School Districts-University Partnerships: A College-Readiness Program

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Abstract

This paper reports on how ten school districts and a state university system address a state-funded college readiness program for high school student achievement in mathematics and English. It addresses in qualitative and quantitative detail: (a) the school-university partnership designed to decrease the number of high school students that require remedial coursework upon entering college; (b) the centrality of school and university faculty expertise with support systems to ensure a continuum for student learning outcomes; and (c) an evidence-based focus on student development and learning progress to meet high standards. Student development had the greatest effects on student outcome: senior students’ placement at the university improved dramatically, student retention rates increased considerably, and remedial math and English classes decreased substantially.

Perspectives and Theoretical Framework

The organizational development framework includes the structures, systems, and processes that work symbiotically together to effect improvement and organizational effectiveness. The seminal work on change theory conducted by Kurt Lewin (1943) prevails as the model for examining the school districts-university partnerships. Lewin, commonly recognized as the father of organizational development, was particularly influential in this work and also pioneered group dynamics and social change. Lewin’s Change Theory poses that patterns of any culture are subject to evolution over time as a result of external and internal forces which may create pattern altering events. To this effect, his theory embraces three stages: (1) unfreezing or being motivated to change, (2) unfrozen or moving to a new state, and (3) freezing or stabilizing the change. The ecological focus of Lewin’s Change Theory applies to the relationship that exists between high schools and universities and requires an examination of past and current educational environments. The intellectual framework for school reform and instructional leadership originates with Lewin’s work in organizational sociology which began as early as the 1930s (Owens & Valesky, 2007). Lewin’s work with the interplay between group dynamics and individual growth form the foundation of modern school improvement, reform and leadership efforts.
Furthermore, Edgar Schein (2004) proposed that if a leader does not take the time to understand the culture context of the work to be done, e.g. to undertake school reform efforts, or university-school district partnerships, then the culture would surely master the leader. The ecological perspective for this study calls for a social science comparison of shared patterns and assumptions that result from adaptation and integration, manifested through core beliefs and perceptions with the intensity to become a sustained effort.

Ladson-Billings (2009) stresses the importance of developing a compact by the school leaders, teachers and the curriculum being able to relate to the students so that they feel supported by and trusting in the educators and in the education institutions as contributors to the students’ growth. The ecological perspective in this study aims at the relationship between school and university leaders and family, and between high school and university faculties and students. They all are partnered in shared commitment to the education of the high school students in this 21st century. It is the concerted effort between and among school and university leaders that enables all parties to be of mutual understanding as to what that means. According to Ladson-Billings, when the parties to the compact are culturally and philosophically disparate, there can develop disconnects between expectations.

The low academic performance of struggling readers, English language learners and reluctant or apathetic students pose a major problem in the high school setting. High school students must be ready to participate in a rigorous academic program even though they may have had the time to prepare for the challenge. They often are not up to par with the literacy levels and academic demands of the secondary school curriculum (Carnegie Council on Advancing Adolescent Literacy, 2010; Short & Fitzsimmons, 2007). Consequently, most fail to develop to their fullest potential and become disaffected, drop out of school, having to settle for low paying jobs or none at all with no access to either high school or a college education (Johnson, Arumi & Ott, 2006).

There are many possible factors for the poor performance of struggling learners, but researchers point to the under-preparedness of mainstream teachers to meet their demands (Minaya-Rowe, 2002). Strickland and Alvermann (2004) suggest that much of the low achievement of minority students may be pedagogically induced or exacerbated. They remind us that the key contributing factor to the achievement gap is the differences in the quality of instruction students receive. Content teachers are among the most unprepared to teach struggling learners. To help these students succeed in each subject area, content teachers need to make the content comprehensible while also teaching rich language development, the academic English like vocabulary, complex syntax, and the reading and writing skills that make up the secondary curriculum (Alliance for Excellent Education, 2007).
Professional development practices for teachers of struggling students are described as shallow, fragmented, and lacking continuity (Téllez & Waxman, 2006). Darling-Hammond and Bransford (2005) suggest that for school improvement to take hold, stakeholders (e.g. teachers, administrators) need to play a key role in the improvement of instructional practice. Darling-Hammond, Meyerson, LaPointe, and Orr (2010) emphasize the importance of sustained, interactive and context-sensitive professional development practices that focus on the process by which teachers acquire the knowledge, skills, and attitudes necessary to be effective in classrooms. Furthermore, Fullan (2010) summarizes common findings in successful schools that include: forming a successful professional learning community, focusing on student work through assessment, changing their instructional practice accordingly to get better results, and doing all this on a continuing basis.

Historically, high schools and universities have often maintained an isolated working existence. Each did the job they considered necessary. Today it is crucial to change the status quo and the profession has realized that it is not only helpful but also imperative to work in close collaboration at equal levels of responsibility and mutual benefit to create a progressive college readiness program for all students. The collaboration moves from philosophy and theory to a model of planned change with a simultaneous plan of action undertaken by ten school districts with potential “early-college” schools working closely with three campuses of the Connecticut State University System to enhance the algebra and English skills of diverse students. In contrast to the last decades, there is now enough research to challenge the poverty of learning by making instruction relevant to high school students who must become the workers and citizens of a global society. The plan:

1. Examines the complex ecologies of the district, school and the university leadership roles to increase high school graduation and college preparedness rates both systematically and incrementally. Planning for such increase is about fundamentally and simultaneously changing three things: the values and beliefs of people, the conditions in which the work is done, and the ways in which people learn about the work. For school districts and universities to effect and sustain continuous improvement efforts for student achievement, they need to identify the antecedents to success and the challenges faced. The plan introduces positive change because the typical high school culture is not working for so many diverse students in the still prevailing mainstream school culture. It intervenes prior to college to have an impact on student retention and later student success in college.

2. Paves the way to converge equity, access to public higher education with high academic learning by adolescents with full participation of teachers, school and district administrators and university faculty. They respond to a new set of academic demands to compete in a global market and to the continuous changes of student demographic trends. The National Center for Education Statistics reports that between 2008 and 2017, the public school enrollment in the United States will grow from 50 million to 54.1 million students. Currently, 43 percent of students are minority, 20 percent of school-age children speak a language other than English at home, and at least 5 percent of native
speakers of English still struggle with communicating in their first language. This increasingly diverse student population brings forward a new set of challenges for educators as the system struggles to evolve quickly enough to serve its needs in a changing global economy. Graduation rates reflect that there is an educational crisis occurring in this country for children of color. Half of all African-American and Latino students do not graduate with a high school diploma. These figures reflect that 15 percent of high school students in these two demographic groups produce 50 percent of all dropouts.

3. Infuses critical race theory scholarship and practice frameworks to play a vital role in enacting socially just policies for educational leaders and policy makers to engage critically in education and challenge the poverty of learning. These leaders can advocate for closing the multiple achievement gaps that affect students of color across public school settings. Eleven percent of children in Connecticut live in poverty and another 26% live in low-income families (National Center for Children in Poverty, 2009). In other words, 37% of its children are economically disadvantaged, so Connecticut is not immune to the problems plaguing the nation. In fact, according to The State of Connecticut Public Education (Truscheit, 2010), Connecticut has the nation’s worst achievement gap between poor students and their wealthier peers. According to Ladson-Billings (2001, 2004), the focus on high-stakes testing and codified achievement has caused education to have a narrowly-defined goal of fitting students who have been constructed as “other” into a defined, hierarchical meritocracy, which in turn reproduces education inequities these students have always experienced. She contends that educational settings systematically oppress, exclude, and damage students of color (African American, Latino, etc.) rendering these settings devoid of “niceness” toward these student populations (Aleman, 2009, Yosso (2006).

4. Builds on solid human capital to align teacher quality and student learning and achievement, to embed processes of change in transformative teacher preparation and professional development programs, and to dismantle inequities. The plan meets the need for sustained professional learning communities for high school teachers to change their attitudes and classroom-based practice when serving diverse learners because a large proportion of them are poor and have difficulty accessing qualified teachers. The System’s goal is to create synergy and: (1) engage in a collaborative inquiry in how the ecological complexity of teacher effectiveness is handled at the school sites and campuses, and (2) contribute with potential solutions to the problem of under-achievement among diverse learners matching significant societal transformations with rigorous transformation in education.

5. Taking these factors into consideration, the professional development program focused on identifying instructional components that content teachers could integrate into their subject domain instructional delivery. The lesson components were based on research and integrated academic language and reading pedagogy across the mathematics and language arts disciplines. The idea is not that math and English teachers need to become reading and writing teachers, but rather that they need to emphasize the reading and writing practices that are specific to their subjects, according to the student’s reading level, specific strengths and needs, and academic English proficiency (Graham & Perin, 2007; Snow, Griffin, & Burns, 2005). The components are based on the following research framework: a) Depth and breadth of vocabulary correlates with reading proficiency (Kamil & Hiebert, 2005). The lesson delivery components include strategies to explicitly select and teach words that will pose difficulty for ELLs before, during and after reading (Beck, McKeown, and Kucan, 2002); b) Decoding and fluency practice in order to become good readers, to recognize words and comprehend a text at the same time (Nagy, 2008; Samuels, 2002). The greater the amount of attention extended to decoding, the less there is available for comprehension. The better the foundation struggling learners have in word recognition, the more focus they can give to overall meaning; c) The strategic processing of
text—comprehension skills and cognitive and metacognitive strategies—to engage students in text comprehension before, during and after reading a math and language arts text include: direct instruction, teacher modeling, and opportunities for partner and team practice of skills (Graves, 2000; National Reading Panel, 2000; RAND, 2002); d) Struggling students need modeling of every stage of the writing process for a variety of expository and narrative writing genres within a content area and the text structure of the targeted genre. They also need practice on language mechanics and editing in content area projects and portfolios that include academic writing (Genesee, Lindholm-Leary, Saunders, & Christian, 2006; Graham, & Perin, 2007).

Methods

This mixed methods study was designed to reveal how the partnership between a university system and school districts had an impact on high school student readiness for college and how it built capacity in both organizations to decrease the number of high school students that required remedial coursework upon entering college. The focus of the project was on intervention, not remediation and, as such, sought to develop mechanisms and procedures that (1) aligned high school and college curriculum and instruction and, (2) provided a collaborative framework for high school and university faculty to create instructional settings that promoted intellectual vitality and habits of mind within high school juniors and seniors.

Initial questions for the study were:

1. What are the most effective tools and processes to collaborate between university and high school faculties?

2. How can the transfer from algebra and English teaching in the high school classroom (teacher’s active instructional repertoire) to the university setting (faculty’s active instructional repertoire) impact diverse students?

3. What are those features of effective professional development, instructional delivery, teacher support systems, and assessments that interact to create the greatest effect on the academic achievement of high school students?

As the study progressed, more precise questions emerged for each of the substudies. Due to the large-scale of this multi-year 4-school study, this paper only highlights some of the aspects of each substudy such as the following:

1. How are reading comprehension and writing best taught and integrated into algebra and English in the high school classroom?
2. What are the collaborative roles of university and high school leadership and faculties in the partnership?

A series of papers and a forthcoming book will detail the partnership with the instructional leadership model. This particular paper reports on the holistic aspect of transfer from training and the impact high school and university faculties can have on students when they have a comprehensive professional development program that includes:

1. A three-day summer institute before school for presentation of research and rationale related to the teaching in the content area; demonstrations of content literacy instructional strategies for math and English; time to integrate all this into their lessons; and, how to establish and sustain collegial learning communities in their schools as well as with university faculty.

2. Follow-up refresher workshops to model strategies teachers want to see again or to delve deeper into some.

3. Coaching by the faculty in each teacher’s classroom for modeling a strategy with their students; co-planning lessons and co-teaching; observing the teacher and giving feedback on strengths and goals for the next observation.

4. Walkthroughs and mini-observations with the building administrator and coach(es) aligned with the effective professional development tools and the school’s evaluative model(s).

5. A requirement that all site coaches and administrators attend the institute or an abbreviated version on the instructional model and how to support teachers through their experimental phase, and to shadow the faculty during some observations in order to triangulate observational data and help coaches and administrators feel comfortable with the content literacy model.

**Data Sources**

A comprehensive evaluation with proximal and distal outcomes (e.g., knowledge gained in the mathematics and English classrooms as reflected on State mandated tests in each area and a group-administered, nationally-normed achievement test in both contents) were studied. Teacher and faculty instruction using observational codes that reflected the content and quality of instruction and treatment were observed. Teachers’ acquisition of the knowledge and skills taught in the university’s Summer Seminars were also assessed. That is, the college readiness program was evaluated through the complete professional development → teacher knowledge → instruction → student achievement loop. The loop from teacher knowledge to teacher behavior to student achievement measured both proximally and distally to the focus of intervention. Analyses were conducted in Grade 12 using an ANOVA model for students nested within class nested within teacher nested within school, with the intervention effect
estimated at the school level. Models of teacher and faculty behavior were examined to explain student outcomes and the intervention effect in terms of specific behaviors in the intervention condition to examine the relationship between fidelity to the program and student outcomes.

Participants

The target school districts are all located in urban areas and belong to the Demographic Reference Group I and H as established by the Connecticut State Department of Education. These are the poorest districts, with the highest percentages of single-parent families and families with a non-English home language, and the lowest percentages of parents with a bachelor’s degree and families in white collar or managerial occupations. Ten pilot high schools were selected to participate in this project. These schools represented the largest share of new freshman admission to the system. Minority student representation ranged from 98% to 47%. Those who passed the math state test were between from 3% to 39%, and reading and writing across the curriculum from 9% to 41%. Although over 90% of students who took the remedial English 101 course satisfactorily completed it, nearly a third of students who took the remedial math 101 course did not satisfactorily complete it the first time they took it and were required to repeat the course. Moreover, the number of students who were required to take a remedial math course was significantly greater than the number of students who were required to take a remedial English course (between 450 and 650 first-year students took a remedial math course in each of the past five years versus 125-165 remedial English students).

Four faculty members from the Mathematics Department and four from the English Department at each campus who taught students English or Mathematics in their freshman year paired with two faculty members from each high school. They arranged college placement exams at each high school, coordinated Summer Seminars and other training options, and established meeting and observation times at each location.

Results

This project proposed to test the notion that teacher quality correlates with student outcomes when teachers are given tools to gauge their own instructional progress as well as their students. There were large gains made by the schools that implemented the college-readiness professional development, lesson planning template, and observation protocol based on the template. Each aspect of the three-prong study will be briefly presented here.
The Professional Development Model. High school and university math and English faculties identified the needs of high school students and their teachers, researched and agreed upon the evidence-based strategies that worked with struggling learners in the content areas. They delineated their college-readiness professional development model and incorporated the strategies in the summer seminars. During the seminars math and English teachers developed a lesson template for planning lessons, for being observed and coached. The study is being conducted in 4 high schools. Preliminary results indicate that students in the three largest schools have significantly improved their chances to succeed in college. The high achievement of students is sustaining over time.

Four components of the college-readiness professional development program emerged: 1) A customized but comprehensive professional development model for strengthening reading comprehension and writing skills within algebra and English classrooms; 2) Coaching by university faculty with immediate feedback; 3) Because administrators and coaches became particularly interested in knowing how to observe and support instruction in content classrooms, the professional development sessions also included techniques on how to observe and coach teachers; and, 4) Participating conditions and collaborative roles of university and high school leadership and faculties in the partnership?

In the professional development summer seminars participants became familiar with and practiced the following activities:

1. Plan and design math and English lessons that focuses on the curriculum content plus strategies to teach academic vocabulary, reading skills, and integrate a peer-practice activity;
2. Deliver lessons (sequence, time on activities, pacing, complexity, etc.),
3. Reflect on the delivery and design of lessons (go back and check what was actually delivered, and the quality of each instructional event),
4. Record authentic performance of students to analyze how and where their own teaching is affecting success or not.

Teacher reflections through these four functions were triangulated with the data gathered with the same instrument by the teachers’ supervisors/coaches and the researchers, then matched with local standards and school/district/state assessments.

Student Outcomes. Results suggest that the college-readiness professional development model prepares math and English teachers to accelerate content learning especially with those students who read below grade-level and need extensive academic language development. Teachers used the evidence-based strategies to teach the standards-based curriculum while increasing students’ word knowledge, basic reading comprehension, English fluency, discussion skills, grammatical knowledge, and writing skills. They integrated the strategies in their lessons. Their lesson plans included: a) the content standards and background building; b) selected content vocabulary and taught it explicitly; c) development and practice of reading comprehension, discourse, and writing skills for content genre; and, d) assessment and monitoring tools. They also practiced professional
learning communities. The overall findings brought to light that teachers want to be active participants in the design, planning, implementation, and follow up of their own ongoing and sustained professional development efforts.

Tables 1, 2, and 3 below present the summary of the ANOVA tests on the SAT Math, SAT Verbal and GPA scores for each of the three experimental high schools that participated in the study. The GPA scores correspond to the first year at university and the partial results of the Fall 2009 semester. First, we see the descriptive statistics for the three variables. The mean average scores show an improvement since year 2007 when the study started. Then, the Analysis of Variance conducted shows that the differences are significant at an α level of .05, because the p value of the test is less than this level (p<.05). (Had the significance value been greater than .05, then there would not have been a significant difference, and hence no improvement in test scores.)

Table 1. Title Mean scores and Analysis of Variance results for High School 1

<table>
<thead>
<tr>
<th>School 1</th>
<th>2007 Academic year</th>
<th>2008 Academic year</th>
<th>Fall 2009</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>SAT average – Math</td>
<td>445</td>
<td>450</td>
<td>453</td>
<td>0.025</td>
</tr>
<tr>
<td>SAT average – Verbal</td>
<td>455</td>
<td>460</td>
<td>466</td>
<td>0.012</td>
</tr>
<tr>
<td>GPA average</td>
<td>2.50</td>
<td>2.52</td>
<td>2.54</td>
<td>0.037</td>
</tr>
</tbody>
</table>

Table 2. Mean scores and Analysis of Variance results for School 2
<table>
<thead>
<tr>
<th>School 2</th>
<th>2007 Academic year</th>
<th>2008 Academic year</th>
<th>Fall 2009</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>SAT average – Math</td>
<td>437</td>
<td>440</td>
<td>444</td>
<td>0.022</td>
</tr>
<tr>
<td>SAT average – Verbal</td>
<td>448</td>
<td>451</td>
<td>457</td>
<td>0.011</td>
</tr>
<tr>
<td>GPA average</td>
<td>2.47</td>
<td>2.49</td>
<td>2.52</td>
<td>0.045</td>
</tr>
</tbody>
</table>

Table 3. Mean scores and Analysis of Variance results for School 3

<table>
<thead>
<tr>
<th>School 3</th>
<th>2007 Academic year</th>
<th>2008 Academic year</th>
<th>Fall 2009</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>SAT average – Math</td>
<td>450</td>
<td>452</td>
<td>458</td>
<td>0.012</td>
</tr>
</tbody>
</table>
Furthermore, the percentage of students placed on academic probation for the three participating high schools has been tracked since 2007 when the program started. The ensuing findings show that there is a decreasing trend, from 50% in 2007 to 35% in 2009, of those students placed on probation as illustrated in Table 4 below.

Table 4. Three-Year Trend of Students Placed on Probation in Three Experimental High Schools (2007-2009)
Discussion

The findings of this study are consistent with aspects of the professional development reform movement. The results suggest that sustained, coherent, high-quality professional development addresses the daily challenges of teaching and improves student learning. Teachers are able to modify and enhance their practice through meaningful involvement and follow-up support systems. The type of follow-up support systems that have not changed in more than twenty years, such as coaching, need to (1) be part of a comprehensive program where content, language and literacy are integrated for math and English and all teachers; and, (2) where teachers and administrators that have struggling learners in their schools actively participate and support this type of professional development and coaching.

School improvement plans (SIPs) have clear and focused purpose: to improve student achievement by increasing the knowledge and skills of educators. Because most high school content teachers lack the training in the areas of academic language and reading pedagogy to teach academic content to struggling learners, it is imperative to provide opportunities for all teachers to develop the skills and knowledge necessary to teach these students on a continuous and coordinated fashion. Today, teachers want to feel secure that their school system and leader will be supportive and understanding. This reassurance comes from seeing their administration actively involved in all aspects of a sustained initiative such as this college-readiness effort. Once they see the leadership clearly setting whole-school learning as a priority, teachers are willing to participate. Many educators have asked us, “How do you get
high school content teachers to participate in interventions that deal with struggling learners?” Our response is that school leadership is essential. Their message is heard loud and clear by all their teachers, as was the case in these schools. Educating low-performing students for success in a complex world requires powerful learning by a whole school. Comprehensive learning, lesson study, and coaching can help educators change the culture of a school so that all students and teachers improve their learning – as evidenced by the three high schools highlighted above.

The intervention had a positive effect in the three high schools as graduates are better prepared to enter college. Significant results include: increased SAT scores, and a decrease in the number of high school students needing remedial coursework upon entering the university. Five years ago, between 51% and 55% of entering students were required to take a remedial course in either math, English, or both; for each of the past three years, that number has dropped to 35% of entering first-year students—an appreciable decline but still well above the national average.

The collaboration between high schools and universities regarding standards and expectations has many positive rewards for improving college proficiency for entering freshmen. The gains over the poverty of learning are numerically and descriptively clear as the collaboration improved access for more students, enabling them to more effectively utilize their first year in college in more complete ways. It also improved both one- and two-year retention for first-year, first-time-in-college students. Access, accountability, affordability and the quality of the educational outcome were impacted by creating appropriate, authentic collaborations that cross boundaries and effectively alter the match between high school standards and college expectations.

This study has made the school-university partnership stronger by involving faculties and administrators to continue to foster a college going culture and provide teacher professional development on strategies and resources for raising student achievement and expectations and standards-based curriculum. Evidence of collaboration are many, three highlights include: a) the Summer Institutes on Instructional Practices for Mathematics and English. The link between high school and university curriculum by bringing together faculty from the target high schools with the Mathematics, English and secondary teacher education faculty at the university. Summer Institute participants demonstrated, practiced and discussed strategies in the context of promoting high school to college transitions; b) Sound, reflective practices between high school and university math and English faculty that emphasized deep understanding of content. High school and college teachers shared in the academic phenomenon whereby classroom instruction became highly interactive and focused on a rich analysis of deep meaning brought about through complex problem-solving activities and/or highly analytic and synthetic reasoning. High school and college faculty planned grade level curricular changes to address areas of algebra and English interventions prior to entering college; and, c) Faculty from the university paired up with faculty from the high schools to conduct structured “walk-through” observations and later reflective discussions of each other’s classroom practices.
References


