SUMMARY

This study addressed the question: "Is the extent of a youngster's participation in school and classroom activities related to his/her academic performance?" Subjects for the study consisted of a nationwide sample of eighth-grade students who were classified into one of four participation groups based on three factors: absenteeism and tardiness, participation outside the regular academic program, and behavior in the classroom. Profiles on the three participation factors were distinct for gender and for racial/ethnic groups in the sample.

The primary outcome variables were achievement tests in Reading, Mathematics, Science, and History/Geography/Civics. Multivariate analysis of variance revealed noteworthy differences among the participation groups in school achievement. Multivariate effect sizes were .75 for the linear trend and .09 for the quadratic trend. That is, there is a strong linear association of participation with academic achievement--the higher the participation level, the higher the (average) achievement scores. In addition, differences between the higher groups of participants were larger than differences between the lower groups. The potential benefits of a small amount of participation (compared with none) are not as great as those for a high degree of participation (compared with some).

On the whole there were no significant interactions of participation with gender or race/ethnicity. That is, the strong association of participation with achievement is supported for males and females and for Asian, Hispanic, African American, and non-Hispanic White students alike.

While the potentially harmful effects of nonparticipation in class and school are obvious, achievement and participation are undoubtedly related in a reciprocal fashion. The literature cited in the introduction to this report notes that young children attribute success to effort rather than to ability. From this perspective, it is also reasonable to assume that for some youngsters, effort is expended--perhaps independently of achievement--until a pattern of failure is realized. If poor grades or low test scores are accompanied by adversarial

interactions with school staff, the youngster's willingness to engage in school-related activities can only be expected to diminish.

Study II: Engagement Among Students At Risk

The primary question of Study II is: Are students at-risk who achieve at acceptable levels academically distinguished from their less successful peers by the extent of their physical and emotional *engagement* in school? To address this question, a subsample of NELS:88 eighth-grade students was identified who would be classified as being at risk for educational failure according to traditional status characteristics. Three sets of risk factors were identified, and all students who were characterized by one or more of these were selected for the study. Risk group "UM" (urban minority) consisted of all individuals who indicated that they were of Asian, Hispanic, or Black and attending a school in an urban area. Risk group "LS" (low socioeconomic status) consisted of all students who were in the lower third of the distribution on the NELS:88 socioeconomic status (SES) index and whose family had 5 or more members.[5] Risk group "LM" (language minority) consisted of all individuals who come from a home in which a language other than English is typically spoken. A youngster was classified as language minority in the NELS:88 survey if either of the teachers or the student reported that another language is usually spoken at home. Table 6 gives the distribution of risk categories for each of the four racial/ethnic groups in the study. It is clear that students of Hispanic origin have the greatest frequency of one or more risk factors and the highest incidence of multiple risk factors of the four groups studied.[6] The total sample for Table 6 this study consisted of 5945 youngsters, although *N*'s vary somewhat from one analysis to another depending on the pattern of missing responses.

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[5]The NELS:88 index of socioeconomic status did not take family size into account as some other indexes have done. Family size is also a consideration in determining whether a youngster is eligible for government-subsidized lunches at school. Inclusion of the family size variable undoubtedly reduced the number of White students in the sample to just those living in the very lowest socioeconomic conditions. This is consistent with the decision to include minority students who are also attending inner-city schools, that is, to identify those "most at risk" by traditional criteria.

[6]Of course, White youngsters, by definition, cannot be characterized as "minority."

Table 6

Distribution of Characteristics for Eighth-Grade Students At Risk

Risk Factors	Racial/Ethnic Group			
	Asian/Pacific Islander	Hispanic	Black	White, not Hispanic
Urban Minority (UM)		13.0	40.6	
Low SES (LS)	3.9	5.5	15.2	77.5
Language Minority (LM)	45.5	19.2	1.8	17.5
UM and LS	1.7	4.1	15.1	
UM and LM	27.6	19.0	1.8	
LS and LM	9.6	20.3	1.0	5.0
UM and LS and LM	11.7	18.8	0.8	
Number in At-Risk Sample	718	2063	1574	1590
Percentage of Total Racial/ Ethnic Group	64.4	82.2	66.9	13.6

Note: All values are percentage of the particular racial/ethnic group.

The at-risk sample was further divided into achievement levels according to the youngsters' performance on the NELS:88 reading and mathematics achievement tests. The highest group, termed "successful," consisted of students who scored above the national mean (of all students) in both reading and mathematics. This criterion of success was chosen under the assumption that youngsters achieving at this level would be judged as adequate whether or not they were in a high-risk group. For those at risk, performing at the national mean may be a real accomplishment, as the statistics were to show. Because the focus of Study II is on behaviors that distinguish youngsters who are even moderately successful from their less successful peers, a middle group--"passing"--was also defined. This classification consisted of students who scored higher than one-half standard deviation below the national mean on both tests. It includes students who score between the mean and $.5\sigma$ below the mean on both tests as well as students who score in this range on one test and above the mean on the other. A third group, termed "unsuccessful," consisted of individuals who scored lower than one-half standard deviation below the mean on one or both tests.

The proportions of students in each performance group are given in Table 7. In total, about 65% of the at-risk sample is in the unsuccessful category. In contrast, 45% of not-at-risk youngsters are classified as successful. About the same numbers of Asian students are classified as successful and unsuccessful. As a group, these youngsters are not as hindered by the multiplicity of risk characteristics as are Hispanics. Students of Hispanic origin are characterized by the greatest incidence of multiple risk factors. However, the smallest proportions of passing and successful students in the sample were Black.

RESULTS

The results of the analysis of student characteristics are described in three parts. First (1) the sample of youngsters who are at risk because of status characteristics is compared with those youngsters who are not at risk by this definition. Second (2) successful, passing, and unsuccessful students at risk are compared in terms of a variety of other outcome

Table 7 Distribution of Reading-Mathematics Performance for Students At Risk

Table 7

Distribution of Reading-Mathematics Performance for Students at Risk

Racial/Ethnic Group	Performance		
	Unsuccessful	Passing	Successful
Asian/Pacific Islander	42.1	15.3	42.6
Hispanic	68.8	15.0	16.2
Black	76.7	11.4	11.9
White, not Hispanic	60.5	18.1	21.4
All Students At Risk	65.4	14.9	19.6
Students Not At Risk	38.7	16.2	45.2

Note: All values are percentages based on row totals.

variables, that is, a more complete profile of school-relevant outcomes is given. And (3) the key question is addressed, "are more and less successful students at risk distinguished by the degree of engagement in school that they exhibit?"

At-Risk Students Compared with Those Not At Risk

A set of characteristics from the NELS:88 student and parent questionnaires is summarized in Table 8 for students in the at-risk sample and for those who do not meet any of the three risk criteria used in this study. These (unweighted) results are intended to provide a fuller picture of the specific sample of this study, and not to estimate "true" distributions of characteristics of students at risk in public schools in the United States.

At home, both groups reported watching an astounding 3 to 4 hours of television daily. Youngsters at risk watched more television, on average, both on weekdays and weekends. In contrast, eighth grade students in the sample averaged fewer than 2 hours per *week* of nonrequired reading, with at-risk youngsters reporting less reading than their not-at-risk peers.

Over half of the youngsters not at risk attended some form of nursery or preschool while about one-third of youngsters at risk attended nursery or preschool. Kindergarten is not mandatory for youngsters in all states, leaving the option open for parents to enroll their children in private kindergartens. In all, about 95% of the not-at-risk sample attended a kindergarten class, and about 88% of youngsters at risk did so. Unfortunately the at-risk youngsters who might have particularly benefitted from these early school experiences did not participate in them as commonly as those not at risk. At the same time, youngsters in the at-risk sample changed schools more times prior to eighth grade, making it all the more difficult for physical and emotional engagement in the school environment to be maintained.

Table 8

Comparison of Students At Risk With Students Not At Risk

Characteristic	Risk Group	
	Not At Risk	At Risk
Mean hours of Television: Weekdays	3.31 (1.55)	3.61 (1.71)
Mean hours of Television: Weekdays	3.86 (1.74)	4.06 (1.89)
Mean hours reading for pleasure	1.82 (1.54)	1.58 (1.42)
Percent who attended preschool	56.2	36.6
Percent who attended kindergarten	94.9	87.8
Mean number of school changes	1.25 (1.56)	1.59 (1.62)
Percent in:		
Unsuccessful achievement group	38.7	66.0
Passing achievement group	16.2	14.7
Successful achievement group	45.2	19.3
Mean self-reported grade average	2.94 (.77)	2.71 (.75)
Percent retained one or more grades	16.8	28.7
Percent who plan to:		
Attend a post-secondary school	89.7	82.6
Graduate from college	68.8	53.6

Note: Scale of each variable is described in the appendix. Standard deviations in parentheses.

The separation of youngsters into three achievement groups yielded substantially different distributions for youngsters at risk by one or more of the status characteristics and for those not at risk. About 61% of the not-at-risk sample was classified as passing or successful, while 66% of the at-risk sample was classified as unsuccessful. Other indicators of school performance were consistent with this difference. According to the parents of these youngsters, about 17% of the not-at-risk sample had been retained in grade at least once prior to eighth grade and over 28% of youngsters at risk have been grade-retained. According to the students' self reports, the grades received by students at risk were somewhat lower than those received by their not-at-risk peers, and fewer students at risk planned to go on for further education following high school or to complete college. Of course, there may be bias in the figures for either or both groups because of the self-report, low-stakes nature of the questionnaire.

Successful, Passing, and Unsuccessful Students At Risk

The focus of this investigation is on students at risk who are successful in school despite the handicaps associated with minority status, coming from a low income family, or having a home language other than English. The sample of youngsters with one or more of these status characteristics was divided into three groups according to their reading and mathematics achievement: academically successful, passing, and unsuccessful. In order to characterize the groups more fully, cross-classifications of achievement were obtained with other background and performance dimensions.[7]

Achievement in other subjects, grades, and education plans. The three achievement groups were defined on the basis of youngsters' performance on the reading and mathematics subtests of the NELS:88 battery. Scores on the science and history tests were also coded as

[7]All percentages in this section were computed from weighted data, that is, using the sampling weight for each individual computed in the NELS:88 survey. The chi-square values were obtained using the SUDAAN program to take the multistage sampling design into account.

successful, passing, or unsuccessful depending on whether the student scored above the national mean, between the mean and one-half standard deviation below the mean, or less than one-half standard deviation below the mean, respectively.

Table 9 gives the percentages of youngsters in each achievement group who scored at each level on the science and history tests. The relationships among the achievement measures were high. In all, 60.5% of youngsters were in the same achievement group for science as for reading/mathematics,[8] and 60.0% of the sample was in the same achievement group for history as for reading/mathematics. While 34% of the at-risk sample could be considered to be doing passing work or better in science and mathematics (see Table 8) over half of the sample could be considered as passing or better in science and over half in history. The X^2-tests of these relationships both exceed 200 which, with 4 degrees of freedom, are highly significant. In general high-risk pupils who are successful in reading and mathematics are successful in other subject areas as well.

Likewise, there is a strong association between achievement in reading and mathematics and self-reported grades. The grade averages in Table 9 undoubtedly reflect an upward bias in students' reports. For example, fewer than 10% of the students in the unsuccessful group reported receiving mostly D's and F's (GPA's of .5 to 1.5) and almost as many reported receiving all A's and B's (GPA's of 3.5 to 4.0). Nevertheless, the association between the reading and mathematics achievement and self-reported grades is consistent: the modal grade category for unsuccessful students is "1.6-2.5," for passing students it is "2.6-3.5," and for successful students it is "3.5-4.0." Again, the X^2-statistic is about 200 which, based on 6 degrees of freedom, is highly significant. In general, students' self-reported grades are positively associated with their achievement on reading and mathematics tests.

[8]This is the total percentage of the sample who were successful on both reading/mathematics and science (above the national mean), plus those who were "passing" on both, plus those who were "unsuccessful" on both. The value can be obtained from Table 9 only indirectly.

Table 9

Educational Outcomes and Plans for Students At Risk

Performance Measure		Reading/Mathematics Achievement Group			
		Unsuccessful	Passing	Successful	All
Science:	Unsuccessful	62.6	27.3	7.4	47.6
	Passing	24.4	31.8	16.3	24.1
	Successful	12.9	40.9	76.4	28.3
History:	Unsuccessful	61.2	20.4	5.4	45.3
	Passing	21.7	27.3	11.4	20.7
	Successful	17.1	52.3	83.2	34.0
Self-Reported Grade Average:					
	.5 - 1.5	9.9	4.9	1.7	7.7
	1.6 - 2.5	47.3	31.6	18.0	39.7
	2.6 - 3.4	33.3	38.9	35.5	34.5
	3.5 - 4.0	9.4	24.6	44.8	18.0
Educational Plans:					
Won't finish high school		3.7	.6	.3	2.6
Graduate from high school		19.2	13.2	5.1	15.8
Vocational, trade, or business school		14.2	9.7	7.2	12.3
Attend college		18.3	16.2	13.0	17.1
Graduate from college		29.6	42.8	41.8	33.7
Post-college schooling		15.0	17.5	32.6	18.5

Note: All values are percentages of the particular reading/mathematics achievement group; that is, column totals are 100%.

There is a well documented tendency for minority students to report unrealistically high aspirations, considering the many constraints that they confront (Coleman et al., 1966; Mickelson, 1990; Smith & Abramson, 1962; Soares & Soares, 1969; Solorzano, 1992). This effect is apparent in the educational plans reported by the eighth grade sample of youngsters at risk. At the extreme, almost 30% of the least successful group stated that they plan to graduate from college and another 15% that they plan to attend graduate school. At the same time, the association between achievement groups and the youngsters' post-secondary education plans is highly statistically significant [$X^2(10,N=6146) = 157.64, p < .001$]. In general, higher percentages of unsuccessful students report that they will not finish high school or will not go on to any post-secondary school, while higher percentages of the passing and successful groups expect to graduate from college.

The identification of three achievement levels among students at risk produces groups that are clearly distinct in terms of other school achievements, grades received, and post-secondary education plans. These results also demonstrate that there is a substantial number of eighth graders who are performing reasonably well in their academic subjects in spite of the handicaps that may be associated with minority status, low incomes, or a home language other than English.

Previous school experiences.[9] There is a significant association of reading and mathematics performance with the student having attended a nursery or preschool. While 33.8% of unsuccessful students had attended one or the other of these early-year programs, 39.8% and 46.9% of the passing and successful students, respectively, had done so. The test of association of nursery/preschool with achievement groups was statistically significant at $p < .001$ [$X^2(2, N=3985) = 30.59$]. It is not clear whether the preschool experience plays a role in causing higher achievement in later years or whether the causal mechanisms are more complex, for example, parents' own educational attitudes may have caused them to send their

[9]Because all of the variables in this section are simple dichotomies, the percentages are given in text rather than a table.

youngsters to nursery school and to promote higher achievement in their children. However, preschool programs may provide an important early opportunity for youngsters to develop participatory behaviors that are beneficial to their school work in later years.

About 88% of the unsuccessful and passing groups had attended kindergarten, while 91.3% of successful students had done so. The association was only marginally significant, [$X^2(2, N=3985) = 6.86, p < .03$]. The fact that most youngsters in the U.S. attend kindergarten makes it difficult to detect the possible effects of this early school experience, especially in a large-scale survey. A more intensive investigation might address whether youngsters attended kindergarten for a half or full day, the nature of the instruction that was provided, and the experiences of those who did not attend kindergarten. The present investigation yields just the finding that the most successful at-risk youngsters attended kindergarten at a slightly higher rate than those with lower reading and mathematics performance.

By the time the students reached eighth grade, 38.3% of the unsuccessful group had been retained one or more grades. In contrast, 19.5% of the passing group and only 9.9% of youngsters classified as successful had been grade retained. The X^2-test indicates that this relationship is highly statistically significant, [$X^2(2, N=5381) = 143.6, p < .001$]. The results for grade retentions, however, raise a critical but unanswered question: Do the positive effects on a youngster's learning or social integration outweigh the harmful psychological effects that may accrue? If keeping a student in a grade for an additional year encourages emotional or physical withdrawal from school and class activities, then a supplementary program to foster engagement behavior is all the more essential.

Television viewing and reading at home. American youngsters continue to fill large blocks of time watching television (see Table 10). Over one-third of eighth graders at risk report watching more than 4 hours of television per day during the week and almost half of eighth graders at risk report watching more than 4 hours per day on weekends. The

Table 10

Television Viewing and Reading for Pleasure among Students At Risk

Activity	Reading/Mathematics Achievement Group			
	Unsuccessful	Passing	Successful	All
Television (Weekdays):				
Don't watch TV[a]	4.0	3.3	2.1	3.5
Less than 2 hours	23.3	25.7	27.3	24.5
2-4 hours	35.9	39.6	42.8	37.9
More than 4 hours	36.8	31.3	27.8	34.1
Television (Weekends):[a]				
Don't watch TV	6.2	3.8	2.9	5.1
Less than 2 hours	18.5	15.8	15.2	17.4
2-4 hours	26.1	29.5	32.3	27.9
More than 4 hours	49.2	50.9	49.7	49.6
Reading for pleasure:[b]				
None	27.3	17.4	13.4	23.2
1 hour or less	37.0	38.0	30.0	35.9
2-3 hours	27.3	29.1	35.3	29.0
4 hours or more	8.4	15.4	21.4	11.9

Note: All values are percentages of the particular reading/mathematics achievement group; that is, column totals are 100%.

[a] Reported TV viewing per day.

[b] Reported reading per week.

relationship of TV viewing with reading and mathematics achievement is statistically significant for both weekdays [$X^2(12, N=5117) = 53.23, p < .001$] and weekends [$X^2(12, N=4920) = 49.70, p < .001$]. The association is especially apparent in the low and high TV viewing categories on *weekdays*. The percentages of youngsters who report watching no television and watching less than 2 hours per day increase as academic achievement goes up, and the percentages who report watching more than 4 hours per day decreases as achievement goes up. On weekends, small amounts of TV viewing are also associated with higher school achievement but about an equal proportion of each achievement group report watching more than 4 hours per day.

Over one quarter (27.3%) of unsuccessful eighth graders at risk report that they never read on their own outside of school. This percentage decreases to 17.4% among passing students and 13.4% of the successful group. In contrast, the percentages of youngsters who read on their own for 2 to 3 hours and for 4 hours or more per week increase monotonically with school achievement. The association of reading with the achievement groups is highly statistically significant [$X^2(10, N=5736) = 115.42, p < .001$].

Summary. Above all else, it is clear that the students who were identified as being at risk for educational failure because of their race, income, or home language are not a homogeneous group. If a modest definition of school performance is adopted, then over one-third of the high-risk youngsters could be classified as "passing" or better, and about 20% can be termed "successful." The more successful youngsters are distinguished from their less successful peers on a range of educational achievements including grades received and educational plans. They watch less television, particularly on weekdays, and read more for their own enjoyment. More of the successful youngsters had attended a preschool program, and a slightly higher percentage had attended kindergarten.

Several of these factors may be attributed to parents' roles as decision makers and monitors of their youngsters' behavior. The decision to enroll a child in a preschool

program or to seek out a kindergarten when one is not provided by the state is clearly in the parents' domain. Parents may also restrict the amount of television viewing from the child's early years and may encourage reading through their own reading habits and by having reading materials in the home. These early experiences may serve to foster the youngster's engagement in school, although the mechanisms by which early behaviors become habitual patterns of participation or withdrawal over the years remain to be understood.

Participation Differences among Achievement Groups

The primary analysis of this investigation consisted of comparing the three achievement groups on five sets of participation and participation-related measures. Each set was analyzed by fitting a three-way MANOVA model to the data, with achievement groups, gender, and race as the factors of classification. The results are presented here in four parts: (1) the six primary school and classroom participation measures; (2) students' participation outside the regular school program; (3) indicators of identification with school; and (4) parental involvement with the youngster's school work, and their own participation in school-related activities.

Classroom and school academic participation. This set of measures includes three scales based on pupils' self reports and three scales obtained from teachers' ratings of the individual youngster regarding attendance, preparation, and active involvement in class activities. A summary of the MANOVA is given in Table 11. Multivariate tests indicate that the three main effects--gender, race, and performance--are all statistically significant (using $\alpha = .0073$) but no interactions.

Gender and race differences provide background information. Gender differences are attributable to the greater degree of noncooperative behavior among males, whether reported by the teachers or by the students themselves. Differences on the three significant measures, PREPARATION, BEHAVIOR, and NOT-ENGAGED, range from $.31\sigma$ to $.53\sigma$ (values not

Table 11

MONOVA Results for Classroom and School Academic Participation

Effect[a]	Multivariate Test[b]	Univariate Tests					
		ATTENDANCE	PREPARATION	BEHAVIOR	ABS-TARDY	WITHDRAWN	NOT-ENGAGED
Gender	$p<.0001$		$p<.0001$	$p<.0001$			$p<.0001$
Race	$p<.0001$	$p<.01$		$p<.01$	$p<.01$		$p<.01$
Performance	$p<.0001$	$p<.0001$	$p<.0001$	$p<.0001$	$p<.0001$	$p<.0001$	$p<.0001$
Gender x Race							
Gender x Performance	$p<.05$		$p<.05$	$p<.01$			$p<.05$
Race x Performance							$p<.05$
Gender x Race x Performance						$p<.05$	

Note: Results indicated are those with p-values less than .05.

[a] The nonorthogonal design required tests of significance in several orders (Finn & Bock, 1985). The results presented here were obtained as follows: Each main effect was tested eliminating both other main affects; each interaction was tested eliminating all terms listed above it in the table.

[b] Obtained from F-approximation from Wilks' likelihood ratio.

tabled). Males and females are not distinct on either attendance scale, nor is either groupnoticeably more "passive or withdrawn."

Two of three multivariate contrasts (Hotelling's T^2) among racial/ethnic groups are statistically significant, the comparisons of Asian students with whites and Black students with whites. Asian students have "better" average scores than white students on both attendance measures and on both the teachers' and student's ratings of classroom behavior, with effect sizes ranging from $.19\sigma$ to $.27\sigma$. No differences were found between these groups in being prepared for class or being exceptionally passive or withdrawn. The only individual variable that showed a significant difference between Black and White students at $p < .01$ was students' self reported attendance, on which the average for Black students was $.13\sigma$ "better" than for Whites (other variables were "marginal" including WITHDRAWN in particular). These differences should be interpreted in the context of the unique sample selection process, however. In particular, the sample does not include a cross-section of minority students but only those attending inner-city schools. Likewise, the White students in the sample do not represent a cross-section of all White eighth graders, but an extreme group from low-SES or non-English-speaking homes with large families.

For the entire set of participation measures, the multivariate contrast between the *unsuccessful* performance group and the average of the others was statistically significant at $p < .0001$; the multivariate "effect size" (Mahalanobis's D) was .45.[10] That is, there is almost a half of a standard deviation difference between the mean participation levels of unsuccessful students at risk and those who are passing or successful. The multivariate contrast between the *passing* and *successful* groups was not statistically significant ($D = .20$, $p < .06$). In general, no mean differences were detected in the participatory behavior of youngsters classified as passing compared with those classified as successful.

[10]Values not given in tables.

The means on all six measures and mean differences ("effect sizes") for each measure are given in Table 12.[11] It is clear that unsuccessful and more successful students at risk are distinct on all six participation behaviors, including those reported by their teachers and those reported by the students themselves. Attendance behaviors distinguish these groups in the expected direction; more successful students are prepared for class more often, participate more in class, and present behavior problems less frequently than unsuccessful students. Successful students are not just passive citizens in the classroom, however, but are rated as being less passive and withdrawn than their academically unsuccessful peers.

Several more detailed findings are of interest. First, while the multivariate test of the difference between passing and successful students was not significant, this difference would be statistically significant at the .05 level if either WITHDRAWN or NOT-ENGAGED was considered by itself. Thus there is some indication that being an active participant in the classroom, especially as perceived by the teacher, is a particularly important antecedent of school performance even among high-risk students.

Second, while the multivariate test of gender-x-performance interaction is not statistically significant according to the study's .0073 criterion, the data suggest that there may be some weak interaction of achievement groups with gender. This is found especially on the three measures that also have significant gender differences (PREPARATION, BEHAVIOR, NOT-ENGAGED). In both sex groups, the mean behavior ratings increase as academic performance improves. However, the difference between successful and unsuccessful males is much larger than that between successful and unsuccessful

[11]Pooled within-cell standard deviations for Study I and Study II are given in Appendix B. The reader is reminded that since all six scales are worded in the negative, lower scores and negative scores represent "preferred" behavior. The magnitudes of the means are relatively small because the data were expressed as deviations from school averages prior to the analysis.

Table 12

Means and Mean Differences for Achievement Groups

Group	Variable					
	ATTENDANCE	PREPARATION	BEHAVIOR	ABS-TARDY	WITHDRAWN	NOT-ENGAGED
Unsuccessful						
Males	.091	.172	.199	.063	.005	.301
Females	-.030	-.068	-.086	.046	.007	-.081
All	.059	.047	.051	.054	.006	.102
Passing						
Males	-.105	.051	.019	-.075	-.007	.013
Females	-.056	-.174	-.162	-.058	-.005	-.275
All	-.079	-.070	-.078	-.066	-.006	-.142
Successful						
Males	-.108	-.031	-.007	-.145	-.038	-.157
Females	-.116	-.124	-.179	-.060	-.027	-.343
All	-.112	-.078	-.093	-.102	-.033	-.250
EFFECT SIZES:[a]						
Unsuccessful – (Passing + Successful)/2	.24***	.18***	.27***	.24***	.13***	.40***
Passing - Successful	.04	.02	.03	.05	.13*	.15**

[a] Effect sizes are least-squares estimates of mean differences in the unequal-*N* analysis of variance model, divided by the pooled within-cell standard deviation of the particular variable. Standard deviations are given in the Appendix. Significance indicated as follows: *$p<.05$; **$p<.01$; ***$p<.001$.

females. At the extreme, the means for unsuccessful eighth grade males stands out from the others. These individuals appear to be particularly ill-prepared for class and withdrawn from learning activities, and presenting many behavior problems. Two out of three of the ratings are student self-reports, raising the possibility that these individuals feel especially alienated from the classroom activity structure.

In general there are substantial differences among achievement groups in the extent to which students are engaged in productive classroom behavior. The virtual absence of any two- or three-way interactions with race adds support to this finding. That is, the types of behavior that accompany successful academic performance are the same among all racial/ethnic groups studied. Attending class, arriving on time and being prepared for the day's work, participating in rather than withdrawing from participation in class activities, and refraining from disruptive acts are accompanied by acceptable school performance (or better) among White, Hispanic, Black, and Asian students alike.

Participation outside the regular curriculum. The MANOVA results for these measures are summarized in Table 13. The two measures of participation outside of school--homework and involvement in extracurricular activities--have significant gender, race, and performance group main effects and no significant interactions. On average, eighth grade females in the at-risk sample reported doing more homework and participating in more extracurricular activities than their male peers; both differences were $.11\sigma$.[12] Of the three contrasts among racial groups, only the multivariate difference between Black and White students was statistically significant [$F(2,4185) = 6.96$, $p < .001$]. This is attributable to the extracurricular activity measure on which White students have a lower mean than Blacks (and lower than the other three racial/ethnic groups as well).

[12]Because of the simple pattern of outcomes, detailed results for these variables are given in text rather than a table.

Table 13

MANOVA Results for Participation Outside of School, and Identification

Effect[a]	Participation Outside Of School			Identification with School				UTILITY
	Multivariate[b]	HOMEWORK	EXT-CURR	Multivariate[b]	MOVES	STU-TEACHER	PERCEPTIONS	
Gender	$p<.0001$	$p<.0001$	$p<.001$	$p<.0001$			$p<.0001$	
Race	$p<.001$	$p<.05$	$p<.01$	$p<.0001$	$p<.0001$	$p<.01$	$p<.0001$	$p<.01$
Performance	$p<.0001$	$p<.0001$	$p<.0001$	$p<.05$			$p<.05$	$p<.01$
Gender x Race				$p<.05$			$p<.01$	
Gender x Performance								
Race x Performance						$p<.05$		
Gender x Race x Performance		$p<.05$						

Note: Results indicated are those with *p*-values less than .05.

[a] The nonorthogonal design required tests of significance in several orders (Finn & Bock, 1985). The results presented here were obtained as follows: Each main effect was tested eliminating both other main affects; each interaction was tested eliminating all terms listed above it in the table.

[b] Obtained from *F*-approximation from Wilks' likelihood ratio.

Both multivariate contrasts among performance groups were statistically significant for this pair of variables, with multivariate effect sizes of $D = .28$ for unsuccessful compared with others and $D = .18$ for passing compared with successful students. The means for both variables increase monotonically with academic performance, that is, higher performance is associated with greater amounts of homework and greater degrees of extracurricular participation. In comparing unsuccessful students with their more successful peers, the difference in amount of homework is $.22\sigma$ and in number of extracurricular activities is $.20\sigma$. For the comparison of passing with successful students, the difference in amount of homework is $.17\sigma$. The passing-successful contrast in extracurricular activities is $.08\sigma$ but is not statistically significant when tested in isolation.

The results parallel those for participation in the classroom. The largest difference observed was between unsuccessful students at risk and both groups of their more successful peers. Successful students are involved in school related activities outside of the regular academic program as indicated by participation in extracurricular activities and amount of homework. There is no significant interaction with gender or race on these measures, indicating that the benefit of participation in these activities accrues both to males and females at risk, and to Asian, Hispanic, Black and White eighth graders alike.

Identification with school. The "belonging" and "valuing" components of identification with school were analyzed separately (see Table 13). For the belonging measures, the multivariate tests of gender differences and race differences were statistically significant. The gender difference is attributable entirely to the higher mean on PERCEPTIONS for males. Males report that their classmates perceive them as popular, athletic, good students, and important to a greater extent than females do. Race differences were mixed; means are given in Table 14. The contrast of Black with White students was significant for the set of three belonging measures, while the multivariate contrasts of Asians

Table 14

Means on Identification Variables by Race and Performance Level

Group	Measure			
	MOVES	STU-TEACHER	PERCEPTIONS	UTILITY
Race/Ethnicity:				
Asian	1.79	.040	.019	.102
Hispanic	1.38	-.011	-.010	.001
Black	1.63	.030	.043	.014
Non-Hispanic white	1.56	-.029	-.025	-.026
Performance:				
Unsuccessful	1.56	-.004	-.007	-.019
Passing	1.59	-.012	.008	.011
Successful	1.47	.014	.030	.066
EFFECT SIZES:[a]				
Unsuccessful-(Passing + Successful)/2	.03	-.02	-.09**	-.11**
Passing - Successful	.10	-.05	-.05	-.09

[a] Effect sizes are least-squares estimates of mean differences in the unequal-*N* analysis of variance model, divided by the pooled within-cell standard deviation of the particular variable. Standard deviations are given in the appendix. Significance indicated as follows: *$p<.05$; **$p<.01$; ***$p<.0001$.

with Whites and Hispanics with non-Hispanic Whites were not.[13] The most pronounced Black-White difference were found for STU-TEACHER and PERCEPTIONS. On STU-TEACHER, a variable reflecting the warmth and supportiveness of the school environment as perceived by students, Blacks gave substantially higher ratings that Whites; the effect size was .14σ. On PERCEPTIONS, a variable reflecting the student's views of how the class perceives him/her (as popular, athletic, a good student, and important), Black students gave the highest average ratings and Whites the lowest; the effect size was .19σ. This is consistent with the established tendency for Black students to give self-reports that are higher than other racial/ethnic groups (Crocker & Major, 1989; Porter & Washington, 1979; Voelkl, 1992).

There was no significant difference among performance groups on the multivariate set of belonging measures (MOVES, STU-TEACHER, and PERCEPTIONS), nor was either contrast significant in multivariate form. That is, among students at risk by virtue of their race, income, or home language, those who are academically successful are not distinct from their less successful peers in their sense of "belonging" in the school setting. In particular, they have not moved from school to school significantly less than students who do not succeed academically and do not perceive the school environment as being any more supportive than those who do not succeed. There is some suggestion of a significant difference between successful and other students on PERCEPTIONS alone, with successful students reporting that they are viewed more positively by their classmates.

There is no difference between males and females, on the average, on UTILITY, a variable that reflects the student's values toward education. Of the racial/ethnic groups, Asian students with the highest mean rating and differed significantly from White students with the lowest; no other differences among racial groups were significant. Asian student perceive school subjects as being substantially more important to their futures than do Hispanic, Black, or White students in the high-risk sample.

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[13]Values not given in tables.

There was a statistically significant difference among the three performance groups on the valuing measure (UTILITY). The means and estimated contrasts (Table 14) indicate that difference is largely between unsuccessful students and the two more successful groups. On average, students at risk who are passing or successful academically are those who perceive that school subjects are more useful to their future.

The finding regarding "belonging" contradicts the proposition of the participation-identification model that identification with school develops over a number of years if the student is regularly engaged in classroom activities and experiences some degree of academic success. The psychological processes that perpetuate a youngster's engagement in school activities are not well understood, and this domain certainly requires more exploration.

At the same time, several other explanations for the lack of association of "belonging" measures with performance are possible. For one, while there are no differences among subgroups of youngsters at risk by virtue of race, income, or language, the larger differences may exist between these students and those <u>not</u> at risk by virtue of status characteristics. If this were the case, however, then the psychological processes that distinguish more and less successful students at risk still remain to be understood. Second, the nature of the particular variables in this analysis may be partially responsible for the finding of nonsignificance. If measures such as MOVES and STU-TEACHER operate mainly at a school level, then a school-level analysis would discover their importance rather than a student-level analysis. Thus it is possible that schools with higher mean performance have students who have remained in the same location longer and have school environments that are seen as warmer and more supportive.

Although measures of identification with school are not strongly related to performance, are they associated with students' active participation in class? The correlations of the identification measures with the six primary participation scales are given in Table 15. All of the correlations are small but all are in the expected direction and all except the smallest two are significant at $p < .01$. The three students' self-reports of

Table 15

Correlations of Identification with Participation Measures

Participation Measure	Identification Measure			All
	STU-TEACHER	PERCEPTIONS	UTILITY	(R^2)
ATTENDANCE	-.18	-.09	-.13	.04
PREPARATION	-.22	-.08	-.13	.05
BEHAVIOR	-.23	-.05	-.07	.05
ABS-TARDY	-.10	-.03	-.06	.01
WITHDRAWN	-.05	-.10	-.04	.01
NOT-ENGAGED	-.17	-.09	-.06	.03

Note: All simple correlations are significant at $p<.01$ except the two smallest. All multiple correlations are significant at $p<.0001$.

participation (ATTENDANCE, PREPARATION, BEHAVIOR) have somewhat stronger correlations with the identification measures, which are also student self-reports. The first canonical correlation between the two sets of measures is .31, statistically significant at $p <$ .0001. The correlations of the original scales with the canonical variates indicates that the association is concentrated in the relationship of STU-TEACHER with ATTENDANCE, PREPARATION, BEHAVIOR, and NOT-ENGAGED. That is, students' perceptions of the concern and support provided by school staff is the primary correlate of participation in productive classroom activities. In sum, while the correlations are small, there is a consistent pattern of greater degrees of identification being associated with higher levels of participation among eighth-grade students at risk.

Parents' involvement. Several gender and race differences were found in parental involvement in their eighth graders' schooling (See Table 16). On average, parents of boys check their youngsters' homework more frequently than parents of girls and contact the school more often to discuss their sons' academic progress, that is, there seems to be somewhat more "monitoring" of boys' work than of girls'. Girls report that they initiate more discussion with their parents about school work than do boys.[14]

Race differences did not follow a consistent pattern. The significant overall differences on four parent measures could be traced to several particular contrasts. On average, Asian parents reported talking more with their youngsters about school experiences and plans (PAR-TALK) and contacting the school more often to discuss their youngsters' performance (PAR-CONTACTS). Both Hispanic and Black youngsters reported that they talk more with their parents about school activities and plans than do Whites (DISCUSS); Asian students did not report initiating this sort of interaction as often as other minority groups. Black parents reported a substantially higher frequency of participation in school functions than the other racial/ethnic groups (PAR-INVOLVE).

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[14]Values not given in tables.

Table 16

MANOVA Results for Parental Involvement

Effect[a]	Involvement in Student's Work					Parent's Participation		
	Multivariate[b]	CHK-HOMEWORK	DISCUSS	PAR-TALK	RESOURCES	Multivariate[b]	PAR-CONTACTS	PAR-INVOLVE
Gender	$p<.0001$	$p<.0001$	$p<.0001$			$p<.0001$	$p<.0001$	
Race	$p<.0001$		$p<.001$	$p<.001$		$p<.0001$	$p<.001$	$p<.01$
Performance	$p<.0001$	$p<.01$	$p<.0001$	$p<.001$	$p<.0001$			
Gender x Race								
Gender x Performance						$p<.05$		$p<.05$
Race x Performance								
Gender x Race x Performance								

[a] The nonorthogonal design required tests of significance in several orders (Finn & Bock, 1985). The results presented here were obtained as follows: Each main effect was tested eliminating both other main affects; each interaction was tested eliminating all terms listed above it in the table.

[b] Obtained from *F*-approximation from Wilks' likelihood ratio.

Overall, parents' direct involvement with their youngsters regarding school work is positively associated with academic performance, while contact and involvement with the school is not. Using the multivariate approach (Hotelling's T^2) both differences among performance groups were statistically significant at $p < .0001$; multivariate effect sizes were .34 for the comparison of unsuccessful students with all who were more successful, and .29 for the comparison of passing and successful groups. In general the association is consistent and moderately strong.

The nature of the association differs somewhat for the specific measures of parental involvement. Univariate *t*-tests indicate that the contrast of unsuccessful with all passing and successful students was significant for all four measures. The contrast of passing with successful students is significant only for DISCUSS, however. On average, unsuccessful students have fewer resources in their homes to support school work, report talking less with their parents about school work and plans, and have parents who confirm that they talk less with their eighth graders about school experiences in comparison to youngsters who are passing or academically successful. The magnitudes of the differences are $-.12\sigma$ for RESOURCES, $-.28\sigma$ for DISCUSS, and $-.11\sigma$ for PAR-TALK. In contrast, unsuccessful students report that their parents check their homework more regularly than parents of passing and successful students; the effect size is $.10\sigma$.

The student's report of conversation with parents about school work and high school plans (DISCUSS) is most highly related to performance of all variables in this set. The mean difference between unsuccessful students and others is $.28\sigma$ and between passing and successful students is $.22\sigma$. This measure, unlike the other three, reflects the *youngster's* initiative in communicating with parents and is most like the in-school participation variables in this sense. In sum, while parents' provision of literary resources and discussing school experiences with their eighth graders are related to achievement, the youngster's own participatory behavior--even out of school--is consistently associated with academic success.