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ABSTRACT

This article presents a description of an instructional management system called Consistency Management (CM) and its implementation in five urban elementary schools in Texas, with over 2,500 students. CM aimed to create a consistently implemented schoolwide consensus for teaching and learning that provided a self-analytical approach for teachers to examine the creation of a positive and orderly learning environment. The schools, ranking in the lowest 5 percent of Texas elementary schools based on the Texas Education Assessment of Minimum Skills (TEAMS), had a minority composition of 94 percent, with 83 percent of students eligible for free or reduced cost lunch. The five CM schools significantly improved scores on the TEAMS from 1985-86 to 1987-88 in mathematics, reading, and writing. CM schools increased 17 percent in the percentage of students passing the TEAMS, while matched non-CM comparison schools decreased 2 percent. Students of CM trained teachers scored significantly higher than did students of non-CM trained teachers. Discipline referrals were reduced, and interviews with 5 principals and 19 teachers indicated that the program had direct transfer to the classroom. The qualitative data from the interviews provide a stronger understanding of the results and issues faced by principals, teachers, and students. Seven tables present study data, and there is a 36-item list of references. (SLD)

Turning Around Five At-Risk Elementary Schools

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Abstract

This article reports the results of a study involving five elementary schools with a large percentage of minority, low socio-economic students. It provides evidence that when teachers of elementary students who are in at-risk environments participate in determining program goals and are given on-going in-service training in a research based management system, the student outcomes improve significantly. In addition, interviews with five principals and nineteen teachers from the schools indicated that the program had direct transfer to classrooms. The study seems to support related research in classroom management and school effectiveness.

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ABSTRACT

This article presents a description of an instructional management system called Consistency Management and its implementation in five urban elementary schools in Texas. The five schools were identified in 1986 by the Texas Education Agency as ranking in the lowest 5 percent of all elementary schools taking the state mandated Texas Education Assessment of Minimal Skills (TEAMS).

An analysis of the program indicates that the five schools significantly improved their TEAMS test scores from 1985-86 to the 1987-1988 school year in mathematics, reading and writing. When compared to a matched set of elementary schools, the Consistency Management schools increased 17 percent in the percent passing the TEAMS while the non-program schools decreased 2 percent in the percent passing during the 1987-1988 school year. When the students of teachers trained in the program were compared with students of untrained teachers, based on the Metropolitan Achievement Tests (MAT6) and the TEAMS, the program (experimental) group scored significantly higher beyond the $p<.01$ level in total language, total reading, social studies, science and total mathematics and in mathematics and writing on the TEAMS. Additionally, discipline referrals were reduced and a series of structured interviews of the five principals and nineteen teachers indicated that the program had direct transfer to the classroom (Freiberg, Prokosch, Treister, Stein & Opuni, 1989a).

This study seems to support the pioneering works of Brookover, Beady, Flood, Schweitzer, and Weisenbaker (1979); Brookover and Lezotte (1977); Edmonds (1979a, 1979b, 1979c); Goodlad (1983a, 1983b); Rutter, Maughan, Mortimore, Ouston, and Smith (1979); Mumane (1975); Summers and Wolfe (1975); Stallings and Mohlman (1981);

This article is based on a paper presented at the annual meeting of the American Educational Research Association in San Francisco, California in March of 1989. This paper would not have been possible without the absolute dedication and belief by the teachers and principals of the five schools, and by the central administration that all students can excel.

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Levine and Stark (1982); Edmonds and Frederiksen (1978); and Wynne (1980) who establish that schools can make a difference in academic achievement regardless of socio-economic status. This is given substantial support from several syntheses and reviews of school-level impact on students' academic achievement (Benbow, 1980; Bridge, Judd, & Moock, 1979; Centra & Potter, 1980; Edmonds, 1979c; Glassman & Biniaminov, 1981; Good & Brophy, 1986; MacKenzie, 1983).

This study disaggregated the school achievement data to determine the influence of training on teachers who were inserviced in the program against those teachers from matched schools who were not trained in this specific program but received other similar services from the district. Qualitative data derived from structured interviews of principals and teachers from the five schools provided a broader understanding of the results and issues faced by principals, teachers and their students.

SCHOOL DEMOGRAPHICS

The five elementary schools which were program schools are being called Washington, Adams, Jefferson, Madison and Monroe for the purpose of anonymity. The schools had three primary commonalities: 1) the students were from minority groups (94 percent), 2) the students were from low socio-economic backgrounds (83 percent were on free or reduced lunch), and 3) student mobility was twice the average of the highest performing elementary schools in the district. The student populations of three schools were exclusively Black, one was Hispanic and Black and one was Hispanic, Black and Asian. Geographically the schools were diverse with only Jefferson and Madison located in the same district area of the city. The percentage of new teachers varied from school to school. For example, Adams Elementary school had 60 percent of the teachers in their first, second or third year of teaching while Monroe elementary school had 58 percent of the teachers with eleven or more years teaching experience. The district average is 47 percent with eleven or more years teaching experience (see Table 1 for demographic comparisons between program and non-program schools).

CONSISTENCY MANAGEMENT

The Consistency Management program (Freiberg, 1983), was used as the intervention in each of the five schools. Consistency Management was the name given to the program which translated research in classroom management, instructional effectiveness, school climate, school effectiveness and staff development into practical classroom and school applications (see Emmer & Evertson, 1981; Kounin, 1970; Doyle, 1986; Cohen, 1983; Freiberg, in press; Murnane, 1975; Stallings & Mohlman, 1981; Teddlie, Stringfield, & Desselle, 1985; Good & Brophy, 1986; Lightfoot, 1983; Freiberg, Driscoll & Knight, 1987; Freiberg, Buckley & Townsend, 1983).

Table 1: Demographic comparison of program and non-program schools. Based on 1985-86 Data.

	Total Enrollment	Ethnicity * Bl	His	Oth	Free/ reduced Lunch	Mobility	Attendance	Achievement** Above	Below	Administrative Area
		Percent			Percent	Percent	Percent	Percent		
Washington	517	96	3	1	98	32	95	57	7	10
Able***	826	75	23	1	98	62	94	61	9	10
Adams	276	36	57	7	88	75	96	28	21	12
Baker***	265	37	63	0	97	44	98	74	2	12
Jefferson	499	100	0	0	74	30	97	51	15	4
Charles***	630	100	0	0	84	41	95	51	11	4
Madison	516	99	0	1	70	55	95	55	10	4
Dillon***	1288	99	1	0	97	53	95	48	14	4
Monroe	774	43	30	27	85	49	96	59	8	14
Edward***	408	25	39	36	57	45	96	60	14	14

* Bl = Black; His = Hispanic: Oth = Other (American, Indian, Asian, & White).
** Above or Below grade level on the ITBS Composite.
*** non-program schools.

Project Goals

The goal of Consistency Management is to establish a supportive, safe, and orderly classroom and school environment which is contingent upon teacher consistency. Consistency begins with a cooperatively developed educational mission that is grounded in shared values by members of the learning community. The goal is to create a school-wide consensus for teaching and learning which is consistently implemented. Consistency Management is designed to prevent problems which might interfere with learning, eliminating or reducing the need for more costly and time consuming interventions.

Consistency Management provides a self-analytical approach for teachers to examine how they establish a positive, orderly learning environment. This was achieved through a combination of strategically timed staff development workshops, teacher and principal self-assessments, team building (students, teachers, principals, and parents) and parental and community involvement.

Instruments were provided throughout the workshop sessions for the school faculty to monitor their own consistency, individually, as a faculty, and with their principal. A Consistency Management Calendar was provided for teachers to identify areas in which they were inconsistent (see Figure 1). A thirty item Consistency Checklist was used to review key areas identified in the workshops. Teachers audiotaped 30-50 segments of their classrooms and used a *Low Inference Self-Assessment*

Measure (Freiberg, 1987) to code, analyze and critique their teaching and meet with other teachers to share ideas for instructional improvement.

WEEK OF _____

FOCUS	MON.	TUE.	WED.	THUR.	FRI.
RECOGNIZE STUDENTS BY NAME					
CALL ON STUDENTS RANDOMLY USING 3X5 CARDS					
PROVIDE A FOCUS FOR EACH LESSON					
POST STUDENT WORK ON THE BOARD					
POST "A" WORK TO GIVE STUDENT A MODEL OF QUALITY					
SEND HOME A WEEKLY CALENDAR WITH ASSIGNMENTS AND OTHER CLASS-ROOM INFORMATION					
BUILD STUDENT RESPONSIBILITY BY USING AN ABSENCE PACKET FOR MISSED WORK					

Source: H. J. Freiberg. (1989). Consistency Management Professional Development Program Materials © 1989. Used by Permission.

Figure 1. Consistency Management Calendar

Each of the five schools reduced the time spent on disciplining students. Adams Elementary School, with 276 students, had the lowest enrollment of the five schools and had the most problems in discipline. In 1986, 109 of the 276 students were sent to the office for disciplinary action, 34 students had warning notices sent home and 24 students were suspended. In the 1987-1988 school year 19 students were sent to the office for disciplinary reasons. Nine of the nineteen referrals were from substitute teachers (Freiberg, Prokosch, Treister, Stein & Opumi, 1989b). One warning letter

was sent home for an after school (on the way home) off-campus fight that was reported to the principal and no students were suspended. It is important to note that the second half of the school year had the highest proportion of misbehaviors in both years.

INSERVICE SCHEDULE

The training began in April of 1987 with a voluntary all day Saturday workshop. Approximately 80 percent of the teachers and all the principals from the five elementary schools attended. A one-hour follow-up session was provided in May at each school site. The teachers proposed another workshop before school began. Two workshops were provided in August of 1987. The first August session was directed to all new teachers hired over the summer and any teachers who were unable to attend the April session. The second August workshop was for all the teachers and principals and the goal was to plan for the opening of school and establish a consistency plan for the year. Over ninety percent of the teachers attended either the April or August workshops. Participation was voluntary for all sessions. The teachers received State approved Advance Academic Training Credit (AAT) which could be used by the teachers for advancement on the Texas Career Ladder.

Six two-hour follow-up workshops were provided at the five schools for a total of 30 workshops. Workshops began in September and continued each month until February of 1988. The staff development design was based on previous research on the factors which caused staff development to transfer to the classroom in the same district (see Freiberg, Townsend & Buckley, 1982).

Management Values

The teachers were asked to examine their own management values both individually and collectively. They were asked to determine how they communicate their values to the students and to determine where teacher-student values are either congruent or in conflict. The Consistency Management program emphasized resolution of problem areas. For example, inappropriate student language was a common value conflict area. Some students would use four letter words as if they were conjunctions for each sentence. Teachers were asked to explain that language which may be used with friends or at home may not be appropriate in school or at work. Students were given a new context for language usage. Rather than trying to negate a home value upon which the teacher or school had little control student language was placed in a differentiated context.

Workshop Contents

Workshop #1. The first workshop, held during the first week of school, placed strong emphasis on contacting parents at the beginning of the year when problems were at a minimum. Positive Post Cards were sent home supporting timely return of homework or being punctual to school. Teachers called home (when parents had tele-

phones) to provide a portrait of the school day and strategies for parental assistance at home for their children. A telephone script was provided during the workshop for teachers who were uncertain about parental contacts. Strategies were provided for teachers to help students feel part of a learning community. Teachers went around the school taking pictures of students involved in academic tasks. Pictures of students reading, working in groups, studying, presenting information were posted on a bulletin board in the main hallway of the school.

Workshop #2 emphasized the need for developing a range of questions to challenge student thinking. The teachers were provided a range of questioning strategies with an emphasis on higher level questioning techniques. The teachers were shown video examples of other teachers using individual student chalkboards to help in assessing student learning. The video teacher would ask students, for example, a math problem and the class would write their answers on their own chalkboards. On cue from the teacher all the students would hold up their answers. Only the teacher would see their responses. The teacher would make a mental note of which students missed the problem and work with them during seat work time. If enough students missed the problem the teacher stopped and retaught the concept.

Workshop #3. The third workshop asked teachers to be reflective about their instruction. Each teacher audio-taped a 30 minute segment of their classroom and used a Low Inference Self-Assessment Measure (see Freiberg, 1987 for a detailed description of the instrument) to analyze their interaction with their students. The teachers listened to their tape and then prepared a written critique which they discussed among their peers. The principals who attended most of the sessions did not stay for the teacher self-assessment sessions.

Workshop #4. The research on cooperative grouping (Slavin, 1983) and peer tutoring (Berliner & Casanova, 1988) support these strategies as powerful learning tools, particularly for low achieving students. The fourth workshop provided examples of how to develop and manage these learning strategies. Many of the teachers had prior training in both strategies but had difficulty in managing the student focused activities. The sessions included ways of gradually developing cooperative learning groups, starting with groups of two and building slowly to groups of four over a three month period.

Workshop #5. The fifth workshop was conducted by an expert teacher from the district who was trained in Consistency Management and had extensive experience in learning centers. She brought her own classroom centers to the workshop and allowed the teachers to participate in her centers and assisted them in building their own math or reading center. Centers and their management were presented as a means of moving away from teacher and student-dependency on worksheets.

Using centers as part of reading time allowed students to circulate from reading with the teacher to seatwork to center work. This flow of instructional activities

reduced the amount of time a child would spend on any one task to about 20 minutes, reducing boredom and ultimately off-task student behavior.

Workshop #6. The final workshop was held in February of 1988. The session included teachers reporting on the on-task/off-task seating charts and interactive instruction observations conducted by teachers' peers during the previous week (see Stallings, Needles, & Sparks, 1987 for examples of the instruments). The teachers had a great discussion about the types of interactions they had with their students and how best to create a relaxed but productive classroom.

As mentioned, the Consistency Management training was provided at the end of the previous year. This enabled the teachers to test some of the ideas with their current students. Although student and teacher interaction patterns were set by the end of the school year, teachers indicated seeing enough of a change in their students in the spring of 1987 to begin planning during the summer for the next school year in September. The before-school workshop in August reviewed and reinforced the previous sessions and focused their attention on the importance of consistency in the classroom and throughout the school.

Inservice Framework

Too often, inservice sessions provided a few days prior to the opening of school present sessions on new curriculum, reading texts, different instructional approaches or organizational procedures that require significant changes in teacher planning and implementation. Few teachers are effectively able to assimilate and implement these new requirements as their attention is being drawn to the opening of school and the influx of new students. The inservice strategy for this program was designed to provide ample time for assimilation (from April to August 1987), opportunities for collegial and administrative interaction (April, May and August sessions), and follow through with additional sessions for the first six months of school (September 1987 to February 1988).

ACHIEVEMENT ANALYSIS

Method

There were three levels of analyses conducted to investigate the effects of Consistency Management (CM) on student achievement. Level I involved determining whether individual school level achievement improved from 1986 to 1988 (pre-post intervention). Level II investigated whether aggregated student achievement improvement across the five program (CM) schools was different from aggregated student achievement improvement across five comparison schools who received no training in the Consistency Management program. Level III identified the teachers in the program schools who had been trained in Consistency Management and compared the achievement of these teachers' students to the achievement of a random sample of students in the comparison schools.

Instruments

Student test data were obtained on two achievement instruments: the Metropolitan Achievement Tests (MAT6), a nationally standardized, norm-referenced academic achievement battery; and the Texas Educational Assessment of Minimal Skills (TEAMS), a state developed and mandated, criterion-referenced basic skills battery.

The MAT6 are overall measures of achievement in the five basic content areas of language arts, reading, social studies, science, and mathematics. As nationally normed tests, their content should be representative of the curricula being taught in these content areas in schools across the nation and test performance of students in a school or program can be compared to the performance of typical students of the same age and grade across the nation. The reported KR-20 reliability coefficients for the various batteries of the MAT6 are generally high, ranging from .63 to .98.

The TEAMS tests measure the minimum competencies in mathematics, reading, and writing that are expected to be mastered by all students in specific grades. These minimum competencies were defined by the Texas State Board of Education and were enacted into State law in 1984 under House Bill 72. The domain of knowledge and skills on which TEAMS test items were developed is much narrower and more focused on lower-level thinking processes than the domain on which MAT6 test items were developed. Reliability data have not been reported for the TEAMS.

The MAT6 are administered annually at all grade levels during the spring semester (first administered in 1987) to students in grades one through nine. Test scores for the study were obtained on the five content area batteries (Total Language, Total Reading, Social Studies, Science, and Total Mathematics) for the 1987 and the 1988 administrations for students who were in grades two through five in 1988 in the program (trained in Consistency Management) and non-program groups.

The TEAMS is also administered annually during the spring semester (first administered in 1986) but it is administered only in first, third and fifth grades. Test scores on the three content area subtests (Writing, Reading, and Mathematics) from 1986 and 1988, were obtained for program and non-program students who were in grades three and five in 1988.

Level I Analysis

The official district evaluation of the staff development programs, including the Consistency Management program, which were provided to the five "low performing" schools to help the teachers in these schools improve student achievement, included an analysis of the simple raw change in scale scores on the TEAMS for students with 1986 and 1988 test data. Correlated sample t tests were used to determine whether there was statistically significant improvement in the mean scale score from 1986 to 1988 at each of the tested grades, on each of the subtests, at each program school.

While all five schools showed statistically significant improvement in test performance on the TEAMS in one or all subtests in one or both grades, this level of analysis should be viewed as a very cursory preliminary investigation. The multiplicity of the t test comparisons without adjusting the overall alpha level simply in-

creases the chances of making a Type I error. More importantly, no comparison was attempted between the program schools' student performance and a comparable set of non-program schools' student performance.

Level II Analysis

In this second level, five schools were selected to serve as a comparison group of schools to the program schools. The comparison schools were matched, as closely as possible, to the five program schools on the following variables (based on 1985-86 data, in which the five program schools were identified as "low achieving" schools): total student enrollment, district administrative area, student ethnic composition, student mobility and attendance rates, student free/reduced lunch rates, and student achievement (i.e., percent of students above and below grade level as determined by performance on the Iowa Tests of Basic Skills, administered during the spring of 1986). Table 1 provides the data regarding these variables for the five paired sets of schools and Tables 2 and 3 present the scale scores.

Table 2: Teams mean scale score. Matched Students

		Math		Reading		Writing	
		1-3	3-5	1-3	3-5	1-3	3-5
Program schools							
Washington	88	817.96 N	736.36	750.20 N	746.91 N	742.62	775.84 N
	86	787.45 (59)	726.89 (46)	706.62 (59)	770.47 (46)	734.00 (59)	656.63 (46)
Adams	88	726.36	730.90	675.45	766.55	721.81	753.90
	86	769.72 (11)	743.90 (20)	668.00 (11)	731.55 (20)	691.00 (11)	680.70 (20)
Jefferson	88	855.17	802.17	801.31	743.61	776.33	739.46
	86	801.02 (45)	699.69 (39)	773.06 (15)	695.35 (39)	754.44 (45)	700.02 (39)
Madison	88	808.29	737.15	755.15	724.77	747.63	737.55
	86	833.97 (44)	680.53 (45)	760.11 (44)	674.88 (45)	786.04 (44)	625.93 (45)
Monroe	88	802.86	799.87	750.17	783.53	698.10	767.34
	86	779.41 (29)	732.42 (47)	865.51 (29)	730.74 (47)	762.75 (29)	654.14 (47)
Non-program schools							
Able	88	707.01	754.80	680.37	741.70	645.52	709.11
	86	779.27 (59)	695.21 (51)	769.74 (59)	712.84 (51)	774.25 (59)	691.27 (51)
Baker	88	791.82	787.05	769.34	771.65	751.08	711.40
	86	849.21 (23)	796.40 (20)	722.65 (23)	757.35 (20)	734.95 (23)	690.80 (20)
Charles	88	762.25	730.61	708.62	728.50	710.32	683.90
	86	791.86 (58)	679.36 (52)	752.96 (58)	683.57 (52)	788.79 (52)	653.88 (52)
Dillon	88	728.57	696.64	704.88	728.84	686.4	670.79
	86	808.23 (122)	661.71 (111)	731.72 (122)	690.18 (111)	726.4 (122)	668.31 (111)
Edward	88	796.82	813.26	782.85	815.36	735.60	814.56
	86	794.42 (35)	778.43 (30)	768.25 (35)	742.03 (30)	735.60 (35)	713.83 (30)

Table 3: Difference in teams mean scale score. 1988-1986 Matched Students

	Math		Reading		Writing	
	3-1	5-3	3-1	5-3	3-1	5-5
			Program schools			
Washington	30.51	9.47	43.58	-23.56	8.62	119.21
Adams	-44.36	-13.00	7.45	35.00	40.81	73.20
Jefferson	54.15	102.48	28.25	48.26	21.89	39.44
Madison	-25.68	56.52	-4.96	49.89	-38.41	111.62
Monroe	22.65	67.45	64.66	52.79	-28.65	113.20
			Non-program schools			
Able	-72.26	59.59	-89.37	28.86	-128.73	17.84
Baker	-57.39	-9.35	46.69	14.30	16.13	20.60
Charles	-29.61	51.25	-44.34	44.93	-78.47	30.02
Dillon	-79.66	34.93	-26.84	38.66	-40.00	2.48
Edward	2.40	34.83	14.60	73.33	-90.00	100.73

The investigation in this level still focused on basically school level data. In this case a comparison was made between the set of program schools and the set of non-program schools on the difference from 1986 to 1988 in the total percentage of students who passed one or more of the TEAMS subtests. The overall percentage of students who passed the TEAMS increased from 61% to 78% in the program schools, while the percentage of students who passed in the non-program schools decreased from 63% to 61%. (SeeTable 4 for the individual school percentages). The McNemar test was used to test whether the passing proportions were identical from pre- to posttest within each group. The program group's increase of 17% more students passing was statistically significant ($Z = 14.1$, $p < .001$), while the decrease of 2% fewer students passing in the non-program schools was also significant ($Z = 5.7$, $p < .001$).

Table 4: Teams aggregate % passing. Matched Students Pij* nij*

Program schools			Non-program schools		
	1985-86	1987-88		1985-86	1987-88
Washington	58.3%	80.2%	Able	64.8%	55.2%
Adams	58.1%	73.1%	Baker	73.8%	80.5%
Jefferson	68.3%	82.6%	Charles	61.8%	61.4%
Madison	56.6%	70.8%	Dillon	57.6%	54.5%
Monroe	60.9%	78.0%	Edward	71.3%	79.9%
Total	60.06%	78.0%	Total	62.7%	60.9%

*where Pij = # of passers for subtest(i) grade(j), nij = # of took subtest(i) grade(j).

These results indicated that something was working in the program schools – student achievement on the TEAMS was improving. Thus far, though, we had been looking at only raw change, only at one measure of achievement (a measure that was not necessarily representative of overall student achievement), and only at a global school performance base.

The inclusion of a third level of analysis reflects a growing concern about the lack of stability of achievement as reported by standardized test scores for improving schools. The aggregation of data may mask groups of students who continue to perform poorly but whose scores are lost in school-wide reporting of achievement (Freiberg, in press).

The research directors of member school districts in the Council of Great City Schools at their annual meetings have expressed continuing concerns about the inconsistencies observed in schools that have made gains in test scores only to regress after a relatively short period of time (Frechtling, 1987). The Level I & II types of analyses described in this paper are acceptable procedures followed by many large school districts with permanent research and evaluation departments. Given the multitude of programs in large urban school districts and the general lack of resources for evaluation, let alone research, completion of Level I and II analyses would be considered more than necessary. Based on the lack of stability of test scores reported nationally for improving schools in other districts school improvement efforts, an additional level of analysis was conducted to examine program effectiveness.

A third level of analysis was conducted to control for pretest effects on posttest performance, to include a broader base academic achievement measure, and to compare the performance of students who had been instructed during the 1987-88 school year by teachers actually trained in Consistency Management to the performance of students who had been instructed by teachers not trained in Consistency Management in the non-program schools.

Level III Analysis

Subjects

Teachers from the five program schools who had attended at least seven hours of Consistency Management training during the spring and/or summer of 1987 were identified (n = 137). Teachers who met the following criteria were then selected from this group. The teachers had to:

1. be a regular classroom teacher (grade 2, 3, 4 or 5),
2. have a readily available computer file identification number, and
3. have completed the 1987-88 school year in the same program school that he/she began the school year.

Twenty-eight teachers met these criteria. Students of these teachers were then identified on the master computer data file.

Students were randomly selected from the five non-program schools according to the grade distribution of the students identified in the program schools. The total number of students (n = 335) sampled from the comparison schools did not exactly

equal the total number of students (n = 364) included in the study from the program schools because of insufficient numbers of students with complete test data. Students in the two groups were fairly similar as to ethnic breakdown and percent on free/reduced lunch (Table 5). These were the only two demographic variables that could be checked readily from the computer file at the individual student level. It should be noted that the comparison schools in which the students were randomly selected were matched for five additional comparable variables.

Table 5: Student sample.

	Ethnicity			Free/reduced lunch
	Black	Hispanic	Other	
	percent			percent
Program students	90	80	2	72
Non-program students	85	9	6	79

Procedure

A one-factor (two-level) multivariate analysis of covariance (MANCOVA) was performed on the five batteries of the MAT6 to determine whether achievement differed between program students (students who were instructed by teachers with Consistency Management training) and non-program students (students who were instructed by teachers without Consistency Management training). The mean NCE (Normal Curve Equivalent) scores on each of the five MAT6 batteries from the spring 1988 administration, which represented posttest performance, were the set of dependent measures which were adjusted by the set of mean NCE scores from the 1987 administration, which represented the pretest performance. The adjusted posttest mean differences between the groups were analyzed.

The MANCOVA model makes it possible to examine academic achievement holistically, taking into account the correlation in performance across the different content areas. This model also allows for the statistical adjustment of posttest performance by pretest performance.

The following assumptions of the analytical model were tested and met:

1. Linear relationship among the dependent variables
   (Bartlett Test of Sphericity = 846.94124, df =10, p <.001)
2. Linear relationship between the set of dependent variables and the set of covariates
   (Wilks lambda = .19347, F = 56.88452, df = 25, 2557.31, p <.001)
3. Homogeneity of the regression hyperplanes for the covariates for each group; (i.e., there was no pretest by group interaction effect)
   (Wilks lambda = .95898, F = 1.15152, df = 25,2538.73, p =.274)

The assumption of homogeneous variance-covariance matrices between groups was not supported. Greater variability was associated with the non-program group of students. As this group was the smaller of the two groups, the statistical test then becomes a more liberal test (Stevens,1986). This liberality can be counterbalanced by testing statistical difference at a stricter alpha level (Stevens,1986). Alpha for this study was set at .01 instead of the more traditional .05 level.

A second one-factor (two-level) multivariate analysis of covariance was performed on the three subtests of the TEAMS test. Mean z-scores (student scale scores on each of the subtests were converted to z-scores within grade level) from the spring 1988 administration (posttest variables) were adjusted by the set of mean z-scores from the spring 1986 administration (pretest covariates). The adjusted posttest means were then analyzed.

All assumptions that were tested were substantiated.

1. Linear relationship among the dependent variables
   (Bartlett Test of Sphericity = 167.20875, df =3, p <.001)
2. Linear relationship between the set of dependent variables and the set of covariates
   (Wilks lambda = .58627, F = 17.771749, df = 9, 649.96, p <.001)
3. Homogeneity of the regression hyperplanes for the covariates for each group; (i.e., there was no pretest by group interaction effect)
   (Wilks lambda = ..97557, F = .72936, df = 9, 642.66, p =.682)
4. Homogeneity of the dispersion matrices
   (Boxs M = 14.49899, F = .67424, df = 21, 271990, p = .863)

Results

The results of the multivariate analyses on the MAT6 and TEAMS achievement instruments indicated that statistically significant differences in adjusted posttest means existed between program students and non-program students. In each analysis, the set of adjusted posttest means for students of program teachers was higher than the set of means for students of non-program teachers.

(MAT-6: Wilks lambda = .92776, F = 10.71428, df = 5, 688, p <.001; TEAMS: Wilks lambda = .82880, F = 18.38451, df = 3, 267, p <.001)

The univariate F tests on the individual batteries of the MAT6, indicated that achievement was greater for the program group of students on Total Language (p < .001), Total Reading (p = .009), Social Studies (p < .001), Science (p = .007) and Total Mathematics (p< .001).(Table 6).

The subsequent univariate F tests on the individual subtests of the TEAMS indicated that achievement was greater for the program group of students on the Writing subtest (p < .001) and on the Mathematics subtest (p < .001). No statistical difference existed between the two groups on the Reading subtest (p= .211). (Table 7).

The TEAMS tests were used as the basis by the State for identifying the five schools in 1986 as the lowest performing elementary schools in the district and are used by the local media for in-district as well as between-district comparisons for

Table 6: Pre-, post-, and adjusted posttest mean NCE's on MAT6, Grades 2, 3, 4, & 5.

	Observed pretest Means	Observed posttest Means	Adjusted posttest Means
Total language			
program	48.3	53.1	52.4
non-program	46.7	46.3	47.1
Total reading			
program	42.2	43.6	42.8
non-program	40.7	40.0	40.8
Social studies			
program	40.6	47.2	46.6
non-program	39.1	41.6	42.3
Science			
program	40.7	47.3	46.5
non-program	38.3	42.9	43.7
Total mathematics			
program	51.2	55.1	54.0
non-program	48.2	46.7	47.8

Table 7: Pre-, post-, and adjusted posttest mean z-scores on teams. Grades 3 & 5.

	Observed pretest Means	Observed posttest Means	Adjusted posttest Means
Writing			
program	-.06140 (735.1)	.30238 (781.2)	.32088 (783.3)
non-program	.06230 (741.6)	-.30684 (726.3)	-.32560 (724.2)
Reading			
program	-.06093 (712.5)	.04032 (734.5)	.07182 (737.2)
non-program	.06183 (728.0)	-.04091 (726.8)	-.07187 (724.1)
Mathematics			
program	.03252 (705.9)	.23218 (761.9)	.25464 (763.8)
non-program	.03300 (717.2)	-.23559 (689.9)	-.25838 (688.0)

Mean scale scores are provided in () for information only.
Program $n = 176$
Non-program $n = 166$

student achievement. Given the lack of available reliability and validity data on the TEAMS, the MAT-6 data in comparison represents truer measures of academic performance; and, therefore, one may have greater confidence in the analysis of these data.

Limitations

There were a variety of programs directed toward students and teachers in the five schools. Sorting through each program and trying to determine its particular effect on student achievement is a difficult task given the interrelationship among activities within a school. One of the principals clarified this issue when she stated "the Consistency Management program was the glue which held the other programs together." The other principals concurred with this assessment.

The results of these analyses provide preliminary support to the premise that teachers who are trained in Consistency Management and utilize the principles in the classroom can facilitate improvement in student academic achievement.

There are, of course, limitations to this study, as there are with any study in a natural school environment. It is always difficult to assess program effect in schools because of the multiplicity of contributing factors to student achievement that abound. The final level of the study, however, did compare the test performance of only those students whose teachers had been trained in the program to the test performance of students whose teachers had not been trained and who were in comparable school environments. Student predisposition to testing was controlled to an extent, by removing from the posttest the effects of the pretest and by comparing these adjusted posttest scores as a set of related indices of achievement.

What we were not able to control and examine was the differential degree of training the program teachers had, nor the degree of transfer of the program principles to the classroom setting by the individual teachers included in the study. We know, however, from the teacher and principal interview data and from the follow-up training sessions, that most teachers trained at each of the five schools utilized what they had learned in their Consistency Management sessions. In addition, because all teacher ID numbers were not available, grade by school cell sizes did not allow for comparing student performance at these levels.

TEACHER INTERVIEWS

Introduction

Beginning in October of 1987, a series of structured interviews was conducted with all of the principals and a volunteer sample of thirty-five teachers from the five schools. Of the volunteering teachers, four were selected from each of the schools to reflect different grade levels and subject areas. Nineteen teachers participated in a first round of interviews in the fall of 1987; a second round of interviews was held in the spring of 1988 with the five principals and the sample of teachers (less one who was no longer available). The interviews took approximately sixty minutes each and were conducted by two doctoral students (who are authors on this paper). As a result, forty-seven interviews were conducted with principals and teachers of the five schools during the 1987-88 year. The first part of this section of teacher interviews focuses on teacher responses; the second part presents principal responses.The interviews explore many relevant factors but here we restrict ourselves to material on the

role of inservice and consistency management in improving teaching effectiveness and student learning.

Inservice Programs

To encourage the teachers' professional development, a large number of organizations, inside and outside of the district, present a wide range of inservice programs each year. When asked about the nature and value of these programs, teachers could identify titles, sponsorship, and formats, but could tell little of their content and less of their value. Teachers indicated that valuable inservice programs have recognizable characteristics. These included being taught something new or reinforcing ideas they had learned before; an interesting speaker or presenter modeled effective instruction by using a variety of teaching techniques; inservice content was relevant to their classroom situation, were easily implemented and gave teachers observable signs of success. The immediate demands of the teaching conditions allowed little room for higher level professional development.

Consistency Management

Teachers responded positively to Consistency Management, both as an inservice program and as an approach to classroom management. Teacher participation in the inservice sessions was voluntary; nonetheless, the principals' encouragement and the fostered colleagueality through the sharing of food at each session maintained a high attendance rate in all five schools throughout the year. Teachers did express their reluctance to the interviewers at attending the initial presentation in the spring of 1987, some asserting that they had no management problems or resenting that the session was scheduled for all day Saturday. In the fall, when sessions were scheduled for the late afternoon, some teachers resented the sessions taking place at the end of a long school day.

The negative comments concerning logistics were overshadowed by the the generally positive responses to the content of the sessions. Almost all of the teachers acknowledged that they had enjoyed the sessions and had learned something that was helpful to their work in the classroom. They praised the Consistency Management inservice program for its meeting many of their criteria for a good inservice program – good presenter, relevant material, and variety in presentation strategies and transferable for their classrooms. It also responded to some of their concerns of professional and colleaguial isolation. They particularly appreciated the discussion and interaction among the participants and the material pertinent to their work with urban at-risk students. One teacher commented that this program was better preparation for their working with inner-city at-risk students than anything they had had in college. Another said it was "more like a college course" because the sessions were on-going, with time between sessions to assimilate the material, experiment with implementation and receive feedback at subsequent meetings. "It didn't leave us hangin," said another, appreciating the continuing support from colleagues and presenter at each session.

Teachers reported that Consistency Management was also effective as a class-

room management program. All of them reported that they were in fact using in their classrooms what they had learned in the inservice sessions. Their most implemented aspect of the program dealt with classroom management techniques. Many said that they adapted the system to suit their particular needs, regular classroom teachers using group rewards while special education teachers preferred individual rewards. They asserted that they liked the Consistency Management program because it was easy to implement and had objective criteria for teacher decision-making. "It reminds me to be fair, that I'm not judge and jury," said one. They appreciated that it offered them and their students clear signs of success, motivating them and emphasizing positive behavior. They also welcomed the fact that Consistency Management involved the entire school staff, including non-teaching personnel, to maintain the behavioral expectations in and out of the classroom and the school. It called for creating an environment that was constantly encouraging. Negative comments focused on one aspect of the program. Some teachers had philosophical opposition to the use of extrinsic rewards. Nonetheless, even those teachers had adopted the program in their classrooms and reported success.

In the second set of interviews, conducted in the second half of the school year, teachers said that they were continuing to use the program. More of them had made alterations in their procedures, eliminating aspects that did not work for them or modifying others to be more effective. They reported changing the frequency of the rewards, directing them more often to individuals than to the group, and moving from extrinsic to instrinsic incentives.

PRINCIPAL INTERVIEWS

Consistency Management

Order and discipline in the schools was a primary concern for the principals. High student mobility (34%-75%) and teacher turnover rate (10%-25%) contributed to a lack of order. The principal at Adams Elementary indicated that the program dramatically reduced referrals to the office because it enabled teachers to handle their own discipline problems. She credited the Consistency Management program for this change by noting that without it "I would not have survived." This was a common theme for the schools. The principal at Monroe Elementary stated in May of 1988: "I still haven't seen many kids. I bet I haven't seen 14 lads this year; last year I saw 62." Other schools also indicated a reduction in disciplinary referrals. The principal at Thomas Jefferson stated, "Last year we needed more help with discipline. Now we are doing very well and can move beyond that."

The principals said the teachers viewed the program as positive. A common theme expressed by the principals was the need for the teachers to acquire tools for dealing with various student behaviors. One principal stated that the program provided a clear plan throughout the school for discipline, making the teachers responsible for their students' behavior and removing her from her role of disciplinarian. "I am not a policeman!," she asserted.

The need for a support program when the program ended was another need stated by the principals. Following the last session (February 1988) the principals talked about another session for the spring. One principal commented, "More of a support system was needed in place after the end of the workshops, perhaps to focus in on what's happening at the end of the year."

Parental Involvement

Each of the principals discussed their concerns and efforts related to parental involvement. The programs to involve parents included the following:

* Technology week. The parents learned with their children about computers during Saturday sessions.
* Report card night. One school had parents pick up the child's report card and meet with the teachers. Sixty percent of the parents attended.
* Newsletters. Stories by the students and articles from the teachers were included in this form of communication brought home by the students.
* Language classes for non-English speaking parents. Spanish speaking parents in two schools had classes to improve their communication.
* Shell II. The Shell Oil company sponsored Saturday programs focusing on math and science for both parents and their children.
* Incentive programs. These included: a) post cards that teachers sent home to communicate positive academic achievements or behavior of students, and b) certificates to parent(s) related to student achievement.
* Festival Activities. Each of the schools had events where food was served and the community was invited.
* PTO. Each school worked to improve formal parent organizations.

One lesson learned from parental and community involvement is that one approach will not involve all the parents. A variety of programs and strategies are needed to increase total parental involvement. The end result is an important message for students, which lets them know school is important.

Implications

There are numerous implications from the perspective of the principals in this study. The concepts of school-based management was an unspoken theme which emerged from the principal interviews. The five principals in defining their good and bad days emphasized the need to be out of the office and in the classrooms. Providing resources to the schools and developing strategies with their teachers to improve achievement were their primary objectives.

Parental involvement in communities where students may be living with grandparents, other relatives or in dysfunctional families, presents serious problems in the partnership each of the principals identified as necessary for educational improvement. The strategies used by the principals and teachers represented a layered approach to parental involvement. One strategy may increase parental involvement by

5 percent but the implementation of several strategies could boost that involvement to forty or fifty percent. The use of classroom strategies (e.g., positive post cards home and telephone calls for positive home contacts at the beginning of the year) combined with school wide strategies (e.g., report card night, and technology week) increased the opportunities for parents to become aware and supportive of their children's education.

Rather than looking for one strategy to solve all the problems, it is evident from the interviews that the principals are looking for a multidimensional approach to effective schooling.

CONCLUSIONS: THE HALF-LIFE OF IMPROVING SCHOOLS

The resources provided by the district to these five at-risk schools have enabled them to turn the corner and create a positive learning environment for the students and orderly and supportive working environment for the teachers and administrators.

In response to the first workshop, over twenty written comments on the district's evaluation related to teacher requests for continuance of the program during the summer. As one teacher stated in the comments section, "...please don't leave us hanging." Veteran teachers have seen innovations come and go and they realize (as evident in their comments) the importance of long term staff development which meets their needs. The school district in this study under the leadership of a new superintendent, has made a clear commitment to making the schools a bridge to personal and academic success for all students.

It is not just the students who are at-risk of failing, but the schools which provide a safety net between what may be a bleak and difficult existence and a hopeful and productive future. The half-life factors of improving schools represent a concept that describes the decay which eats away at extraordinary efforts to improve the learning environment of students. As long as the community and families' needs are not being met by the larger society, then extraordinary efforts will be necessary to maintain a level of equilibrium to continue improvement efforts. Once a school begins to improve and exceeds the criteria for its students being at-risk, district supports may begin to be removed and redistributed to other newly identified at-risk schools (Frechtling, 1987; Freiberg, 1989). Within a relatively short period of time, the school begins to be at-risk of not sustaining the delicate equilibrium and safety net that provides a climate of growth and learning for students and their teachers. Given limited resources, the funding for extra supplies or specialized staff development is withdrawn and moved to another set of "at-risk" students and schools. The improving efforts begin to decay as the teachers and administrators see both intangible and tangible supports being removed. Add to the withdrawal of support, the attrition of teachers and the high mobility rates of students, the school becomes "at-risk" again, in need of new interventions. Preventing decay in school improvement efforts may require sustaining support for as long as home and community conditions create students who are at-risk of failure in schools and society.

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TEMPLE UNIVERSITY CENTER FOR RESEARCH IN HUMAN DEVELOPMENT AND EDUCATION

The Temple University Center for Research in Human Development and Education is an interdisciplinary center for the study of emerging problems and challenges facing children, youth, and families. Its overall goal is to investigate the basic forces that affect human development as well as educational processes and outcomes. An important focus of the Center's work is the identification and shaping of effective responses to these forces through far-reaching changes in institutional policies and practices.

The problems and challenges facing children, youth, and families stem from a variety of cultural, economic, political, and health pressures. Their solutions are, by nature, complex. They require long-term programs of study that apply knowledge and expertise from many disciplines and professions. To this end, the Center draws together the many resources of the University and a wide range of national, state, and regional programs. The result is interdisciplinary and interdepartmental collaborations that involve investigations of social, economic, educational, and developmental factors and demonstration of state-of-the-art models for training and for delivery of relevant services. Research and development projects in these areas reflect a commitment to enhance the knowledge base for improving the quality of life for children and families, particularly in urban environments.

The work of the Center for Research in Human Development and Education is divided into four program units: Improving Instruction and Learning in Schools, which provides technical assistance and training for innovative school programs; Social Service Delivery Systems, which develops models for effective social service delivery; Studies of Child Development and Early Intervention, which conducts pre-school diagnosis and produces innovative program development; and the National Center on Education in the Inner Cities (CEIC), funded by the U.S. Department of Education's Office of Educational Research and Improvement, which has undertaken a program of research and development as well as dissemination that takes bold steps to mobilize and strengthen education and related resources to foster resilience and learning success of children, youth, and their families in inner cities.

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