4.23	1.08	21.91	10.49
8	8 (5/3)	Multiple risk	14.65	0.77	2.72	0.83	2.54	0.53	5.06	1.13	15.50	3.02
Total sample (girls)	206 (143/63)		13.15	5.03	5.03	1.23	4.78	0.92	2.64	1.32	30.57	16.78

Note. ACA = academic competence; POP = popularity; AGG = aggression; SES = socioeconomic status.

sample ($N = 475$). Clustering variables included age and socioeconomic status at Grade 7, and mean ICS teacher ratings of academic competence (ACA), popularity (POP), and aggression (AGG) across Grades 7 and 8.

Table 1 (top and bottom) shows the final eight-cluster solutions for boys and girls, respectively. These configurations were grouped into three superordinate categories of social–cognitive competence, according to criteria described earlier. For boys, high competence included Clusters 1, 2, and 3; marginal competence included Clusters 4, 5, and 6; and at-risk included Clusters 7 and 8. For girls, high competence included Clusters 1, 2, and 3 (same as the boys); marginal competence included Clusters 4 and 5; and at risk included Clusters 6, 7, and 8.

Figure 1 shows growth curves estimates and mean extracurricular involvement for male and female competence clusters across middle school, early high school, and late high school.[2] For boys, growth curve analysis revealed a significant effect for competence, $F(2, 132) = 11.32$, $p < .001$, a quadratic grade effect, $F(2, 132) = 9.36$, $p < .001$, and a Competence × Linear Grade interaction, $F(1, 132) = 24.62$, $p < .001$. The high competent and marginally competent clusters showed a greater increase in activity participation during high school than did the risk clusters. The quadratic trend indicates that activity growth between middle and early high school was greater than between early and late high school.

For female competence-based clusters across the same three age–grade periods, growth curve analysis revealed a significant effect for competence, $F(2, 160) = 6.64$, $p < .01$, a linear grade effect, $F(1, 174) = 90.47$, $p < .001$, and a Competence × Linear Grade interaction, $F(2, 160) = 6.26$, $p < .01$. Like the boys, the higher competence clusters for girls showed greater increases than the risk clusters. However, for girls, a significant quadratic effect was not found, indicating that activity growth was relatively constant across the three age–grade periods.

Extracurricular Activity Involvement and School Dropout

Sixteen percent of the 392 participants were early school dropouts (27 girls, 34 boys). Dropout rates increased over time. The following number of participants dropped out for Grades 7 to 11: 7th grade, 0; 8th grade, 3; 9th grade, 13; 10th grade, 16; 11th grade, 29.

To evaluate whether extracurricular involvement would predict early school dropout, we compared activity participation across Grades 7 to 10 for dropouts and nondropouts. Univariate ANOVAs were performed separately at each grade so as not to

[2] It is noteworthy that the growth curve analysis underestimated the actual mean level of extracurricular activity participation for risk clusters during late high school. We suspect that this finding is due to the higher proportion of dropouts found in the risk clusters. As shown in Figure 2, participation rates by students who eventually dropped out of school is significantly lower than those for nondropouts.

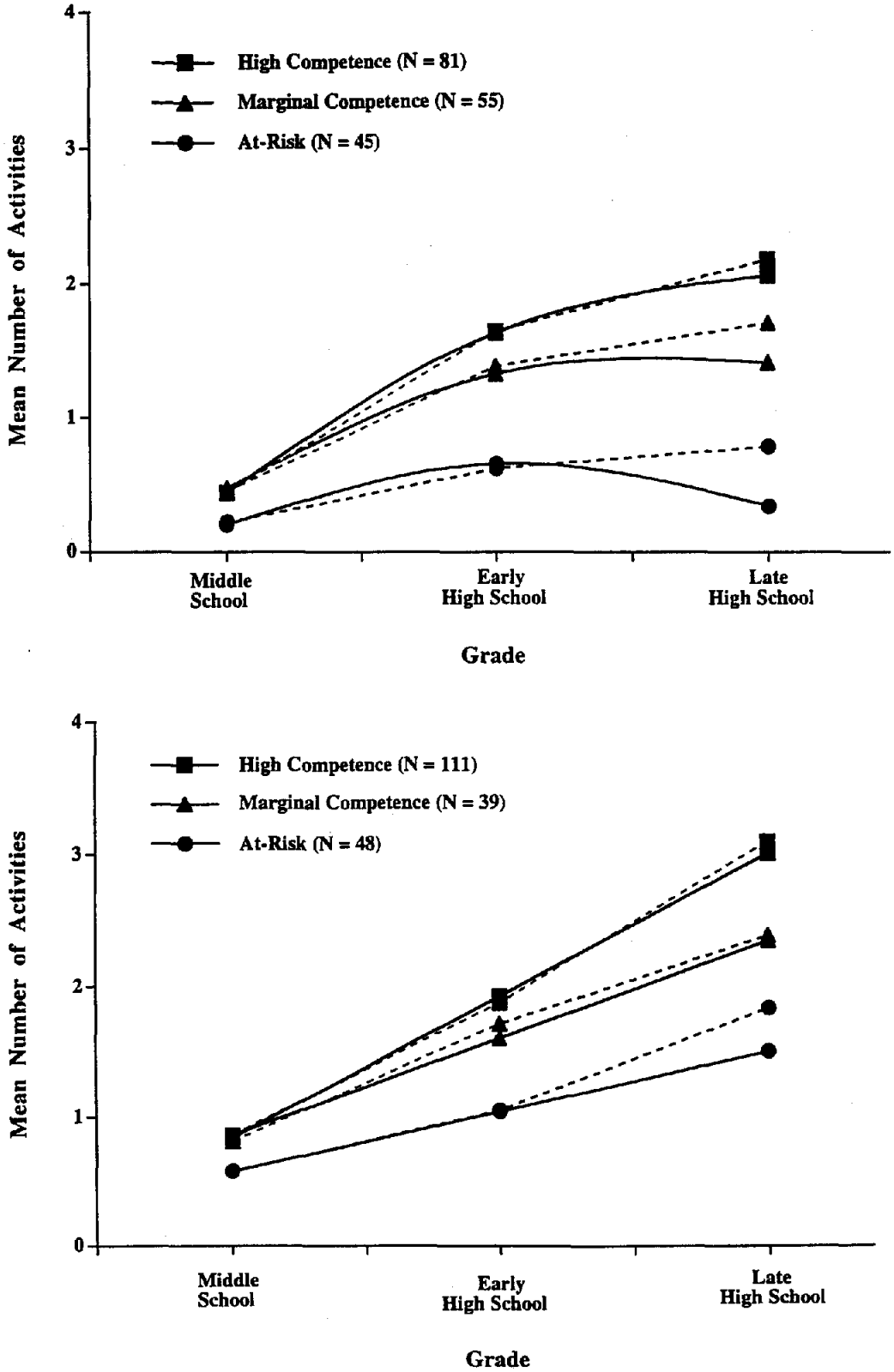

Figure 1. Extracurricular activity involvement as a function of competence and grade for boys (top) and girls (bottom). Solid lines show hierarchical linear model estimated growth curves; dashed lines show sample means.

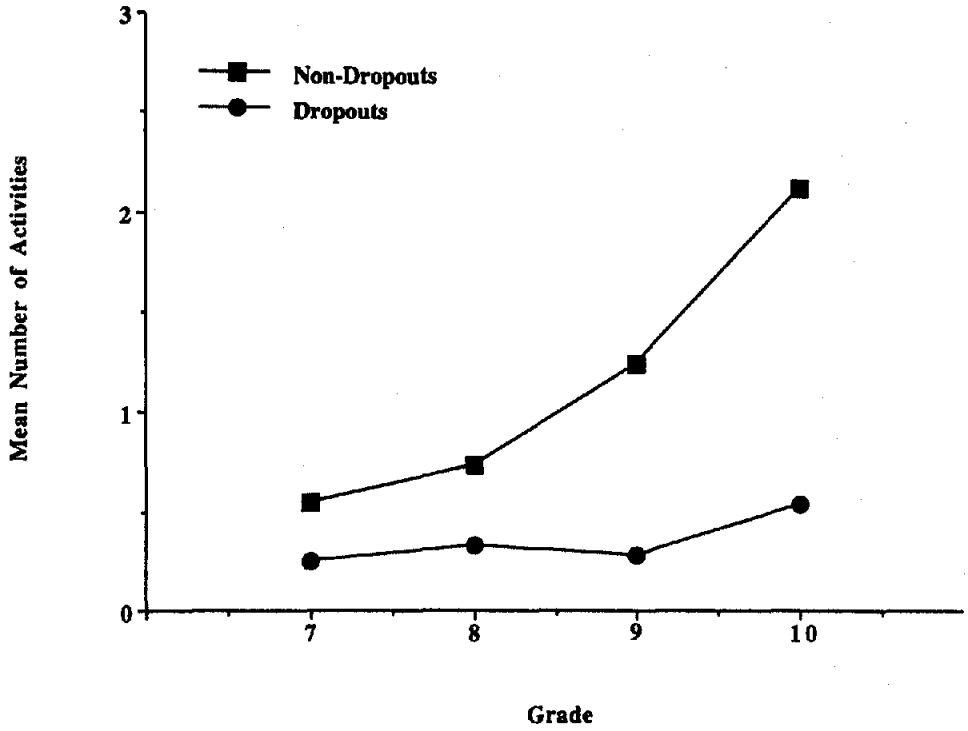

Figure 2. Mean number of extracurricular activities participated in as a function of dropout status and grade.

confound the number of dropouts with activity participation. Figure 2 shows the mean number of activities participated in by nondropouts and dropouts. Dropouts participated in significantly fewer extracurricular activities at all grades, even several years prior to dropout: 7th grade, $F(1, 389) = 8.41$, $p < .01$; 8th grade, $F(1, 365) = 10.14$, $p < .001$; 9th grade, $F(1, 343) = 15.46$, $p < .001$; and 10th grade, $F(1, 314) = 31.00$, $p < .01$.

We then assessed whether school dropout would differ according to levels of extracurricular involvement and competence. Table 2 shows the proportion of dropouts separately by gender, according to competence clusters and annual extracurricular involvement during middle and early high school. For this analysis, extracurricular involvement was divided into three categories during middle school and early high school; namely, no involvement, one activity, and more than one activity.

During middle school, we identified significant main effects for cluster competence, $F(2, 360) = 29.98$, $p < .001$, and level of activity involvement, $F(2, 360) = 4.24$, $p = .02$. The interaction between cluster competence and activity level did not reach statistical significance, $F(4, 360) = 2.20$, $p = .069$. However, students in the risk clusters showed a significantly

Table 2
Proportion of Dropouts by Extracurricular Activity Involvement and Competence for Boys and Girls

	Middle school			Early high school		
Competence level	No involvement	Up to one activity	More than one activity	No involvement	Up to one activity	More than one activity
			Boys			
Competent	.07 (3/42)	.04 (1/28)	.00 (0/11)	.11 (2/19)	.05 (1/19)	.00 (0/39)
Marginal	.26 (7/27)	.05 (1/22)	.00 (0/6)	.27 (3/11)	.13 (2/15)	.00 (0/24)
At risk	.57 (17/30)	.29 (4/14)	1.00 (1/1)	.59 (10/17)	.00 (0/8)	.00 (0/8)
			Girls			
Competent	.04 (1/23)	.07 (4/60)	.00 (0/27)	.18 (4/22)	.00 (0/25)	.00 (0/55)
Marginal	.00 (0/10)	.11 (2/19)	.20 (2/10)	.29 (2/7)	.07 (1/15)	.06 (1/16)
At risk	.45 (9/20)	.24 (5/21)	.00 (0/7)	.42 (5/12)	.07 (1/14)	.00 (0/11)

higher dropout rate than students in the more competent clusters only in the case of no extracurricular involvement, $F(2, 149) = 20.69$, $p < .001$, or involvement in one activity, $F(2, 161) = 5.99$, $p = .003$. No significant gender interactions were observed. As annual involvement increased, the dropout rates decreased and became similar across the three competence clusters.

Parallel effects were observed in early high school, with somewhat higher levels of significance: cluster competence, $F(2, 319) = 7.26$, $p = .001$; activity level, $F(2, 319) = 30.28$, $p < .001$; and cluster competence by activity level, $F(4, 319) = 5.12$, $p = .001$. There was a large reduction in dropout for students in the risk clusters as activity participation increased. Significant differences between competence clusters were observed only in the case of no activity involvement, $F(2, 85) = 6.23$, $p = .003$. No significant gender interactions were observed. Figure 3 shows the relation between extracurricular involvement and early school dropout as a function of competence clusters, with boys and girls combined. Involvement in extracurricular activities was related to a substantial reduction in school dropout. This effect was strongest for the risk clusters during early high school.

To clarify this finding, risk clusters were compared with respect to participation in each of the nine activity domains and rates of early school dropout (see Table 3).[3] Results show that, with the exception of fine arts participation, all domains were associated with reduced rates of early school dropout. This was particularly true for involvement in athletic activities. There were no significant gender interactions for any activity domain. With the exception of one participant, risk students who engaged in any activity domain during early high school graduated from high school.

The cluster methodology also suggests a fresh way to address the relationship between SES and extracurricular activities. Socioeconomic comparisons are usually confounded with differences on other adaptive characteristics (e.g., academic competence, aggressive behavior, popularity). It should be noted that two high competence clusters of boys (i.e., Clusters 1, 2) were similar on multiple characteristics of school adaptation but differed in SES. With these relevant social–academic factors controlled, the socioeconomic difference in activity participation between male Clusters 1 and 2 (see Table 1, top) is not significant. A parallel comparison is possible for competent female clusters (i.e., Clusters 1, 2, and 3; see Table 1, bottom). These three clusters showed a small but reliable difference in activity participation as a function of SES, $F(4, 312) = 2.87$, $p < .05$.

Discussion

Results indicate that engagement in school extracurricular activities is linked to decreasing rates of early school dropout in both boys and girls. The outcome is observed primarily among students who were at highest risk for dropout.

The association between reduced rates of early school dropout and extracurricular involvement differed according to the competence of the individual. For students in the risk clusters, the associated reduction in dropout was stronger compared with more competent students. It is likely that the relations were not as pronounced for more competent children because they presumably had one or more existing sources of positive connection to the school. The concept that protective factors may differentially moderate the risk–outcome relation as a function of competence has been shown in studies of developmental psychopathology and competence (e.g., Masten, Garmezy, Tellegen, Pellegrini, Larkin, & Larsen, 1988; Masten, Morison, Pellegrini, & Tellegen, 1990; Rutter, 1990) and several recent preventive intervention studies, ranging from intellectual development in high-risk infants (Gross, 1990; Gross, Brooks-Gunn, & Spiker, 1992; Infant Health and Development Program, 1990) to depression among unemployed adults (Caplan, Vinokur, Price, & van Ryn, 1989; Price, 1992; Price, van Ryn, & Vinokur, 1992).

In the light of the current results, the functions and goals of extracurricular activities should be reconsidered. The exclusionary processes characteristic of some activities (e.g., Coleman, 1961; Eder, 1985; Evans & Eder, 1993; Jacobs & Chase, 1989; Hollingshead, 1949) may work against those students who could benefit most directly from involvement.

But why should participation in a single school extracurricular activity be strongly associated with lower rates of school dropout for students at risk? For students whose prior commitment to the school and its values has been marginal, such participation provides an opportunity to create a positive and voluntary connection to the educational institution. Unlike alternative procedures (e.g., school dropout prevention programs, remedial education), which focus on the deficits of students and serve as a catalyst in the formation of deviant groups, extracurricular activities can provide a gateway into the conventional social networks while, simultaneously, promoting individual interests, achievements, and goals (e.g., Csikszentmihalyi et al., 1993; Eder, 1985; Kinney, 1993; McNeal, 1995). Thus, school dropout may be effectively decreased through the maintenance and enhancement of positive characteristics of the individual that strengthen the student–school connection.

A related question is, why is there a greater associated reduction in school dropout during early high school? One explanation is that the increased diversity of activities offered in high school provides adolescents more opportunity for activity participation suited to their interest–ability (Kinney, 1993). The range of activities included in the domains that risk students most often participated (athletics, fine arts, and vocational) increased during high school, as did their participation in these domains. Thus, the effect may be stronger in high school because participation increases as a result of greater opportunity, an expanded diversity of activities, or both.

A second explanation would be that the shift from middle school to high school represents a point of developmental transition. Recall that competence was defined by the configuration of variables assessed during middle school. The reorganization of schools, classrooms, teachers, and peer groups that accompanies the transition into high school may provide some students with a turning point by which earlier patterns of adaptation can

[3] The following activity domains were grouped together because of the low participation rate among persons in the risk clusters: assistants, service, academics, government, and press. There was no participation in the royalty activities among persons in the risk clusters, so this domain was not included in the analysis.

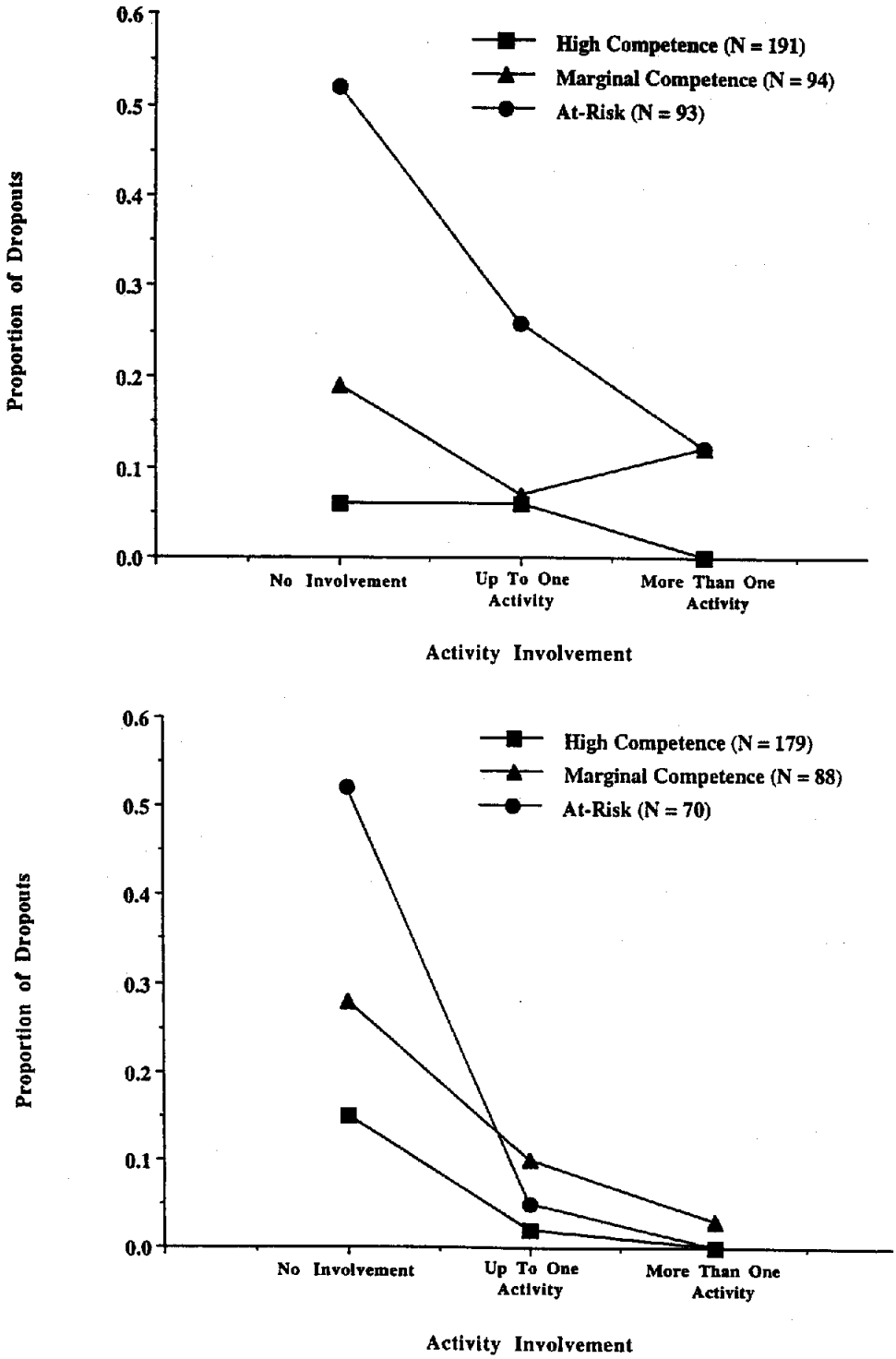

Figure 3. Early school dropout as a function of extracurricular activity involvement and competence during middle school (top) and early high school (bottom).

be transformed. Extracurricular involvement, particularly for persons at risk for dropout, may be one component of that transition that could help shift the balance toward greater engagement in school.

It is also noteworthy that rates of early school dropout were higher in early high school than in middle school. This age-related difference may, in part, reflect that students are required by law to remain in school until the age of 16 years. Students

Table 3
Proportion of At-Risk Dropouts as a Function of Activity Domain and Grade

Activity domain	No involvement	Any involvement	Chi-square[a] or Fisher's exact test[b]	*p*
		Middle school		
Fine arts	.40 (27/67)	.35 (9/26)	$\chi^2(1, 93) = .07$	>.10
Athletics	.44 (35/79)	.07 (1/14)	$\chi^2(1, 93) = 5.44$	<.05
Vocational	.40 (36/91)	.00 (0/2)	Fisher's exact	.37
All others combined	.43 (34/79)	.14 (2/14)	$\chi^2(1, 93) = 3.02$	<.10
		Early high school		
Fine arts	.27 (15/55)	.07 (1/15)	Fisher's exact	.08
Athletics	.34 (16/47)	.00 (0/23)	$\chi^2(1, 70) = 8.31$	<.01
Vocational	.29 (16/55)	.00 (0/15)	Fisher's exact	.01
All others combined	.30 (16/53)	.00 (0/17)	Fisher's exact	.006

[a] Chi-square values were computed using Yate's continuity correction. [b] When expected cell frequency <5, Fisher's exact test probabilities are reported.

who became committed to dropping out in high school would not be expected to extensively participate in any aspect of formal schooling, including extracurricular activities.

School yearbooks are published annually in most American secondary schools to record the goals of the institution and accomplishments of the students. For the researcher, they constitute a convenient, noninvasive, and public index of each student's participation in extracurricular activities. It is a small irony that the production of yearbooks is itself an extracurricular activity.

Yearbooks are not newspapers, and their content is biased toward recording school-related achievement rather than individual shortcomings. Honors and accomplishments are archived, but failures, delinquencies, and expulsions are not. Despite this bias toward accomplishment, it seems noteworthy that school dropouts could be differentiated from nondropouts by virtue of their absence of involvement in extracurricular activities early on.

It should be recalled, however, that participation was selective. The large number of uninvolved students found in this study is consistent with earlier reports that there is a general inequality of extracurricular participation in American secondary schools. In this investigation, roughly half of the students were not publicly recognized during secondary school, or at least were invisible across the range of extracurricular activities presented in school yearbooks. Using a conservative estimate including only the intact sample at each grade, we found that 59% of girls and 68% of boys showed an average amount of participation in one or no school activities each year. Moreover, the growth curve analysis revealed that participation rates were consistently lower for risk students compared with their more competent counterparts.

The availability of extracurricular activities does not ensure equal opportunity for participation. Why the differential involvement? Possible reasons include the following: (a) Many activities highlighted in yearbooks require expertise in particular domains (e.g., music, sports, languages, mathematics, science), (b) certain school activities require nomination, selection, or election and participation, and status may be maintained by exclusion and gatekeeping (possibly mediated by school personnel, peers, or both); (c) some school activities require minimal academic performance (e.g., a "C" average) to be eligible for participation; (d) socioeconomic status, although not a general barrier to participation, may influence the types of activities students choose (or are allowed) to participate in as well the attainment of status within those activities (Coleman, 1961; Hollingshead, 1949; Csikszentmihalyi et al., 1993).

The design of this study followed from a developmental model that called for disaggregation of the sample at the onset of the longitudinal investigation. This step was required to facilitate the tracking of the different developmental pathways that were likely to be adopted. The procedure begins with the assumption that interactions among internal and external characteristics are central to understanding the course of individual human development. In the present research, the technique highlighted the differential outcomes associated with extracurricular involvement, and it could be equally important in subsequent analyses of the success or failure of preventive interventions.

Correlational results provide only weak evidence for causation. This principle holds even when correlational matrices and their sibling analyses (e.g., multiple regression analysis, linear structural equation models) are derived from years of longitudinal study and involves replication across successive time-points and samples. Prior work shows that school dropout is associated with multiple properties of the individual and the social context, and it is very likely that more than a single pathway is involved. Nonetheless, convergent evidence from this study is consistent with the proposition that extracurricular participation helps protect against school dropout for some students. In this regard, the results are consistent with the developmental model of correlated internal and external constraints that guided the research design.

Future research on extracurricular activities should address reasons why some students join extracurricular activities, maintain their participation over time, and the possible reasons why they do not become involved or drop out of the extracurriculum. It would also be of interest to assess whether patterns of participation in school-based extracurricular activities have conse-

quences following formal schooling. Participation in school extracurricular activities may or may not be related to subsequent achievement following formal schooling, depending on the type of activity and the measure of subsequent achievement (Eccles & Barber, 1995). This finding suggests that research on extracurricular activities should be extended beyond high school to assess the linkages to long-term patterns of adaptation.

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Appendix

Extracurricular Activities Participated in From Grades 7 Through 12

Asterisks indicate that activity is offered during middle school.

Athletics

Baseball
Basketball*
Cheerleading*
Cross-country
Fellowship of Christian Athletes
Football*
Golf
Grapplelette
Monogram
Pep club*
Softball
Tennis
Track
Volleyball
Wrestling

Assistants

Flag attendant
Food service
Laboratory assistant
Library assistant*
Office assistant

Fine Arts

Art club
Band*
Chorus*
Concert choir
Drama
Intermediate chorus
Girl's ensemble
Marching band
Small ensemble

Student Government

Class officer
Student council*
Student government association

Press

Journalism club
School newspaper*
Photography club
Yearbook*

Vocational

Automobile club
Career club*
Distributive educational club
Future business leaders (FBA)
Future farmers (FFA)
Future homemakers (FHA)
Vocational industrial club (VICA)

Academics

BETA club
Business club
French club
Future programmers (FPA)
Future teachers (FTA)
History club
Junior marshall
National honor society (NHS)
Science club
Spanish club
Quiz bowl

Service

Bible club
Civinettes/civitans
Ecology council
Health occupation students (HOSA)
Students Against Drunk Drivers
Young American Society (YAS)
Youth Advisory Council (YAC)

Royalty

Homecoming
Prom
School princess

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