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“The Effectiveness of the Consistency Management & Cooperative Discipline (CMCD) Model as a Student Empowerment and Achievement Enhancer: The Experiences of two K-12 Inner-City School Systems.”

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Abstract

Consistency Management and Cooperative Discipline (CMCD) is a research-based K-12 discipline management program that builds on shared responsibility for learning and classroom organization through the cultivation of democratic and participatory practices that are fair, inclusive, and caring. CMCD seeks to provide a stable and orderly learning environment in which students become self-disciplined and empowered, by experiencing greater responsibility. The number of schools that have adopted CMCD in the United States and England surpassed 211 schools (involving 120,000 students) in 2001. CMCD's effectiveness assessment involved two vertical (K-12) clusters of schools, one in Houston and the other in Newark. Houston's assessment was a descriptive one-group study, while Newark's was a two-group quasi-experimental study involving a matched-pair of 228 CMCD and 228 Non-CMCD comparison students. The assessment findings indicated that, prior to CMCD's implementation in 1995-96, four of the nine participating Houston schools had Teacher-Student Relationships' mean scores above the national mean of 50, while the remaining five had scores below the national mean, but by the third year, all of the schools had achieved considerable gains, with eight schools achieving mean scores of 61% – 73%, considerably above the national average. Five of the eight schools achieved gains that were statistically significant. By the fourth year of CMCD's implementation, all of the participating schools had also experienced a significant decline in the number of students referred to the offices of their principals, with a combined decrease from 1,017 to 268 in referrals, a 74% decline. Also, teachers in CMCD elementary schools indicated during the third year that they had been saving about 36 minutes daily as a result of CMCD practices, while middle school teachers indicated they had been saving 30-31 minutes daily (3.6 weeks annually), that would have been wasted on student conduct/disciplinary problems in pre-CMCD implementation years. In Newark, CMCD students, at the end of the first project implementation year, significantly outperformed their comparison cohort in math (effect size, 0.53; 70th percentile) and in reading (effect size, 0.26; 60th percentile). This improvement in math performance among the students occurred even though the math component of the comprehensive reform model had not yet been installed. With the many benefits and factors that CMCD is capable of enhancing, the program could be implemented as a stand-alone school reform program or as a part of a comprehensive reform model involving math and reading.

Introduction

The multi-faceted baggage of challenges and needs that inner-city children bring to the seemingly ill-equipped k-12 schools in the nation's major cities, have overwhelmed many stakeholders of school reform in recent decades (Calfee, 1988; Etzioni, 1984; Farkas, 1996; Hill, 1994; Hixon, 1993; Honig, 1996; Pallas, 1986). In frustration, P. T. Hill questioned, a decade ago, why educational reform: "has so little to show for its efforts, particularly in urban school systems, after a decade devoted to school improvement," and continued to question if "the larger community difficulties in urban areas are so intractable that schools, in the face of these problems, are helpless to influence student achievement"(Hill, 1994). Quite dissimilar from the enabling moderator factors that facilitate high performance levels among students from affluent homes, such as two-parent homes, print-rich homes, history of high school and college graduation, and appreciation of schooling pursuits, inner-city children come from significantly lower income homes, with absentee fathers or mothers, low appreciation of the value of formal education, low academic attainment of parents, and low academic orientation (Van Horn, 1999). It is thus not surprising that, for example, problems of student discipline and conduct are significantly more prevalent in inner-city schools than they are in schools attended by children from more affluent homes (Ward, 1998; Langdon, 1999). Consequently, many researchers have recommended that urban school reform programs be comprehensive, multifaceted, and learner-centered, with a philosophical and pragmatic constructivist orientation (Desimone, 2000). A major element of such a comprehensive approach is the enhancement of the psychosocial environment, as a precursor and facilitator of student empowerment and academic success. For, if the commercial farmer appreciates the vital importance of preparing the soil and ensuring that the soil conditions are adequate to support and nourish the growth and yield of his/her seeds/plants, educators should similarly appreciate the enabling role a strong socio-emotional environment plays in the effective learning of at-risk children.

Even though the quality of building level leadership is a crucial and major schoowide effectiveness factor, it is the classroom teacher who holds the keys for unlocking the academic potential of the at-risk inner-city child (Van Horn, 1999; Wang et al, 1987). For, it is the teacher who moulds and nourishes the social environment of the classroom to enable students to feel psychologically comfortable, important, respected, and empowered; all of which are related to student motivation, resilience and academic achievement (Ellis, 1997; Freiberg, and Associates, 2001; Ryan & Patrick, 2001; Skinner & Belmont, 1993; Turner and associates, 2003; Murdock & Miller, 2003; Voelkl, 1995; Furrer & Skinner, 2003; Crosnoe and Associates, 2004; Testerman, 1996). Consistency Management & Cooperative Discipline[®] (CMCD[®]) is a research-based discipline management and climate enhancement program that combines instructional effectiveness through consistency in classroom organization with student self-discipline developed cooperatively (Fashola, 2004; Fashola & Slavin, 1998; Freiberg, 1999; Slavin & Fashola, 1998). It is a school reform model that builds on shared responsibility for learning and classroom organization through the cultivation of democratic and participatory practices that are fair, inclusive, and caring, between teachers and students. CMCD seeks to provide a stable and orderly learning environment in which students become self-disciplined and empowered by experiencing greater responsibility. CMCD provides the mechanisms by which consistent and constructive strategies are adopted across the entire school and vertical team, and encourages consistent communication between teachers and parents through telephone calls, grade-level newsletters, progress reports, and other school activities (Freiberg, 1996; Freiberg and others, 1996; Rogers & Freiberg, 1994). The number of schools that have adopted CMCD in

the United States, Italy, and the Netherlands increased from three schools (involving 1,500 students) in 1995 to 140 schools (involving 120,000 students) in 2001.

While CMCD is an independent school-improvement program capable of being implemented independently from other school reform models/programs, it has also been one of five complementary programs of a comprehensive K-12 school reform model, the Project GRAD (PG) Model, which is currently being implemented in many major cities including Akron, Alaska, Atlanta, Brownsville, Cincinnati, Columbus, Houston, Knoxville, Lorain, Los Angeles, and Newark. Project GRAD now serves more than 131,800 at risk youth in 211 of the nation's most disadvantaged public schools. Among the major dimensions and goals were the following: establishment of positive classroom norms, management philosophy and values, organization of active classroom learning environments, development of cooperative discipline strategies, management approaches for the first days and weeks of the school year, management approaches for the second half of the school year, building self-discipline in the classroom, building schoolwide self discipline, parent/community roles in school and classroom management, and self-improvement through self-assessment. To enable teachers, school staff and administrators to achieve the preceding goals, CMCD provides an elaborate, field-tested, and research based professional development that runs through four phases, with the fourth focusing on on-going sustenance/continuance that enables new teachers to acquire all relevant skills & knowledge, while strengthening other with refresher sessions, and sharing sessions.

As the PG Model was developed in Houston during the mid-1990's, and has expanded into other cities, it has been impractical to isolate the impact of the CMCD model on student achievement in reading and math, since the PG Model has research-based math (i.e. MOVE It Math) and reading (i.e. Success for All) programs (Opuni & Ochoa, 2002). In Houston, where most of the PG model's components were concurrently implemented, for instance, by the end of the fourth year, the proportions of student passing the state criterion-referenced test in math had increased significantly in all seven elementary schools: Jefferson, 52% -92%; Lamar 38% - 96%; Lee, 48% -80%; Looscan, 52% - 83%; Martinez, 32%-59%; Ryan, 27%-85%, and Sherman, 43%-67%. Substantial gains had also been made in reading from 63%-81% among the elementary schools. At the middle school level, the passing rate in math had increased from 28%-62% and 45%-58% in reading. Growth at the high school level was between 42% -63% in math and 51%-77% during the four years. The concurrent implementation of all of the programs required that these academic gains be collectively shared by all of the programs, because of the impracticality in apportioning gains that could be attributed to the CMCD practices. What could be isolated in Houston during the early implementation years, to demonstrate the role and effectiveness of CMCD was its impact on three mediating/moderator variables or factors associated with student achievement in reading and mathematics. The factors were: a) quality of teacher-student relations; b) quality/level of student discipline, as reflected by disciplinary referrals to the offices of building-level principals; and c) the observed availability of more instructional time resultant from declines in instructional time previously used for addressing student disciplinary problems.

The implementation of the PG Model in Newark Public Schools in 1998-99, however, gave CMCD's implementation a rare opportunity to precede the implementation of the PG's math and reading programs to facilitate an assessment of its impact on math and reading achievement (Opuni, 2005). This study thus provides: a) a two-group quasi-experimental study of the CMCD's implementation in Newark Public Schools (1998-99); and b) a qualitative assessment of the changes in teacher-student relations, quality of students discipline, and changes in time

available for instruction in the Houston ISD's Davis High School feeder schools during the early years of the CMCD's implementation (1994-1998).

Demographic Characteristics of Participating Schools

Houston Schools: The Davis High, School, its feeder middle school, and seven elementary schools that implemented the CMCD model in the 1990's were in a high poverty neighborhood and in schools that were at the bottom of academic achievement ratings among district schools. The nine participating schools had a combined enrollment of 7,188 students, mostly (98%) minority (African American or Hispanic) with 88%, 70%, and 45% in the free/reduced lunch program at the elementary, middle, and high school levels respectively. According to the US Census Bureau (1992), more than a third (34.6%) of the households in the Davis community (male = 9.3% and females = 26.3%) were either headed by a male with no wife present or by a female with no husband present when the initiative started (Census Tracts: 503.01, 503.02, 508.00, & 509.03). Educational attainment levels were also low with 73%-85% of adults over 25 years lacking a high school diploma, 27%-60% with 0-8th grade education, and about only 13% with post high school education.

National figures on percentage of adults with less than high school education and those with college degrees for 2000 were 19.6% and 30.7% respectively compared to 58.6% and 8.3% for the Davis community, an indication that even after 10 years, the pervasiveness of the challenge persisted. Student mobility rates were high in the feeder schools: 40% in the elementary schools; 30% in the middle school, and 64% in the high school. The spring 1994 passing rates on the state administered criterion-referenced test, TAAS (Texas Assessment of Academic Skills for grades 3 were 61% in reading and 31% in mathematics; grade 6 were 41% in reading and 29% in mathematics; and grade 10 were 53% in reading and 44% in math.

Newark Schools: The years immediately preceding the implementation of Project GRAD in the Newark Public Schools were difficult times for Shabazz High feeder schools. The prevailing reputation was that the feeder neighborhood was perhaps the worst in Newark, partly because of its location in a high crime neighborhood, dominated by youth gangs. With mobility rates ranging between 40% and 51% for five of the nine participating schools, two schools with between 30% and 39%, and six of the nine schools dominated by high proportions of students from high poverty homes (80-94%), there was widespread concern about high and increasing academic failure rates during the late 1990's in the feeder schools. Indeed, Newark school system was one of New Jersey's 30 poor inner city and "special needs" districts affected by the New Jersey Supreme Court's *Abbott v. Burke* decision that required a state take-over.

Comparison schools used in the Newark study, based on demographic characteristics and academic achievement, were: Bragaw Avenue ES (K-8), Broadway ES, Camden Street ES, King ES (K-8), Fifteenth Avenue ES, Quitman ES, and Chancellor Avenue ES (3-8). It should be mentioned that all of the comparison schools from which the comparison students were selected for the statistical analyses had adopted one of the many "whole school reform" models approved by the state for New Jersey schools. Each, indeed, had a program that competed with the PG/CMCD Model: Bragaw Avenue (Accelerated), Broadway (Accelerated), Camden St. (Communities For Learning), King (Communities For Learning), Fifteenth Ave (Communities For Learning), Quitman (COMER), and Chancellor Ave (COMER). In effect, these schools were not the traditional statistical "control" schools. Table 1 shows the lunch status and mobility rates of the participating Newark schools.

Table 1. Some Characteristics of Project GRAD-Newark Schools (1998-99):
Shabazz High Feeder Schools

School	Grade Levels	No. Of Students	Free/Reduced Lunch (%)	Mobility Rate*1998-99	Teachers & Administrators With Masters Degrees (%)
Avon Avenue	K-8	520	85	36%	28
Belmont Runyon	preK-5	338	93	29%	44
Dayton Street	K-8	411	93	51%	19
Madison Avenue	preK-5	747	93	40%	37
Miller Street	K-8	530	79	42%	39
Peshine Avenue	K-8	745	94	43%	29
Spencer	preK-8	1323	80	47%	35
Brown	5-8	432	77	38%	29
Shabazz HS	9-12	1309	61	27%	49

Source: Philadelphia Online's School Report Cards Web site (www.philly.com) and New Jersey Department of Education

* Percentage of all students enrolled in the school at any time in the year who entered or left during the year.

Instructional Microsystem Factors and Student Achievement

As educators have surmised, student learning does not occur in a vacuum, but within a complex ecological milieu of macrosystem factors such as home/neighborhood conditions and proximal microsystem factors such as teacher attitudes and interactions with students (Bronfenbrenner, 1979; Felner, 1995). Many studies have demonstrated the pervasive and causative links between the quality of teacher-student interactions/relations and student attitudes, motivation, behavior, appreciation of schooling, engagement, and academic achievement (Felner et al, 1995; Murdock, 1999; Wehlage & Rutter, 1986). Student perceptions of their teachers are said to be the single best predictor of students' sense of belonging in the school environment and subsequently predict a positive school affect (Roeser, Midgley & Urdan, 1996; Murdock, 1999), and academic self-concept, and behavior (Murdock et al, 2000; Murdock & Miller 2003). A study by Gary Whelage and Robert Rutter, that involved about 30,000 sophomores from 1,105 public and private high schools, provided much credence to the fact that improvements in students' perceptions of the degree of concern that teachers feel for them positively affect students' attitudes about school and increase the likelihood of their staying on to graduate (Testerman, 1996; Whelage and Rutter, 1986).

In another study involving a national sample of 13,121 eighth grade students, Voelkl discovered that the causal link between the degree of school warmth (i.e. degree of teacher warmth, caring, and supportiveness) and academic achievement though strong, was not direct, but mediated by a corresponding degree of participation in class activities (Voelkl, 1995). In effect, students in schools/classrooms that have high levels of warmth are more encouraged, like school better, become more engaged, be stimulated to work harder and subsequently achieve higher performance levels. The philosophical orientation and carefully developed practices of CMCD seek to maximize the development of instructional conditions by cooperatively working with all

students in an empowering, warm, and caring environment that fully engages not only the students but also their parents in the schooling endeavor.

Research Scope and Methods

The Houston Study: The National Association of Secondary School Principals' (NASSP) Comprehensive Assessment of School Environments survey instruments were used to collect data on Teacher-Student Relations in 1995-96 and 1997-98 in all Davis feeder schools. *Teacher-Student Relationships* is defined as "perceptions about the quality of the interpersonal and professional relationships between teachers and students. The NASSP instruments were developed and nationally normed by a team of researchers at the University of Nebraska-Lincoln. Internal Consistency (Cronbach's alpha) of the NASSP School Climate Survey is 0.81, with a scale range from 0.67 to 0.92. The average reliability of the NASSP's Teacher Satisfaction Survey was 0.88, with a range from 0.80 to 0.93. To complement the NASSP instruments, an implementation survey was developed and used annually to collect teacher self-assessments of CMCD implementations levels, and their perceived level changes in student responsibility and behavior levels that could be attributed to CMCD practices. School disciplinary files of students were used to document the number of students referred to the offices of the seven elementary principals in the school year before the first implementation year of CMCD and in 1997-98. Teacher survey return rates for the NAASP surveys were between 95% and 100% for the 1995-96 and 1997-98 administrations, while the program implementation survey in 1997-98 had the following return rates: Jefferson (96%), Lamar (73%), Lee, (100%), Looscan (96%); Martinez, (88%), Ryan, (96%), Sherman, (86%), and Marshall, (63%), and Davis, (67%).

The Newark Study: The purpose of the Newark study was to assess the impact of the CMCD program at the end of the first year of the initiative before PG's reading and math programs were introduced in subsequent years. All demographic data and test data used in the Newark study were obtained from the Office of Planning, Evaluation, and Testing, Newark Public Schools. With no testing in first grade, the eligible grade level with pre-test and post-test (Stanford-9) data was the 1998-99 third grade students (228 students) who had been tested in second grade with the Stanford-9 in 1997-98, prior to PG's first implementation year. These students were matched/paired one-on-one to 228 students from demographically and academically similar Newark elementary schools based on ethnicity, gender, free/reduced lunch status, as well as their 1997-98 reading and math scores. Analyses of Covariance (ANCOVA) statistical procedures were used to assess the effectiveness of CMCD on student performance in math and reading.

Program Implementation

Houston Schools: The 1995-96 was the first implementation year of CMCD at Looscan ES, Martinez ES, Lee ES, Sherman ES, and Marshall MS, while it was the second implementation year at Jefferson ES, Lamar ES, and Ryan ES. Teacher self-reported levels of CMCD implementation for the 1995-96, 1996-97, and 1997-98 are as follows: Jefferson (75%, 80%, 82%); Lamar (68%, 80%, 80%); Lee, (62%, 80%, 83%); Looscan (66%, 85%, 84%); Martinez, (68%, 82%, 85%); Ryan, (82%, 83%, 89%); Sherman, (63%, 72%, 78%); Marshall, (N/A, 72%, 80%); and Davis (N/A, N/A, 54%).

Newark Schools: After the pre-implementation professional development workshops in 1998 and the during the first full year of implementation (1998-99), each school in the Shabazz feeder

elementary schools was provided with two-to-five full-time teachers to assist school staff in incorporating CMCD practices into their daily school routine. In addition, and in support of CMCD’s parental involvement dimension of the model, a full or part-time parental involvement staff was placed in each school to provide targeted assistance to students and their parents, and connect them with needed private and public community resources.

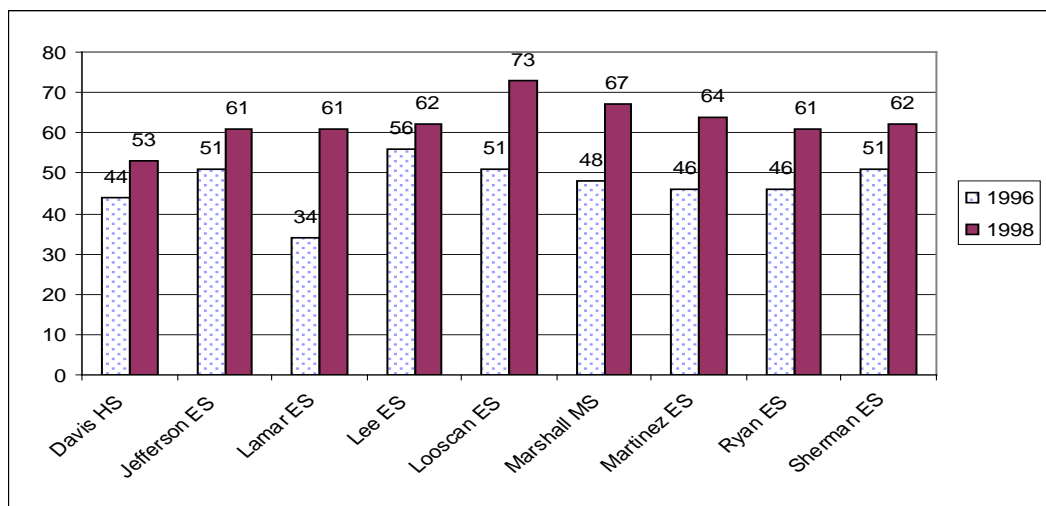
FINDINGS

(A) The Houston Study: Impact of CMCD on Mediating/Moderating Factors

Teacher-Student Relationships

When teachers in participating schools were surveyed in 1995-96, year two of the initiative, with the NASSP CASE instrument (School Climate Survey), four of the nine schools had Teacher-Student Relationships’ mean scores above the national mean of 50, while the remaining five had scores below the national mean (Figure 1).

Figure 1. Improvements in Teacher-Student Relationships: Changes in Mean Standard Scores of Teachers 1995-96 and 1997-98 (NASSP CASE Instrument)



When the survey was administered in 1997-98, all of the schools had achieved considerable gains, with eight schools having achieved mean scores above the typical national range (i.e. 40-60). A One-Way Analysis of Variance indicated that five of the schools achieved gains that were statistically significant with the following F ratios and p-values: Lamar (F=5.504 & p=0.002), Looscan (F=5.487 & p=0.023), Martinez, (F=8.945 & p=0.004), (F=5.504 & p=0.002), Marshall (F=5.262 & p=0.024).

Student Discipline Indicators

a) Referrals to Principals’ Offices: By the fourth year of CMCD’s implementation, all of the participating schools had experienced a significant decline in the number of students referred to the offices of their principals. The following indicates the pervasiveness of the decline in referrals between the pre-CMCD year and CMCD Year 4: Jefferson (enrollment: 718), from 145-50, a 66% decrease; Lamar, (Enrollment: 411), from 239-32, a 87% decrease; Lee, (enrollment: 232), from 56-12, a 79% decrease ; Looscan (enrollment: 419), from 100-31, a 69% decrease;

Martinez (enrollment: 623), from 120-34, a 72% decrease; Ryan (enrollment: 440), from 199-28, a 86% decrease; and Sherman (enrollment: 709), from 158-81, a 49% decrease. Overall, all the elementary schools (enrollment: 3552), experienced a combined decrease from 1,017 to 268 in referrals, a 74% decline.

Student Behavior Levels & Teacher Satisfaction Levels: With the responsibility for working with students centralized in the hands of the classroom teacher amid the use of CMCD practices, teacher satisfaction levels were closely monitored and assessed with the NASSP CASE instrument (Teacher Satisfaction Survey). Mean teacher satisfaction standard scores for 1995-96 and 1997-98 for the respective schools in Student Responsibility and Discipline remained generally within the national average range (40-60) and generally did not suffer significant declines as the following figures show: Jefferson, from 51-50; Lamar, from 49-47; Lee, from 44-46; Looscan, from 48-52; Martinez, from 42-50; Ryan, from 43-45; Sherman, from 47-36; Marshall, from 41-43; and Davis, 44 in both years. In effect, five schools experienced an increase in teacher satisfaction levels, three experienced a slight decline (except for Sherman), while one remained the same.

A survey in 1997-98 of teachers, who were at their respective schools before the initiative, to find out the extent to which they had observed improvements in students' sense of responsibility and student behavior that could be attributed to CMCD practices showed the following: a) the percentage of teachers who indicated that they had observed improvements were: Jefferson (Responsibility, 74%; Behavior, 83%); Lamar (Responsibility, 78%; Behavior, 78%); Lee, (Responsibility, 30%; Behavior, 40%); Looscan (Responsibility, 76%; Behavior, 89%); Martinez, (Responsibility, 96%; Behavior, 88%); Ryan, (Responsibility, 77%; Behavior, 89%); Sherman, (Responsibility, 29%; Behavior, 18%); and Marshall, (Responsibility, 29%; Behavior, 18%). b) Among the teachers, who had observed improvements, the following indicated that they had observed moderate/significant improvements: Jefferson (Responsibility, 39%; Behavior, 48%); Lamar (Responsibility, 78%; Behavior, 56%); Lee, (Responsibility, 0%; Behavior, 0%); Looscan (Responsibility, 76%; Behavior, 71%); Martinez, (Responsibility, 68%; Behavior, 68%); Ryan, (Responsibility, 55%; Behavior, 56%); Sherman, (Responsibility, 23%; Behavior, 12%); and Marshall, (Responsibility, 23%; Behavior, 12%). As could be inferred from the preceding figures, the perceived impact of CMCD on student disciplinary referrals, student behavior, and sense of responsibility seemed strong and pervasive in all participating schools.

Availability of More Instructional Time: During the initial year of the initiative's implementation, teachers consistently mentioned that they had more time available for instruction as a result of a decline in the amount of time they had previously used for addressing student disciplinary problems in their classrooms. Consequently, an item was added to the annual teacher survey that asked teachers who were in the respective schools prior to the beginning of the initiative, to estimate the amount of time they had saved daily as a direct result of their implementation of CMCD practices.

During the second year of the initiative, Davis feeder elementary teachers indicated that they had saved, on average, 14 minutes daily. In year three the estimated time saved daily increased to 36 minutes. Marshall teachers indicated they had saved 20 minutes daily in year one, 30 minutes daily in year two, and 31 minutes daily in year three. Based on a 180-day school year and six hours per day, the elementary teachers saved 3.6 weeks in 1996-97, while Marshall Middle saved 3.0 weeks that would have been wasted on disciplinary problems if it had not been CMCD

practices. These perceived impacts of CMCD have been incrementally supported by subsequent teacher assessments in the Davis schools as well as new feeder schools in Houston ISD that have adopted the CMCD program (see Tables 2 & 3).

Table 2. Assessment of Additional Time Available For Instruction Resulting from CMCD Practices (1995-2002)

Schools	Project Years	Average Time Saved Daily	Total Days Saved Per Year
Davis Elem. Schools	7 years (1995-01)	32 minutes	16.0 days (3.2 wks.)
Yates Elem. Schools	4 years (1997-00)	33 minutes	16.5 days (3.3 wks.)
Wheatley Elem. Schools	3 years (1997-00)	26 minutes	13.0 days (2.6 wks.)
Marshall Middle (Davis)	5 years (1995-00)	28 minutes	14.0 days (2.8 wks.)
Cullen Middle (Yates)	2 years (1998-00)	22 minutes	11.0 days (2.2 wks.)
Ryan Middle (Yates)	2 years (1998-00)	25 minutes	12.5 days (2.5 wks.)
E.O. Smith Middle (Wheatley)	2 years (1999-01)	24 minutes	12.0 days (2.4 wks.)

Table 3. Assessment of Additional Time Available For Instruction Resulting from CMCD Practices (2002-2003)

Schools	# of Teachers	Project Year 2002-03	Average Time Saved Daily	Total Days Saved In 2002-03
Davis Elem. Schools	175	9 th year	28 minutes	14.0 days (2.8wks.)
Yates Elem. Schools	280	6 th year	44 minutes	26.4 days (5.3 wks.)
Wheatley Elem. Schools	298	5 th year	45 minutes	27.0 days (5.4 wks.)
Reagan Elem. Schools	294	3 rd year	26 minutes	13.0 days (2.7 wks.)

Teacher Comments: The following comments by five teachers from Marshall Middle in spring 1998 on CMCD’s impacts lend credence to the preceding findings (Opuni, 1998, p. 78):

- “Marshall has benefited from the instructional strategies of CMCD by having a more functional day. I can spend more time helping individual students. It has allowed me more time to tend to teach the students.”
- “Teachers are now experiencing less stress as a result of better student behavior.”
- “Teachers now have taken control of the school. Marshall is a better school with structure for learning.”
- “I have gained more instructional time with the students and have learned to be more patient and organized teacher. My room is more organized. I have fewer disciplinary problems.”
- “Students with disruptive behavior have shown significant improvement.”

B) The Newark Study: Pretest and Post-Test Comparisons: Matched Group Analyses

CMCD Impact on Math Scores

As shown in Table 2, the CMCD students, at the end of the first project implementation year, significantly outperformed their comparison cohort in math on the Stanford-9 test. This improvement in math performance among the students occurred even though the math component of the PG model had not yet been installed. As indicated by changes in the pretest and adjusted average/mean scores, the PG students experienced a 15% performance increase in their math scores by the end of the first year, while the comparison students in non-Project GRAD schools suffered a 7% decline in their math scores.

Table 2. CMCD Cohort: **1998-99 Third Grade** and **Non-CMCD Comparison Cohort: Pre-CMCD (1997/98) Stanford-9 & First-Year (1998-99) Stanford-9 Math NCE Scores**
ANCOVA of Independent and Dependent Variables

Cohort Groups	1997-98 Std.Dev.	1998-99 Std.Dev.	1997-98 Stanford Group Mean	1998-99 Unadjusted Stanford Group Mean	1998-99 Adjusted Stanford Group Mean	F	Effect Size	Post-Test Percentile level of PG Group's Average Student (50 th at pre-test)
Shabazz Feeder Group I (n=228)	20.20	21.49	48.06	55.20	55.09	52.26*	0.53**	70th
Comparison Cohort (n=228)	19.88	20.58	47.74	44.05	44.16			

* Significant $p < 0.05$ ($p = 0.000$ for Math) ** Effect Size 0.2 is considered a small positive effect; 0.5 a medium/moderate effect; 0.8 a large effect (Cohen, 1988).

The increased performance in math among the CMCD/PG students outpaced that of the comparison students. The improvement was statistically significant, with a medium effect size of 0.53. An effect size of 0.53 indicated that the average percentile score (50th percentile) of the PG students, initially the same as that of the comparison cohort in 1997-98, increased to 70th percentile level at the end of the initial year of CMCD/PG implementation (i.e. 1998-99), while the average percentile score of the non-PG/PG group was at the 50th percentile.

CMCD Impact on Reading Scores

As shown in Table 4, at the end of the first project implementation year, the PG students outperformed their comparison cohort in reading on the Stanford-9 test. The CMCD students experienced a 3% performance increase in their reading scores by the end of the first year, while the comparison students in non-Project GRAD schools suffered an 8% decline in their reading scores. Since the SFA reading program was not implemented in PG schools during the first year, the increased performance could be attributed to the CMCD component.

The increased performance difference between PG students and the comparison students was statistically significant and had an effect size of 0.26, indicating that the average reading percentile score (50th percentile) of the CMCD/PG students, initially the same as that of the comparison cohort in 1997-98, increased to the 60th percentile level by the end of the initial year of Project CMCD's implementation, while the average percentile score of the non-PG group was at the 50th percentile.

Table 4. CMCD Cohort **1998-99 Third Grade** and **Non-CMCD Comparison Cohort: Pre-CMCD (1997/98) & First-Year (1998-99) Stanford-9** Reading NCE Scores
ANCOVA of Independent and Dependent Variables

Cohort Groups	1997-98 Std.Dev.	1998-99 Std.Dev.	1997-98 Stanford Group Mean	1998-99 Unadjusted Stanford Group Mean	1998-99 Adjusted Stanford Group Mean	F	Effect Size	Post-Test Percentile level of PG Group's Average Student (50 th at pre-test)
Group I(n=228)	18.59	19.78	43.98	45.14	45.08			
Comparison Cohort (n=228)	18.70	17.27	43.81	40.17	40.23	15.73*	0.26**	60th

* Significant $p < 0.05$ ($p = 0.000$ for Reading) ** Effect Size 0.2 is considered a small positive effect; 0.5 a medium/moderate effect; 0.8 a large effect (Cohen, 1988).

Conclusion

A review of the preceding qualitative and statistical analyses of the effects of CMCD on vital psycho-social moderators/factors that directly or indirectly affects student learning reveals how inner-city schools can benefit from CMCD practices. As many educators are aware, the multitude of factors that directly affect student achievement in the inner-cities makes it virtually impossible to apportion values to the individual factors that affects student learning. The question is: “In order to improve math achievement, how can one assign various “weights” or values to factors such as the role of the principal, the quality of the math program, the teaching skills of teachers, the motivation levels of students, the participation levels of teachers, quality of teacher-student relationships, the extent of parental appreciation and involvement in the schooling process, the level of student behavior and discipline, etc. As some educators have mentioned, the challenges is indeed a giant puzzle in the inner city. As biological researchers have indicated, to every ecosystem, where plant growth is to be enhanced, it is vital for one to identify the “limiting factor” and how more or less of the factor controls the extent or speed of growth. In many cases, in inner city school systems, it may difficult to identify the limiting factor, or there may be a host of limiting factors of which addressing one without addressing other limiting factors may lead to the non-achievement of the goals of the curriculum. It is therefore important that administrators of school reform in the inner-cities refrain from “band-aid approaches,” by adopting much more comprehensive reform models such as the Project GRAD Model, to ensure that the package is comprehensive, like a cafeteria restaurant, where different needs, tastes, are met to the collective satisfaction of all patrons. And, with the many benefits and factors that CMCD is capable of enhancing, whether it is student motivation, engagement, attendance, academic performance, student behavior/discipline, teacher morale, parental involvement, available time-on-task, the CMCD program could be implemented as a stand-alone program or as a vital part of a comprehensive set of programs.

Even though lack of test data for year two of the Newark cohort, and the implementation of Success for All (SFA) in the second implementation year hampered any follow up analysis that could directly relate to CMCD effects, the boost in student achievement in math and reading during the first year clearly demonstrated that student behavior/discipline and engagement, or teacher skills pertinent to the needs of inner-city children were limiting factors in Newark. For, as the limiting factors were enhanced, student performance in math and reading accelerated.

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