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ABSTRACT

This paper evaluates STRIVE, an alternative program designed to provide a nurturing, caring, and intensive academic environment for over-age, low-performing ninth grade students attending the Barbara Jordan High School for Careers in Houston (Texas). STRIVE operates in isolation from the regular student population and has a counselor and four teachers who work in a team format. The program includes enrichment activities, access to computers, and options to participate in sports and vocational programs. In particular, the evaluation examines the program's effectiveness in improving attendance rates and academic performance of selected students while encouraging them to remain in school to complete their education. The program was first implemented in 1987-88. Sixty-two students participated in the program in 1990-91. By addressing seven research questions the study shows the following: (1) participants improved their performance on a standardized achievement test during the year they participated in the program; (2) participants outperformed a comparison group on a math component only; (3) attendance rates declined significantly; (4) statistics on dropout rates were not conclusive; and (5) examination of withdrawal rates indicated that the program does help to keep participants in school. Data are provided in 13 tables and one bar graph. Included are three references. (JB)

An Evaluation of the STRIVE Program

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EXECUTIVE SUMMARY

AN EVALUATION OF THE STRIVE PROGRAM 1990–91

PROGRAM DESCRIPTION

The STRIVE Program is a "pull-out" instructional program for over-age, low-performing ninth grade students who were perceived to be at risk of dropping out of school. The purpose of the program is to prevent these at-risk students from dropping out of school by providing them with a nurturing, caring, and intensive instructional environment designed to improve academic performance and class attendance. STRIVE was implemented in the 1987–88 school year at Barbara Jordan High School for Careers as a pilot program in response to HISD's search for effective ways to address the problem of educating academically disadvantaged and at-risk students of urban secondary schools.

PROGRAM COST AND FUNDING SOURCE

The number of students who were enrolled in the STRIVE program at the beginning of the 1990 school year was 77. For various reasons, 15 students withdrew from the program. The 1990–91 Adopted General Fund Budget allocated $44,900 for instructional materials, supplies, and the salary for one counselor. The cost per student served, not including teacher salaries, was $641 for the school year.

EVALUATION QUESTIONS

The purpose of this report was to describe the students who were served by the program and to assess the effectiveness of the program in improving student academic performance and attendance. The following research questions were addressed:

Research Question 1: What were the referral or selection criteria for students participating in the STRIVE program?

The acceptance decision is based on the results of the student's application, interview, letters of recommendation from home school teachers and counselors, and attendance, conduct, and academic performance. Eligible students have low attendance levels, are over-age for grade, and are classified as being at risk of dropping out of school. Students who are accepted have a minimum ninth grade ability, are the most over-aged of the eligible applicants, and have demonstrated improved attendance, conduct, and grades during the second semester of the eighth grade.

Research Question 2: What were the characteristics of the students who were served by the program?

For the 1990–91 school year, the ethnic composition of the students served by the STRIVE program was 19% Black, 67% Hispanic, and 16% White. Thirty percent of the students were female and 70% were male.

Research Question 3: Were there significant differences between MAT6 scores for STRIVE participants before STRIVE and after one year in the STRIVE program?

The STRIVE students' MAT6 test scores on the reading, math, science, and social studies subtests and on the complete battery improved for the year they attended the STRIVE program. T-tests indicated that the improvements were significant for all MAT6 subtests except for the 1988–89 participants' reading scores, the 1987–88, 1988–89, and 1989–90 participants' science scores, and the 1989–90 participants' social studies scores.

Research Question 4: Were there significant difference between 1990 and 1991 MAT6 scores for STRIVE students, placed ninth grade students, and ninth grade students who were neither placed into the ninth grade nor participated in STRIVE?

Multiple classification analysis disclosed that the difference in MAT6 test scores between the treatment group (STRIVE) and the comparison groups (placed ninth and regular ninth) was statistically significant for the math subtest. The Scheffé method of multiple comparisons indicated that the significant differences occurred between the STRIVE group and the placed ninth grade comparison group.

Research Question 5: Were there significant differences among the attendance rates for STRIVE participants before STRIVE, at the end of one year in the STRIVE program, and one year after exiting the STRIVE program?

The attendance rates for the STRIVE students decreased from the year before STRIVE to the year of the program, significantly so for the 1988–89 and 1990–91 students. The attendance rates continued to decrease for the year after the students completed the program as well. The decrease was statistically significant for the 1987–88 and 1989–90 participants.

Research Question 6: Were there significant differences between the 1989–90 and 1990–91 attendance rates for STRIVE students, placed ninth grade students, and ninth grade students who were neither placed into the ninth grade nor participated in STRIVE?

A significant difference between the treatment group and the comparison groups was identified when the multiple classification analysis was applied to the groups'

attendance rates. However, in this case, it was the decrease in the STRIVE group's attendance rate that was significantly greater than that of the comparison groups.

Research Question 7: What were the dropout and withdrawal rates for STRIVE students? If they remained in HISD, were the students who exited STRIVE in the appropriate grade in 1990–91?

A higher percentage of the 1987–88 and 1988–89 STRIVE participants were identified as having dropped out of school as of October 1990 than the non-STRIVE comparison groups of students who had received an invitation to attend STRIVE but chose not to. In contrast, 11% to 15% more of the STRIVE participants were still in HISD schools as of June 1991 than the non-STRIVE comparison groups. Although more of the 1988–89 STRIVE students were in the appropriate grade or above (11th-12th) than the non-STRIVE group, the percentage of 1987–88 STRIVE students in the appropriate grade or above (12th-graduate) was lower. None of the above stated results were statistically significant.

AN EVALUATION OF THE STRIVE PROGRAM 1990–91

DEPARTMENT OF RESEARCH AND EVALUATION
HOUSTON INDEPENDENT SCHOOL DISTRICT

Abstract

STRIVE is an alternative program designed to provide a nurturing and caring, intensive academic environment for over-age, low-performing ninth grade students. These students were identified as being at risk of dropping out of school. This report evaluates the effectiveness of the STRIVE program in achieving its goals of improving attendance rates and academic performance of selected students while encouraging them to remain in school to complete their education.

Introduction

The STRIVE Program is a "pull-out" instructional program for over-age, low-performing ninth graders who were perceived to be at risk of dropping out of school. The purpose of the program is to prevent these at-risk students from dropping out of school by providing them with a nurturing, caring, and intensive instructional environment designed to improve academic performance and class attendance. The program was implemented in the 1987–88 school year as a pilot program in response to HISD's search for effective ways to address the problem of educating academically disadvantaged and at-risk students of urban secondary schools.

STRIVE is located at Barbara Jordan High School for Careers. It is generally operated in isolation from the regular student population in a building specifically designated for the program. One counselor is assigned to the STRIVE students to address their affective needs and serve as liaison between the program staff and the parents of the students. The counselor is also involved in student recruiting and selection. The program has four teachers, one for each of the following content areas: English/language arts, mathematics, social studies, and science. The teachers work as a cohesive team to address the instructional needs of the students; they have a group planning period in addition to their conference period. The teachers collaborate with the counselor to address the unique needs of the students from a holistic perspective.

The program incorporates a variety of enrichment activities, such as field trips, guest speakers, and remedial activities, into the curriculum. There are twelve Apple computers for the students' use. Each of the teachers assigns computer activities to increase the students' computer

literacy. Students over the age of 16 are allowed to take a two-hour vocational course from the main school at Jordan. Students may also elect to spend their sixth hour at their home school in an athletic program. To participate in sports, they must be passing their courses with a grade of 70% and must be earning five credits per semester as required by the University Interscholastic League. In addition, the students are clustered into five small groups for counseling sessions once a week for 45 minutes. For example, one of these groups is a peer counseling group for drug abuse; another group, Teen Advocates, studies family planning. Once a month, the counselor has a one-hour guidance session with all the students in which different topics are discussed and "Student of the Month" plaques and other awards are presented. These awards are used as incentives to improve academic performance and attendance.

The number of students who were enrolled in the STRIVE program at the beginning of the 1990 school year was 77. For various reasons, 15 students withdrew from the program The 1990-91 Adopted General Fund Budget allocated $44,900 for instructional materials, supplies, and the salary for one counselor.[1] The cost per student served was $641 for the school year.[2]

The purpose of this report was to describe the students who were served by the program and to assess the effectiveness of the program in improving student academic performance and attendance. The following research questions were addressed:

1. What were the referral or selection criteria for students participating in the STRIVE program? (See page 4.)

2. What were the characteristics of the students who were served by the program? (See page 5.)

3. Were there significant differences between MAT6 scores for STRIVE participants before STRIVE and after one year in the STRIVE program? (See page 7.)

4. Were there significant differences between 1990 and 1991 MAT6 scores for STRIVE students, placed ninth grade students, and ninth grade students who were neither placed into the ninth grade nor participated in STRIVE? (See page 11.)

5. Were there significant differences among the attendance rates for STRIVE participants before STRIVE, at the end of one year in the STRIVE program, and one year after exiting the STRIVE program? (See page 15.)

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[1] The STRIVE program was also awarded a $3,000 grant from the principal for the 1989-90 and again for the 1990-91 school years. This money is not budgeted and is used to help pay for the special incentive awards given to the students, for speakers, and for field trips.

[2] The number of students served was calculated by averaging the number of students at the beginning with the number of students remaining in the program at the end of the school year. The number used was 70 students. The pupil to teacher ratio was 19 to one which is similar to that of other schools. Teachers would be needed for these students with or without this program; their salaries are not, therefore, considered as costs incurred as a result of the STRIVE program.

6. Were there significant differences between the 1989–90 and 1990–91 attendance rates for STRIVE students, placed ninth grade students, and ninth grade students who were neither placed into the ninth grade nor participated in STRIVE? (See page 17.)

7. What were the dropout and withdrawal rates for STRIVE students? If they remained in HISD, were the students who exited STRIVE in the appropriate grade in 1990–91? (See page 19.)

Results

Question 1 What were the referral or selection criteria for students participating in the STRIVE program?

Method

Referral and selection criteria were obtained from an interview with the counselor for the STRIVE program which was conducted at the program site on January 14, 1991.

Findings

During the spring semester, the counselor for the STRIVE program visits area middle schools to which she has been invited to present information concerning the program. These middle schools usually include Edison, Henry, Hogg, and Marshall. In 1990, the counselor also made a presentation at Lanier Middle School. When the program began in 1987, the seven targeted middle schools were Burbank, Edison, Fonville, Henry, Key, Marshall, and McReynolds.

The STRIVE program has space for 80 students. Approximately 200 students apply each year. Students may be referred by their middle school counselors, coaches, and sometimes by the Magnet coordinator at Barbara Jordan High School for Careers. After the students complete the program application, the students and their parents are interviewed by the counselor and the STRIVE teachers. The counselor makes the acceptance decision based on the results of the application and interview, in addition to the student's attendance, conduct, and academic performance. Eligible students have low attendance levels, are over-age for grade, and are at risk of dropping out of school as classified by the Texas Education Agency.[3] Students who are accepted have a minimum ninth grade ability, are the most over-aged of the eligible applicants, and have demonstrated improved attendance, conduct, and grades during the second semester of the eighth grade. The counselor also evaluates applicants based on letters of recommendation from teachers and school counselors.

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[3] To be classified as "at-risk," a student must meet one or more of the following conditions:

1) has been retained one or more times in grades 1–6;
2) is two or more years below grade level in reading or mathematics;
3) is of limited English proficiency;
4) failed one or more sections of the most recent TEAMS/TAAS test; and
5) failed at least two courses in one or more semesters.

Summarized from Tex. Educ. Agency, 19 Tex. Admin. Code § 75.195 (West Supp. 1990) (Alternatives to Social Promotion).

Question 2 What were the characteristics of the students who were served by the program?

Method

Enrollment rosters were obtained from the counselor for STRIVE in order to identify the STRIVE participants for the last four years. The October 4, 1987, roster listed 99 students; the October 4, 1988, roster listed 81 students; the September 5, 1989, roster listed 66 students; and the September 26, 1990, roster listed 77 students. Data regarding gender and ethnicity were retrieved from the HISD Student Master File for the STRIVE participants.

Findings

Figure 1 graphically depicts the gender and ethnicity of the students who enrolled in the STRIVE program over the last four years. The ethnic composition has shifted from 48% Black, 48% Hispanic, and 4% White in 1987–88 to 19% Black, 67% Hispanic, and 16% White in 1990–91. The ethnic breakdown for HISD's at-risk secondary population has also shifted, though only slightly, from 43% Black, 34% Hispanic, and 22% White/other in 1987–88 to 39% Black, 42% Hispanic, and 19% White/other in 1990–91.[4] This suggests an 8% increase in Hispanic at-risk secondary students over the last four years and a 4% decrease in Black students classified as such.

Another possible reason for the shift in the STRIVE program toward Hispanic students, besides the increase in secondary Hispanic students being classified as at-risk, is that the four middle schools from which the counselor recruited students for the 1990–91 school year (Edison, Henry, Hogg, and Marshall) have predominantly Hispanic student populations. At the beginning of the STRIVE program, Key and Fonville middle schools were also used as source schools from which STRIVE students were recruited. These schools have larger Black student populations than the middle schools used for recruiting during this last school year. Thus, the STRIVE participants reflect the ethnicity of the local schools they attend and not HISD as a whole.

In terms of gender, the percentages for STRIVE participants have changed from 56% male in 1987–88 to 70% male in 1990–91. The data for HISD's at-risk secondary population by gender were not accessible at the time this report was prepared, thereby not allowing any comparisons to be made. No other reason for this shift in gender from being relatively even in 1987–88 to predominantly male in 1990–91 than a possible shift in the gender of the district's at-risk students is known.

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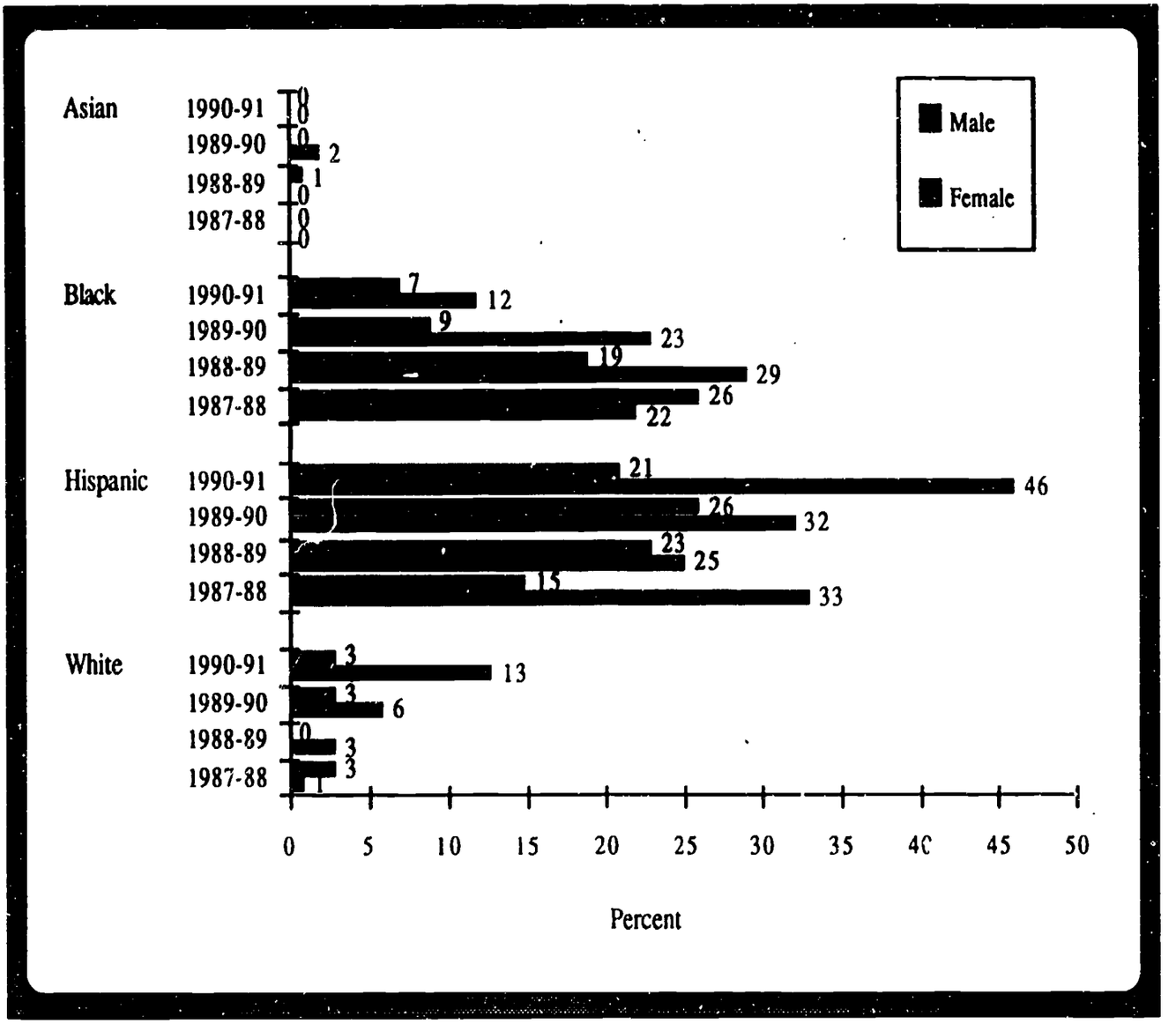
[4] *HISD District and School Profiles 1987–88*; Unofficial Fall Survey as of October 1, 1990, as prepared by the Pupil Accounting Department.

Figure 1. Percentage of STRIVE Students by Ethnicity and Gender per Year



Question 3 Were there significant differences between MAT6 scores for STRIVE participants before STRIVE and after one year in the STRIVE program?

Method

To determine whether the differences in Metropolitan Achievement Test, 6th edition (MAT6) scores were significantly different for participants before and after participation in the STRIVE program, MAT6 scale scores were obtained from the HISD Student Master File for students identified as participants from STRIVE enrollment rosters. The t-test for paired observations was conducted on the "pre-test" and "post-test" scale scores for students who had MAT6 and attendance data for both years. For example, if the student attended STRIVE during the 1987–88 school year, the pre-test would be the student's 1987 MAT6 test scores and the post-test would be the 1988 MAT6 test scores. MAT6 tests are administered during April. The two-tailed probability was calculated since differences in the pre- and post-test scores could have been either positive or negative.

Findings

In comparing students' scores on the MAT6 test before they entered the STRIVE program with the scores obtained in the spring of their STRIVE year, it is evident that the scores increased the year the students were in the STRIVE program. The t-tests in Tables 1 through 5 indicate that the increases in test scores were significant for all MAT6 subtests except for the 1988–89 participants' reading scores, the 1987–88, 1988–89, and 1989–90 participants' science scores, and the 1989–90 participants' social studies scores. These scores still showed an increase, although not statistically significant. The significant improvement in the students' science scores for the 1990–91 school year, unlike the three years previous, may be attributable to the fact that a new science teacher was hired at the beginning of the 1990–91 school year, and the curriculum was changed from physical science, which had been taught the first three years of the program, to Introduction to Biology. On the whole, it is apparent that the students are making significant gains academically during the year they participate in the STRIVE program in comparison to their performance from the previous year.

One limitation of this analysis is that the data illustrating the difference between the test scores for the STRIVE year and one year after STRIVE is available only on a very limited basis. The MAT6 is regularly administered to students in the first through ninth grades. It is administered to students in the 10th through 12th grades only if they are of limited English proficiency (LEP). Fewer than five students in each participant group had MAT6 test scores for the year after their attendance in STRIVE. The number of participants matched was too small to base any meaningful analysis regarding the students' ability to maintain academic improvements as witnessed by the increases in test scores for their STRIVE year.

Table 1. Paired T-Test for MAT6 Total Reading Scale Scores Before and After STRIVE

	MAT6 Total Reading Scale Scores			
Year of participation	N pairs	Mean Scale Score	Standard Deviation	"t" value
87-88				
Before STRIVE		639.0	27.0	
STRIVE Year	47	649.9	32.3	2.94**
88-89				
Before STRIVE		649.5	33.8	
STRIVE Year	35	659.1	41.6	n.s.
89-90				
Before STRIVE		642.9	33.5	
STRIVE Year	46	651.5	36.0	2.51*
90-91				
Before STRIVE		647.7	38.6	
STRIVE Year	41	658.6	40.8	3.29**

* p≤.05, **p≤.01, ***p≤.001

Table 2. Paired T-Test for MAT6 Total Math Scale Scores Before and After STRIVE

	MAT6 Total Math Scale Scores			
Year of participation	N pairs	Mean Scale Score	Standard Deviation	"t" value
87-88				
Before STRIVE		640.9	26.3	
STRIVE Year	47	656.8	29.7	5.64***
88-89				
Before STRIVE		637.0	27.9	
STRIVE Year	35	649.2	34.6	3.21**
89-90				
Before STRIVE		639.6	25.8	
STRIVE Year	46	650.2	29.1	3.50***
90-91				
Before STRIVE		639.4	23.8	
STRIVE Year	41	659.8	29.1	8.05***

* p≤.05, **p≤.01, ***p≤.001

Table 3. Paired T-Test for MAT6 Science Scale Scores Before and After STRIVE

	MAT6 Science Scale Scores			
Year of participation	N pairs	Mean Scale Score	Standard Deviation	"t" value
87-88				
Before STRIVE		617.9	23.8	
STRIVE Year	47	622.4	23.0	n.s.
88-89				
Before STRIVE		626.0	24.8	
STRIVE Year	35	631.4	28.9	n.s.
89-90				
Before STRIVE		623.1	20.8	
STRIVE Year	46	626.1	20.7	n.s.
90-91				
Before STRIVE		626.4	24.4	
STRIVE Year	41	635.4	24.6	3.23**

* p≤.05, **p≤.01, ***p≤.001

Table 4. Paired T-Test for MAT6 Social Studies Scale Scores Before and After STRIVE

	MAT6 Social Studies Scale Scores			
Year of participation	N pairs	Mean Scale Score	Standard Deviation	't" value
87-88				
Before STRIVE		623.1	23.3	
STRIVE Year	47	631.3	21.0	2.55*
88-89				
Before STRIVE		625.0	24.4	
STRIVE Year	35	632.1	26.3	2.60*
89-90				
Before STRIVE		624.6	23.2	
STRIVE Year	46	627.0	23.3	n.s.
90-91				
Before STRIVE		622.1	27.9	
STRIVE Year	41	633.3	27.1	3.57***

* p≤.05, **p≤.01, ***p≤.001

Table 5. Paired T-Test for MAT6 Complete Battery Scale Scores Before and After STRIVE

	MAT6 Complete Battery Scale Scores			
Year of participation	N pairs	Mean Scale Score	Standard Deviation	"t" value
87-88				
Before STRIVE		632.7	18.6	
STRIVE Year	47	642.0	20.1	5.04***
88-89				
Before STRIVE		636.3	21.9	
STRIVE Year	35	644.2	24.4	3.50***
89-90				
Before STRIVE		634.0	19.6	
STRIVE Year	46	640.4	20.0	3.03**
90-91				
Before STRIVE		634.9	21.7	
STRIVE Year	41	646.3	22.9	7.09***

* p≤.05, **p≤.01, ***p≤.001

Question 4 Were there significant differences between 1990 and 1991 MAT6 scores for STRIVE students, placed ninth grade students, and ninth grade students who were neither placed into the ninth grade nor participated in STRIVE?

Method

To determine if the differences in the STRIVE students' standardized achievement test scores from before and after the STRIVE program were a result of the STRIVE "treatment," comparison groups were established. As most, if not all, of the STRIVE students were placed into the ninth grade, it was reasonable that other students who were placed into the ninth grade[5] but did not participate in the STRIVE program be used as a comparison group. Students identified as placed ninth grade students in addition to ninth grade students who had not been placed into the ninth grade (regular ninth grade students) who had MAT6 test scores for both 1990 and 1991 were matched with the 1990–91 STRIVE participants on ethnicity, gender, and free lunch status. Sixty-six students from both the placed ninth and regular ninth grade groups were randomly sampled and used as the two comparison groups. MAT6 scale scores for 1990 and 1991 were obtained from the HISD Student Master File for all three groups. The analysis of covariance (ANCOVA) statistical model with a multiple classification analysis was applied to the test scores. The unit of analysis was the individual student, while the factor for the model was the group (STRIVE, placed ninth grade, or regular ninth grade). The dependent variables were the students' 1991 MAT6 scale scores (post-test scores) for the reading, math, science, and social studies subtests and for the complete battery. The 1990 MAT6 scores were used as the covariates, or pre-test scores, in the model. One-way analysis of variance was conducted on the post-test scores after adjusting for differences on the pre-test scores. The Scheffé post hoc method of multiple comparisons, which identifies between group differences, was applied to the adjusted post-test scores if a significant F score was obtained from the ANOVA (Glass & Hopkins, p. 382).

Findings

This analysis compares achievement scores for students who were placed into the STRIVE ninth grade program (treatment group) with a matched sample of other placed ninth grade students not in the STRIVE program and with a matched sample of regular ninth grade students (comparison groups). Multiple classification analysis was used to equalize differences between the treatment group and the comparison groups on the pre-test (1990 MAT6) scores. In order to do this, the post-test (1991 MAT6) scores were adjusted according to differences in the pre-test scores. The adjusted means are listed in Tables 6, 7, and 8 along with the F statistic calculated from the ANOVA whenever it was statistically significant. When comparing the total group, the F

[5] A student is eligible to be "placed" in the ninth grade if he or she has been retained once in grades one through four and again in grades five through eight.

value was statistically significant for the math subtest. However, when the groups were disaggregated by ethnicity and by gender, the difference was significant for the White students on the science subtest and for the male students on the math subtest. The Scheffé technique (not shown in the tables) indicated that the significant differences between the three groups occurred between the STRIVE group and the placed ninth grade comparison group.

Table 6. ANOVA, Adjusted 1991 Mean MAT6 Scale Scores

	Adjusted Means			
	STRIVE	Placed 9th Grade	Regular 9th Grade	F
Reading	668.1	675.1	670.1	n.s.
Math	669.0	659.5	663.6	3.69* (2,151)
Science	640.0	631.4	634.7	n.s.
Soc. Studies	640.8	640.7	642.9	n.s.
Complete	654.8	652.0	654.9	n.s.

Parentheses indicate degrees of freedom for F-test
* p≤.05

Table 7. ANOVA, Adjusted 1991 Mean MAT6 Scale Scores by Ethnicity

	Adjusted Means			
	STRIVE	Placed 9th Grade	Regular 9th Grade	F
Black				
Reading	672.0	684.5	698.3	n.s.
Math	661.9	655.5	667.5	n.s.
Science	635.3	630.3	642.2	n.s.
Soc. Studies	647.3	641.2	642.8	n.s.
Complete	655.6	655.2	661.2	n.s.
Hispanic				
Reading	658.3	665.2	661.5	n.s.
Math	662.7	655.1	657.9	n.s.
Science	635.9	628.8	628.1	n.s.
Soc. Studies	635.5	637.2	637.9	n.s.
Complete	649.7	648.0	649.9	n.s.
White				
Reading	712.1	708.7	688.2	n.s.
Math	704.2	683.2	689.1	n.s.
Science	670.7	644.0	655.8	4.25* (2,18)
Soc. Studies	667.1	656.8	662.4	n.s.
Complete	680.6	668.4	671.9	n.s.

Parentheses indicate degrees of freedom for F-test
* p≤.05

Table 8. ANOVA, Adjusted 1991 Mean MAT6 Scale Scores by Gender

	Adjusted Means			
	STRIVE	Placed 9th Grade	Regular 9th Grade	F
Female				
Reading	659.5	666.0	668.2	n.s.
Math	652.5	648.5	650.8	n.s.
Science	630.9	616.4	621.4	n.s.
Soc. Studies	637.8	628.6	527.8	n.s.
Complete	648.0	642.9	646.6	n.s.
Male				
Reading	672.4	680.3	671.0	n.s.
Math	676.1	664.6	672.4	3.63* (2,97)
Science	643.9	640.8	644.4	n.s.
Soc. Studies	642.9	648.3	652.2	n.s.
Complete	658.2	657.8	660.5	n.s.

Parentheses indicate degrees of freedom for F-test
* $p \leq .05$

Tables 6, 7, and 8 also show that the STRIVE total student population had higher adjusted mean scores than the comparison groups for the math and science subtests. Higher adjusted means indicate larger differences between the pre- and post-test scores. When the groups were disaggregated by ethnicity, the Black students in STRIVE had a higher adjusted mean for the social studies subtest, the Hispanic STRIVE students had higher adjusted means for the math and science subtests, and the White STRIVE students had higher adjusted means for all the subtests than did the comparison groups. The female students participating in STRIVE received higher adjusted means than the comparison groups on all but the reading subtest and the male students had a higher adjusted mean score for the math subtest.

In earlier studies, the STRIVE participants were compared with students who had received invitations to STRIVE but chose not to attend (Opuni, Goebel, & Sanchez, 1988, 1989). Opuni's 1988 study found that there was no significant difference on the post-test MAT6 scores between the treatment group and the non-STRIVE comparison group, except for the math subtest, using an unpaired t-test. However, in the 1989 study, an ANCOVA model demonstrated that the STRIVE students significantly outperformed the non-STRIVE students in all of the four content areas.

Based on the findings presented here and on the previous works cited, it is possible to surmise that although participation in the STRIVE program improved students' standardized test scores from the year before STRIVE, it did not significantly improve these students' performance on the MAT6 test in comparison to similar students who did not participate in the STRIVE program, except for the math subtest. The significance found for the 1990–91 White student subgroup may be related to the change in curriculum to Introduction to Biology instead of the physical science course previously taught. It is unclear why the 1988–89 STRIVE students significantly outperformed the non-STRIVE students in all four content areas (Opuni et al., 1989),

while the results from Opuni's 1988 and this study indicated that the STRIVE students outperformed the comparison students only in math. These results are limited, however, in that it was assumed that the comparison groups utilized in these analyses were comparable to the STRIVE students. Since random assignment of students to the treatment program was not possible, there may be inherent differences between the students who were accepted into the STRIVE program and the students in the comparison groups which may distort the findings. Nevertheless, this improvement in mathematics is an important stepping stone for the over-age, at-risk students who were served by this program.

Question 5 Were there significant differences among the attendance rates for STRIVE participants before STRIVE, at the end of one year in the STRIVE program, and one year after exiting the STRIVE program?

Method

Attendance data were obtained from the HISD Student Master File for students identified as participants from STRIVE enrollment rosters. Data were used only for those students who had data available for the year prior to STRIVE, the year they attended STRIVE, and one year after the STRIVE program. The t-test for paired observations was conducted on the students' attendance rates for pre-STRIVE and STRIVE. A second t-test for paired observations was applied to the attendance rates for STRIVE and post-STRIVE.

Findings

One of the goals of the STRIVE program is to improve the attendance rate of a selected group of at-risk ninth graders. The mean attendance rates for students who participated in the STRIVE program over the last four years, in addition to the results of the t-test for paired observations, are listed in Table 9. The results of the t-tests indicate that the attendance rates declined from the year before STRIVE to the STRIVE year for all the groups, significantly so for the 1988–89 and 1990–91 participant groups. Likewise, the groups' attendance rates continued to decline from the STRIVE year to one year after STRIVE; for the 1987–88 and 1989–90 groups, the decline was statistically significant. It is important to note that the method in which attendance rates were calculated for students changed after the 1989–90 school year. The new formula will cause a noticeable decline in attendance rates for the 1990–91 school year. Therefore, it is difficult to determine if the significant decline in the attendance rates observed for the 1990–91 participant group was due in large part to the changes in the calculation method or an actual decline in the rate.

Table 9. Paired T-Tests for Mean Attendance Rates for Before STRIVE, During STRIVE, and After STRIVE by Participant Group

Year of participation	N pairs	Mean Attendance Rate	Standard Deviation	"t" value
87-88				
Before STRIVE		91.4	9.5	
STRIVE Year	63	91.3	12.8	-.07
Year After STRIVE	63	82.9	19.0	-4.25***
88-89				
Before STRIVE		89.7	10.0	
STRIVE Year	48	85.5	11.8	-3.11**
Year After STRIVE	48	81.7	17.9	-1.85
89-90				
Before STRIVE		92.4	8.2	
STRIVE Year	50	91.6	7.5	-.56
Year After STRIVE	50	83.4	13.9	-5.33***
90-91				
Before STRIVE		90.0	8.8	
STRIVE Year	70	80.7	15.5	-6.22***
Year After STRIVE		—	—	—

* $p \leq .05$, ** $p \leq .01$, *** $p \leq .001$

Question 6 Were there significant differences between the 1989–90 and 1990–91 attendance rates for STRIVE students, placed ninth grade students, and ninth grade students who were neither placed into the ninth grade nor participated in STRIVE?

Method

To determine if the differences in the STRIVE students' attendance rates before and after their participation in the STRIVE program were a result of the STRIVE "treatment," placed ninth grade and regular ninth grade comparison groups were utilized. Students identified as placed ninth grade students in addition to ninth grade students who had not been placed into the ninth grade (regular ninth grade students) who had attendance data for both 1990 and 1991 were matched with the 1990–91 STRIVE participants on ethnicity, gender, and free lunch status. Sixty-six students from both the placed ninth and regular ninth grade groups were randomly sampled and used as the two comparison groups. Attendance data were retrieved from the HISD Student Master File for all three groups. The analysis of covariance (ANCOVA) statistical model with a multiple classification analysis was applied to the attendance data. The unit of analysis was the individual student, while the factor for the model was the group (STRIVE, placed ninth grade, or regular ninth grade). The dependent variables were the students' 1991 attendance rates (post-test scores). The 1990 attendance rates were used as the covariates, or pre-test scores, in the model. One-way analysis of variance was conducted on the post-test scores after adjusting for differences on the pre-test scores. The Scheffé post hoc method of multiple comparisons, which identifies between group differences, was applied to the adjusted post-test scores if a significant F score was obtained from the ANOVA (Glass & Hopkins, p. 382).

Findings

The analysis of covariance (ANCOVA) with the multiple classification analysis indicated that there was a significant difference between the groups when studying the attendance rate for the total groups, and more specifically for the Black students and for the female students (see Table 10). The significant difference lies in the negative direction. The mean attendance rate for all the student groups presented here declined from 1990 to 1991. The regular ninth graders' attendance rate declined less than the other two groups. They received higher adjusted means, which in this case, indicates a smaller decrease between the pre- and post-treatment attendance rates. The Scheffé post hoc comparison (not shown in the table) indicated that the significant difference was between the STRIVE group and the regular ninth grade group for the total sample and for the female students. It also indicated that for the Black students, the decline in attendance rate was significant between the STRIVE group and the placed ninth grade group as well as the STRIVE group and the regular ninth grade comparison group.

Table 10. ANOVA, Adjusted 1991 Mean Attendance Rates

	Adjusted Means			
	STRIVE	Placed 9th Grade	Regular 9th Grade	F
Black	73.8	85.8	90.5	7.10*** (2,29)
Hispanic	83.5	86.4	88.2	n.s.
White	83.3	83.3	86.5	n.s.
Female	79.1	84.1	89.7	7.82*** (2,65)
Male	83.3	86.5	87.7	n.s.
Total	81.8	85.7	88.4	6.87*** (2,194)

Parentheses indicate degrees of freedom for F-test
* p≤.05, ** p≤.01, ***.p≤.001

Question 7 What were the dropout and withdrawal rates for STRIVE students? If they remained in HISD, were the students who exited STRIVE in the appropriate grade in 1990–91?

Method

Dropout and withdrawal data were obtained from the HISD Student Master File for the students identified as STRIVE participants from the program rosters for 1987–88 and 1988–89 and for students who had declined to accept the invitation to attend STRIVE during those years (non-STRIVE students). There were 109 non-STRIVE students for 1987–88 and 92 non-STRIVE students for 1988–89. However, because identification numbers were not available for 17 of the non-STRIVE students from 1988–89, only 75 students were used in the comparison group for that year. Students were identified as dropouts if they had a "dropout flag" in the Student Master File data base as of October 1990. The dropout flag takes into consideration those students who dropped out of HISD schools and whose transcripts were not requested by other educational institutions. Students who withdrew from school during the 1990–91 school year will not be identified as dropouts until October 1991 preventing them from being counted in the dropout analysis. The withdrawal analysis was conducted on students who did not have an HISD school code as of June 20, 1991. Students were deemed to be in the "appropriate" grade if they attended the ninth grade STRIVE program in 1987–88 and four years (1990-91) later were in the 12th grade or had graduated. Likewise, the appropriate grade for the 1988-89 students is the 11th grade or higher.

The chi-square test for association was used to determine if there was some degree of association between the treatment (STRIVE and non-STRIVE) and dropout or withdrawal rates. The Yates' correction for continuity was applied as the cell sizes of the 2x2 tables were greater than four. However, it must be noted that one limitation to this analysis is that there may be a self-selection bias between the students who chose to accept the invitation to attend STRIVE and those who did not. The possibility cannot be ruled out that there may have been pre-existing differences between the STRIVE participants and the non-STRIVE comparison groups.

Findings

One of the goals of the STRIVE program was to keep a group of at-risk ninth grade students from dropping out of school and to prepare them for continuing in high school. By using the 1987–88 and 1988–89 STRIVE participants as well as the students who were invited to attend STRIVE during those years but chose not to, a longitudinal analysis was conducted on the students' dropout rates, withdrawal rates, and whether or not they were in the appropriate grade level three to four years later.

The chi-square statistic calculated on the 2x2 matrices shown in Table 11 indicated that there was no significant difference between the STRIVE groups and the comparison groups in the proportion of students who dropped out of school. In fact, the STRIVE participants for both years had a slightly higher dropout rate than the students who chose not to attend STRIVE. However, when one looks at the withdrawal rate (see Table 12), 11% to 15% more of the students who participated in the STRIVE program were, three to four years later, still in HISD schools than those in the comparison groups. Although the proportions were not significantly different at the .05 level, there was a noticeable difference. This indicates that there may be some undefined degree of association between the STRIVE treatment and student withdrawal rate from HISD schools.

Table 11. 1990 Drop-out Rate for 1987–88 and 1988–89 STRIVE and Non-STRIVE Comparison Groups

	1987–88		1988–89	
	STRIVE % (N)	Non-STRIVE % (N)	STRIVE % (N)	Non-STRIVE % (N)
Dropped out of school	44 (44)	39 (42)	36 (29)	35 (26)
Still in school	56 (55)	62 (67)	64 (52)	65 (49)

Table 12. 1991 Withdrawal Rate from HISD for 1987–88 and 1988–89 STRIVE and Non-STRIVE Comparison Groups

	1987–88		1988–89	
	STRIVE % (N)	Non-STRIVE % (N)	STRIVE % (N)	Non-STRIVE % (N)
Withdrawn from HISD	68 (67)	79 (86)	64 (52)	79 (59)
Still in HISD Schools	32 (32)	21 (23)	36 (29)	21 (16)

The chi-squares conducted on the 2x2 matrices in Table 13 demonstrated that with these samples there was no association between the STRIVE treatment and whether or not the student was in the appropriate grade three to four years later. Nevertheless, 38% of the 1988–89 STRIVE participants were in the 11th or 12th grades while only 25% of the non-STRIVE students had attained this level.

Table 13. Percent of Students in the Appropriate Grade or Above for 1987–88 and 1988–89 STRIVE and Non-STRIVE Comparison Groups

	1987–88		1988–89	
	STRIVE % (N)	Non-STRIVE % (N)	STRIVE % (N)	Non-STRIVE % (N)
In appropriate grade or above	*12th grade*		*11th grade*	
	60 (23)	64 (14)	38 (15)	25 (4)
Not in appropriate grade	40 (15)	36 (8)	62 (25)	75 (12)

Summary and Discussion

The purpose of this evaluation was to examine the effectiveness of STRIVE, a program designed to serve over-age, low-performing ninth grade students who were perceived as being at risk of dropping out of school. Although the major goal of the program was to prevent students from dropping out of school, it was also the program staff's intention to improve these students' academic performance and class attendance. Results indicated that the STRIVE participants from the last four years improved their performance on the MAT6 standardized achievement test during the year they participated in the program compared to the previous year. This study could not determine if the students retained this improved performance after completing the STRIVE program since the MAT6 is regularly administered to only first through ninth grade students.

To determine if the test scores were significantly higher for these students by their being in the STRIVE program than if they had not attended STRIVE, an ANCOVA with a multiple classification analysis was performed on the 1991 scores for the 1990–91 STRIVE group and two comparison groups using the 1990 test scores as the covariate. The results of these tests indicated that the STRIVE students on the whole out-performed the comparison groups on only the math subtest. The White STRIVE students had significantly higher scores on the science subtest and the male STRIVE students had significantly higher scores on the math subtest than the comparison groups. There were no significant differences between the treatment group and the comparison groups on the other subtests nor on the complete battery. One limitation to this analysis is the possibility of pre-existing differences between the STRIVE participants and the comparison groups.

The attendance rates for the STRIVE students declined from the year before STRIVE to the year of the program, significantly so for the 1988–89 and 1990–91 students. The rates continued to decline for the year after the students completed the program as well. When analyzing the STRIVE students' attendance rates in relation to the attendance rates for the comparison groups, it is evident that the STRIVE students' mean attendance rate declined more than either of the other two comparison groups. This was true for the groups on the whole and for the Black and female students subsets. With the improvement of students' attendance rates as one of the goals of the program, these significant decreases are not encouraging.

As stated above, the major purpose of the program was to keep students who were identified as being at risk of dropping out of school from doing just that. Using the students who declined the invitation to attend STRIVE during the 1987–88 and 1988–89 school years as the comparison groups, it was found that a larger percentage of the students participating in STRIVE were still in HISD schools three to four years later and, for the 1988–89 group, were in the appropriate grade level or above as of June 1991. Eleven percent more of the 1987–88 STRIVE students and 15% more of the 1988–89 STRIVE students were still in HISD schools in contrast to the students who chose not to accept the invitation to attend the STRIVE program those years. Yet, none of these results were statistically significant. When considering the dropout rate, the 1987–88 and 1988–89 STRIVE participants had slightly higher dropout rates (44%, 36%) than did

the non-STRIVE comparison groups (39%, 35%). The dropout data for the district should be cautiously considered because of errors in determining whether or not a student has completely dropped out of school. The withdrawal data are more accurate, but they do not disclose whether or not the student enrolled in another school outside the district once he/she withdrew from HISD.

The results of this evaluation indicate that although the STRIVE students made significant gains academically during their year in STRIVE, it is hard to determine if they would not have made similar gains without attending STRIVE. Also, there were no improvements in attendance rates for the STRIVE students. The gain comes, however, when examining the withdrawal rate. STRIVE appears to be keeping more of these at-risk, over-age, low-performing ninth graders in HISD schools than if these students had not attended the program.

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