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The Effect of Communities In Schools on High School Dropout and Graduation Rates: Results From a Multiyear, School-Level Quasi-Experimental Study

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Communities In Schools, Inc. (CIS) is a nationwide initiative designed to connect needed community resources with schools to help students, particularly those identified as at-risk, successfully learn, stay in school, and prepare for life. As part of a comprehensive 5-year national evaluation of CIS, ICF International conducted a school-level quasi-experimental study on 123 CIS high schools and 123 matched comparison high schools, using public use data from 7 different states. The study examined the differences in high school dropout and graduation rates between CIS and its comparison schools over a 4-year period, starting from the year prior to CIS implementation to 3 years after implementation. Our analyses showed that CIS high schools made stronger gains in on-time graduation rates, and had greater reductions in dropout rates, than comparison schools over the same period. Results were considerably stronger for CIS schools that implemented the CIS model with a high degree of fidelity.

In recent years, there has been movement in the youth development field to focus on how collaboration between organizations can better serve children and families. Many researchers recognize that solving the complex problems of today's youth and families in piecemeal fashion is not ideal, and comprehensive services addressing multiple needs are more likely to produce positive outcomes (Jehl, Blank, & McCloud, 2001; Lockwood, Stinnette, & D'Amico, 1996; Yost, 2000). The majority of past research, however, has mainly focused on the effects of single-service interventions providing nonintegrated support services to youth and has demonstrated their positive impact on student behavior (Connell, Gambone, & Smith, 2000).

Roth and Brooks-Gunn (2000) found that programs incorporating principles of a youth development framework (positive-behavior focused; problem-behavior focused; and resistance skills-based) showed greater positive impacts on reducing mental health and behavioral problems, decreasing adolescent risk-taking behaviors, and increasing adolescent capabilities. In addition, several characteristics have emerged as being vital to a successful youth development intervention: social and emotional support from adults; opportunities to belong to a support structure; promotion of prosocial norms (e.g., community service components); opportunities

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to experience mastery and to engage in activities that matter; skill building; integration of family, schools, and communities; physical and psychological safety; and a clear, well-executed structure (Eccles & Templeton, 2001). The National Research Council suggested that programs for youth offered by more than one organization—in schools, community centers, or both—that focus on different areas of interest and through different kinds of curricula provide the greatest opportunity for young people to acquire personal and social assets (National Research Council & Institute of Medicine, 2004).

Schools also benefit from the involvement of families and the community in youth education because they receive additional support and input, enabling schools to identify and provide more comprehensive services for students (Epstein & Salinas, 2004). In short, support has been growing in the youth development field for community-based integrated student services, which are designed to provide a more comprehensive support structure for at-risk students struggling with academic, behavioral, health, and/or other issues.

Research has shown that approximately a quarter of adolescents in the United States are at risk of not achieving "productive adulthood," described as the essential social networks that help students transition into adults (Eccles & Gootman, 2002). In thousands of schools across the country, students are not meeting their academic potential and are leaving school before graduation. Balfanz and Legters (2007) estimated that 7,000 students drop out of school every day and 1.2 million students drop out of school each year. The Center for Social Organization of Schools at Johns Hopkins University found that many of these students are leaving from so-called *dropout factories*, schools in which the freshman class shrinks by 40% or more by the time students reach their senior year. Balfanz and Legters (2004) reported that a school with a majority of minority students is five times more likely to be a dropout factory than a majority White school, and that 46% of African American and 39% of Hispanic students attend schools where graduation is not the norm. According to Balfanz and Legters (2007), Florida, Texas, and Georgia have the largest number of dropout factories. Risk factors for dropping out include poor attendance and academic preparation, which leads to course failure and eventual grade retention (Allensworth & Eaton, 2007).

Recent studies have highlighted the importance of community collaboration and involvement for addressing the dropout problem. Strong partnerships between the school and community are fostered by sharing resources and expertise, as well as working together to design a program that meets the needs of students (Hammond, Linton, Smink, & Drew, 2007; What Works Clearinghouse, 2009). Community partnerships have been shown to be valuable to schools because they provide students access to social services, create unique learning opportunities, and promote opportunities for students to develop new relationships (Sanders, 2003; Sheldon & Epstein, 2005).

Organizations such as Communities In Schools (CIS) are aware that basing these collaborative efforts in the school is an effective way to reach disadvantaged students and their families. CIS is a nationwide initiative designed to connect students and their families to critical community resources, and operates on the principle that every young person needs five basics: (1) a one-to-one relationship with a caring adult; (2) a safe place to learn and grow; (3) a healthy start in life; (4) a marketable skill to use upon graduation; and (5) a chance to give back to peers and community. CIS has a particularly strong presence in the states with a high proportion of dropout factories, including Texas, Florida, and Georgia.

The CIS model includes conducting annual school-level and student-level needs assessments, developing comprehensive site plans to address identified needs, and providing a combination of integrated prevention and intervention services. Specifically, the annual implementation of the CIS model is led by a designated site coordinator who conducts an assessment to identify and prioritize overall school needs. A site operations plan is then developed to deliver a combination of evidence-based prevention and intervention services. These services are designed to mitigate specific risk factors that increase the likelihood of students eventually dropping out of school and are delineated as Level 1 and Level 2 services. Level 1 services (prevention services) are generally short term in duration and are intended to address schoolwide needs (e.g., school health fairs, motivational speakers). Level 2 services (intervention services) are targeted and sustained for longer periods of time through an integrated case management process (e.g., individual counseling, home visits, providing free eye exams to students). During the school year, the CIS site team regularly monitors and adjusts services as needed to maximize effectiveness and impact. At the end of the school year, the CIS site team evaluates the extent to which school-level and student-level goals were achieved. These results and other assessment data drive planning for the next year.

This study was conducted as part of a comprehensive 5-year national evaluation of CIS. The national evaluation study used multiple studies to triangulate evidence to understand the impact of CIS, with a specific focus on high schools that implemented the program for at least 3 consecutive years. This investigation is a quasi-experimental design intended to examine the effects of CIS on graduation and dropout rates at the secondary school level. The evaluation team also examined how CIS schools that implemented the model with a high degree of fidelity differed from lower implementing schools on key outcomes. Additional studies that have been conducted as part of the CIS National Evaluation include a natural variation study to determine key factors that differentiate high-performing CIS schools from others; an external comparison study to determine how operations can be strengthened in large-scale youth-serving organizations; a series of eight case studies; and three randomized controlled trials. Results from these studies will be released in the near future.

METHOD

Sample

From 1996 to 2006, 3,325 schools were served by CIS, and 748 schools implemented CIS for at least 3 consecutive years between 1999 and 2006. To reduce the burden of data alignment across states, the evaluation team limited the sample to the seven states where CIS has the greatest presence: Florida, Georgia, Texas, Michigan, North Carolina, Pennsylvania, and Washington. The sample of schools served by CIS for 3 consecutive years included 398 elementary schools, 205 middle schools, and 145 high schools. This study reports findings at the high school level.

Four cohorts of CIS schools were studied, with cohort membership dependent on the baseline year (i.e., the year prior to CIS implementation at a given school). That is, all Cohort 1 CIS schools started implementing their programs during the 1999–2000 school year; Cohort 2 CIS schools began during the 2000–2001 school year; Cohort 3 CIS schools began their implementation during the 2001–2002 school year; and Cohort 4 CIS schools started in the 2002–2003 school year.

Procedure

To evaluate CIS' effectiveness at the high school level, a propensity score matched-pair sample of high schools using optimal matching techniques was created. Propensity score matching techniques have been widely used for constructing comparison groups in nonexperimental designs using observational data (Shadish, Cook, & Campbell, 2003). The propensity score, defined as the conditional probability of being in a group receiving a treatment given the covariates, can be used to simultaneously control for many variables that potentially confound the relationship between a specific outcome and the treatment. Specifically, a computerized algorithm, *Optimal Match*, which draws on the work of Rosenbaum (1989) and Rubin and Thomas (1992), was used to match CIS schools to non-CIS schools within each of the seven states on several pre-implementation characteristics: urbanicity, attendance rate, number of students receiving free lunch, number of students with special needs, total number of students in the school, percentage of students passing the state Math test, percentage of students passing the state English Language Arts test, racial composition, and dropout rate for high schools. Urbanicity was measured using the Common Core of Data school locale code. Schools in large and mid-sized cities were classified as *urban* schools; schools located in the urban fringe of a large or mid-size city or in a large town were defined as *suburban* schools; and schools in small towns and rural areas were categorized as *rural* schools.

The logic behind the matching process was to find comparison schools that, based on their characteristics, would have had a similar chance of implementing CIS, but did not. To study all selected CIS high schools at the same stage of development, the selected matching variables were drawn from baseline data from one year prior to the year of CIS implementation at a given school. As a result, within each state, a separate matching procedure was followed for each of the four cohorts of CIS schools. As shown in Table 1, baseline matching variables were drawn by cohort membership from the 1998–99 school year for Cohort 1, through the 2001–2002 school year for Cohort 4.

Of the 145 schools that were part of the study, 123 schools (36 rural, 38 suburban, and 49 urban schools) were successfully matched to non-CIS high schools within the same state. Although CIS high schools were matched within each state based on their cohort membership, the evaluation team combined all four cohorts of CIS schools and their derived matches for the outcome analysis. CIS schools and their matched pairs with complete data qualified for the outcome analyses, which used proxy measures of dropout and graduation as dependent variables. Additional detail on the matching variables and outcome measures follows.

TABLE 1
CIS Baseline and Implementation Years by Cohort

Cohort Membership	*Pre-CIS Implementation School Year*	*CIS Implementation School Year*	*End of 3-Year Implementation*
Cohort 1	1998–1999	1999–2000	2001–2002
Cohort 2	1999–2000	2000–2001	2002–2003
Cohort 3	2000–2001	2001–2002	2003–2004
Cohort 4	2001–2002	2002–2003	2004–2005

Note. CIS = Communities In Schools, Inc.

Measures

Matching variables. The variables for the propensity score matching procedure were drawn from the National Center for Education Statistics' Common Core of Data and State Department of Education Web sites and offices. Specifically, the number of students eligible for free lunch, the total number of students in a school, and student racial/ethnic composition were drawn from the National Center for Education Statistics' Common Core of Data. State Departments of Education provided data on school academic performance, attendance rates, and—for some states—data on the number of students with special needs. CIS State Offices also assisted data collection efforts by working with their respective State Department of Education to obtain data that were not publicly available in some cases.

Outcome variables. For the outcome analyses, incomplete data, along with differences in how dropout and graduation rates were measured and defined, made large-scale alignment of these variables across all seven states quite complicated. The evaluation team had to align data both within states across time (because variable definitions changed in some cases) and between states over time (because many states defined outcomes differently). With no standard method for counting and reporting dropouts across states, the evaluation team estimated dropout rates using the Promoting Power metric, which compares the number of 12th graders in a high school to the number of 9th graders 3 years earlier (Balfanz & Legters, 2004). This measure was preferred to state-reported dropout rates because it allowed for a common metric to be compared across states using school enrollment numbers reported to the National Center for Education Statistics, available through their Common Core of Data (CCD). The basic formula for promoting power is:

$$\frac{\text{Number of 12th graders enrolled in Year } Y}{\text{Number of 9th graders enrolled in Year } (Y-3)} = \text{Promoting Power (dropout rate)}$$

For reference, Balfanz and Legters (2004) described a school with promoting power of under 60% as a *dropout factory*.

Because each state also calculated graduation rates differently, the Cumulative Promotion Index was used as a proxy for actual graduation rates. The Cumulative Promotion Index is a measure of on-time graduation, and represents the steps on a student's way to graduating from high school: promotion from 9th to 10th grade, from 10th to 11th grade, from 11th to 12th grade, and receiving a high school diploma (Swanson, 2003). The formula for the Cumulative Promotion Index is:

$$\frac{\text{Grade 10 enrollment Year } Y}{\text{Grade 9 enrollment Year } (Y-1)} \times \frac{\text{Grade 11 enrollment in Year } Y}{\text{Grade 10 enrollment Year } (Y-1)} \times \frac{\text{Grade 12 enrollment in Year } Y}{\text{Grade 11 enrollment Year } (Y-1)} \times \frac{\text{Graduations in year } Y}{\text{Grade 12 enrollment in Year } (Y-1)} = \text{GRAD RATE}$$

By comparing these steps to enrollment figures from the previous year, the Cumulative Promotion Index captures the process of completing school and the chances of completing

school on time with a regular diploma. Enrollment numbers were drawn from the Common Core of Data and graduation figures were retrieved from State Department of Education Web sites.

Analyses for each outcome measure utilized a difference-in-difference approach; that is, measuring the net difference between the change score of the CIS group from baseline to 3 years post-implementation and change score of the comparison group across the same period. The Hedges' *g* formula was used to calculate effect sizes for this analysis. Repeated measures ANOVA was also used to measure the significance of change within each group across the 4-year study period.

Subgroup analyses were conducted to determine whether schools that implemented the CIS model with a high degree of fidelity had stronger outcomes than CIS schools that did not.

TABLE 2
Fidelity of Implementation Rubric

Domain	*Question*	*Scoring*
Needs assessment domain	• Does CIS conduct a needs assessment (L1 and L2)?	• Yes: 5 pts; No: 0 pts.
	• How often are needs assessments conducted (L1 and L2)?	• More than once a year: 5 pts.; Once a year: 3 pts.; Less than once a year: 1 pt.
	• Types of information used for identifying needs (L1 and L2).	• 1 pt. for each type of information used (max 5 pts.).
	• Types of information for prioritizing overall needs (L1 and L2).	• Student and external factors: 5 pts.; Student needs only: 3 pts.; External factors only: 2 pts.; No needs assessment: 0 pts.
Planning domain	• Does CIS have an annual operations plan (L1 and L2)?	• Yes: 5 pts.; No: 0 pts.
	• What is included in the annual operations plan (L1 and L2)?	• 1 pt. for each type of information used (max 5 pts.).
Referrals domain	• How are students referred to CIS for targeted and sustained interventions (i.e., Level 2 services)?	• Internal, external, and self: 5 pts.; 2 of 3 sources used: 3 pts.; 1 source used: 2 pts.; No referrals: 0 pts.
Service delivery domain	• How many of the 5 basic needs are addressed with Level 1 and Level 2 services?	• 1 pt. for each of the 5 basics covered
	• Percentage of students in school who receive Level 1 services from CIS.	• Above 75%: 5 pts.; 50% to 75%: 3 pts.; 25% to 49%: 2 pts.; 1% to 24%: 1 pt.; 0%: 0 pts.
	• Percentage of students in school who receive Level 2 services from CIS.	• Above 5%: 5 pts.; 1% to 5%: 3 pts.; 0%: 0 pts.
	• How much time site coordinator spends coordinating CIS services.	• 100%: 5 pts.; 76–99%: 4 pts.; 50–75%: 3 pts.; 26–50%: 2 pts.; 1–25%: 1 pt.; 0%: 0 pts.
Monitoring and adjustment domain	• How often does CIS review student progress (L1 and L2)?	• More than once/grading period: 5 pts.; Once per grading period: 3.5 pts.; Once per semester: 2.5 pts.; Once per year: 1 pt.; Never/less than once/year: 0 pts.

Note. CIS = Communities In Schools, Inc. Questions denoted with *L1* and *L2* indicate that the same question was asked regarding Level 1 (whole-school) and Level 2 (case managed, sustained) services. Scoring was conducted separately for each level of service.

Fidelity was measured using results from a survey that was administered to CIS site coordinators in May 2007, and 76 CIS high schools had valid responses. This effort was particularly valuable because it provided a framework to assess CIS National's recently-developed Total Quality Standards, as well as a framework to assess the value-added of the CIS model itself.

The evaluation team developed a 19-item rubric to categorize CIS schools into two groups based on their adherence to the CIS model: *high implementers* and *partial implementers*. This rubric, which had acceptable levels of internal consistency ($\alpha = .834$), included five domains: planning, referrals, needs assessment (which includes site coordination), service delivery, and monitoring and adjustment in their programs (Table 2). Fidelity measures from the Site Coordinator Survey were selected through a review of CIS National's Total Quality Standards, and were scored using a rubric that was vetted to the National Evaluation's Implementation Task Force, comprised of CIS practitioners who advised the national evaluation team on a wide variety of subjects. High implementers were defined as CIS schools that delivered programs with 70% or higher fidelity to the ideal CIS program model. Partial implementers delivered programs with less than 70% fidelity. This cut point was developed by analyzing breaks in the distribution of implementation scores, and through discussions with CIS staff to determine how much tolerance the CIS model had to local modifications.

RESULTS

Matching and Outcome Results for Promoting Power

Based on data available from 1998 to 2005, 82 CIS schools and their matched comparison schools had complete data on promoting power, which resulted in an analysis sample of 164 schools (82 CIS schools and 82 matched non-CIS schools). The analysis sample of CIS and their paired non-CIS high schools were examined on the following baseline characteristics used in the matching process: urbanicity, number of students receiving free lunch, total number of students in the school, racial composition, and promoting power. CIS schools and their comparison schools in the analysis sample were similar on baseline characteristics (Table 3). Effect sizes were calculated for each baseline variable by taking the difference in means and then dividing that number by the pooled standard deviation.

On average, both groups were located in relatively large high schools, predominantly serving Hispanic and African American students. The majority of the schools were in large or mid-sized cities (38%), followed by rural (35%) and suburban (27%) sites. The only notable (but not significant) baseline difference between CIS and comparison schools was that CIS had a larger proportion of the student body receiving free lunch. In CIS high schools at baseline, 38% of students, on average, were eligible for free lunch and 32% of students in non-CIS schools were eligible for free lunch during the same period. On our main outcome of interest, promoting power, no systematic pre-implementation differences were found.

The mean change in promoting power from baseline to the 3rd year of implementation for the CIS group was compared to the mean change in promoting power over the same period for the comparison group. As shown in Table 4, after 3 years of CIS presence in a high school, promoting power increased by 2.4% from baseline. By contrast, the comparison group

TABLE 3
Promoting Power Analysis Sample: Baseline Characteristics of CIS and Non-CIS High Schools

	CIS		*Non-CIS*		
Characteristics	*M*	*SD*	*M*	*SD*	*Standardized Mean Difference (Effect Size)*
Urban schools	31	—	31	—	0.00
Rural schools	29	—	29	—	0.00
Suburban schools	22	—	22	—	0.00
School enrollment	1,435	729	1,356	713	0.11
White	50.8%	29.5%	52.8%	31.0%	0.06
Hispanic	17.5%	30.0%	16.7%	29.6%	0.02
Male	47.7%	11.5%	47.5%	11.5%	0.02
Promoting power	60.5%	14.9%	61.3%	14.9%	0.06
Free lunch	37.7%	21.4%	32.2%	20.2%	0.23

Note. CIS = Communities In Schools, Inc.

reported a small increase of 0.7% in promoting power from baseline to 3 years after implementation. Comparing the difference in the gains between the two groups resulted in an effect size (ES) of 0.21.

Within-subject repeated measures ANOVA analyses were conducted for CIS and non-CIS schools to examine whether rates of promoting power changed significantly across time. The evaluation team also examined if the repeated measures met the normality assumption, and if the assumption of sphericity was satisfied. In both analyses, the skewness and kurtosis of the repeated measures met the normality assumption. However, although the assumption of sphericity was satisfied for the within-subject repeated measures ANOVA for the CIS group of schools; Mauchly's $W(5) = .90$, $p < .156$; the assumption of sphericity was not met for the non-CIS group; Mauchly's $W(5) = .52$, $p < .001$. Degrees of freedom were, therefore, corrected using Greenhouse-Geisser estimates of sphericity (epsilon = 0.68).

Figure 1 depicts mean growth in promoting power from baseline to the 3rd year of data collection. The repeated measures ANOVA analyses showed that in the 3 years following implementation of the CIS program, CIS high schools demonstrated positive improvements in promoting power; $F_{(3,\ 324)} = 2.58$, $p = .058$; and that the effect of CIS increased linearly with

TABLE 4
Promoting Power Rates for CIS vs. Non-CIS Schools, Baseline Through Three Years Post-Implementation

		Time				*Net Difference: CIS Over Comparison*
		Pre	*Post1*	*Post2*	*Post3*	
CIS	Mean	60.5	61.8	61.6	62.9	
	SD	14.9	14.1	13.5	15.0	+2.0
Non-CIS	Mean	61.3	61.3	61.7	62.0	
	SD	14.9	15.1	14.5	15.5	

Note. CIS = Communities In Schools, Inc. All values represent percentages.

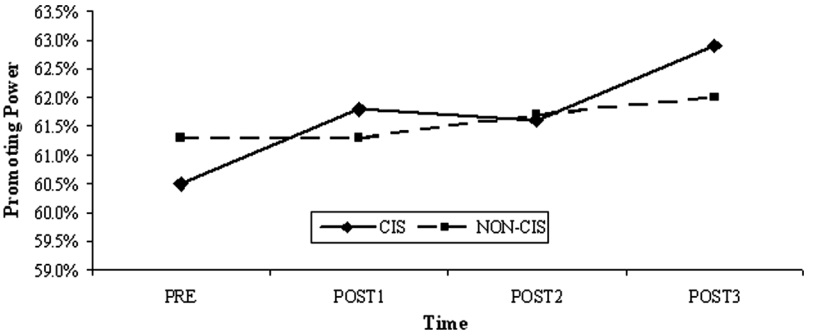

FIGURE 1 Promoting power for Communities In Schools, Inc. (CIS) and non-CIS high schools.

time; $F_{(1,\ 81)} = 5.48$, $p = .022$. By contrast, comparison high schools did not report notable progress toward keeping students in school; $F_{(2.04,\ 165.58)} = .335$, $p = .720$.[1]

The CIS sites identified as high implementers demonstrated greater success over time on increasing promoting power than their matched (non-CIS) comparison schools. As shown in Table 5, in the 3 years following implementation of the CIS program, promoting power of high implementers increased 2.8%, yet promoting power of non-CIS schools decreased slightly by 0.8%, for a net difference of +3.6% ($g = 0.36$). CIS partial implementers (i.e., schools that implemented the model with a lower degree of fidelity) still outperformed their comparison sites (net difference = +1.5%); however, net differences of CIS over comparison sites were still more than twice as high among high implementers.

Matching and Outcome Results for Graduation

From the 123 matched schools in the baseline sample, 90 CIS high schools (and their matched comparison sites) had complete data on graduation (i.e., Cumulative Promotion Index) and were included in this analysis. This yielded an analysis sample of 180 schools (90 CIS and 90 matched comparison schools). Table 6 includes the means and standard deviations for each baseline variable for the analysis sample. Prior to CIS implementation, a plurality of CIS and non-CIS schools was located in urban areas (42%) and more than half of the student population was from minority groups. The average percentage of students eligible for free lunch was slightly higher for CIS schools (40%) than for comparison schools (36%) at baseline; however, this difference was not statistically significant. Prior to CIS implementation, CIS and non-CIS schools did not differ significantly on any other characteristic, including graduation rates.

On average, CIS schools increased their graduation rates by 1% after 1 year of CIS implementation whereas graduation rates in comparison schools decreased by a similar amount (Table 7). Although no notable changes in graduation rates were observed in the 2nd year of

[1]One-way repeated measures ANCOVA was also conducted for between group differences on both outcomes of interest with an interaction term of *treatment* × *time*. For both outcomes, the interaction term was not statistically significant. Promoting power: $F(2.46, 439.34) = .181$, $p = .872$. Graduation: $F(2.57, 417.31) = .638$, $p = .567$.

TABLE 5
Promoting Power Findings by Level of Implementation

		Time				
		Pre	*Post1*	*Post2*	*Post3*	*Net Difference*
High implementers (CIS schools)	Mean	62.9	63.5	64.2	65.7	
	SD	17.6	17.5	17.5	19.5	+3.6
Comparison schools for high implementers	Mean	62.2	60.5	59.9	61.4	
	SD	17.0	18.9	18.1	19.2	
Partial implementers (CIS schools)	Mean	57.2	58.2	59.2	60.7	
	SD	12.9	12.8	12.7	12.0	+1.5
Comparison schools for partial implementers	Mean	60.0	58.9	63.0	62.0	
	SD	13.8	12.8	16.7	16.8	

Note. CIS = Communities In Schools, Inc. All values represent percentages.

TABLE 6
Graduation Analysis Sample: Baseline Characteristics of CIS and Non-CIS High Schools

	CIS		*Non-CIS*		
Characteristics	*M*	*SD*	*M*	*SD*	*Standardized Mean Difference (Effect Size)*
Urban schools	38	—	38	—	0.00
Rural schools	21	—	21	—	0.00
Suburban schools	31	—	31	—	0.00
Free lunch	40.3%	21.3%	35.8%	21.6%	0.19
School enrollment	1,632	723	1,593	796	0.05
White	25.9%	26.4%	24.5%	28.7%	0.03
Hispanic	45.0%	29.8%	47.4%	34.1%	0.07
Male	26.3%	33.5%	25.4%	34.4%	0.02
Promoting power	48.5%	9.6%	48.4%	9.8%	0.01
Free lunch	55.5%	18.2%	56.2%	18.5%	0.03

Note. CIS = Communities In Schools, Inc.

TABLE 7
Cumulative Promotion Index (On-time Graduation Rates) for CIS vs. Non-CIS Schools, Baseline Through Three Years Post-implementation

		Time				*Net Difference: CIS Over Comparison*
		Pre	*Post1*	*Post2*	*Post3*	
CIS	Mean	55.5	56.6	56.3	55.7	
	SD	18.2	18.8	22.3	22.9	+1.7
Non-CIS	Mean	56.2	55.5	55.6	54.6	
	SD	18.5	20.5	23.7	22.8	

Note. CIS = Communities In Schools, Inc. All values represent percentages.

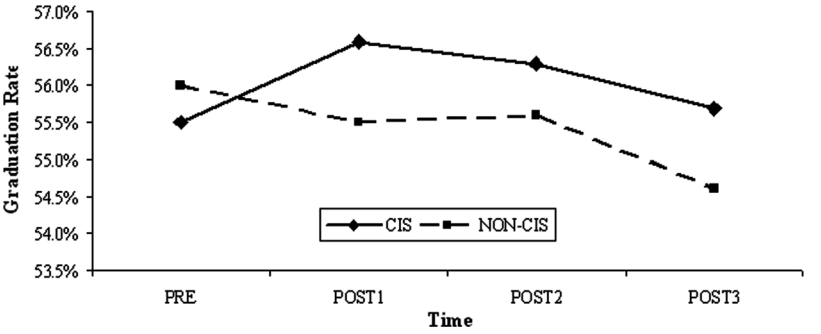

FIGURE 2 Graduation rates (CPI) for Communities In Schools, Inc. (CIS) and non-CIS high schools.

implementation, both CIS and their comparison high schools experienced a decrease in graduation rates in the 3rd year of the study. Although CIS schools reported a small increase of 0.2% in graduation rates, comparison schools declined by 1.6% over the same period, resulting in a net difference of +1.7 percentage points favoring the CIS group ($g = 0.08$).[2]

Figure 2 depicts the change in graduation rates for CIS and non-CIS schools across the 4 years of the study. Within-subject repeated measures ANOVA analyses were conducted to examine whether CIS and non-CIS schools experienced significant changes in their graduation rates across time. In both analyses, the skewness and kurtosis of the repeated measures met the normality assumption. The assumption of sphericity was not met for CIS; Mauchly's $W(5) = .55$, $p < .001$; and non-CIS group; Mauchly's $W(5) = .63$, $p < .001$. The degrees of freedom for the CIS group were corrected using Greenhouse-Geisser estimates of sphericity (epsilon = 0.70), and for the non-CIS group the degrees of freedom were corrected using Huynh-Feldt correction (epsilon = 0.81). Over the 4 year study period, CIS schools showed a slight (but not statistically significant) improvement in on-time graduation rates from their pre-implementation values; $F_{(2.12,\ 188.86)} = .120$, $p = .898$. Non-CIS comparison schools showed a decrease in on-time graduation rates across time but this change was also not significant; $F_{(2.44,\ 217.45)} = .257$, $p = .816$.

Among high implementers, graduation rates increased by 8.6% across the 3 years following CIS implementation (Table 8) with a sizeable increase of 6.2% in the first year. The net difference for high implementers above their comparison sites is +4.8% ($g = 0.31$). Partial implementers also reported greater growth in graduation rates than their non-CIS comparisons across all 3 post-implementation years. The net difference in graduation rates between CIS partial implementers and their comparison schools is +2.5% in favor of CIS, or about half the difference between high implementers and their comparisons. Although partial implementers did not outperform their comparisons by as much as high implementers did, graduation rates still increased substantially (+4.2%) among partial implementers after the first year of the program.

[2]Please note that as a result of rounding, some reported net difference values differ slightly from the values generated by calculating net differences from the trend plots.

TABLE 8
Cumulative Promotion Index Findings by Level of Implementation

		Time				
		Pre	*Post1*	*Post2*	*Post3*	*Net Difference*
High implementers (CIS schools)	Mean	56.8	62.9	65.1	65.4	
	SD	20.3	19.5	18.9	17.2	+4.8
Comparison schools for high implementers	Mean	56.5	55.1	60.7	60.3	
	SD	18.4	22.5	19.9	18.7	
Partial implementers (CIS schools)	Mean	50.5	54.7	56.1	53.2	
	SD	21.2	16.8	17.6	21.1	+2.5
Comparison schools for partial implementers	Mean	55.2	56.9	57.3	55.4	
	SD	17.4	20.9	22.7	22.8	

Note. CIS = Communities In Schools, Inc. All values represent percentages.

DISCUSSION

This school-level quasi-experimental study investigated the differences between schools providing community-based integrated student services though CIS and their matched schools for 3 consecutive years. With access to large amounts of existing state data, we were able to identify comparison high schools that were matched on numerous observed characteristics. The variables included in the within-state matches controlled for key anticipated biases on variables that historically are associated with dropout, such as free lunch and race/ethnic background of the student population.

In this study, we found that initiatives that aim to prevent student dropout by encouraging collaboration between schools and their surrounding communities can help keep students engaged in school and on track to graduation. Moreover, we found that CIS schools that implemented their programs with fidelity (e.g., conducting regular needs assessments, delivering services to a substantial portion of the school) had stronger outcomes than CIS schools that partially implemented the model. Although more research is needed to substantiate this claim, the implication of this study is that adherence to the CIS model appears to be associated with stronger outcomes, and this can be considered at least an initial validation of the CIS model itself.

Other studies have confirmed that community collaborative initiatives tend to reduce dropout rates while improving academic performance (Center for the Study of Social Policy, 1995; US General Accounting Office, 2000; Wardlow, 2009); however, these studies indicate that the act of forming community collaborations, per se, does not guarantee success in all situations. Rather, these relationships provide the foundation for increasing effective strategies and promoting achievement with other nurturing factors (Smink & Schargel, 2004). Greenberg and colleagues (2003) also explored the work of various researchers, academicians, and organizations in the fields of dropout prevention and positive youth engagement, including the National Dropout Prevention Center, The American Youth Policy Forum, and the Northwest Regional Educational Laboratory. Evidence from this research supports comprehensive programs that are committed to changing the school environment to make schools more conducive to student learning and success.

This study does have some shortcomings that we will address in future research. First, propensity score matching is limited in its reliance on observed variables. It is altogether possible that some unobservable factors (e.g., motivation to implement CIS within a school district) may account for at least part of the positive outcomes found in this study. Moreover, our sample size was limited because not all State Department of Education data could be aligned across all time points. As part of the National Evaluation of CIS, we recently completed three student-level randomized controlled trials, which, through randomization, equated groups on both observed and unobserved characteristics.

Our findings thus far have underscored the importance of maintaining fidelity to the CIS model, which is predicated on a strong needs assessment process, continuous monitoring, delivering targeted services, and ensuring that a wide range of student needs are being met. CIS produced modest gains overall at the school level (+2.0% for dropout, +1.7% for graduation), but when we consider that a 1.7% increase in graduation rates is equivalent to 10 additional graduates in a class of 600 students, these net gains may be considered quite substantial—and even more so when the CIS model is implemented with fidelity.

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