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ABSTRACT

This study evaluates a 1-year, pre-vocational intervention--Project OASES (Occupational and Academic Skills for the Employment of Students)--for at-risk middle school students in the Pittsburgh (Pennsylvania) Public School District. The study sample consisted of 502 former participants and 148 active participants (1988-1989 school year) plus control groups of at-risk peers (n=157). The Piers-Harris Children's Self-Concept Scale and the Multi-Dimensional Measure of Children's Perception of Control were administered to active participants during May of 1989. Classroom grades, attendance rates, enrollment status, and results of California Achievement Test administration during the spring of 1989 were compiled. Participants' and non-participants' dropout rates were comparable, as were self-concept scores and achievement test scores in reading and mathematics. Participants' grades in reading and mathematics and absenteeism declined during the succeeding year. Participants exhibited a lower project-participation-year retention rate than did their control group peers and a lower ninth-grade retention rate as well. Non-participants exhibited higher degrees of internality in cognitive and social domains than did participants. Results indicate that project participants may not be well served. Recommendations include interdisciplinary planning, use of chronological age rather than grade level as a selection criterion, and de-emphasis of vocational goals in favor of vocational education as academic intervention. Three data tables and three figures are included. (Author/TJH)

Pre-Vocational Immersion as Risk Intervention In A Mainstream Setting: A Preliminary Evaluation of Project OASES

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Running Head: Pre-Vocational Immersion

Abstract

This study evaluates a one-year, pre-OVT intervention for at-risk middle school students in the Pittsburgh Public School District. Former (n = 502) and active participants (1988-1989 school year, n = 148, age 11-16 years) and control groups of at-risk peers (n = 157) comprised the study sample. The Piers-Harris Children's Self-Concept Scale (Piers and Harris, 1969) and the Multi-Dimensional Measure of Children's Perception of Control (Connell, 1985) were administered to active participants during May, 1989. Classroom grades, attendance rates, enrollment status, and Spring, 1989, California Achievement Test scores were compiled.

Participants' and nonparticipants' dropout rates were comparable (62% and 67.4% respectively, p = .5124) as were self-concept scores (p = .5650) and achievement test scores in reading and mathematics (p = .4757 and .8682). Participants' grades in reading and mathematics neither improved nor declined during project enrollment (p = .7032 and .7979) but declined during the succeeding year (p = .0002 and .0001). Participants' absenteeism followed the same pattern: stasis (p = .3112) and then decline (p = .0001). Project participants exhibited a lower project-participation-year retention rate than did their control group peers (3.8% and 20.9% respectively, p = .0001) and a lower ninth grade retention rate as well (32.3% and 53.1% respectively, p = .0356). Nonparticipants exhibited higher degrees of internality in cognitive and social domains (p = .0373 and .0029 respectively).

Results indicate that project participants may not be well-served. Recommendations include interdisciplinary planning, use of chronological age instead of grade level as a selection criterion, and de-emphasis of vocational goals in favor of vocational education as academic intervention.

Pre-Vocational Immersion as Academic Risk Intervention In A Mainstream Setting: A Preliminary Evaluation of Project OASES

Based on the assumption that students who are unsuccessful in traditional academic programs will find vocational experiences relevant and motivating, those at risk for school failure and dropping out are frequently placed in alternative programs that emphasize such activities and often de-emphasize academic goals. A casual review of ERIC citations of the past five years yielded references to over two-hundred public and private risk interventions that include vocational or pre-vocational components. One recent direction of education research has been examination of the relationship between enrollment in vocational and pre-vocational training and the holding power of schools (Barro & Kolstead, 1986; Catterall, 1986; Coombs & Cooley, 1968; Grasso & Shea, 1979; Greene, 1986; Lotto, 1982; Mertin, Seitz & Cox, 1980; Mertin, 1986; Weber, 1986; Woods & Haney, 1981). This literature has produced equivocal findings. The present study contributes to this body of work the evaluation of an atypically early intervention program that includes the formal measurement of behavioral characteristics (self-concept, locus of control) that are putative correlates of more commonly examined outcome measures such as absenteeism, graduate status, and academic achievement.

Project OASES

The Pittsburgh Public School District implemented Project OASES (Occupational and Academic Skills for the Employment of Students) in 1982, a one-year intervention for seventh and eighth grade students

whose poor academic and behavioral profiles are judged by building administrators and others to place them at risk for school failure and dropping out. Sixteen three-period occupational-vocational training laboratories operate in eight district middle schools under the supervision of a teacher and an aide. In addition to a somewhat reduced mainstream academic schedule, students attend project laboratories daily, are provided rudimentary instruction in building craft, and are routinely transported to specially contracted community work sites where they put their skills to practical effect. Recent projects include installing window flower boxes for a resident neighborhood group, constructing a nature trail in cooperation with a municipal agency, and constructing to specifications a court room/governance chamber in a district high school. Project participants and their parents sign contracts pledging adherence to attendance and behavior policies under penalty of expulsion.

It is the contention of project administrators that OASES represents not a vocational track but an academic intervention nurturing self-concept and fostering independence, thus improving attendance and academic achievement, and helping ensure high school graduation, as students meet rare success in a school-based environment. On the other hand, should they choose to attend, project participants are given preference over others on enrollment waiting lists for the district's vocational-technical high school. In school year 1989-1990, forty percent of eligible project participants took advantage of this opportunity. No similar incentive is offered to enroll in one of the district's popular academic magnet schools.

Methods

Sample

Two cohorts comprised the main study sample. Cohort I was comprised of all students enrolled in Project OASES in September, 1988 (n = 148) and a control group of peers (n = 101) whose academic and behavior profiles would have justified their placement in the project. Cohort II was comprised of all students enrolled in Project OASES in September, 1987 or 1988 (n = 195). Barring retention, this group represents those who have most recently experienced the critical transition to high school. In addition, the records of all students who completed Project OASES since the 1982-1983 school year (n = 650) were examined to determine the graduation rate of the project's participants since its inception. Likewise, the records of a control group of at-risk peers enrolled in eighth grade during the 1985-1986 school year (n = 56), the only such group prior to the 1988-1989 school year for which district records are available, were examined to provide contrasting graduation status information.

Among Cohort I, about which most is known, racially balanced project laboratories of 13 students each ranged between ages 12 and 1[illegible] in grade eight (mean = 14.28) and between 11 and 14 in grade seven (mean = 12.95). Males were overrepresented (73.6%). Control group peers (project nonparticipants) were representative of the participant sample on these characteristics.

Instrumentation and Other Data Sources

Two behavior scales were administered to Cohort I students during May and June, 1989, timed to measure program effects at the close of the school year: (1) The Piers-Harris Children's Self-Concept Scale (Piers & Harris, 1969), a student self-report measure comprised of six subscales

contributing to a measure of self-esteem; and (2) The Multi-Dimensional Measure of Children's Perception of Control (Connell, 1982), a student self-report measure comprised of three subscales contributing to a measure of locus of control in cognitive, social, physical, and general domains. In addition, Spring, 1989, California Achievement Test scores in reading and mathematics were collected.

Building-level data collected for Cohorts I and II included classroom grades, attendance and retention rates, and graduation status. Accurate extant suspension data could not be retrieved from district records.

Locus Of Control Relativity Measure

Connell's recommended interpretation of results of the Multi-Dimensional Measure of Children's Perception of Control rests on a measure of relative internality to externality. In his view, a categorical measure of control type dominance in any particular domain is not adequate. Nor are total scores of internality and externality, especially for groups, illuminating or accurate. An individual's relativity score may be computed by subtracting weighted subscale totals for unknown, plus powerful others, control sources (UCS and POCS, respectively) from the subscale total for internal control source (ICS):

$$\text{Relativity Score} = ICS - ((UCS \times .5) + (POCS \times .5))$$

Thus, a relatively high or low score may serve as a guide in diagnosis or remediation.

Computing group means in this way, on the other hand, may lead to erroneous conclusions, for similar scores thus obtained often mask underlying dissimilarities. Consider the following cases drawn from

this study's sample, for whom identical relativity scores disguise the fact that raw measures of internality differ. (Subscale totals range from a low of 1 to a high of 4):

INSERT TABLE 1 ABOUT HERE

In recognition of the fact that students such as these are qualitatively different and that relativity scores should reflect this, the following standardizing modification, which yields differences between scores of internality and externality expressed as ratios of internality, is here proposed:

$$\text{Adjusted Relativity Score} = ((ICS - ((UCS \times .5) + (POCS \times .5))) / ICS) + .25$$

(As an artifact of item scaling 1, 2, 3, 4, as opposed to Ø, 1, 2, 3, it becomes necessary to add .25 to scores thus obtained to yield ratios with an intuitively satisfying maximum of 1.ØØ.) Scores thus adjusted reflect individual (and, therefore, subsample group mean) differences, thus:

INSERT TABLE 2 ABOUT HERE

Adjusted relativity scores reflect the fact that, in these cases, while Student C achieves the lowest raw score on a measure of internality, the gap between his or her level of externality, relative to internality, is the highest.

Results

Graduation Rates

Since 1983, 65Ø students have completed Project CASES. To date, 34% have dropped out of school, 1Ø% have graduated, and 56% are current-

ly enrolled. However, among the graduating classes of 1987, 1988, and 1989, (OASES school years 1982-1983 through 1984-1985), 62% have dropped out, 30% have graduated, and 8% are currently enrolled. (According to various sources, the district-wide dropout rate is estimated to be between 5% and 35%.) Allowing that those among the latter group who are currently enrolled will, in fact, graduate, and allowing the same for the control group graduating class of 1990 (OASES school year 1985-1986), graduation rates are not different for Project OASES participants and their at-risk peers (p = .5124). (See Table 3).

INSERT TABLE 3 ABOUT HERE

Academic Achievement

Project OASES participants' mean final report card grades in mathematics and language arts neither improved nor declined during project enrollment (Z = .2561, p = .7979; Z = 1.1818, p = .2373, respectively). Mean stasis, however, masks the fact that, in both of these subject areas, approximately 60% either exhibited declines of one or more letter grades or maintained letter grades of "D" or "F." (See Figures 1 and 2.) During the same period, control group peers exhibited a decline in performance in mathematics (binomial p = .0005) while language arts grades remained stable (binomial p = .2012).

Classroom achievement did not remain stable for project participants during the succeeding year, however. Achievement declined in mathematics and language arts (Z = 4.0705, p = .0001; Z = 3.7442, p = .0002, respectively). (Control group grade achievement information was not available for grade nine.)

INSERT FIGURES 1 AND 2 ABOUT HERE

Attendance

Project participants' mean absence rates neither improved nor declined during project enrollment (prior-year mean = 15.44%; OASES-year mean = 16.82%; Z = 1.0126, p = .3112). As in the case of grades, however, mean stasis masks the fact that 42% exhibited poorer rates or maintained rates ranging from 15% to over 50% of the school year. Control group peers' rates (which were significantly higher than participants' in both years) increased during the same two-year period (prior-year mean = 20.79%; OASES-year mean = 24.67%; Z = 2.8006, p = .0051). Again, as with grade achievement, project participants' absence rates were significantly poorer during the succeeding school year than they were during the year of project participation (OASES-year mean = 13.82%; succeeding-year mean = 20.53%; Z = 3.8188, p = .0001).

INSERT FIGURE 3 ABOUT HERE

Grade Retention

Project participants exhibited a lower OASES-year retention rate than did their control group peers (3.8% and 20.9%, respectively; x^2 = 16.38299, p = .0001) and a lower ninth grade retention rate as well (32.3% and 53.1%; x^2 = 4.41843, p = .0356). The latter is significant in a district where some high schools report annual ninth grade retention rates above 50% and in light of the strong relationship that has been demonstrated in the literature on risk between ninth grade retention and dropping out.

Behavior Scales

Project participants and their control group peers achieved comparable mean scores on the Piers-Harris Children's Self-Concept Scale (Z = -5742, p = .5658). In addition, the proportion of students in both

groups falling into the categories "low" self-esteem (approximately 10%) and "high" self-esteem (approximately 30%) did not differ (p = .8929 and .3626, respectively). (Low self-esteem: <= 40 Piers-Harris T-score; High self-esteem: >= 60 Piers-Harris T-score.)

Results of the Multi-Dimensional Measure of Children's Perception of Control also indicated no differences between project participants and control group peers on measures of relative internality in two domains: physical (Z = -1.5252, p = .1272) and general (Z = -1.5304, p = .1259). However, in the cognitive and social domains, important within the context of school achievement and behavior, control group peers exhibited higher degrees of relative internality than did project participants (cognitive domain: Z = -2.0830, p = .0373; social domain: Z = -2.9801, p = .0029).

Finally, participants and control group peers did not exhibit different mean grade equivalent deviations from national norms on California Achievement Test total reading and total mathematics subscales (Z = -.7132, p = .4757; Z = -.1659, p = .8682, respectively).

Discussion

Risk interventions which include vocational education components and out-of-class work experiences have been reported to be among the most successful. Project OASES provides a nearly full mainstream academic experience as well as a vocational hands-on program. Both of these features have been assumed to contribute to the accomplishment of stated program goals. But results of this study indicate that on some measures of effectiveness, project participants may not be well-served through this resource-intensive, pull-out program. Dropout rates are not encouraging. Project goals of increasing positive attitudes and

independence are apparently not being met. And in the case of the latter, relative internality, which has been linked to academic achievement (Findley & Cooper, 1983) and to adaptive behavior (Gilmor, 1978) is apparently not being fostered as effectively as among non-participant peers in two domains that are especially relevant within this context -- cognitive and social. (These results complement those of Catterall (1987) whose treatment group of at-risk students, in an intervention program that isolated them from their peers, achieved lower mean scores than a control group on the Wisconsin Youth Survey of self-perception and attitude.) The evidence indicates, furthermore, that, while Project OASES may contribute to stabilizing (but not improving) grades and attendance rates during project participation, this effect is short-lived. Finally, analyses of California Achievement Test scores reveals no effect on a measure of achievement that is independent of classroom dynamics and teacher bias.

Interviews with district personnel revealed the need for integrated planning between vocational and academic teachers who are assigned primary responsibility for project participants in the mainstream. Lacking this, it is ensured that skills acquired in pre-vocational laboratories will not find practical application in academic settings and vice versa. Lack of integration with the academic mainstream also promotes the notion that programs such as OASES are vocational tracks instead of academic interventions. (The practice of giving project participants preference over others on waiting lists for vocational-technical high schools does nothing to dispel this misconception and should probably be discontinued, unless similar incentives are offered for gaining access to elite district academies and other special schools.)

At the heart of the question about the role of vocational education

in risk intervention is the myth of self-esteem, access to postsecondary opportunities, and adapting systems to serve students' best interests. Though it is often assumed otherwise, it has been pointed out that students who have not embraced traditional academic tracks, and who have little investment in the rewards of school, are not likely to suffer deterioration in sense of worth because of school failure. Whether as an artifact of research contingencies (no pre-measures were possible) or as a function of the myth of self-esteem, OASES students -- whose continued poor academic achievement is presumably offset by success in prevocational laboratories -- and their control group counterparts -- whose academic shortcomings are not offset by other school experiences (though they may be offset for both groups by many out-of-school activities) -- did not exhibit differences on a measure of self-esteem. Indeed, students in both groups had a better than nine-in-ten chance of falling into the "average" or "high" self-esteem groups, as determined by Piers-Harris national norms for general populations. Self-esteem, then, may not be a reasonable risk intervention target, at least to the extent that the real goal of interventions such as Project OASES is *academic* intervention.

Students inevitably find irrelevant and dull traditional academic tracks. Some, the so-called gifted and others, are rewarded for rejecting mainstream activities with forward-looking curricula and methodology. But in addition, they gain thereby an important insight: Systems may be plastic, and you may effect change. Others, notably those whose rejection of irrelevant and dull experiences has not been suitably refined under the tutelage of parents, sympathetic counselors and teachers, who refuse to cooperate long enough in a mainstream setting to complete rote, unimaginative, fragmented assignments, find the conse-

quences of rejection to be different. While schools question how the system failed in the former case, they ask how the student failed the system in the latter. One remedy for these troublesome students, as in many risk interventions including vocational experiences, is an effective reduction in academic load in favor of an intervention that offers success in a largely unrelated domain wherein it may be the case that no prior aptitude or interest has been demonstrated, sometimes under strict supervision enforced by threat of expulsion for the very behaviors that alerted school personnel to risk in the first place. Comes a very different insight under these conditions: Systems are rigidly manipulative; you may be directed to address your deficiencies by receiving the blessing of the system to deny them. The risk in this is the suggestion that opportunity does not await one's initiative. Easier, then, to join the system in the maintenance of the working class. This is not to denigrate what we have come to know as labor: The physician and the technician soil their hands. One or both of them, however, looking back, might have wished for an opportunity to choose blacker pitch, to choose from a wider range of options that were not foreclosed by decisions made by others. Is it not as logical to assign a presumably *gifted* student to vocational experiences when traditional academic tracks are insufficiently motivating? Do the *trades* require fewer gifted personalities than the *professions*? Thus, sense of relative internality may be negatively influenced, as it appears to have been among this study's participant sample.

In addition to mandating integrated planning and adjusting high school enrollment preferences in similar programs, student candidate selection processes and criteria should be continually evaluated. Clearly, for example, in the present case, on the single measure of absenteeism, the neediest students are not being served. In addition,

chronological age should be considered a more valid metric of program readiness than grade level. Among eighth grade participants during school year 1988-1989, for example, ages ranged between 12.39 years to 16.15 years. Among seventh grade participants the range was 11.84 years to 14.18 years. It needs extraordinarily talented teachers to address the needs of such developmentally different groups. Finally, formal tracking and evaluation components should include pre- and post-intervention assessment of behavior such as self-concept, locus of control, and social skills acquisition for participants and control groups. One function of such components would be to assist in the screening of potential participants.

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Table 1
Locus of Control Relativity Scores Masking Differences
In Raw Measures of Internality

Relativity Score = ICS - ((UCS x .5) + (POCS x .5))

Control Source Raw Subscale Scores

	INTERNAL	EXTERNAL	
		UNKNOWN	POWERFUL OTHERS
Student	ICS	Weighted UCS	Weighted POCS
A	3.75	(2.75 x .5)	(2.25 x .5)) = 1.25
B	3.50	(2.75 x .5)	(1.75 x .5)) = 1.25
C	2.75	(1.25 x .5)	(1.75 x .5)) = 1.25

Table 2
Adjusted Locus of Control Relativity Scores
Contrasted With Unadjusted Scores

Adjusted Relativity Score = ((ICS - ((UCS x .5) + (POCS x .5))) / ICS) + .25

Student	Control Source Raw Subscale Scores			
	INTERNAL	EXTERNAL		
	ICS	Weighted UCS + POCS	UNADJUSTED RELATIVITY SCORE	ADJUSTED RELATIVITY SCORE
A	3.75	2.50	1.25	.58
B	3.50	2.25	1.25	.61
C	2.75	1.50	1.25	.70

Table 3
Enrollment Status
OASES Completers and Nonparticipant Control Group:
1982-1983 Through 1988-1989 School Years

OASES School Year Ending:

Enrollment Status	1989 n=144	1988 n=78	1987 n=68	1986 n=72	1985 n=32	1984 n=73	1983 n=56	T n=523
	Current Grade Barring Retention:							
	9	10	11	12	—	—	—	
Currently Enrolled	137	55	47	40	3	4	5	291 55.6%
Graduate	0	0	0	4	8 25.0%	24 32.9%	17 30.4%	53 10.1%
Drop Out	7 4.9%	23 29.5%	21 30.9%	28 38.9%	21 65.6%	45 61.6%	34 60.7%	179 34.2%

Enrollment Status	1986 n=46 Non-Participant Control Group	1985 - 1983 n=161 Aggregated OASES Completers
Currently Enrolled & Graduate	15 32.6%	61 37.9%
Drop Out	31 67.4%	100 62.1%

Figure 1
Report-Card-Grade: MATH IMPROVEMENT
Between Prior-OASES Year and OASES Year
OASES Completers: 1988-1989 School Year

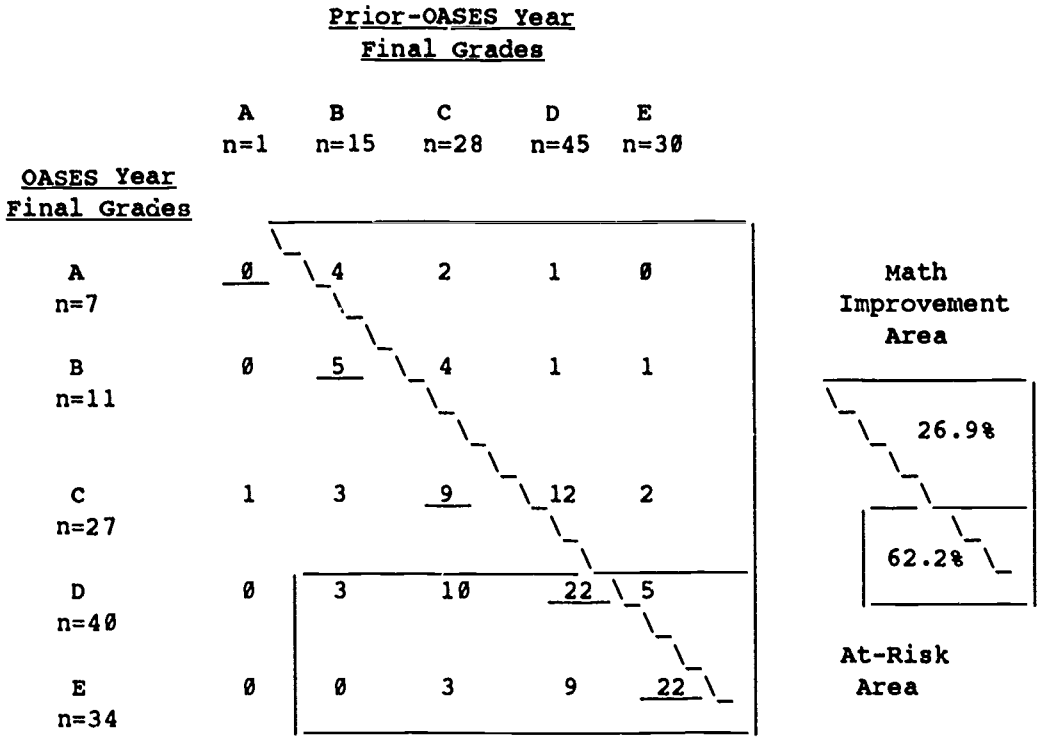

Figure 2
Report-Card-Grade: LANGUAGE ARTS IMPROVEMENT
Between Prior-OASES Year and OASES Year
OASES Completers: 1988-1989 School Year

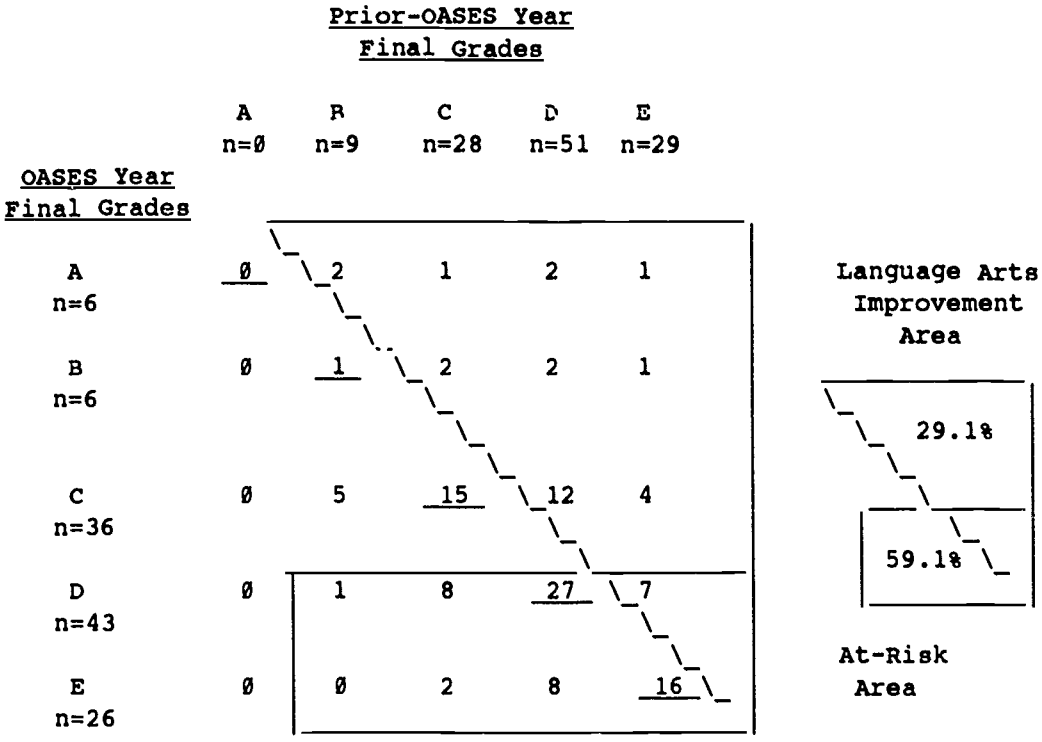

Figure 3
Attendance Rate Improvement
Between Prior-OASES Year and OASES Year
OASES Completers: 1988-1989 School Year

Prior-OASES Year
Attendance Rates
(Annual Percentage of Days Absent)

OASES Year Attendance Rates	0-5% n=21	5-10% n=27	10-15% n=22	15-20% n=25	20-50% n=26	50-95% n=2
0-5% n=20	10	8	2	0	0	0
5-10% n=26	7	10	7	1	1	0
10-15% n=25	1	4	6	10	3	1
15-20% n=18	1	4	4	7	2	0
20-50% n=29	2	1	2	7	17	0
50-95% n=5	0	0	1	0	3	1

Attendance Rate Improvement Area

28.5%

42.3%

At-Risk Area

END

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