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At the Crux of a Systemic Reform: California Partnership Academy Lead Teachers in Comprehensive High Schools in a Linked Learning District

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At the Crux of a Systemic Reform:
California Partnership Academy Lead Teachers in Comprehensive High Schools in a Linked Learning District

By

Anne Johnston

A dissertation submitted in partial satisfaction of the requirements for the degree of Doctor of Education In the Graduate Division Of the University of California at Berkeley

Committee in Charge:

Dean Judith Warren Little
Professor David Stern
Professor Susan Stone

Spring 2013
At the Crux of a Systemic Reform:
California Partnership Academy Lead Teachers in Comprehensive High Schools in a
Linked Learning District

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By

Anne Johnston
Abstract

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Anne Johnston

Doctor of Education

University of California, Berkeley

Dean Judith Warren Little, Chair

The purpose of this exploratory case study is to focus a lens on lead teachers of California Partnership Academies (CPAs), who are responsible for overseeing the operation and coordinating the components of a complex, contra-normative secondary reform model. This study examines the stresses experienced by four CPA lead teachers at two different sites in a district committed to placing the Linked Learning model in the center of its secondary school reform strategy. Previous research has identified stressors inherent in the lead teacher role, and in the career academy reform studied here. This research assess the impact of those stressors, strategies lead teachers employ and conditions that facilitate lead teachers’ work by looking at the dynamics of their role, the context in which they work, and patterns of leadership distribution through three key relationships, each focused on a particular routine.

This study found that the primary role-related stressor these CPA lead teachers experienced was overload, which may have implications for the sustainability of the model, particularly as it is scaled up. The contra-normative nature of this reform was evident in the conflicts that arose for lead teachers in each of the three relationships examined. In their relationships with administrators focused on the master schedule, traditional patterns of student placement into AP and non-AP tracks conflicted with the effort to create pathways for all students to access both college and career. Teachers struggled to create strategies for addressing this issue. In lead teachers’ work with their peers on interdisciplinary curriculum, the collaborative and interdisciplinary nature of the reform conflicted with the autonomous, individualistic and subject-oriented nature of teacher culture. Where collective co-performance defined school-wide patterns of leadership distribution, lead teachers were better able to influence collaborative teacher norms. Lead teachers’ relationships to community and industry partners facilitated integration of work-based learning into the CPA instructional program, accessed new resources and challenged the traditional segregation of academic and vocational education. This work was greatly facilitated by district support but limited by the capacity of site administrators who were often unaware of these partnerships, and were not developing systemic ways to include them in the school’s vision or program.
Dedication Page

This dissertation is dedicated to Flora Russ, without whose leadership the CPA in which I spent my entire career as a teacher would never have come to be, and without whose mentoring I would never have been able to manage as a CPA lead teacher.

It is also dedicated to my two daughters, Rose and Johanna, whose exuberance, passion, reflectivity and determination as they map out their own life paths have been a constant source of inspiration as I tackle that same task.
At the Crux of a Systemic Reform:  
California Partnership Academy Lead Teachers in Comprehensive High Schools in a Linked Learning District  

Table of Contents  

Dedication Page..................................................................................................................................................i  
Table of Contents...............................................................................................................................................ii  
List of Tables.......................................................................................................................................................iv  
List of Figures......................................................................................................................................................v  
Preface.................................................................................................................................................................vi  
Acknowledgements..............................................................................................................................................vii  

Chapter 1 – Introduction  
Teacher Leaders at the Crux .................................................................................................................................1  
The Purpose of the Research.........................................................................................................................................2  
Consulting the Knowledge Base...............................................................................................................................3  

Chapter 2 – Conceptual Framework, Research Design and Methods  
Conceptual Framework.............................................................................................................................................11  
Multi-Case Research Design.................................................................................................................................15  
Methods.................................................................................................................................................................16  

Chapter 3 – Cases in Context: Four CPA Lead Teachers at Two Comprehensive Schools  
in a Linked Learning District  
The Role of Context in CPA Leadership Enactment .................................................................................................21  
Riverside High School, Developing a Collaborative Culture......................................................................................22  
Leading a Young, Growing CPA: Jean Parker, STEM Academy..............................................................................26  
Leading a Mature Academy: Briana Heller, Public Service Academy.................................................................27  
Bayview High School: Tackling Disparities in Student Achievement  
Between CPA’s.........................................................................................................................................................28  
Hands-On Science Enrichment: Luanne Olsen, Science and Environmental Technology Academy (SETA) ..........30  
Serving Student Needs: Linda Trent, Health & Social Services Academy (HSSA).....................................................31  
Impact of Contextual Factors: Community, District, and Site..............................................................................33
List of Tables

Table 1: Potential Stress Points in CPA Lead Teachers’ Work in Three Key Relationships Relative to Effective Implementation Criteria ..................8

Table 2: Interviews Conducted ...........................................................................................................................................................................17

Table 3: Interview Focus ..................................................................................................................................................................................18

Table 4: Distributed Leadership Context of Admin-Teacher Leader Relations ..............25

Table 5: Role Ambiguity ...................................................................................................................................................................................36

Table 6: Role Conflict .......................................................................................................................................................................................38

Table 7: Role Overload .....................................................................................................................................................................................40

Table 8: Stressors and Strategies in Master Scheduling .........................................................42

Table 9: Conditions that Facilitated Teacher Leaders’ Success in Master Scheduling ..........47

Table 10: Stressors and Strategies in Lead Teachers’ Interdisciplinary Work .................50

Table 11: Conditions that Facilitated Lead Teachers’ Interdisciplinary Work ...............54

Table 12: Lead Teachers’ Stressors with Industry Partners .............................................56

Table 13: Strategies and Facilitating Conditions for Reducing Stress in Industry Partner/Lead Teacher Relationship .................................................................60
List of Figures

Figure 1: The Three Key Relationships for CPA Lead Teachers ..............................................11

Figure 2: Lead Teacher Continuum of Responses .................................................................12

Figure 3: Conceptual Framework ..........................................................................................14

Figure 4: Aspects of Context Impacting CPA Leadership Enactment ...............................21
Preface

After 21 years of working in a California Partnership Academy (CPA), eight of them as a lead teacher, I took up the challenge of beginning again as a neophyte, learning the tools, attitudes, and content knowledge of a researcher. But I did not leave the expertise I gained from that experience behind. I am a practitioner; I seek to use research to address problems of practice, to apply the lessons learned from careful study to the daunting task of educational reform. Career academies offer a chance to develop authentic pedagogy, setting learning in an interdisciplinary and applied context, with real-world tasks and audiences for student work, and a transformation of the isolated conditions of teachers’ work. But as Grubb (Grubb, 2007) warns, without explicit attention to the quality of instruction, equity, the potential for re-tracking, and the difficulties of helping students who are behind, we may alter the structure, but not the essence of the high school.

Altering the essence of the high school is a pretty tall order, as educational bureaucracies are tremendously resistant to change (Schein, 1990). Yet equity issues have driven my efforts, as I entered education to work for social justice. I began teaching in a Career Academy in an era of transformative, critical thinking reforms. From my first year as a teacher in 1990, I worked in a CPA that included almost entirely “at-risk” students in a very diverse high school. I learned about authentic pedagogy (Newmann, Smith, Allensworth, & Bryk, 2001) and small learning communities through practice in that Academy. I sought out industry and community partners because they helped me to engage my students by providing resources, mentors, and a vision of education connected to real and possible future careers. I learned to integrate curriculum through professional development sponsored by my CPA. I was supported with additional planning time to put together project-based curriculum and integrated projects, through which I worked closely with the other social studies, math, English, PE, science, world language, art, CTE, and Special Education teachers as well as the counselor who shared responsibility for our students. Together we created, revised, transformed, and revised again the program of study, the support systems, the augmentations and enrichment experiences that saw countless students graduating at higher rates, going to college and entering careers. Cohort after cohort continued to be a community long after they left our school, and came back to share, some even to teach.

While I experienced the potential of this school reform model to transform teaching and learning, my limited ability to understand and impact the conditions in which I worked as a lead teacher drove me back to school, and to this research. As the number of CPAs at that comprehensive high school grew, the role of the CPAs changed. Tracking had always existed, AP classes had always been overwhelmingly white and our CPA had always been overwhelmingly Black and Latino, but with a third of the school in CPAs, issues around the relative merits, rigor, and diversity of our programs took center stage. Students selected the program they wanted to attend based on their comfort with the social scene and their expectations, often founded on stereotypes and unconscious racism. As I began this research, it seemed evident that the scaling up of the Career Academy approach had pushed to the fore the very equity issues that CPAs were designed to address.

Transforming a corner of the school for “those” kids, for whom expectations are generally lower, is acceptable. But transforming the essence of schooling so that it serves all students,
without privileging some: that is a fundamental challenge to the education community, requiring systemic change in the district, the site and the classroom (Fullan, 2001b).
Acknowledgements

First, a heartfelt thank you to the LEEP Program Director, Professor Heinrich Mintrop, whose vision and commitment to praxis drives the direction and success of LEEP. And to the LEEP cohorts whose constant quest to address issues of equity kept me on track as we learned to look at educational systems as practitioner-researchers. Thank you to my advisor, Dean Judith Warren Little, whose laser-like ability to see through to what is really needed kept me moving in the right direction. Thank you to Flora Russ and David Stern, my mentors, colleagues and friends. Thank you to my patient and supportive partner, Judy Greenspan, who has acted as a sounding board for me throughout this endeavor, and whose work in elementary education has contributed tremendously to my knowledge base. Thank you to my daughter, Johanna, whose willingness to talk about and analyze her experiences as a student in a CPA has provided me with valuable insights. Thank you to my daughter Rose, who regularly asks how I am doing, to my sister, Barbara, who encourages me constantly, and to my mother, Dr. Terry Johnston, my role model and confidant.
Chapter 1: Introduction

Teacher Leaders at the Crux

The role of “lead teacher” is built into many school reform efforts. Increasingly the literature has noted that teacher leaders, in both instructional and organizational functions, are an important factor in successful school reform and in improving student outcomes. The political drives for standardization and accountability, on the other hand, have created contexts in which teacher leaders are often used to impose mandated reforms and such teacher leaders face significant challenges winning influence with the teachers they are assigned to lead. Where teachers lead reforms that run counter to the norms of school organizations as well as values and beliefs underpinning teacher identity, other major challenges arise. Lead teachers’ practice in contra-normative reform models is characterized by myriad tensions and conflicts over the demands the contra-normative reform places on people and structures in schools (Achinstein, 2002; Judith Warren Little, 1995a). I use the term contra-normative, as opposed to counter-normative, to imply contrast as well as opposition, which sits more comfortably in a theory of change that involves the development of innovative models that engage deep-seated beliefs and practices. Counter-normative, on the other hand, implies opposition only.

A case in point is the California Partnership Academy (CPA), in which lead teachers coordinate implementation of a reform model that challenges deeply ingrained norms underlying institutional structures and teacher identity in secondary schools. CPAs are widespread – approximately 400 are formally authorized, over half since 2006 (Dayton, Hamilton-Hester, & Stern, 2011). CPAs are standardized by California Education Code (54692), which means that effective implementation is measurable against a consistent set of required practices. Districts accepting CPA grants are required to provide a “lead teacher” a minimum of a .2 release period to coordinate the work of a team of teachers (54692d), who are mandated to develop and implement the CPA model (Legislative Council of the State of California, 2011). While the duties of a CPA lead teacher have been outlined in policy and practitioner literature (Dayton, Clark, Tidyman, & Hanna, 2007), and substantive research has been done on the student outcomes of CPAs (Dayton, Hamilton-Hester, et al., 2011; J. Kemple, 2004; J. J. Kemple, 2008; Stern, Dayton, & Raby, 2010), little is known about the role of the CPA lead teacher. No research studies on the teacher leadership practices related to this reform model have been identified by this researcher.

CPAs are part of a larger trend in secondary school reform, termed “College and Career Pathways” in the national school reform context, and “Linked Learning” in California. Often building upon the wave of small learning community reform of the late 1990s and early 2000s, career pathway approaches have garnered national attention, in particular as common core standards require an emphasis on relevant and applied learning. In California, approximately one third of all secondary school students are in districts that have committed to expand career pathways (Torlakson, 2013).

The CPA reform model was initially developed as an alternative school-within-the-school addressing the needs of students who were otherwise poorly served. As research on outcomes demonstrated significant improvements in graduation rates and post-secondary success (Clark, Dayton, Stern, Tidyman, & Weisberg, 2007; J. Kemple, 2004) many districts committed to using career academies as a central reform strategy for their secondary schools (Linked Learning Alliance, 2012). State and federal policy initiatives
have developed to support this reform (Lakes & Burns, 2012; US Department of Education, 2012), resulting in a growing trend toward establishing multiple career academies within comprehensive high schools. In some districts, the ultimate vision poses career pathways as a new paradigm for secondary education (Rustique & Rutherford-Quach, 2012).

CPAs have anchored many of these pathways because of their clearly defined requirements, and the funding attached to them. Yet because this model conflicts with important aspects of the traditional comprehensive high school, expanding it within a comprehensive high school requires ambitious changes, from project-based pedagogy in untracked academic classrooms, to inter-disciplinary teaming for integration of skills and concepts from industry fields, as well as collaboration with community and industry partners through both internships and academic career technical courses (Dayton, Hamilton Hester, & Stern, 2011). These practices differ from long-established norms in secondary education, in which teaching is traditionally conducted in private, individual classrooms, organized by discipline and segregated into multiple tracks, with little relationship to the world outside the classroom (Judith Warren Little, 1990a, 1995a; Lortie, 1975; Mangin, 2005; Oakes & Guiton, 1995).

This conception of the CPA as a contra-normative reform model informs the nature of the research reported here. As the college and career academy model expands, it competes with long-established institutional norms and structures and exacerbates the tensions and ambiguities normally associated with teacher leadership. Comprehensive secondary schools are already fundamentally more complex than middle or elementary schools, due to both their size and their historically departmental organization (McLaughlin & Talbert, 2007). Orchestrating this complex and contra-normative reform in comprehensive secondary schools poses a huge challenge to CPA lead teachers. Without administrative authority and with minimal release time, CPA lead teachers are charged with creating small schools within comprehensive high schools that require substantial changes in institutional priorities, collegial norms, and teacher identity, and that compete with departments and other programs for ever more scarce resources.

**Purpose of the Research**

CPA lead teachers play a central role in implementing the career academy model. As this reform model develops, districts that have committed to using career academies as a key reform strategy for their secondary schools are adding multiple schools-within-a-school to already complex organizational structures. Districts seeking to systemically implement this model face significant challenges in organizational capacity, as interdependency is built into the comprehensive high school organization (Elmore, 2008). Deeper examination of the practices of and conditions facing the CPA lead teachers facilitating this contra-normative reform can help site and district administrators who select, train, and support lead teachers. This research can similarly inform the work of the coaches provided by external partners supporting this reform, who work with pathway leads as well as district and site administrators. This exploratory study may also help teacher leaders working to implement CPAs or related contra-normative reforms, to strategically address the tensions they experience. It is also possible that this study could contribute to theoretical understandings of the role of teacher leaders in contra-normative reforms within comprehensive secondary schools.
Finally, it is hoped that this research will provide insight into the conditions under which teacher leaders are able to thrive and succeed in transforming teaching and learning, in order to affect policies and practices that can better support those conditions. Areas of tension that arise for lead teachers implementing CPAs in "Linked Learning" comprehensive schools can serve to spotlight systems or structures that may need to change. Examining the strategies lead teachers develop as they adjust routines and create tools to implement this reform model can also identify promising practices for further development. Analyzing the conditions that facilitate the development of such strategies can assist districts and policy makers in determining how to systematically support a transition to this new paradigm.

To identify some of the elements of leadership practice that assist CPA lead teachers in successfully negotiating these tensions, particularly in districts that are increasing support for the model, I focused on the following research questions:

1. **How do the most salient tensions inherent in the contra-normative CPA model manifest in lead teachers’ key relationships – administrative, peer team, and industry partners?**

2. **What strategies assist CPA lead teachers in navigating the tensions inherent in this contra-normative reform?**

3. **What specific conditions facilitate lead teachers’ capacity to negotiate the tensions involved in implementing the CPA model?**

**Consulting the Knowledge Base**

In reviewing the research base to develop a foundation for this study, I have found relatively few studies focused on teacher leadership in the specific context of comprehensive secondary school reform, but many studies of secondary school reforms have touched upon leadership issues. I have also found valuable clues to the challenges and tensions CPA lead teachers are likely to face, and promising practices that support the effectiveness of teacher leaders of contra-normative reforms in the teacher leadership, educational leadership, and social organization of schools literature.

Thus far, the majority of research on both CPAs and career academies has focused on examining student outcomes (Stern, et al., 2010), with some research documenting the impact of academies on student and teacher experiences (J. J. Kemple, 1997), and the characteristics of high performing models (Saunders & Chrisman, 2011) and practitioner literature providing resources for lead teachers (Career Academy Support Network, 2012). One can glean some sense of the tensions CPA lead teachers face from studies on career academy implementation. For instance, in a case study of four large high schools in four different states, all implementing wall-to-wall career academies, Stern, Dayton, Lenz and Tidyman (2002) reported a range of lead teacher concerns, including problems of overload and administrative overlap, such as when lead teachers spent 80 to 90% of their release time on student discipline, resulting in high turnover of lead teachers. Promising practices included shared leadership structures and district-level support including a district-level academy support provider. Stern (2005) also reported that small learning community (SLC) redesign raised issues for career academy implementation, particularly related to
tracking and teacher assignment, both of which could be expected to impact lead teachers’ work.

Teacher leadership research, particularly that related to SLCs, indicates that reforms attempting to establish significantly different instructional and pedagogical norms through small schools-within-schools face barriers in the entrenched structures and patterns of the comprehensive high school (Wasley & Lear, 2001). SLCs initiated in the late 1980s tapped teachers to take on multiple responsibilities in the new smaller units, such as design, program coordination, administrative work and participation in school-wide leadership (Raywid, 1996). Many of the tasks associated with these teacher leader roles were administrative in nature.

Little’s (1995a) case study of two restructuring comprehensive high schools with interdisciplinary “houses” and “divisions” provides valuable insights into teacher leadership in a contra-normative SLC reform context. Little found that when teacher leaders are appointed to semi-administrative positions, conflicts over authority and legitimacy often emerge. Little (1995b) also found that teacher leaders’ ability to influence the teams they lead is impaired when they are viewed by their colleagues as serving a mandate from above, rather than the constituency from which they may have emerged. While teacher leaders’ authority in interdisciplinary teams tends to be more detached from subject ties, teachers’ identities and sense of community in general are powerfully attached to subject areas expertise (Judith Warren Little, 1995a). The departmental organization of comprehensive high schools has a pervasive influence on norms, values and structures (Siskin & Little, 1995) that can be a daunting barrier to interdisciplinary school restructuring efforts.

Subject area expertise influences teacher leaders’ legitimacy and effectiveness in implementing instructional reforms. Mangin and Stoelinga (2009) found that teacher leaders’ content knowledge coupled with their procedural knowledge of how to work with teachers to promote collaboration, reflective dialogue, and trust affects their ability to influence instructional improvement. Other researchers have found that interdisciplinary teacher leader’s legitimacy may be related to capacity to work with a team, facilitate organizational learning across subject specialties and influence teachers to develop collaborative norms (Grossman & Weinburg, 2001; Westheimer, 1999). There is a gap in the literature regarding other factors that may affect CPA lead teachers’ legitimacy, for instance, the relationship between their area of subject expertise and the career focus of the academy, or their reputation for instructional expertise with underserved students.

Sorting students into the hierarchy of future occupations is a fundamental normative purpose of schooling (Jeannie Oakes & Stuart Wells, 2004), which results in status differences among the tracks thus created. Career Academies challenge this norm as they both incorporate career technical courses at each grade level, and integrate career related concepts into core academic subjects. Traditionally in comprehensive high schools, lower status is assigned to teachers of vocational courses (Judith Warren Little, 1993), and practical applications of academic skills are viewed as only appropriate for “low track” students. Yet in Academies, career technical teachers are often lead teachers, and their content knowledge is central to the thematic focus that drives teacher collaboration in curricular integration (Clark, et al., 2007).

Teacher sense of competence is closely tied to the academic success of the students they teach (Metz, 1993). Competition for teaching schedules with high performing students
contributes tremendously to the micro-political disputes and divisions over teacher status that characterize “Balkanized” school cultures (Hargreaves & Macmillan, 1995). Tensions related to teacher assignment and willingness to integrate career-technical concepts, and around conceptions of the level of academic rigor expected in a program associated with career technical education can be anticipated (Stern et al., 2000), as well as tensions over both human and physical resources between the CPA and departments in the school.

The organization of secondary schools by subject matter establishes subject-specific frameworks that can shape teachers’ thinking and identity by adding a set of widely shared assumptions about teaching and learning, for instance, beliefs that support grouping students by achievement level (Hargreaves & Macmillan, 1995). According to Bernstein’s (1971) sociological analysis of academic disciplines, subject areas organize knowledge in ways that are more or less conducive to practical application of knowledge and to integration of subject matter based on whether the subjects falls in the collection codes (i.e. math and science) or integration codes (social studies and English) categories. Grossman and Stodolsky (1994) point out a resulting tension between the importance of deep disciplinary knowledge for meaningful interdisciplinary work, and the potential negative impact of strong disciplinary socialization on teacher’s willingness to engage in interdisciplinary experimentation. These findings point to potential tensions for CPA lead teachers organizing interdisciplinary projects in particular involving subject areas like math and science with more rigid boundaries around the subject.

Researchers studying professional community in reforming schools (Louis & Kruse, 1995), have noted that teacher leaders of SLCs within large restructuring comprehensive high schools face significant challenges as they compete for both human and structural resources. For example, in Washington State’s conversion of large comprehensive schools (Wallach, Lambert, Copland, & Lowry, 2005), teacher leaders were swamped in the logistical demands of competing programs. Wallach and Leer’s (2005) study of 17 Washington state restructuring comprehensive schools found that one third of the teachers and one fifth of the teacher leaders believed the position untenable, primarily from lack of authority. Teacher leaders’ turnover was alarmingly high due to workload, peer conflicts, role ambiguity, and lack of preparation.

The Learning from Leadership Project, (Wahlstrom, Seashore Louis, Leithwood, & Anderson, 2010), a six-year study of school leadership in 43 districts in nine states, demonstrated a direct connection between patterns of leadership distribution, the quality of professional community, and the fostering of instructional practices associated with student achievement. CPA lead teachers play a crucial role in the development of professional learning community among their interdisciplinary team members, who collaborate to integrate curriculum around a particular career field using project based curriculum. To effectively implement a CPA, they must be able to affect instructional practices. Research on school leadership has found that secondary schools experience significantly lower levels of both instructional leadership and professional learning communities (Wahlstrom, et al., 2010), as compared to elementary and middle schools. Yet CPA teams are tasked with developing and implementing integrated curriculum projects that require specific skills and expertise, that challenge norms of individual autonomy and subject boundaries, and that require a degree of trust, collaboration, and collective accountability (Judith Warren Little, 1990b). School change researchers have found that when teachers collaborate to build professional community around shared values,
particularly innovative values that challenge traditional norms, conflict emerges (Achinstein, 2002). How leaders manage these tensions and conflicts can make a significant difference in the type of learning community that results (Grossman & Weinburg, 2001; Westheimer, 1999).

Changing comprehensive high school structures to provide more equitable access to resources and opportunities has challenged school leaders for decades. Developing more personalized instruction, building teacher professional community, standardizing or increasing curricular expectations, and changing instructional practices have all been emphasized by school leaders at various levels of the educational system (Copland & Boatright, 2004). As CPA lead teachers engage in all of these reforms, research on how teacher leaders exert influence provides a valuable focal lens. York-Barr and Duke’s (2004) extensive review of the teacher leadership literature found that teacher leadership is primarily exerted through the development of trusting and collaborative relationships. They identified three strategies teacher leaders use to exert influence: a) maintain a focus on teaching and learning, b) establish trusting and constructive relationships and c) interact through formal and informal points of influence.

In examining a teacher leadership role, the distribution of leadership within the site sets a context for lead teachers’ work and, as Wahlstrom’s (2010) executive summary notes, influences their capacity to build teacher community in ways that impact student achievement. In the final report from this six-year study on school leadership, Seashore Louis and her colleagues (2010) argue that a comprehensive approach to examining leadership helps break us out of a focus on leaders’ individual traits or capacities, toward an understanding of how the structures within which leaders work shape their work. They found that collective and shared patterns of leadership distribution at the school site are associated with higher levels of student achievement. James Spillane has contributed tremendously to the effort to understand educational leadership in a more comprehensive perspective. Spillane and Coldren’s (2011) work on the Distributed Leadership Study, focused on 13 Chicago K-5 and K-8 schools, is useful for the purposes of this study in analyzing patterns of leadership distribution that affect CPA lead teachers. Spillane and Coldren found that the practice of leadership — whether by teachers or administrators -- takes place in the relationships between the people taking responsibility for particular leadership routines and functions, the followers, and the situation; and that leaders use tools and routines as mechanisms to affect the organization.

In summary, the research on teacher leadership that informs this study indicates that tensions are likely to characterize CPA lead teachers’ work. Studies on career academy implementation identify overload, tracking and teacher assignment policies as sources of tension. Studies on comprehensive high school redesign and SLCs identify the entrenched structures and norms of the comprehensive high school as significant barriers to this contra-normative reform. Semi-administrative roles that teacher leaders take on can lead to role conflict and tensions around legitimacy and authority. The comprehensive school’s subject specialization structure has a deep and abiding influence likely to conflict with an interdisciplinary, untracked, career-field focused reform model. Teachers in comprehensive high schools generally experience fewer professional learning communities, and less instructional leadership than in elementary or middle schools. The process of establishing a professional learning community around a contra-normative model is a source of tension over norms and values both within the team and within the
larger comprehensive school context. How teacher leaders negotiate these tensions impacts the nature of the learning communities they create. Teacher leaders generally exert influence by developing trusting, collaborative relationships with other leaders, with followers, and in relation to the specific contexts in which they are working, often through the use of routines and tools.

*Effective Implementation*

I reviewed this literature in order to specify the most salient tensions confronting lead teachers in CPAs, which are required to meet specific criteria established in the California Education Code (Legislative Council of the State of California, 2011). For purposes of this study, I have summarized these requirements in brief as five criteria: 1) heterogeneous student cohorts with 50% “at-risk;” 2) industry skills incorporated into college preparatory academics; 3) project-based interdisciplinary instructional practices which are dependent upon cohort scheduling; 4) internships, a CTE course of study and career field experiences; and 5) teacher teams that are provided time to collaborate to implement the model. This research did not seek to establish causal relationships between leadership strategies and effective CPA implementation because context plays such a critical role in determining whether those strategies are effective. Rather, this research aimed to map the tensions that lead teachers engage in a context of increased district support for this contra-normative model (Table 1), in order to look more closely at the lead teachers’ strategies for addressing those tensions, and the conditions under which those tensions were exacerbated or ameliorated.
<table>
<thead>
<tr>
<th>Effective Implementation Criteria</th>
<th>Peer Teacher Team</th>
<th>Administrators</th>
<th>Community/Industry Partners</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Heterogeneous student cohorts, 50% at risk</td>
<td>Status, Cultural competence Pedagogical skills Students as resources</td>
<td>Cohort scheduling Recruitment (diversity) Purpose (tracking)</td>
<td>Liability Student behaviors Accountability</td>
</tr>
<tr>
<td>2. Industry skills incorporated in college prep academics</td>
<td>Subject compartmentalization Subject status Pedagogical capacity</td>
<td>Balkanization Teacher assignment Teacher capacity Schoolwide assessments Multiple mandates</td>
<td>Status of Industry Field Time Convenience Return on investment Influence on program</td>
</tr>
<tr>
<td>3. Project-based interdisciplinary instructional practices</td>
<td>Subject specialization Time to plan Instructional Time Teacher disposition Resources Norms of Privacy Instructional expertise</td>
<td>Disruption Bell schedule Schoolwide assessments Cohort scheduling</td>
<td>Time Convenience Return on investment</td>
</tr>
<tr>
<td>4. Internships, CTE program of study &amp; career field experiences</td>
<td>Resources Disruption Instructional Time</td>
<td>Disruption Liability, accountability Credentials a-g Requirements Budget Time</td>
<td>Liability Student behaviors Cost vs. Benefit Influence on program Site &amp; district recognition Flexibility of schedule</td>
</tr>
<tr>
<td>5. Teacher-led team collaborating to implement</td>
<td>Subject Compartmentalization Common vision Norms around conflict, privacy, autonomy Teacher assignment Leadership distribution</td>
<td>Competing demands re: school-wide priorities Flexibility vs. security Scheduling Hiring Common Preps Leadership distribution</td>
<td>Access to resources Administrative recognition</td>
</tr>
</tbody>
</table>
Teacher Leadership in the Changing School Reform Context

As the career academy model moves toward a whole school reform model, the School Reform literature is also helpful in understanding the challenges inherent in the effort to change the context, or scale up the reform, and potential directions for addressing them. There are positive indications and sources of concern, both of which affected the course of my research. On the positive side, Newmann (2001) and Datnow’s (2005) research, as well as Desimone’s (2002) analysis of comprehensive school reform (CSR) implementation studies all point to the importance of aligning school reform efforts between teachers, school, and district. Elmore (Elmore, Ablemann, Even, Kenyon, & Marshall, 2004) describes the type of capacity building needed to develop coherence, teacher knowledge and skills, leadership definition and distribution, school organization and problem-solving norms related to instructional practice. In such an idealized context, reform is school-wide, teachers share decision-making power, and they develop coherent and aligned authentic instructional practices in professional communities of practice. These are conditions that the Linked Learning Initiative is actively striving to create in select districts.

The Linked Learning Initiative in California represents a policy thrust aimed at combining teacher ownership and participation in authentic, community-involved interdisciplinary instructional practices with site-level restructuring to support career-field-related pathways, backed by a district commitment to Linked Learning as central to secondary school reform. As California implements AB790 (Torlakson, 2013), over a third of California public school students are in districts that seek to expand and scale up the Linked Learning approach in their secondary high schools. On the other hand, the majority of successful Linked Learning models examined in the research have been autonomous small schools (Lafors & McGlawn, 2013; Saunders & Chrisman, 2011). While school structures and instructional practices have begun shifting in Linked Learning comprehensive high schools, significant impediments to this design remain as those structures are deeply rooted in the nature of the comprehensive high school, and few effective models of Linked Learning comprehensive school redesign exist.

Currently, Linked Learning communities of practice are built pathway by pathway. The SLC reform movement broke up many comprehensive high schools into schools-within-schools, which increased the complexity and likelihood of fractures in the comprehensive school structure, focusing teachers on structures and power dynamics rather than on authentic pedagogical models for teaching and learning (Wallach, et al., 2005; Wallach & Lear, 2005). Yet Linked Learning has the capacity to do the opposite – to unite a school of many programs behind a common instructional approach. Whether CPA lead teachers are mini-administrators or are able to fill the instructional leadership gap in secondary schools seems pivotal in determining whether this reform can make substantive improvements in teaching and learning. Wahlstrom’s (2010) extensive study of leadership in 180 schools (elementary, middle and high) across nine states demonstrates that leadership, including teacher leadership, is “central in addressing the work of teaching and learning, as well as managing the influences related to the work outside of the school” (page 5). Wahlstrom finds that collective leadership, or “goal-directed mutual influence that exists within a system,” has a stronger influence on student learning than any individual source of leadership within a school. Spillane & Coldren (2011) provide tools for developing school-level leadership capacity, which their research argues convincingly is
essential to ensure a school-wide coherent vision of teaching and learning that is owned by and permeates teachers’ daily practice. If interdisciplinary teacher teams are to be at the heart of a school redesign, the development of teacher leadership capacity seems essential.

The questions investigated in this exploratory case study are designed to lay groundwork, to better understand how to sustain and leverage teacher leadership that can transform instructional practices to support increased student success through this model of reform. These four cases can be instrumental in laying that groundwork, but only by first clarifying the most salient contextual factors impacting leadership enactment. Because the literature identifies distribution of leadership at the site as a critical contextual element affecting lead teachers’ ability to exert influence, I also analyzed patterns of leadership distribution at each of the two sites. Finally, given the lack of previous research on CPA lead teachers, it was important to identify tensions related to the CPA lead teacher role definition, versus those that flow from the contra-normative nature of the reform they are leading. The study examines tensions and strategies in lead teachers’ key relationships to identify practices and conditions that facilitate their work implementing the model.
Chapter 2: Conceptual Framework, Research Design and Methods

The Conceptual Framework

Recent studies in educational leadership point to the potential value of expanding teacher leadership to implement instructional reforms, both because principals are too distant from the classroom and distracted by organizational demands to provide effective instructional leadership in secondary schools (Kelley, Klar, & Bredeson, 2009), and because teacher participation in school-wide decisions and strong professional communities appear to be related to successful school reform (Wahlstrom, et al., 2010) that correlates with higher student achievement. CPA lead teachers are part of a growing body of teacher leaders of a complex, interdisciplinary, college and career-oriented school reform model within secondary schools. In conceptualizing this research into teacher leadership within a decidedly contra-normative reform, Michael Fullan's discussion of school change theory is helpful. Building leadership capacity at all levels, according to Fullan, is critical to successful school change (2001b). Fullan defines change as a continual and complex process (1999), in which what really matters cannot be mandated: changes in skills, thinking and committed actions (2001a). These only develop over time as people interact with the innovation, particularly in solving the problems that arise as the change gets embedded in the institution (1999). Any successful change strategy, Fullan argues, must simultaneously focus on changing individuals and the culture of the system within which they work (Fullan, 2006). This research study was focused on the individual CPA lead teachers charged with implementing a radically different set of relationships and processes within the context of a comprehensive school whose norms and structures were in flux.

This research did not attempt to define the individual characteristics of effective lead teachers. My purpose was to better understand the dynamics lead teachers contend with as they work to implement this contra-normative model in the midst of a changing policy context. Leadership, for this research, was understood as Spillane (2005) defines it, as the relationship between leaders, followers and context. I looked at lead teachers’ key relationships, because developing trusting and collaborative relationships is the primary means by which teacher leaders tend to exert influence (York-Barr & Duke, 2004), and because it is in those relationships that leadership practice occurs.

Figure 1: The Three Key Relationships for CPA Lead Teachers

The research is situated in two comprehensive schools within a “Linked Learning District” where policies are shifting toward a higher level of organizational support for the
career academy reform model. I hypothesize that alignment of district policies with this previously marginal reform model could bring to the foreground tensions between the conventional model of schooling and the reform model, increasing the pressure to either amend components of the reform or develop innovative approaches to implementation. I seek to identify some conditions that facilitate such innovative approaches. Conversely, where the traditional norms of the comprehensive school culture had strong roots and entrenched structures, I expected to find weak implementation of the model.

Figure 2: Lead Teacher Continuum of Responses

Routines in Three Key Relationships
To understand how people function within organizational structures and roles, organization theorists look at role ambiguity, role conflict and role overload (Schmidt, 2000), all areas of stress for teacher leaders in general, and all clearly heightened by the contra-normative nature of the CPA reform model. The additional tensions evoked by this contra-normative reform were studied in three critical relationships: a) with administrators whose main charge is to maintain the stability and smooth functioning of the system, but who represent a district that has agreed to support the development of a contra-normative model; b) the peer team, from which the teacher leader requires collaboration but over whom she has no formal authority; c) the industry or community partners, who must be convinced to invest staff time and organizational resources to create internships and help connect classroom instruction to the world of work.

Organizational theory is useful for looking at the norms that regulate behavior within organizational culture, which provide meaning, stability and comfort (Schein, 1990), and are extremely difficulty to change. The interdisciplinary, collaborative nature of CPA peer teamwork contrasts sharply with the subject-specific organization of curriculum and instructional autonomy norms of secondary schools. Integrating career field technical content into academic courses challenges long-standing divisions between academic and “vocational” education (Kazis, 2005). These findings point to potential areas of tension between the CPA model and the typical comprehensive school. Organizational theory also
points to an avenue for exploring how teacher leaders experience and engage the resultant tensions.

Routines enable bureaucracies to organize expertise and exercise power (Feldman & Pentland, 2003) and are essential to maintaining organizational stability. Feldman and Pentland (2003) argue that routines can be a source of change as well as of stability. By distinguishing between the structures and the people who bring those routines to life, Feldman and Pentland also point to the important role of leadership in transforming organizational norms and practices. In examining the role of leadership in school change, some organizational theorists have posited new conceptions of school leadership, such as parallel (Crowther, Ferguson, & Hann, 2009) and distributed (James P. Spillane, Halverson, & Diamond, 2001) leadership. Surveying how leadership is distributed within the school organization provides a way to map the context in which CPA teacher leaders operate.

Spillane and Coldren (2011) apply organizational change theory to argue the importance of capacity building as the core of school reform, both in the day-to-day work of modeling and guiding effective practice and to transform the inter-dependent practice of the entire school system. They posit a typology of leadership practices for use in analyzing how leadership is distributed and enacted within schools. Drawing on Feldman and Pentland (2003), they encourage researchers to focus not only on the range of interdependent leadership roles, but also on the routines within school organizations where leadership is enacted in the process of school change, and on the tools used to structure or focus those routines. Based on this research, I attempted not only to delineate leadership practices within the school and CPA team, but I also focused my attention on specific routines enacted within each of the three focal relationships: between lead teacher and administrators -- master scheduling; lead teacher and peer team -- integrated, project-based curriculum development; and lead teacher and industry partners -- work-based learning (See Figure 3, below).
Arrows depict leadership enactment
Multi-Case Research Design

This comparative, multiple case study explores the leadership practices of four CPA lead teachers, two in each of two comprehensive high schools within the same Linked Learning district. The unit of analysis under study was the CPA lead teacher, with a particular area of subject expertise, a set of values and beliefs, skills and experience, with which they negotiate the three relationships central to implementation of this reform model: administrators, peer team, and industry partners.

The research questions I sought to address are exploratory, intended to develop hypotheses and propositions for further study, and explanatory, as I am interested in explaining the process by which CPA lead teachers manage tensions and influence change within their schools. Case study methods are valuable for investigating causal processes, especially where the process is embedded in a particular context (Maxwell, 2004). The social and cultural contexts within which the CPAs operate affect the tensions between the two different models of schooling, as well as the strategies lead teachers are able to employ to deal with those tensions. The specific contextual factors that facilitate innovative approaches to managing the change process can be most readily identified through qualitative methods.

A qualitative comparative case study methodology (Creswell, 1998) is particularly useful for this research as CPA lead teachers occupy an ambiguous role between administration and peers, and between industry partners and the CPA team. They lead a team of teachers charged with implementing a contra-normative reform model within a comprehensive high school still dominated by traditional norms and structures. As teacher leaders without official administrative authority, their effectiveness is to some extent dependent upon administrative support, while their capacity to influence instruction rests on their ability to orchestrate collective vision and practice among a diverse team of peers. Case study research is an effective way to investigate such a complex set of dynamics, occurring in a current context, in which the behaviors of the subjects cannot be manipulated (Yin, 2009). Exploring the nature of CPA lead teachers’ relationships and strategies as they go through the annual cycle of planning curriculum, competing for resources, building collaborative structures, and negotiating ever-changing relationships lends itself to case study methodology which will allow me to observe, conduct interviews, and analyze documents and artifacts that reflect the tensions developing over time.

A limitation of this design is the time involved in collecting and analyzing the wide range of data required for a rigorous treatment of four cases. Particularly in an exploratory case study, where flexibility is required of the researcher, it is inevitable, according to Yin (2009), that one will have to make changes and adjustments to a design, which can be time consuming. For example, in one of the research sites, the one administrator responsible for working with both CPAs had to go out on leave because of an injury sustained at work, and was not available for interviews. For all four CPAs, the main source of administrative support experienced by any of the leads came from a district office, the College and Career Office (CCO). Given the limited scope of this research study, and in order to maintain a tighter design, I therefore added this district administrative office to the administrative relationship in my research design rather than creating a fourth relationship to investigate.

A second, related limitation of this design is that for the replication approach to multiple case methodology, data collection ought to be sequential –the first case is completed before the second is begun (Yin, 2009). However, because the relationships and
routines under study operate on a school-year cycle, I collected data for all four cases simultaneously within a brief four-month period, as sequential collection would not allow for comparable data to be collected. Nevertheless, I did the bulk of data collection on one of the case studies in its entirety first, and used that case study data to develop my coding scheme.

**Methods**

**Case Selection**

Cases were selected from a large Linked Learning district with multiple comprehensive high schools, each with multiple CPAs. Two relatively similar high school contexts were identified, in terms of size, ethnic composition and socio-economic status of student population, and number of CPAs. This literal replication of basic elements of context limited the number of variables affecting my analysis, allowing me to compare findings across contexts, and to more readily highlight the remaining differences in school context, such as patterns of leadership distribution. It allowed me to focus on contrasts between cases, such as between older and newer CPAs, and provided a basis for theoretical generalizations regarding the change processes affecting all four lead teachers.

In selecting the CPA lead teachers upon which to focus within the two comprehensive high schools, I sought out leads from one newer and one more mature CPA. The number of CPAs has doubled in the last five years, creating significantly different contexts for “new” versus “old” programs. Older programs generally have established routines and have carved out niches within the comprehensive school. As new CPAs and pathways are established, I postulated that norms were likely to be revisited, and dynamics surrounding both structural and human resources were likely to change. Newer pathways experience additional tensions due to both inexperience and insecurity, in particular as the funding sources for newer CPAs are far less secure. To examine the role of maturation in the processes and mechanisms lead teachers develop, I purposefully sampled one newer CPA (in existence between 2 and 4 years) and one older CPA (in existence 5 years or more) within each high school, within which I identified a focal lead teacher. Because CPAs aim to establish long term relationships between teachers and students in close-knit cohorts, the CPAs from which I selected lead teachers were both relatively stable, in that all four CPAs had turnover rates significantly lower than 50%. However, because the newer CPAs started with only a sophomore cohort, then added students each year, both had a sizable number of teachers new to their programs as their staff had grown as their student population grew.

One of the sources of tension for teacher leaders identified in the literature rests in issues of legitimacy (Judith Warren Little, 1995a). Factors related to legitimacy were considered in case selection, such as the method by which the lead teacher is assigned, and evidence of the lead teacher’s instructional expertise (York-Barr & Duke, 2004). All four of the lead teachers in this study had at least a decade of teaching experience, and all were highly regarded for their energy and commitment to their programs. Three of the four lead teachers were founders of their programs, and the fourth had been leading the program for eight years.
**Screening Cases**

I gathered initial data to select these focal CPA lead teachers through interviews with district personnel who support CPAs, and external providers who coached CPA leads or worked with them on industry-related projects. I also reviewed data on the school sites and their CPA web pages, as well as other online sources.

**Data Collection and Validity and Reliability**

While interviews were the primary source of data for this research, data was collected from multiple sources, including observations, field notes, and a wide range of documents, to check the validity of findings. Over the course of the study, I conducted three interviews with each of the focal lead teachers, each regarding a different relationship and timed to address issues as they arose during the normal cycle of the school year (see Appendices 1, 2, and 3). The first interview focused on interdisciplinary curriculum development, the second interview on master schedule and staffing, and the third on work-based learning. I conducted one interview each with two teachers from each of the CPAs, and one interview with an industry partner from each. At one site the administrator responsible for working with all the CPA lead teachers, as noted above, was unavailable from early in the course of data collection. I conducted one interview with the administrator acting in his stead. At the other site I was able to interview one administrator who had worked for several years prior to this one with one of the CPAs, and who was currently working with the other. As all four lead teachers indicated that their primary source of administrative support was the district’s College and Career Office, I interviewed four staff members there who had specific responsibilities for working with the focal CPAs.

**Table 2: Interviews Conducted**

<table>
<thead>
<tr>
<th>Lead Teachers</th>
<th>Administrators: Site</th>
<th>Administrators: CCO</th>
<th>Team Members</th>
<th>Industry Partners</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>School 1, CPA1</td>
<td>3</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>8</td>
</tr>
<tr>
<td>School 1, CPA2</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>8</td>
</tr>
<tr>
<td>School 2, CPA1</td>
<td>3</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>8</td>
</tr>
<tr>
<td>School 2, CPA2</td>
<td>3</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>8</td>
<td></td>
<td>4</td>
</tr>
</tbody>
</table>

Where multiple interviews were conducted (for the lead teachers and one administrator) I shifted the focus of the interview based on the cycle of the school year so that the focal issues would be in the forefront of staff attention. For each relationship I was investigating, I focused the interview questions on specific routines (Table 2, below). With administrators, I focused on master scheduling, staffing and professional development planning. With team members, I focused on interdisciplinary curriculum planning. With Industry partners, I focused on work-based learning. I maintained a log of all interviews and observations, noting planned interviews in red and completed interviews in black with corresponding dates (see Appendix 1).

Interviews were conducted using a semi-structured protocol (Appendix 2). New questions were added as themes emerged. All interviews were recorded, except in one instance where careful notes were taken and immediately written up. All interviews were transcribed, then had identifying information removed. To ensure the reliability of the data,
protocols were used throughout, and a careful record was maintained of all documents, identifiers, and the actors involved.

### Table 3: Interview Focus

<table>
<thead>
<tr>
<th>Relationships</th>
<th>December - January</th>
<th>February</th>
<th>March</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Lead Teachers</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(1/pathway)</td>
<td>Interdisciplinary</td>
<td>Master sched and staffing/PD</td>
<td>Work-based learning</td>
</tr>
<tr>
<td></td>
<td>curriculum interviews</td>
<td>interviews</td>
<td>interviews</td>
</tr>
<tr>
<td><strong>Administrators:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Site and College</td>
<td>Master schedule</td>
<td>Staffing/PD interviews</td>
<td></td>
</tr>
<tr>
<td>&amp; Career Office</td>
<td>interviews</td>
<td>OCCR interviews</td>
<td></td>
</tr>
<tr>
<td></td>
<td>observations</td>
<td>observations</td>
<td></td>
</tr>
<tr>
<td><strong>Team Members</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(2/pathway)</td>
<td>Interdisciplinary</td>
<td>Interdisciplinary</td>
<td></td>
</tr>
<tr>
<td></td>
<td>curriculum interviews</td>
<td>curriculum interviews</td>
<td></td>
</tr>
<tr>
<td></td>
<td>observations</td>
<td>observations</td>
<td></td>
</tr>
<tr>
<td><strong>Industry Partner</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(1/pathway)</td>
<td>observations</td>
<td></td>
<td>Work based learning</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>interviews observations</td>
</tr>
</tbody>
</table>

In order to triangulate the data I gathered from interviews, I observed team meetings, curriculum planning sessions, professional development activities, guest speakers, exhibitions, field trips and other work-based learning activities, and teacher leaders in the course of their work. I conducted 16 observations in all, using a semi-structured observation protocol (Appendix 3). I maintained field notes from all informal conversations with team members, recorded all formal observations and wrote my field notes listening to the recordings.

One of the challenges I faced in data collection was in the one CPA that rarely met as a team, in which almost all CPA-related activities were conducted through the science classes of two lead teachers who took turns in that role. The co-lead whose turn it was, however, had a recent newborn and although he had the release time in his schedule, the other co-lead was doing the work. I was able to observe interactions between the lead and the counselor, and with community partners in those classes, but was unable to observe any interactions between the CPA lead and her team. I sought out documents to understand the dynamics in this case, including some written by team members and submitted as part of an effort to attain Linked Learning certification last year.

I collected and analyzed a variety of documents, prioritizing first any tools used by the informants to influence the routines under study, such as protocols, draft schedules or internship agreements. I collected agendas and protocols from meetings I observed, documents created by the CPAs to define their pedagogical approach and agreements, and planning and recruitment documents developed by or about the CPAs. At the site level, I gathered and analyzed publicly available site plans and other policy documents related to the CPAs and the specific routines under study. At the district level, I collected CPA-related policy statements and sought out data comparing each pathways’ student demographics and various performance indicators, such as attendance, referrals, and standardized test scores, to those of non-pathway students at each site. I found no public personnel-related documents regarding lead teachers, and in fact provided a sample M.O.U. from another district to the staff working on lead teacher job descriptions. I gathered specific data from the district Data and Assessment Office on student demographics and home language in order to get a deeper understanding of the debate regarding high performing Asian students at one site, but was unable to acquire correlated performance data.
Data Analysis

The first level of analysis occurred as data was processed. All transcribed interviews were read for accuracy and corrected, all respondents, places, institutions or people named were changed, and a record was kept of all changes. All observations were written up from notes and recordings as soon after the observation occurred as was possible, and again, all names were changed and all changes were recorded. All documents were organized in both computerized and hard copy files by case. As this process was conducted, I created a chart using the research questions and the cases to record general impressions (Appendix 4).

The second level of analysis utilized an online qualitative analysis program, Dedoose. The transcribed interviews and observations were uploaded to Dedoose and coded there. The coding system was developed first by extracting concepts derived from the literature that were essential for addressing the research questions. For example, to identify the areas of stress related to the lead teacher’s mandate to orchestrate a particular set of programmatic and instructional components I developed codes related to the CPA-mandated components; common preps, pure cohorts, 50% “at risk” composition, integrated project-based curriculum; and work-based learning. To capture stressors related to the nature of a lead teacher’s role I developed codes for role ambiguity, role conflict, and role overload, as well as legitimacy and authority. Given that lead teachers have no formal authority, I defined that as their ability to exert influence, and used York-Barr and Duke (2004) analysis of the means by which teacher leaders exert influence to identify sub categories the following subcategories: Empowerment (participation and social integration with school leadership structures, a weighted measure), Instructional Focus, Collective Vision, and Trust Building (Appendix 4).

Because the literature drew strong connections between instructional coherence, leadership distribution and capacity building (Elmore, et al., 2004). I also developed codes to analyze Leadership Distribution both within the CPA team and within the school context. Finally, I added codes specific to the relationships under investigation, including staffing, scheduling, and resources. The codes were developed and revised using five documents (interviews and observations) from the first case study. They were revised and reorganized, some discarded and others created. The first five documents were then recoded with the final set reported herein.

A third level of analysis occurred during the coding process, as re-reading the transcripts allowed me to make connections, ask questions, identify issues for exploration or verify issues raised elsewhere. Those memos were then organized into files by theme, such as “Disparity in Student Characteristics” or “Leadership” for later use as I develop my findings. Among the documents I did not code were data sets related to specific themes, such as “Disparity in Student Characteristics.” I analyzed documents that compared each of the four CPAs students to non-pathway students at both school sites in a variety of performance areas. As Asian students were considered a valuable resource by teachers, and as their distribution was a source of both concern and contention, I found and compared home language data to get a better grasp of the student characteristics in the “Asian” category. I also obtained documents from the district office used for student recruitment into ninth grade pathways, and to recruit industry partners for pathways.
The fourth level of analysis involved working with the coded data to identify the most salient themes, to see if the expected patterns match the data I found, and to map the tensions felt by and the strategies employed by these lead teachers. I coded the sets of data related to each case study into separate project files so that I could identify the specific patterns within each case. I analyzed role-related stressors expressed by the lead teachers against the expected stressors identified in the literature, including role ambiguity, conflict and overload, and I mapped the data I found on sources of authority and legitimacy for lead teachers. Finally, I organized matrices for cross-case comparison for each of the relationships I was investigating, the routines through which I was exploring those relationships, and the strategies lead teachers used to negotiate those stressors. Finally, I identified the contextual conditions that appeared to facilitate lead teachers’ capacity to move CPAs closer to implementation of the model.

Validation

Where I found patterns, I sought to validate them through multiple data sources. Observations and interviews with administrators, team members, and industry partners were the main sources for validating findings drawn from the more in-depth lead teacher’s interviews. Additional data sources were also referenced regarding the history, organization, and demographic and achievement patterns within each CPA, acquired from the district office, online research, and other sources. I revised interview protocols to elicit additional perspectives and explanations where appropriate. For instance, the lead teacher of the Science and Environmental Technology Academy (SETA) noted that the concentration of high performing Asian students in their program had only been identified as a problem recently, as the school demographics shifted and competition for high performing students increased, and that similarly tracked programs serving high performing students were not similarly criticized because the parents involved are white. I found validation for her first claim from the administrator at the site, who noted that the Asian student population was decreasing, and the African American population was increasing. I found validation for her second claim in an interview with an administrator in the District’s College and Career Office, who noted that the principal of the neighboring school with a similar high-track program could not be expected to address tracking issues given the potential political reaction of white parents, who were more numerous there.
Chapter 3: Cases in Context – Four CPA Lead Teachers at Two Comprehensive Schools in a Linked Learning District

**The Role of Context in CPA Leadership Enactment**

CPAs were designed to create an alternative to the norms of the comprehensive high school by substantially changing a number of essential organizing principals and relationships in the educational context. Research into how CPAs achieve their outcomes is complicated by the number of variables in the model, as well as by the number of contexts in which the reform exists. In a comprehensive high school, CPA lead teachers’ relationship to site administration is embedded in the distribution of leadership within the site, and their authority, or ability to influence their context, is heavily impacted by site leadership routines. The contra-normative nature of this school reform model contends with administrative as well as teacher norms. Site administrative teams are also transitioning from the expectations, beliefs, and norms associated with the traditional comprehensive school structures to a new modus operandi, in which pathway structures and the routines associated with them dominate school operations.

The four cases examined in this research are further embedded in another broader context – a *Linked Learning* district where considerable resources are directed toward developing programmatic components essential to the CPA model, from community partnerships and work-based learning structures to new a-g approved course sequences and project-based learning instructional strategies. Elements of each context are foregrounded by the data examined here, and impact how leadership is enacted toward implementing the CPA model.

**Figure 4: Aspects of Context Affecting CPA Leadership Enactment**

<table>
<thead>
<tr>
<th>Community</th>
<th>District</th>
<th>Site</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Involvement of Partners in District Sponsored Reform</td>
<td>• Coherence of Reform Strategy</td>
<td>• Leadership Distribution</td>
</tr>
<tr>
<td>• Relationship of Partners to Site Administration</td>
<td>• PD/Resources to Pathway Leads</td>
<td>• Administrative Capacity re: Reform</td>
</tr>
<tr>
<td>• Patterns in School Enrollment</td>
<td>• Community/Industry Partnerships</td>
<td>• Dynamics of Student Placement</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Teacher cultural norms &amp; beliefs</td>
</tr>
</tbody>
</table>
Two cases were examined at each of two comprehensive schools within a large, urban district of over 36,000 students, with five comprehensive high schools ranging in size from 650 to 2000, and eight small independent high schools or programs. Pine Hills School District’s school reform plans, according to the superintendent, focused on creating “Full Service Community Schools, in which schools act as resource and service hubs that connect with local partners to help build healthy and vibrant schools and communities.” As part of that strategic plan, the district had reorganized its CTE and secondary school reform programs into the College and Career Office. The Career Readiness Coordinator, Tiana Carson, explains their main goals:

“We serve the lead teachers and their teams... by funding them through ROP, listening and watching and learning from them what they need, what they want, and where they are in terms of lead teachers of teams... We have vowed from the beginning that we don’t bring more work to lead teachers, we try to take work off teams, off lead teachers, and we only bring to them what they’ve told us they want and need.

–Tiana Carson, CCO Career Readiness Coordinator

The CCO office works with site administrators and lead teachers to develop strong Linked Learning pathway programs of study utilizing ROP funding. They assist leads with course development for UCOP a-g approval, provide professional development on integrated project-based learning, cultivate community partnerships, and coordinate the development of work-based learning programs.

At both Riverside and Bayview campuses, Linked Learning pathway expansion had been promoted by this strategic plan and instigated on site by proactive administrators. As a result, both sites had developed new pathways in the last three years, and had undergone structural changes in school-wide leadership bodies. Both were also embroiled in contention regarding expectations of and structures for teacher collaboration. At both sites there had been considerable turnover in the administrative leadership and at the conclusion of data collection, both sites had lost their current principal.

Riverside High School: Developing a Collaborative Culture

Outside the windows, trees sway in the breeze. Despite the slightly dilapidated portables in the back, Riverside is the prettiest of the five comprehensive high schools in Pine Hills School District (PHSD) because it is on the edges of the big urban district, in an affluent neighborhood with its back to a forest, far from any commercial or industrial areas. Once white students were the majority here, but Pine Hills’ open enrollment policy has changed that. Designed to increase equitable access to high performing schools, this policy has diversified Riverside, and white students are now only about 8% of the student population of approximately 1800. Black and Latino students each comprise close to a third of the school, and nearly one in five students are Asian. Over the last six years, this school has had five principals and a constantly changing set of Assistant Principals, and budget cuts have increased class sizes dramatically. Like two thirds of the schools in PHSD, Riverside has falling test scores and is in program improvement. Three quarters of the students are identified as socioeconomically disadvantaged.

Principal Roy Burson was described by Tiana Carson, of the CCO, as “a pretty dynamic, out-there shoot em’ up principal.” He embraced the idea of developing career academy pathways and interdisciplinary teacher teams. Working with the district, he
orchestrated a seven-period day to build in collaboration time to support the development of teacher teams. The additional resources to add a seventh class to each students’ schedule in such a tight fiscal climate largely came out of counselors, whose jobs were eliminated and whose work load was taken on by administrators. Each is responsible for counseling an entire grade level in addition to their administrative duties. Riverside’s principal was injured on the job in October, and was not able to return to work. Acting Principal Will Unsler spends half his time as counselor for the senior class.

The district’s CCO provided Riverside the services of a CTE specialist, Deanna, to help develop community and industry partnerships at Riverside. While she was involved in initial discussions about setting up student enterprises at the site, her relationship to the administration has been primarily obtaining permission for college and career activities. She works directly with the lead teachers and communicates rarely with the administration beyond getting field trip forms signed.

In addition to the traditional departments of a comprehensive high school, Riverside has ninth grade “houses” with interdisciplinary teacher teams that collaborate weekly. There are three CPAs at Riverside, and two programs described as pathways, which offer a series of CTE courses in grades 10-12. About a third of Riverside students are in the three CPAs, with the largest number in STEM Academy, the newest CPA, which has just added four sections of ninth graders.

Beginning with the development of integrated teacher support teams for ninth grade families, Riverside teachers were eventually convinced of the value of teacher collaboration across disciplines. Eddie, a history teacher in the Public Service Academy, describes the transformative process:

Some of the resistance I think was very appropriate, like if we go too far to reorganizing around these cross-curricular teams of teachers, then how are we going to have consistency of curriculum and assessment at grade level per discipline? But then if we don’t acknowledge the new reality of these cross-curricular teams of teachers, then how are we going to be able to collaborate around the students that we share? And it really was our freshman program that showed us the way of how we could do both.

...As teachers began experiencing a lot of success and satisfaction at having the prep and the collaboration time, that’s when the tension between departments and academies began shifting. So, suddenly, the old department heads starting realizing that the academy structures had something really to offer. The academies also saw that collaborating around curriculum with the people you share curriculum around still held a lot of value.

--Eddie, PSA CTE and social studies teacher

Riverside faculty were able to unite behind the importance of developing a culture of collaboration among teachers, switching their bell schedule to a seven period day with both a prep period and a collaboration period built into each day. Leadership of collaboration teams at Riverside is now in the hands of dozens of teacher leaders, who operate in many different contexts, but are expected to utilize common protocols, a parallel performance form of leadership distribution (J.P. Spillane & Coldren, 2011). While the expectation of collaboration is new, teachers have been accorded a level of flexibility in the application of that expectation that builds upon norms of autonomy and professionalism.
This flexible application of new collaborative expectations has allowed departments to benefit, and has undermined resistance to interdisciplinary forms of organization.

Mary, for example, teaches English in two CPAs, as well as AP English in the comprehensive school. She is the English Department chair, and represents the English Department in the Faculty Council. She collaborates most often with PSA, almost daily, but her work in the Department and the Faculty Council is aligned with her work in PSA.

I’m really passionate about increasing the commonality in instruction, the alignment of instructional practices. And I chair the English department, and it’s something I’ve been trying to do within our department and through the grade levels, and it’s something I’m trying to do in our academy.

--Mary, PSA English teacher and English Department Chair

Jean, the STEM Academy lead teacher, contributes resources and experience in project-based curriculum to grade level teams looking for ways to make their science curriculum more applied and relevant, especially with the onset of common core standards. Crystal, the ninth grade STEM Academy math teacher, takes new approaches to teaching mathematics in an applied context from her department’s common core trainings and brings that approach to the STEM Academy interdisciplinary project based learning planning sessions where she argues for meaningful, authentic student work products. Relationships between departments, CPAs and pathways have become productive sources of new understandings of how to better meet common goals.

The school-wide leadership routines at Riverside allowed for leaders of these various teacher teams throughout the school, operating independently and in many different contexts, to organize around common goals. Riverside leaders incorporated the new interdisciplinary structures into established formal routines. The Leadership Council revised its bylaws, ensuring that members of CPAs or pathways were selected as departmental representatives to the Leadership Council, and providing the CPAs and pathways a representative on the Leadership Council. The Leadership Council thereby effectively represented the various groupings of teachers on the site as it addressed school-wide interests, including how to strengthen the instructional program. Spillane and Coldren (2011) characterize this type of leadership distribution as “Collective Co-Performance,” in which multiple leaders perform separate but interdependent tasks in different contexts but with a common goal.

Confident in their direction, both Faculty and Site Councils have asked that the VP acting as Principal be promoted to the position. Riverside’s administrative team now plans to create a VP position focused on supporting pathways. Although the master schedule is still a major obstacle to pathway development, Riverside appears to be moving forward as a whole school toward routines that normalize teacher collaboration and interdisciplinary teaming.
## Table 4

### Distributed Leadership Categories Applied to Site Context of Administrator-Lead Teacher Relationship

<table>
<thead>
<tr>
<th>Routines</th>
<th>Riverside</th>
<th>Bayview</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>School-wide Formal Leadership Routines</strong></td>
<td><strong>Collective Co-Performance</strong>&lt;br&gt;<strong>Master Schedule</strong> (informal)&lt;br&gt;<strong>WASC Process</strong> (formal)</td>
<td><strong>Parallel Performance</strong>&lt;br&gt;<strong>Faculty Council</strong>: Department representatives w/principal&lt;br&gt;<strong>Schoolwide Instructional Leadership Team</strong> (SILT) = Pathway Leads and Department Heads w/administration</td>
</tr>
<tr>
<td><strong>Faculty Council</strong>: includes Dept. Chairs plus one CPA lead representing all small learning communities + Subject reps from each SLC</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>School-wide Teacher-led collaboration teams</strong></td>
<td><strong>Parallel Performance</strong>&lt;br&gt;All 9th grade house, pathway or CPA leads run collaboration teams. Protocols establish common approach and accountability.&lt;br&gt;Flexible application. Teachers participate at varying levels, from 5 days a week to once a week after school. Collaboration can be in pathways or subject area.&lt;br&gt;Departments meet bi-monthly on early-release days.</td>
<td><strong>Division of Labor</strong>&lt;br&gt;No set collaboration time. Pathway teams either meet after school or not at all.&lt;br&gt;No school-wide collaboration routines, nor agreement on the desirability of collaboration.&lt;br&gt;Departments meet approximately monthly on early release days.</td>
</tr>
</tbody>
</table>

**Collective Co-Performance**: Multiple leaders perform separate but interdependent tasks in different contexts but with a common goal.

**Parallel Performance**: Multiple individuals perform the same tasks in different contexts.

**Division of Labor**: Various people exercise leadership in different areas/tasks.
Leading a Young, Growing CPA: Jean Parker, STEM Academy

She’s really dedicated. She’s really passionate, and she’s feisty, and I admire that… At the end of the day she could only do so much, but never once would I question whether or not she really gave that effort.

–Crystal, STEM 9th and 11th grade math teacher

In her 16th year in teaching, and her 8th year at Riverside, Jean Parker is a veteran in this, her second career. A CPA lead teacher, a former science department chair, and a CTE teacher, STEM Academy is her three-year-old baby just seeing its first cohort of seniors. She wrote the grants that allow her to access $135,000 to provide supplemental resources to her students (about twice what most CPAs get), and expanded the program this year to include four sections of ninth graders. She knows how to organize a program and how to connect to industry partners. She is constantly juggling the work. She will pick up a student at seven in the morning to take him to a breakfast with industry partners and spend her prep periods in meetings or making phone calls to students’ homes. Students come in to her room over lunch to finish their labs or talk to her guest speakers. She stays late filling out field trip forms and grades papers at night. On Saturdays she works with students at the high school to set up a weather station. “I like to take the lead,” she says.

As a science and technology-based Academy, Jean is aware of the demographic disparities between her program and others on campus. As the science and technology-based CPA program with access to more resources than any other pathway on campus, she feels obligated to ensure that at least 50 percent of STEM’s students be truly “at risk.”

I have no problem getting the not at risk kids to join the academy, and if I want to reach the at-risk kids, they’re at-risk because they’re not academically or emotionally engaged in learning. So I’ve got to figure out ways to get them thinking “Maybe, maybe I could make some friends and fit in here.”

--Jean, STEM lead, CTE and science teacher

With Jean’s background in the industry, and the support of the CCO, STEM Academy has developed robust community partnerships that reach primarily into the CTE classes.

I think when you see an industry partner and you incorporate them... and they’re in on the ground floor, that kind of experience for them -- it’s amazing how many industry professionals are willing and interested in working with schools. ...You’ve got just to foster it and they give value to your program.

--Jean, STEM CTE and science teacher

Jean is in constant contact with community and industry partners, through the Advisory Board, articulating coursework, arranging training for her CTE teachers, hosting guest instructors, setting up summer internships, arranging for on and off site field experiences like visits to industry sites and college campuses, or supervising after-school work-based learning projects like the weather station that contribute to the Riverside campus and involve industry partners. She wishes her principal, or someone from the administration, would acknowledge the value of this work, ask about it, come to an advisory board meeting, or stop in when an industry partner is on campus working with students.

This year Jean’s challenge is to support grade level teacher teams to create interdisciplinary project-based integrated curriculum, no easy task given master schedule
problems that undermine grade level teams and cohorts, as well as the wide range of other responsibilities on her plate. The district College and Career Office provides invaluable support. “That support from that office,” she says, “is what keeps me as an academy lead.” Yet even with the assistance of the CCO, Jean is burning out. Thinking about retirement, she is training another CTE teacher, now a co-lead, to take over her job.

_We feel like we are doing two jobs. Being an academy director is a full time job. Being a teacher is a full time job. Having one period off from teaching just means that I have to take a full time job and fit it in five hours a week._

_You can’t do that. So I don’t know what the answer is on that._

--Jean, STEM Lead & CTE Teacher

**Leading a Mature Academy: Briana Heller, Public Service Academy (PSA)**

_(She’s) amazing, incredible, the best… She’s so well organized and detail oriented, and composed in the midst of such craziness. And positive, and just really respectful of her peers and the students._

--Mary, 11th grade Social Service Academy English, and English Department Chair

Briana took over as lead teacher for the Health and Social Services Academy six years ago, but the CPA has in existence for twenty years. Drafted into the lead position, and into teaching the CTE classes in her third year of teaching, she was initially disgruntled about the assignment, but once she researched the CPA model, she got excited. She took on building up the program of study, rewrote the CTE courses to get them a-g credit, and started recruiting strong teachers to the program. She also got her Master’s in Urban Education and an administrative credential at UC Berkeley’s Principal’s Leadership Institute. Over time she has managed to focus the team less around logistics and more on student support services and curriculum and instruction. Team members collaborate daily. They talk about their team as an oasis of professionalism, where metacognition is ingrained not just in what they teach, but in how they relate to each other as professionals.

The students in PSA tend to be many more female than male, and more Latino/as than in the school overall. This disparity concerns Briana because “as students self sort they’re perpetuating a system that’s already inequitable.” She argues that students should choose their program based on inherent interest, but that currently a significant part of students’ choices are based on the expectations of their friends, their parents, or society.

_If I’m a Latina female I’m not going to choose to join the Computer Academy because that’s not what Latino girls do…. So it sort of perpetuates this societal expectation of students based on their class and race._

--Briana, PSA lead and CTE teacher

When Briana presented the purpose of PSA’s work-based learning program to a group of educators from around the state, she stated that PSA’s work-based learning is focused on connecting students to each other and to their passions. PSA’s purpose, she said, is to increase academic success, college attendance and readiness for a broad range of careers.

Brianna inherited some of PSA’s work-based learning partnerships, like Junior Achievement, and some were connections made through CCO, like the anti-smoking peer
Bayview High School: Tackling Disparities in Student Achievement Between CPAs

Situated in a middle-income residential neighborhood and bordering a main thoroughfare, the modern buildings on this hilly campus are surrounded by guarded security gates. Hit hard by the recession, 88% of the over 1700 students are identified as socioeconomically disadvantaged in this school. Lock downs are a regular occurrence in a city where homicide is the most common cause of death among youth. African American students are 36% of the school, and Latinos are 18%. The largest ethnic group (41%) is classified as Asian, and comes primarily from homes where Chinese is spoken. Asian students are a hot commodity at Bayview, where they are widely viewed as easier to teach, more tractable, and more likely to perform well on tests and to take AP classes than African Americans or Latinos. Contrary to trends within the district overall, the Asian population here is falling, and the African American population is rising. As the population shifts, so do the test scores, which have been falling dramatically. The gap between Asian and African American proficiency according to CST scores is huge – 26 percentage points in ELA, and 21 percentage points in math. Only 5% of African Americans are proficient or advanced in math. Yet largely because of high performing Asian students, students from Bayview graduate with more college preparatory (a-g approved) courses than from any other high school in the district.

There are three CPAs at Bayview, as well as a Project Lead the Way program (a series of CTE classes). About a third of Bayview students are in pathway programs. The school has a six period day except for approximately bi-monthly early release days. As at Riverside, a previous principal set up ninth grade families with interdisciplinary teacher teams to increase support for the transition to high school. A new community health center was established at Bayview through a partnership with a community organization, Pine...
Hills Asian Youth Center (PHAYC). PHAYC worked closely with Bayside administrators to set up the new Health and Social Services Academy as part of an effort to address the large number of low-performing, underserved students in the school.

The established STEM Academy, serving a disproportionately high-performing sector of the school population, came under criticism for its lack of diversity, as it is composed overwhelmingly of Asian students. The administration’s effort to shift resources and attention to the more disenfranchised students at Bayview polarized a politically charged situation. As the resulting conflict and stress increased, the last principal resigned. This year the new principal, formerly a VP at Riverside, was determined to get the school into wall-to-wall pathways and to break down disparities in access to more rigorous coursework. He announced that for next year, all AP classes had to be open to all students. He began working, in what one lead teacher called his “war room,” on ideas for a new schedule that would include teacher collaboration time. But in March came the sudden announcement that he had left the school for personal reasons. Another Assistant Principal stepped up to complete the year while a principal search began.

Bayview’s faculty has been in a contentious debate over how to schedule collaboration time into the school day. Two of the three CPAs stay late each week to collaborate, one rarely meets as a team, and the ninth grade interdisciplinary teams meet during their common prep periods. Only CPAs can pay their teachers for the extra work involved, although SETA chooses not to do so. Various plans for revising the bell schedule have circulated, beginning with the Riverside model of a seven period day with a built-in collaboration period. However, the deep divisions in the school are reflected in a leadership structure that undermines efforts to unite behind common goals and direction.

Responsibility for planning and approving educational reform initiatives is divided between two parallel formal leadership bodies. On the one hand there is the Faculty Council, a contractually defined body of elected department representatives charged with collaborating with the principal to address operational concerns, provide faculty input on administrative concerns, and discuss and approve any instructional reforms. On the other hand there is the School-wide Instructional Leadership Team (SILT), initiated by the principal, and composed of administrators, department chairs, CPA and pathway leads, and the program director of the Bayview Health Center. SILT advises the administrative team on master scheduling, course development, student recruitment and other school policies as well as the use of professional development time. Proposals for a shift in the schedule to allow for a collaboration period were developed here, but blocked by Faculty Council opposition. Spillane and Coldren (2011) termed this a parallel performance distribution of leadership, in which multiple individuals perform the same tasks in different contexts – in this case, the task of discussing and approving instructional reforms. This distribution of leadership appeared to provide fertile ground for micro-political conflicts. Given the lack of common educational goals or common agreements regarding teacher collaboration, the distribution of leadership in Bayview’s teacher teams generally can be characterized as division of labor, in which various leaders exercise leadership in different areas, but are not united by common goals or held to common standards.
Hands On Science Enrichment: Luanne Olsen, Science and Environmental Technology Academy (SETA)

She’s the ultimate workaholic. ...Her academics are unbelievable. Her body of knowledge is just off the charts. And she does have a great sense of humor.

--Larry, 10th and 11th grade science teacher, co-lead

Luanne founded SETA in 1998 alongside another science teacher, Larry Keller, rooting the extensive field-based learning activities in science classes that the two of them taught. Neither of them have CTE credentials, but only as the district has increased its commitment to Linked Learning and channeled resources into CTE has that fact impinged on their work. Both have been teaching science for well over two decades, in fact they are the two most senior science teachers in the department. They run this program together by alternating leadership responsibilities each year. This year it is Larry’s turn but his wife just had a baby, so while he has the release period, Luanne is carrying the workload. With a Masters and a Ph.D. in biological science, Luanne is now working part time in a math-related project at the University as she prepares for her next career steps after retirement. She has cut back her hours so that she is teaching just two classes, the capstone senior AP Environmental Science classes out of which senior projects are organized. “It’s just an insane amount of work. I can’t believe how much work she’s doing,” say Larry about the senior projects.

Luanne starts her workday on the computer at 5:00 am every morning, arrives by 8:00 and rarely leaves campus before 2:00. She orchestrates an energy efficiency data collection project, guest speakers, job shadowing to industry partners and field trips to a wide range of other sites, such as the 3 day field trip to Catalina with 65 students for environmental science field work, with a stopover at UCLA on the way home. Larry runs several other standing components of the program, such as the water-testing data collection project at the Lake Lakena and Sierra Club wilderness guide certification. They have created a rich and extensive work-based learning program that offers many opportunities for applied learning and a rigorous academic curriculum to their largely low income and high performing student population.

This established, mature CPA places great value on its solid academic reputation. Courses are rigorous, many are AP, and the field trips are the core of the program. Teachers do not need to meet to integrate their curriculum, Larry argues, because they know when field trips are coming and can include related content in their curriculum. Luanne would prefer a more collaborative team of teachers. She is always willing to shift her curriculum around to connect to another teachers’ lessons. But the teachers are mostly opposed to meeting outside the contract day, or to using their prep periods to collaborate. They decided early on, Luanne explained, to use their resources for field experiences rather than teacher time. Their main requirement for recruiting teachers into the program, besides academic rigor, is willingness to release students and to chaperone the field trips.

When the previous principal began working with Pine Hills Asian Youth Center (PHAYC) to create the Health and Social Service Academy, Luanne felt snubbed:

But that year when that was being done, I could not get into the principal’s office, she wouldn’t talk to me. I would ask for her time, she wouldn’t talk to
me. She would stand out in the hall with groups of HSSA teachers and chat and laugh, and I would come by and I would ask her, and she wouldn’t even talk to me. My jaw dropped at the rudeness of that. But I saw those people spending a lot of time in her office.

–Luanne, SETA co-lead and science teacher

The majority of SETA students are, as Larry describes it, “the urban working poor.” But they are also relatively high performing Asian students. Luanne and Larry have been trying to diversify their CPA demographics through concerted outreach efforts. At the same time, they note that their program brings valuable resources and experiences to deserving low income youth who would not otherwise have access to them. Keeping that group of academically motivated students at Bayview seems to them a tremendous contribution to the school, as shrinking enrollment and falling test scores are serious problems. If the “tiger moms” start looking for other programs, Luanne says, “they are going to say ‘I want my kids to go to these other schools.’”

Although she held a formal seat on the School-wide Instructional Leadership Team (SILT), she felt unsupported there. In fact, at a school-wide professional development organized by the SILT team regarding cultural competence, SETA teachers were singled out for criticism in a manner Luanne found rude and offensive. Facing pressure to change the character of her program, Luanne stopped attending SILT meetings. Although she had no formal seat on the Faculty Council, she sought support there as the conflict escalated.

Serving Student Needs: Health and Social Services Academy (HSSA): Linda Trent

She’s very energetic, very earnest, open to new ideas.

--Kellin, 10th and 11th grade English teacher

She is energetic, compassionate, passionate and caring.

--Kendal, 11th grade Chemistry teacher

Linda has been an advocate and an educator for over twenty years. Fifteen of these were working for the State Department of Alcohol, Drugs and Tobacco, and the last seven have been as a high school health teacher. She was recruited to lead the Health and Social Services Academy just two years ago, when health classes were eliminated due to budget cuts – it was a choice between this job and no job. She’d been in leadership positions before, running a statewide consortium, but she wasn’t ready for the impact on her teaching.

I love teaching, but I feel like I’ve become… more of a manager than a teacher.
I’m having to coordinate the other teachers, and motivate them, and think of their needs over beyond—more of a management position for the team.

--Linda, HSSA Lead and CTE Teacher

Her day starts with before-school prepping because prep periods are jammed with other responsibilities. She teaches two classes, then facilitates a team meeting, has a consultation with district staff about courses she’s developing for a-g approval, runs paperwork to the district office, conducts a parent meeting, teaches two more classes, then
has a meeting with the principal regarding scheduling for next year before doing prep work for an integrated project. She has raised the issue of overload with her team, and they want to discuss how to share responsibilities. They see this as a team project, and they want to help make it happen. "We all have this very earnest commitment to 'Okay, this is gonna work!'” explains Kellin, who teaches HSSA English.

Linda had reluctantly taken the helm of a new program that was quickly filled with an overwhelming number of students identified as needing the extra support a Health and Social Services Academy could provide. But needing support and wanting a career in the field of health and social services were not the same, and many of those students did not want to stay in the program.

_We've grown probably six eleventh graders, but we're down almost 12 to 15 tenth graders... there were multiple reasons why we lost 20 students when school started._

--Linda, HSSA lead and CTE teacher

Linda has a strong relationship with her Assistant Principal, Terri, and her program has been viewed as an essential spearhead of the school’s effort to become a full-service community school. During the first year, she co-led the program alongside the director of the on-campus Health Center, Traci Zumi, who wrote grants that have brought considerable resources to HSSA students, and who also sits on the Site Instructional Leadership Team (SILT). The administration values the fact that this CPA is addressing the needs of a largely underserved population. This allows the teachers to try out creative approaches, such as a blocked schedule to accommodate their twice daily practice of transcendental meditation. But the high concentration of low-performing students has also raised instructional issues for HSSA teachers, who have had difficulty managing a largely unmotivated and disaffected student population, many of whom were placed in the program without choosing it. HSSA teachers have raised concerns about between-program disparities in student placement. Linda explains their desire for a more diverse student population.

_Linda:_ I want to make sure our academy is diverse, and I think there's a diverse population at this school who still want the same goals and dreams and hopes and aspirations, and my job is to help support them and instill that and bring that out with them. I'm not gonna cream.

_Student:_ She wants a diverse group of kids who all want to be successful.

_Linda:_ No matter where they're starting from.

Despite the long hours and frantic workload, Linda comes alive when she talks about the possibilities this pathway is opening up for their students. The resources industry partners are offering are completely aligned with HSSA’s developing curriculum as well as with their students’ support needs, and line up with the direction of the school and the district.
Reflections on Contextual Factors Affecting These Cases

Before moving from a descriptive introduction to the cases and contexts to a cross-case analysis, I want to highlight a few of the contextual factors that emerged as significant in this research:

At the Community Level, a diverse, active, and engaged civic context affected these cases:

Factor 1: Where community partners such as PHAYC or Junior Achievement were invested in the district, their connections to sites were facilitated by the CCO and lead teachers were supported to engage their teams in connecting student learning to a community and career-based context.

Factor 2: Where the community viewed one program at the site as serving high achieving students, that program became a scarce resource in a community context of low-performing schools. Some families left the school if they could not access the program, which added weight to pressures to maintain it as a high track program.

At the District Level, being in a district that had adopted Linked Learning as a whole-school reform approach affected these cases:

Factor 1: Traditional ways of organizing districts and school sites, embedded in many interdependent bureaucratic structures, conflicted with the contra-normative requirements of the reform, such as diversity in program enrollments and new routines for cohort scheduling. Values, structures and routines were in flux.

Factor 2: District-organized professional development and specialized personnel were working to affect pathway instructional practices through course and program of study development, training in instructional strategies and outcome-based program planning and assessment, negotiation with principals for team and lead release time, and orchestration of career-field-related curricular activities.

At the Site Level, although both sites shared many contextual characteristics, there were also differences in context that affected these case studies.

Factor 1: At Bayview, strong cultural norms of autonomy and privacy combined with subject-specific and status-related norms to undermine team development, contributing to contention regarding collaboration time.

Factor 2: At Riverside, where teacher leaders with contra-normative experience in interdisciplinary teaming were infused into the traditional departmentally-based school-wide leadership body, norms around autonomy, privacy, subject- and student-related status were more open to discussion and change.

Factor 3: At Riverside, resources had been allocated and structures developed for collaborative time that did not add to teachers' workload. Consequently, collaboration and reflection on problems of instructional practice, as well as on student support were more common teacher norms.
With these contextual factors in mind, we next turn to the stressors these CPA lead teachers experienced in relation to their roles, to assess the extent to which role ambiguity, role conflict, and role overload were evident. Then we will examine patterns of leadership distribution at each of the sites to situate the lead teachers’ work in that context, using Spillane’s previously referenced definition of leadership practice, as practice that “takes place in the interaction of leaders, followers, and their situation” (p. 14), and his typology of patterns of leadership distribution (J.P. Spillane & Coldren, 2011). Finally, the next chapter will extend the cross-case analysis to stressors specific to the three critical relationships that CPA lead teachers develop as they engage this work – their interactions with administrators, their peer team, and their industry and community partners. By focusing on a specific routine in each of those relationships, I will identify strategies and conditions that strengthen the capacity of CPA lead teachers to productively fulfill this role.
Chapter 4: Cross-Case Findings

The stressors these four CPA lead teachers experience were examined with respect to the dynamics of their role, the context in which they worked, including patterns of leadership distribution, and three deep-seated conflicts with traditional norms and culture, each of which was studied through a particular relationship and routine. First, the reform seeks to offer all students access to both college and career preparatory curriculum in institutions that were previously designed to track students into college or work. This dynamic was explored through the routine used to place students into classes, the master schedule, which is negotiated between the lead teacher and the administration. Second, the collaborative and interdisciplinary nature of the reform model conflicts with the autonomous, individualistic and subject-oriented nature of teacher culture in secondary schools, examined through the lead teachers’ work with their peers on interdisciplinary curriculum development. Finally, the CPA’s community and industry partnerships challenge the traditional segregation of academic and vocational education, and bring outside actors into the school community. This conflict was examined by looking at work-based learning routines in which leads worked with industry or community partners.

The Role of the CPA Lead Teacher

The role of the CPA lead teacher is not defined in the education code. The Request for Proposals for SB70-funded CPAs in 2008 defined the lead teacher role simply as “to oversee the overall academy operations and coordinate the required components” (California Department of Education, 2008). A bit more detail is available in the practitioner literature, such as in the College & Career Academy Support Network’s (CCASN) self assessment guide:

One teacher, sometimes two, agrees to take the lead, serving as the SLC/Academy Coordinator(s): e.g. interacting with administrators and board members, managing the budget, helping to coordinate teacher professional development, and helping to coordinate employer, higher education, and parental involvement (Dayton & Stern, 2010).

Although definition of the role is rare, where it exists, this definition is typical. The selection process and specific duties differ from CPA to CPA. While the education code requires a .2 release period for CPA lead teachers, how much release time they get varies by district. Given the lack of definition of this role, as well as research findings on teacher leadership stressors addressed in the earlier literature review, a comparative analysis of how these four CPA lead teachers experienced ambiguity, conflict and overload in their roles as lead teachers will serve to highlight the specific contextual factors that affect those stressors, and that facilitate or impede CPA lead teacher’s practice.

The tensions common to lead teacher positions, identified in the literature, were evident in all four cases. Some, however, were more salient than others in these contexts. Of those stressors related to the definition of lead teachers’ work -- role ambiguity, role conflict, and role overload -- the last was clearly the primary concern for all four lead teachers.

Role Ambiguity

Role ambiguity was identified as a potential stressor because the job of the CPA lead teacher has not been defined by law, and has rarely been defined in district/union
contracts. The position has no administrative authority, yet many of the duties also overlap with those of administrators, (e.g. budget management and master schedule development), counselors (e.g. college advising, scheduling) and department chairs (e.g. course development, ordering of materials). The lack of specificity regarding the lead teacher’s job duties, it was hypothesized, would lead to stress and tension. Surprisingly, ambiguity about what the work of the CPA lead teacher entailed was rarely a concern for these leads, with the exception of the SETA lead teacher, regarding her responsibility to organize teachers to meet as a team.

Luanne, SETA’s lead teacher, expressed a great deal of ambiguity regarding expectations associated with her role, particularly the expectation that she would lead a team of teachers to create student supports and integrated project-based curriculum related to the CPA theme. She described why SETA never developed a teacher team, but instead focused on enriching the core science curriculum with industry and community partnerships:

*When we first started our academy people were very reluctant to become a part of an academy. They didn’t want to have meetings. They didn’t want to do anything. We had to bribe them with stuff for their classes, like buying books or this or that. And we had to assure them that they wouldn’t have to come to extra meetings. It’s been hard to convince people to be a part of it.*

—Luanne, SETA co-lead and science teacher

Grossman and Stodolsky (1994) noted that there may be a relationship between the importance placed on deep disciplinary knowledge, and teachers’ lack of willingness to engage in interdisciplinary experimentation, particularly where subject areas are highly ordered and bounded. This may explain why the expectation that teachers would meet on their own time, even in paid meetings, met with significant resistance. The science teachers leading this team placed a great deal of emphasis on the strength of their academic knowledge base and program.

*(They are) academics. Yeah. One thing that Luanne and I look for when we’re looking for teachers – you hear from the kids which classes are tough and we like that.*

—Larry Keller, SETA co-lead and science teacher

Collaborative inter-disciplinary teaming is contra-normative in teacher culture, and appears also to have conflicted with strong norms of autonomy and privacy among teachers assigned to SETA. The co-lead teachers adapted to this constraint by orchestrating collaborative projects around field experiences and involving teachers of other subjects peripherally in relation to the field experience component. The expectation that teacher teams would meet to discuss and organize additional supports for at-risk students, as well

**Table 5**

<table>
<thead>
<tr>
<th>STEM (new)</th>
<th>PSA (old)</th>
<th>HSSA (new)</th>
<th>SETA (old)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minor concern: Peer Lead vs. Administrator re: Quality of Team Members’ Teaching</td>
<td>N/A</td>
<td>N/A</td>
<td>Major concern: Lead without a team due to teacher norms of privacy and autonomy</td>
</tr>
</tbody>
</table>

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Luanne,

PSA (old)

HSSA (new)

SETA (old)
as to collaboratively create integrated curriculum could not be met. Because implementation of the model was severely weakened in the absence of a collaborative context, to comply with mandated components the SETA lead teacher became a mediator rather than a team leader, reduced to contrivance to create integrated projects:

* I was the architect of it; it didn’t come from the teachers who are teaching it.*

*However, you couldn’t get them in the same room. Some of them hated each other and you could not get them in the same room. And I had to have a project, so I went to each individually and I said, ‘Will you do this?’ This also focused around one of our very best field trips that we do in the 11th grade, which is to the EPA—EPA Marine Biology lab in Shell City.*

—Luanne, SETA co-lead and science teacher

Luanne’s legitimacy as a team leader was severely eroded by this conflict. She even found it difficult to get teachers assigned to her program to agree to come on those field trips. This is far from the role she envisions.

* I would like us to have a reliable Wednesday afternoon, one and a half hours, at least once a month and possibly twice a month. Twice a month to pay us back for all those year we have not been able to meet at all ...I think teachers need to build a community, they need to talk about their common problems, their students they’re dealing with right now. We can work into maybe focusing around our field trips... I think that would be very powerful, that’s what I want.*

—Luanne, SETA co-lead and science teacher

The STEM Academy at Riverside, on the other hand, was actively engaged in an effort to begin interdisciplinary curriculum project-based curriculum planning. Jean has pushed every team except the somewhat dysfunctional eleventh grade team, to develop an integrated project. She focused her efforts to integrate career-related content and plan a program of study on her cadre of science CTE teachers. A former Science Department chair, she participated actively in subject-specific science curriculum planning. Yet she did not encounter the same resistance to interdisciplinary project-based learning as did Luanne, and had no such ambiguity about her role as leader of an interdisciplinary team. Jean expressed only mild ambiguity about how to maintain a non-administrative peer relationship while addressing a teacher performance issue that affected her Academy’s program.

* I need to go sit in on that class, which I will as an academy director. Not that I’m evaluating the teacher, cause they are my colleague, but I am evaluating the class as an academy class, and what I see going on in the academy class.*

*And how can I as an academy director support that teacher in that situation.*

—Jean, STEM Academy lead, CTE, science teacher

She also discussed possibly establishing peer observation norms to provide access to the classroom and to open up conversations about instructional practice, a strategy the lead teacher of the older Public Service Academy at Riverside had introduced to engage her team in dialogue regarding instructional practice issues.

**Role Conflict**

While all lead teachers experienced simultaneous priority demands, and all felt some degree of overload, by and large lead teachers did not experience these as conflicting
demands. Only the SETA lead teacher experienced significant anxiety regarding conflicting demands. The priorities and goals of the three other programs were in congruence with site and district goals, so that conflict was not apparent when other priorities arose. For instance, HSSA’s English teacher, Kellin, was responsible for bringing ELA common core implementation priorities back to the Bayview English Department. This work, in her view, complemented and strengthened the work she was doing in HSSA. Similar experiences were found with Riverside’s STEM math teacher and the PSA English Department chair. In contrast, SETA’s programmatic emphasis on high performing students conflicted with district and site priorities, which were to realign resources to address the needs of underserved, low-performing students.

SETA’s program had earned a reputation for academic rigor combined with extraordinary field study opportunities, and in a school with a large Asian population, attracted overwhelmingly high performing Asian students. Both SETA co-lead teachers argued that providing a program for high performing students benefits the school.

People are looking at the concentration of good students in our pathway and wanting to homogenize. We have had a loss of students, and the perception is that Riverside and Pine Hills Tech are better schools, their APIs are apparently better. They have elitist academies there, like engineering, they have independent funding, they can pick whoever they want. ...I feel that we offer similarly pretty damn good programs. ...What we are losing and what we should try not to lose is our Asian population. It’s 45% now, it’s used to be 60. Those are the parents that are going to switch their schools, it’s not the African-American kids.

--Luanne, SETA co-lead and science teacher

We actually have a better track record of Latino and African American students passing AP exams than maybe any other program in the city. Somehow or other, we get kids to pass those exams. Not at high levels, but it’s higher than the others are doing... We put them next to kids who are highly motivated, and when you’re collecting homework and you’re in one class that’s handing in, out of 30 kids, we’re getting 5 homeworks, and in the other class you’re getting 25 homeworks, which class do you want your kid in?

--Larry, SETA co-lead and science teacher

On the one hand, the SETA co-lead teachers feel strong pressure from their teachers, students, and parent community to continue to serve a high performing student population, on the other hand SETA is being compelled by the district and state to increase the number of African American and Latino students in the program, and to serve a broader spectrum of the student population.

<table>
<thead>
<tr>
<th>Role Conflict</th>
<th>STEM (new)</th>
<th>PSA (old)</th>
<th>HSSA (new)</th>
<th>SETA (old)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>Rigorous program serving high performing students vs. district/site emphasis on underserved students and CPA 50% “at-risk” criteria</td>
</tr>
</tbody>
</table>
I think it all boils down to the fact that we have too many Asians and their jobs are on the line because of the low performance of other ethnic groups at our school. Even though we’ve recruited massively and we’re improving, that’s their focus... They feel we’re taking students away from other programs — they want us to distribute the good students among all the programs.

--Luanne, SETA lead and science teacher

The pressure to ‘distribute the good students,’ implies serving more lower-performing students, for which the CPA mandated team approach to creating integrated project-based curriculum, personalization and student support is designed. But that is not what SETA was designed to do. Larry, SETA’s co-lead, says, “One thing that Luanne and I look for when we’re looking for teachers —you hear from the kids which classes are tough and we like that.” Research into secondary school teacher cultures (Hargreaves & Macmillan, 1995) noted a tendency for insular subgroups to act in self-interest, acquiring and holding onto resources and status. In such a “Balkanized” setting, Hargreaves argues, power dynamics and competition for status and resources politicize relationships and teacher behaviors. Teachers of high performing students generally rank higher in status than those who teach heterogeneous or low track classes (Siskin & Little, 1995), and science as a subject has a high value both because of the technical nature of the subject and its role as a core, tested subject (Grossman & Stodolsky, 1994). Having created a program of subject-oriented, insular teachers, renown for their academic knowledge and high standards, which largely serves the “good students,” SETA’s lead teachers are conflicted between the value they place on the program they have built and their desire to attract and serve a racially diverse population.

Although STEM Academy is similarly founded upon a science-based program of study, and also serves a disproportionately high skilled student population, Jean did not experience conflicting demands from parents or her teachers. Her team has embraced the effort to make STEM Academy a program that serves students at all skill levels, and she is seeking ways to convince students who are lower-performing, who are also disproportionately African American and Latino, that STEM Academy will support them to be successful.

What we have to focus on in recruitment is “What is it about the academy that’s going to help your student be a better student? What can they get from this academy that’s going to foster their learning, which is going to provide them academic support, provide them with experiences to help guide them through their studies and focus on what they’re going to do after their studies. That’s how we’re going to attract the demographics that really represent the school.”

--Jean, STEM lead and science teacher

Disparity in achievement between STEM and PSA students is significant, as measured by tests scores. It reflects disparities in the ethnic composition of the student populations, but is not nearly as dramatic as the disparities evident between SETA and HSSA. Riverside’s CPA lead teachers collaborate with each other and share overall agreement with the Linked Learning principle that all CPA programs should offer relatively comparable programs of study. No existing high track program exists at Riverside as a bastion of the sorting tradition, as it does at Bayview. Riverside’s strategy for addressing falling test scores and falling enrollment appears to be a unified approach to improving teaching and learning
school-wide, facilitated by the changes in Riverside’s governance structures and collaborative teacher culture.

Role Overload

Role overload, or having too much to do given time available, is a primary stressor related to the role of a CPA teacher leader. For all of these lead teachers, overload severely impacted their lives. PSA and HSSA leads both expressed conflict between managing their programs and maintaining the quality of their teaching, but both attributed this to overload rather than to oppositional priority goals:

*I can’t even begin to enumerate the number of logistics. For example, right now, what’s weighing on my mind is getting 60 students placed in internships, and that in and of itself could be a full time job. That’s what I’m trying to do after school and on the weekends and meanwhile, I’m constantly trying to improve my instruction, but I feel like that falls by the wayside, because the district initiatives are weighing on me… (This) makes me really disheartened as a teacher because I feel like the reason I’m in a classroom is because I want to be a good teacher, but I’m being pulled into this kind of half administrator role.*

–Briana, PSA lead and CTE teacher

*I feel like my work load is doubled. I feel like I’m becoming an administrator, at least a department head. ...Reaching out to the community partners, monitoring internships, the budget, the paperwork. Having to go to a lot of night meetings at the district. The district expecting me to give up my summer and work 24/7. Getting the classes a-g approved... recruiting, interviewing the students. It’s a lot of work. I’m no longer just a teacher. I feel more mid-management, not quite an administrator, but not quite a teacher. Somewhere in the middle. ...I don’t like it. I like being a teacher. ...I’ve been in management, and I became a teacher to not get caught up in all this stuff.*

–Linda Trent, HSSA lead and CTE teacher

Both leads addressed the issue by increasing industry partners’ involvement in classroom instruction, but both also were actively investigating ways to increase the amount of release time available to them, and to distribute operational tasks among other team members.

For the STEM Academy lead, developing and managing a science-based industry partnership appeared to strengthen her collaborative relationships with other science teachers, in part thanks to the existence of collaborative time and structures. This was evident both in her relationship to her science subject-area peers, and to her relationships with the three other science/CTE teachers working with her academy. Despite the enrichment her program coordination brought to her subject area collaborations, she still expressed considerable difficulty with the time required to manage the work:

Table 7

<table>
<thead>
<tr>
<th>Role Overload</th>
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<tbody>
<tr>
<td><strong>STEM (new)</strong></td>
</tr>
<tr>
<td>Primary Concern</td>
</tr>
<tr>
<td>Two full time jobs</td>
</tr>
<tr>
<td>Time</td>
</tr>
<tr>
<td><strong>PSA (old)</strong></td>
</tr>
<tr>
<td>Primary Concern</td>
</tr>
<tr>
<td>Teaching vs. Managing Time, Stress</td>
</tr>
<tr>
<td><strong>HSSA (new)</strong></td>
</tr>
<tr>
<td>Primary Concern</td>
</tr>
<tr>
<td>Teaching vs. Managing Stress</td>
</tr>
<tr>
<td><strong>SETA (old)</strong></td>
</tr>
<tr>
<td>Lead carries load</td>
</tr>
<tr>
<td>without release time</td>
</tr>
</tbody>
</table>

40
It is a full-time job and I don’t think there’s enough hours in the day. And I think it is going to be high burnout too. …We feel like we are doing two jobs. Being an academy director is a full time job. Being a teacher is a full time job. Having one period off from teaching just means that I have to take a full time job and fit it in five hours a week. You can’t do that.

--Jean, STEM Academy lead, CTE and science teacher

One of the main strategies all four lead teachers attempted to explore to manage the high level of overload they experienced was shared leadership, or distribution of leadership responsibilities. None of them, however, felt that was an adequate response to the stressors they experienced.

There is one academy here that has two directors, but they are a larger academy. Their academy is 9 through 12. And she-, even that academy director says she’s just completely overwhelmed. So, the changes in the schedule that would be supportive would be more to reduce the number of periods teaching, so that we have more time for logistics.

--Briana, PSA lead and CTE teacher

SETA Academy’s co-lead cannot imagine having only one release period to take on the workload Luanne has been carrying:

So she’s doing the bulk of the work and the grant, all the paperwork that has to get done there. I know that she’s going to retire in a few years and I’m going to have to do it, but we’re going to have to work out something with more conference period time or something in order to get that done.

--Larry, SETA co-lead and science teacher

With a teacher team described by Mira, the SETA English teacher, as “not very closely connected,” and “distant from each other a lot of the time,” there is little chance to distribute leadership responsibilities. Larry is not really co-leading, and all of the work is on Jean.

Because she makes so many things happen, and helps our students find amazing internships, and does so much work with her class, collaborating with outside organizations. But I think that means that the Academy really rests on her shoulders in a way that is not gonna work when she leaves.

--Mira, SETA English teacher

Role overload is a major concern in the conception of this teacher leadership role. Of the four lead teachers examined in this study, two are planning to retire soon, one is moving on into an administrative position, and the last is seeking some way to either hand off or share the position.

The duties of these CPA lead teachers appeared relatively unambiguous, despite the lack of job descriptions. Perhaps having clear guidelines about the character of the reform one is to lead a team of teachers to engage in is adequate definition to avoid ambiguity, except in the case where little team exists because of the individualistic teacher culture. There, the legitimacy of the leaders’ charge is constantly challenged, causing ambiguity about just what the job entails. The three lead teachers who were able to establish an interdisciplinary team working with industry and community partners to implement the model rarely found themselves pulling simultaneously toward opposing goals. Only where traditional student tracking norms had taken root in the definition and structure of the CPA, did lead teachers’ concern for equity and access conflict with their established
Academy structures. All four of the CPA lead teachers, however, experienced their roles as tremendously time-consuming and nearly impossible to fulfill in a sustainable way.

**Stressors, Strategies and Facilitating Conditions in Three Key Relationships**

In each of the three relationships central to the CPA model, with administrators, their peer team, and their industry or community partners, CPA lead teachers confronted challenges that stymied their efforts and produced additional stress. To identify the most salient stressors, the strategies lead teachers employed to manage them, and the conditions that facilitated success, this research focused on a specific routine enacted within each relationship.

**Negotiating with Administrators to Get What You Need in the Master Schedule**

The set of annual routines related to the master schedule compose a four-dimensional puzzle, mapping teachers and their credentialed subjects against groupings of students and their course needs over the periods in the school day and simultaneously over the four-year period of their high school education. In a large comprehensive high school this complex process goes through many iterations. The more complex the program offerings, the less likely it is that it will all work out. The rule of thumb is, ultimately, you can get some things you want, but not everything you want. CPA leads want more than most comprehensive high school schedules are set up to give: common preps for collaboration, pure cohorts in up to four classes per grade level, teachers assigned

<table>
<thead>
<tr>
<th>Table 8</th>
<th>Stressors and Strategies in Master Scheduling</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Riverside</td>
</tr>
<tr>
<td><strong>Major Stressors</strong></td>
<td>STEM (new)</td>
</tr>
<tr>
<td>Cohort purity for Integrated Projects</td>
<td>Cohort purity for Integrated Projects</td>
</tr>
<tr>
<td>AP pullout impact on class sizes</td>
<td>AP pullout impact on class sizes WBL internships need pm block</td>
</tr>
<tr>
<td><strong>Master Scheduling Strategies</strong></td>
<td>&quot;Open Door&quot; CPA leads meet independently to coordinate demands CPA leads meet with principal together to make demands</td>
</tr>
</tbody>
</table>
primarily within one program, and able to loop with their students if they desire, block
schedules for creative use of instructional time, like field studies or internships or team
teaching. Other routines are intimately connected to the master schedule, such as teacher
assignment, student recruitment and placement policies that impact the program of study a
CPA is able to offer.

None of the CPAs in this study were able to achieve cohort purity, a term used
commonly to refer to the requirement that students in a CPA be scheduled as a cohort into
sections without any students who are not in the CPA. HSSA came closest, but students who
did not choose them were assigned to HSSA last year, and because they left in large
numbers, class sizes have fallen and “backfilling” – placement of non-CPA students into CPA
classes in order to fill the classes – has begun. SETA never worried about “cohort purity,” in
large part because they did not do authentic interdisciplinary projects that required it. At
Riverside, about a third of all classes except the CTE courses were “backfilled” due to AP
pullouts. Briana looked very tired as she described the impact of this problem:

_I've, like I said before, kind of had to acquiesce to a very, very imperfect system._

_We do not have cohorts. The only pure cohort is within the CTE class._

--Briana, PSA lead and CTE teacher

Leads at both sites worked regularly with administrators to advocate for their
master scheduling priorities. At both sites, administrative turnover and lack of experience
with master scheduling for a pathway model added to lead teacher tensions. However,
scheduling tensions differed substantially by site. While neither site achieved “cohort
purity,” for instance, it mattered more at Riverside. There collaborative interdisciplinary
teaming had become part of normative school structures, the lack of pure cohorts raised
high levels of stress. It was the one piece of the puzzle that wasn’t working, undermining a
tremendous amount of otherwise effective work. At Bayview, on the other hand, where
collaborative interdisciplinary teaming was contending with traditional norms in the
school culture, and the various programs were competing for teachers and students,
“cohort purity” was less of an issue. There, the master schedule became the battleground
for a larger debate over expectations of collaboration, and the norms of tracking and
teacher autonomy.

Administrative overload and turnover exacerbated conflicts between programs
competing for teachers and students via the master schedule at Bayview. This year the
master schedule was an avenue through which Principal Ken Smith planned to move the
school to wall-to-wall pathways. Terri was no longer building the schedule, and Smith left
suddenly in March. With leadership structures in disarray, the “Balkanized” nature of the
school culture made master schedule-related issues like teacher assignment a source of
major stress.

_AVID is recruiting and trying take away our new English teacher, SETA lost
their History teacher and is trying to get ours... Its ugly, mean and sad. When I
asked our acting principle about it she said "oh well," so I have no support and
could be losing an English teacher, government teacher and forced to work
with a history teacher that is not a team player._

–Linda, HSSA lead and CTE teacher
Administrative turnover, combined with administrators’ lack of experience with running a master schedule conducive to multiple pathways in a comprehensive high school, also created significant tension for CPA lead teachers at Riverside.

Since I’ve been here, we’ve had six administrators in the eight years that I have been teaching, principals. Six principals. And we have had probably about that same number of assistant principals. ...It’s hard to rebuild institutional knowledge about academies every year with new administrators... Overall, academy directors have a pretty close and collegial relationship with the administrators. It is challenging though, the constant turn over, because it creates more work for academy directors every year to have to explain Ed Code and explain cohorting of students and explain... you know.

-Briana, PSA lead and CTE teacher

At Riverside this instability was ameliorated by the fact that the current, absent principal had put into place a cohesive, inclusive leadership structure that improved support for interdisciplinary, collaborative teacher teams. According to the acting principal, that collaborative approach was built into the school's routines and would inform the development of the master schedule.

We have an open door policy where when we start working on the master schedule: department chairs, academy directors, or lead teachers, are invited to come in and help us in terms of student movement, trying to make it pure, and making sure the flow makes sense. That’s how it’s worked and so far I think it’s been a good process. Because when it comes down to it, if something does happen we’re like, ‘hey, admin didn’t force this on you guys, we all did this together.’ So if we’re having a tough time, all of us are going to be held responsible for this tough time.

-Will Unsler, Riverside Acting Principal

Despite the open door policy, both lead teachers complained vociferously about the lack of “cohort purity.” The removal from CPA cohorts of students taking AP classes left many classes under-enrolled, which were usually “backfilled” with non-CPA students. This undermined the lead teachers’ ability to effectively organize interdisciplinary projects or academy-specific activities. PSA’s English teacher, Mary, and lead teacher, Briana, wrestled for over an hour with how to adapt an integrated project to fit classes that were not cohorted. Greatly discouraged, Briana exclaimed, “This just goes to show how master scheduling pure classes is the backbone of being able to integrate curriculum.”

The problem is a gnarly one, primarily set up by the fact that students who aspire to go to a four-year college have to opt out of CPA classes to take AP classes. Mary, PSA’s 11th grade English, and Sean, STEM Academy’s 10th and 11th grade English teacher tried to incorporate AP English by splitting their 11th grade cohorts into one AP section and one non-AP section, but it did not happen this year. Jean, STEM Academy’s lead, explains why that strategy has been ineffective:

Ideally if you have a cohort of sixty kids, you want thirty to be AP and thirty to be non-AP so you can have a cohort of non-AP that’s a full class. Unfortunately, it doesn’t always happen that way. So you’ve got 40 kids going into AP and 20 kids not. Well that’s 20 kids and a teacher, you need to fill that up with other kids – non-Academy kids. Or you have only 20 going into AP, which can get dispersed into all the different AP classes. Now you have 40 kids and you are asking a teacher, well, you are an Academy 11th grade US history teacher, here
are your 40 kids. It’s like, ‘Wait a minute, I can’t do 40 kids!’ and this is what happened this year, so now you have 20 and 20. You don’t even have 30 and 10. You have 20 Academy and 10 non-Academy in one period and 20 Academy and 10 non-Academy in another period.

—Jean, STEM Academy lead, CTE and science teacher

This particular master scheduling quandary is exacerbated by between-school disparities in student achievement. In an ideal year, creating one section of AP and one section that is non-AP (high track/low track) might work for a program with a concentration of high achievers, although as research by Oakes (2005) and others on tracking has shown, the impact on lower-performing students is generally negative. But in many inner city comprehensive high schools, concentrating enough high achieving students to run a high-track program leaves the other programs bereft of high achievers. While between-program disparity is not as dramatic at Riverside as it is at Bayview, it is nevertheless problematic. Riverside’s ninth graders are divided into four groups, one of which is attached to STEM Academy. Jean reported that STEM Academy’s cohort had more ninth grade students with 4.0 gpas than all of the remaining three ninth grade cohorts combined.

At both sites, strategies to reduce between-school achievement disparities currently rest primarily upon recruitment efforts. At Bayview those efforts have brought about some change in student choice trends by ethnicity, but the disparities remain dramatic. Both science and technology-related academies experience higher rates of high achieving students choosing their programs, in particular higher rates of high performing Asian students, and significantly lower percentages of African American students relative to their schools’ student demographics. At Bayview, Linda has been working with her team on revamping the program of study so that HSSA’s program can attract a more diverse group of students who choose the program because of their interest in the career field. At Bayview, the “Balkanized” culture encouraged competitive approaches to equity issues; At Riverside, the collaborative culture facilitated more cohesive, school-wide approaches.

“Cohort purity” was not a major stressor for SETA or HSSA. Terri, the Assistant Principal who had done the master schedule for many years, understood the CPA model, and worked hard to ensure pure cohorts. But the two programs differ in pedagogical approach and in student achievement, such that the cohorting issues affect them very differently. SETA students were allowed to select other AP or elective options over CPA classes if they wanted. “They have always not really cared so much about the purity of their classes,” explained Bayview Assistant Principal, Terri Danvers. SETA has also developed strategies to address the increasing diversity of their program. SETA has often separated their cohorts into AP and non-AP sections in English or history. This year, however, all sophomores took AP Biology. SETA co-lead Larry identified about 15 sophomores in those two AP Biology sections who might otherwise fail, and had them instead coded for Advanced Biology. He is differentiating his assessments so that they are able to experience success rather than a potentially damaging failure in a class for which they are unprepared.

HSSA, on the other hand, had so few high performing students that AP pullouts were less of an issue. But in this, their second year, a large number of students unhappy with being placed in HSSA left it in large numbers at the beginning of the year, and backfilling has begun to affect “cohort purity.” Kellin, HSSA’s English teacher, is trying to include advanced options, but with a very different student population. She currently has two students in her junior cohort who are coded as Honors English, doing extra work within the
regular college preparatory class. More signed up to do so originally, but have dropped off. HSSA’s priority is in bringing more academically successful students into their cohort. Kellin is hoping next year to develop a support section for students who wish to take AP English. Students would remain in the regular English class, and simultaneously take an after-school twice-a-week augmentation class that is fully integrated with the regular English, but focused on preparing students for an AP test. They would get credit for both AP and regular English. That would require additional resources and solid administrative support. With the loss of the principal, and more budget cuts next year, it is unclear if it will be able to happen.

At Riverside, another strategy for tackling this problem is developing. Mary, PSA’s English teacher who is also the English Department Chair and on the Faculty Council, has been experimenting with incorporating AP content into her regular English classes:

_The English department has been talking about developing more of a pre-AP culture on our campus. As we think about how we design units and how we backwards plan and what instructional practices we should be using, we’ve been talking a lot about how our non-AP classes should better reflect the curriculum of our AP classes, and that’s been really powerful for me. So I’m teaching AP for the first time this year, and I just started kind of testing out how I bring more of the AP style of writing into my non-AP classes, and it’s actually pretty cool and pretty easy, and so I’m taking that into the unit design work and I’m planning to present on that to my department._

--Mary, PSA English and English Dept. Chair

While this effort to provide AP curriculum to lower-track students, and Kellin’s plan to integrate AP into the regular course with augmentation are promising, the general policy of putting students into separate high and low tracks remains a strong norm at both sites.

Both Bayview CPA leads experienced considerably less stress regarding the master schedule than did the Riverside leads because they had close working relationships with an Assistant Principal who was knowledgeable and experienced at balancing the needs of multiple CPAs and other programs with the needs of the comprehensive school overall. She had facilitated their ability to creatively use block scheduling within the traditional schedule, and she valued and understood the scheduling requirements for their work-based learning programs. The structures they created were threatened with elimination, however, because that Assistant Principal was removed from her master schedule responsibilities by a principal who then left in March. Exacerbated by parallel distribution of leadership and a “Balkanized” school culture, competition for the scarce resources of team-oriented teachers and high achieving students increased stress for both lead teachers.

Riverside’s administration was able to make great inroads in changing school culture and leadership structures. The district’s CCO CTE Coordinator chalks that up to a principal who was willing to take risks, who understood the Linked Learning vision.

_Because of our funding, we’re at the table when he’s making decisions, building his master schedule, building his budget, sharing his vision saying “Here’s what I want to do, can you guys help me out, or where should I go?” So we’ve worked very closely with him in the past. For the interim principal, we seem to be having the same relationship. …There was a working relationship._

--Ellen, CCO CTE Coordinator
On the other hand, some basic understandings about how to incorporate cohort scheduling and work-based learning into the master schedule were not in place. When Briana was asked about her priorities for administrative support, she replied:

*All the academies really need support around master scheduling and cohorting our students. It is the backbone. It’s the life blood of an academy model working. It’s so hard to do any of the real integrated curriculum when you don’t have pure classes or when you don’t have cohorted students. That would be number one.*

--Briana, PSA lead and CTE teacher

Ellen, in charge of CTE programs at the CCO, affirmed that concern:

*I don’t know that the principals have a really deep understanding of how essential that is towards interdisciplinary, project based – to all of the things that is link learning. If you don’t have your teachers having common planning period and having cohorted students, all the rest of it just falls apart. And I’ve heard principals talk about that as being important, but only in the context of the assurances that they signed for the money, and that bothers me. I wish they could understand that that is fundamental to this reform that we’re trying to do.*

--Ellen, CTE Coordinator at the District CCO

Meeting the needs of diverse students within academy cohorts remains a challenge. This caused both Riverside lead teachers a great deal of stress, undermining their ability to hold onto sizable cohorts, build grade level teacher teams, and coordinate interdisciplinary curriculum and internships.

Leads at each site were able to negotiate for a master schedule that met only some of the basic demands of the reform. At both sites the level of success in meeting CPA needs in the master scheduling process was facilitated by district mandates, and supported by the district in the form of principal coaches. At Riverside common preps were facilitated by the district support given to site administration to overhaul the school day, including major changes in staffing to establish a seventh period collaboration time. The structured collaborative relationship between lead teachers, the “open door policy,” and their

**Table 9**

**Conditions that Facilitated Teacher Leaders’ Success in Master Scheduling**

<table>
<thead>
<tr>
<th>Facilitative Conditions</th>
<th>Riverside</th>
<th>Bayview</th>
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<tbody>
<tr>
<td>• Structured, collaborative relationship between lead teachers</td>
<td>• Close working relationship with Admin putting in CPA constraints and priorities first</td>
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</tr>
<tr>
<td>• Support from CCO to administration re: creative approaches to master scheduling and related routines (staffing, student recruitment)</td>
<td>• Explicit congruence between site and pathway goals</td>
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<tr>
<td>• Existence of a collaboration period built into the work day</td>
<td>• Field experiences/WBL built into school day</td>
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empowerment in the school leadership context provided the lead teachers with avenues through which to engage the administration in addressing the tensions due to a lack of cohort scheduling. The CPA leads at Riverside put the pressure on their administration.

*The most effective way has been for us to -- I know this term sounds awful, but to band together. Like all of the academy directors, stop by his office at this day and time and say this is essential.* --Briana, PSA Lead and CTE teacher

Before long, Acting Principal Unsler had proposed that Briana become an Assistant Principal whose primary role would be supporting academies.

At Bayview, common preps and creative master scheduling of blocked periods for both CPAs was facilitated by a close working relationship to an administrator, who was skilled and knowledgeable regarding CPA requirements like common preps and work-based-learning needs, as well as processes for building those into the schedule. It was also facilitated for HSSA by the congruence between HSSA goals and school-wide goals, for instance in developing a schedule that allowed Transcendental Meditation to be built into the school day.

**Leading Teacher Teams to Affect Instructional Practice: Interdisciplinary Projects**

In a reform that includes multiple components that run counter to the traditional norms of teacher culture, the lead teacher’s relationship to a team of peers is a critical factor in the successful transformation of instructional practices. Where teacher leaders have been pulled from the classroom to oversee structural reforms, they often struggle with legitimacy, particularly when they do not share the subject expertise of those they supposedly lead (Judith Warren Little, 1995a). But these leads all taught four sections of students, with a .2 release to fulfill both programmatic and instructional leadership roles.

All four CPA leads were acknowledged for their teaching skill and subject expertise, but perhaps most impressive to their peers was the amount of work they did. That work allowed team members to take students on field trips, bring in speakers and other resources, offer students incentives, and much more. It allowed teams to develop norms, and team members to have a voice and role in shaping their program. And it allowed teams to work together on instructional strategies, to engage students in relevant, practical applications of academic content, and to collaborate in evaluating student work and reflecting on the problems of practice it presents. In this study, the lead teacher – peer team relationship was investigated through a focus on the routines in which teams were striving to connect their teaching practice to each others’ by developing authentic career-field related interdisciplinary projects.

The older Academies had routines for integrating curriculum that were built into their norms and expectations of each other. They had established patterns through which interdisciplinary and thematic curriculum integration took place. Their common stressor was adjusting those norms and expectations to new conditions. Newer teams were just establishing their norms, and craved models, tools, and time to learn how to connect to each other’s curriculum. They also experienced more frustration with teacher induction and inexperience, particularly since as new CPAs grow, their size increases each year. At Riverside, the site-specific stressor that had the most impact on integrated project-based curriculum was related to the master schedule: “cohort purity.”
Leading New Teams: Building Airplanes While Flying

The two newer CPA leads were developing their teacher teams as they were developing their programs, adding new people each year as their programs grew. In this, their third year, STEM Academy’s staff doubled, as they added both ninth and twelfth grades. “This is the year of project collaboration,” Jean explained:

*In the first two years of the academy the only thing we did collaboratively was a science fair project second semester, where the written component was talked about in the English class. 90% of it was through my class and maybe only about 10% through the English teacher."

This year Jean led an effort to develop an integrated project in the sophomore team.

*It was really an intervention. This project is really trying to see, hey, what if we do this? Can we get the kids to be more engaged in English and not kind of fear the whole writing stuff.*

–Jean, STEM Academy lead, CTE and science teacher

They used a sequential approach, with lessons and activities orchestrated in Jean’s class, then handed on to the CTE teacher, and finally passed on to the English teacher. He was not really sure how he would incorporate their efforts into his English class, as the original idea was not longer a good fit.

*I still haven’t seen an example of an effective cross-curricular project. I don’t know what one looks like. That’d be helpful to me. I’m sure it’s been done before, I’m sure it’s been done in STEM academies before.*

–Sean, STEM Academy English teacher

Jean introduced the proposal to develop integrated curriculum projects to STEM’s ninth grade team, who had been working together in a “family” for years before being joined to STEM this year. Crystal, the ninth grade math teacher, had set aside a week in her math class for a spring project on “sustainable energy in the community.” Ninth and twelfth grade teams attended a day-long Project Based Learning (PBL) workshop conducted by the Buck Institute. There, the ninth grade math and history teachers were observed planning:

Crystal: *How can we get them to work on an actual, hands-on product? If they could choose, after all of these project activities to increase their grade by applying what they’ve learned to make a brochure, or a lesson plan, or a policy proposal…*

Karen: *I think that whatever they produce, all of these parts are essential, they have to address all parts. An audience is also very important. Parents? Another house? Can we use a community connection, like the City Council or the Principal?*

A few minutes later:

Karen: *When they present, they have to prove that this is going to work.*

Crystal: *Prove’ is the driving force,” Crystal agrees. “Students have to present more than an idea. “Evidence that that idea would address the problem is crucial.”*

The ninth grade team appears to be engaged in deep discussions of effective pedagogy. While new to Green Academy, this ninth grade team, has been collaborating for several years, and meets three times a week, as well as once a week with all of the STEM Academy. But the eleventh grade team, Jean explains, is not really functional.
The English teacher does not have a common planning period with us... because she's 90% with a different academy. ...Now, the eleventh grade history, the eleventh career tech ed, and the eleventh grade math teacher all have a common planning period. They can work together during that time, but I just don't see that happening. I don't see them putting a project together.

--Jean, STEM lead, CTE and science teacher

The eleventh grade math teacher has four ninth grade sections, and puts her collaboration energy there. That leaves the CTE teacher to collaborate with the U.S. history teacher, about whom Jean notes:

*She's a veteran teacher but she's new to high school, so she's kind of learning how to teach all over again. It's hard to say, ‘Oh, by the way, I want you to collaborate and work on this project.*

--Jean, STEM lead, CTE and science teacher

The district’s College and Career Office has provided technical support, worked with the principal to get teams released to attend the PBL workshop and to access to a two-day

**Table 10**

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<thead>
<tr>
<th>Stressors</th>
<th>NEWER CPAs</th>
<th>OLDER CPAs</th>
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<tbody>
<tr>
<td><strong>Stressors</strong></td>
<td>STEM Riverside</td>
<td>HSSA Bayview</td>
</tr>
<tr>
<td>Lead new to project-based curriculum integration</td>
<td>Teacher turnover</td>
<td>Impure cohorts undermined integration</td>
</tr>
<tr>
<td>Some grade-level teams dysfunctional due to impure cohorts, teacher assignment issues</td>
<td>New teacher induction</td>
<td>Science not clear on how to connect</td>
</tr>
<tr>
<td>New teacher not prepared to collaborate</td>
<td>Program of study still in formation</td>
<td>One teacher not interested in collaborating</td>
</tr>
<tr>
<td><strong>Strategies</strong></td>
<td>Integration as intervention strategy</td>
<td>Involve teachers in a-g course development</td>
</tr>
<tr>
<td>Sequential collaboration</td>
<td>Use of District resources: time and tools from PBL workshop</td>
<td>Use of District resources: PBL workshop</td>
</tr>
<tr>
<td>Use of District resources: time and tools from PBL workshop</td>
<td>Vertical project integration</td>
<td>Projects built into core science classes</td>
</tr>
<tr>
<td>Peer Observation to engage team around instructional practices</td>
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Leadership Institute where the CTE teachers articulated the outcomes for the core sequence that informs their capstone senior projects. There, Jean worked with the twelfth grade team planning the senior project. The time and the tools thus provided were welcomed. After the district-sponsored PBL workshop, Jean exclaimed:

*I really liked that paper he had us fill out, that overview, project overview paper. I thought that was really good, because it helped us put our ideas down in a more logical manner instead of my scribbled notes on paper, which is what we did and what I was doing. I’m like, ‘Oh this is better.’*

---Jean, STEM lead, CTE and science teacher

Time to plan was the one thing Jean said she needed the most as she discussed moving her team into integrated project based curriculum routines. But clearly the tools that help teams to frame the work were also essential resources. Doubling in size as a program put a high priority on getting new team members to feel connected, invested, and knowledgeable about the reform. Planning interdisciplinary project based curriculum in grade level teams provided Jean a context for that work, for which both the CCO’s support and the collaboration period were extremely valuable, particularly given the level of overload she was experiencing:

*Time. Time. You’re teaching, and if that isn’t enough,… grading and planning and teaching… And then you’re trying to get guest speakers, and then you’re trying to do career exploration visits, and you’re trying to do fieldtrips, and you’re trying to integrate curriculum with other teachers… You keep asking more and more of your teachers, and this project integration is a big thing we’re asking our teachers to be a part of to the extent that they can and want to be. But again, it’s like the more people, the more time…*

---Jean, STEM lead CTE and science teacher

HSSA is a year younger than STEM Academy. In their second year, this is HSSA’s first junior class. The English, history, and CTE teachers teach both tenth and eleventh grades, their science teachers each teach a grade level, but the sophomore science teacher is new. Linda participated in the hiring of the new sophomore science teacher, and recruited the new junior science teacher. Kendal had worked with Karen before, and felt comfortable collaborating with her, but subject integration is more challenging.

*I have not been able to integrate the chemistry – this is my first year with PHA and I am not really connected to the group. Finding connections around which to collaborate has been difficult, and it is hard to figure out ways to be included.*

---Kendal, SSA science teacher

The HSSA team participated in two weeks of summer work developing their program, with the support of the CCO. Although they lost a key teacher at the end of the summer, they received support from their administration in filling the opening. They worked on integrating curriculum at the district-sponsored PBL workshops, and all received training in and implemented Transcendental Meditation into their classrooms. Linda urged team members attending the annual Educating for Careers Conference to find courses they could adopt as well as ideas for integration. “We came back inspired!” she exclaimed.

*I got a lot of ideas and inspiration for how to do it at the CPA conference. We have the beginning of a plan, now. We will start with radiation. And maybe we will also do something about food energy and calories. I found the HSPE website, and it has tons of curriculum material.*

---Kendal, HSSA science teacher
As the HSSA team is still developing, the program of study has brought teachers into long-term planning toward a cohesive integrated program. HSSA science teachers are seeking out and adopting courses that will allow them to connect to the CPA theme in their academic instruction. It is quite a juggling act to build a team and induct new teachers while building the foundations of the program, especially with such strong community partnerships. But the team took full advantage of the CCOs resources; Ellen at the CCO worked closely with Linda on course development, and her administrator did the same with the master schedule. The team and the program are both coming together.

**Leading Mature Teams: Reevaluating Established Norms**

The two long-established CPA leads both worked through embedded routines around which integrated curriculum development was organized. PSA at Riverside had experience with authentic integrated project-based curriculum, met daily, and had begun articulating their integrated project across all three years. Eddie is an experienced history teacher who had seen much success in raising students’ academic skills in his work with the interdisciplinary ninth grade families. He began work with the team during a two week summer in-service before he took on the 10th grade introductory CTE course, so he “got to see how they collaborated around the organization and the implementation of that plan.” It was a very deliberate induction process.

> And then the following summer, Chris and I started putting together our own collaborative plan and talking with Mary and Briana about how our cross-curricular plan could be a foundation for the work that they wanted to do again in 11th grade, and how we could extend that into the 12th grade so that we could integrate not only cross-curricularly horizontally, but cross grade level vertically.  
> --Eddie, PSA CTE and social studies teacher

PSA projects were centered around English, history, and the CTE courses, leaving their science teachers less connected. One science teacher chose to collaborate with a new athletic science pathway rather than PSA. Briana pulled the second science teacher into the collaborative team by supporting her to create a new course that would meet a-g requirements in biological science, aligned with the pathway theme. Briana’s role in the development of interdisciplinary projects was central. On the one hand, she supports the leadership of other team members.

> It’s not one of those groups where we have to be really explicit about what the roles are, because everyone just kind of naturally steps up a little bit – and, I would say, in different ways. Probably Eddie and I second to Briana.  
> --Mary, PSA English teacher and English Dept. Chair

On the other hand, as the lead teacher, she defined the nature of the team’s work.

> ...Not only is it her example of being interested in creating these (integrated projects), but she’s the one who actually says, “This is what we’re gonna do over the summer. We’re gonna get together and focus on...” So she takes a real sort of command-and-control lead around that, but then she’s also the catalyst. So she kind of plays a blended role of being the CEO and the catalyst for that process.  
> --Eddie, PSA CTE and social studies teacher

PSA team members were frustrated, however, by the extent to which they had to scale back their projects this year because of the lack of “cohort purity”. AP students were pulled out of the cohort in the junior year and their seats were backfilled with non-
Academy students in English and History. A truly integrated project, therefore, would mean that many students, both PSA and non-PSA, would miss out on essential components. Mary, the PSA English teacher and English Department chair, described the impact of this on their established Junior integrated project, on which Briana and she were collaborating.

She does a research piece and does a lot with observational research, and so they're going to get that in her class as they would normally, but I think it's only going be connected to the project in the sense that I say, “I know some of you have already covered some of this in Miss Heller’s class.” But I have students in my classes who haven’t, so...

--Mary, PSA English teacher and English Dept. Chair

Not only does the lack of “cohort purity” impede students’ ability to develop authentic work products that integrate concepts from more than one subject area, it also impedes teachers’ ability to collaborate on the development of common rubrics and evaluation of student work, which had been valuable for developing their program of study and for collaboratively addressing problems of instructional practice. As a metacognitive approach to developing their teaching skills is highly valued by the PSA team, they have instead begun to observe each other on a regular basis, to be able to open up conversations focused on common instructional strategies in their collaborative team meetings.

Teacher culture at Riverside has shifted to normalize cross-disciplinary collaboration. While it occurs primarily within the CPA and 9th grade teams, it sits alongside a school-wide discussion about instructional alignment, described by three of the six teachers interviewed at Riverside. Mary, the English Department chair and an English teacher in PSA, discussed instructional strategies she wanted all Riverside teachers to share, such as questioning strategies to promote critical thinking that could be used across subject areas, and common interdisciplinary writing rubrics. “I would rather start with the higher order thinking skills and then, within that, create project-based learning units that incorporate them.” We catch here a glimpse of the potential of a collaborative teacher culture to support the development of a cohesive instructional program.

Luanne, SETA lead and science teacher at Bayview, was being pushed to reevaluate SETA’s routines for integrating their curricular theme into their academic courses. From the beginning, SETA did not require collaborative teamwork. But as the district pushed for increased support for pathways, Terri Danvers put common prep periods into the master schedule, and expectations changed.

Luanne was really upset at first when I did the master program so that they would have common planning time. She thought that that wasn’t as important as some other things in building the master schedule. And so we kinda had to fight with her about that. –Terri, Assistant Principal, Bayview High School

Luanne believes in integrating curriculum, and goes out of her way to adjust her curriculum to connect to others’ whenever she can. She has tried to have team meetings to discuss even a low level of collaboration, but to no avail.

I have this tremendous vision for how we could co-operate, and my vision is not like SETA takes over people’s teaching and curriculum... I don’t want to standardize our startups, I don’t want to standardize our discipline plans, I don’t think that’s necessary, but there are some things I would like to put out there but I’ve never had the opportunity to share. Sometimes people are...
required to come, and they just sit there like they swallowed a frog, they're not even open-minded enough to listen. --Luanne, STEM lead and science teacher

She has tried to go to individual teachers with ideas for how they might connect on their theme, without any common student work products or extra meetings required, but with little success.

He has been with us for many years and he's an excellent teacher, but he does not bend at all, he's very reluctant to use environmental themes. I've asked him, I've said "Hey, we're doing water quality, can you talk about this or that?"

And, you know?

"Not really."

...Or isotopes, and isotopes are such a big thing in environmental research, could he just mention it or maybe have the kids do a little mini report about one, give them a list of ones and where they could look?

"No." --Luanne, STEM lead and science teacher

Occasionally she will get someone to agree to connect in some way, like the Government teacher who worked with her on an environmental racism policy paper, but Luanne carries the bulk of the workload. For instance, when she heard the English teacher was teaching Night, she revamped her curriculum to be able to look at genetics and included readings on the eugenics movement in her class.

The main successful strategy Luanne and Larry have developed for interdisciplinary work is to establish field trips and field study projects embedded in their science classes as a part of the CPA curriculum, require that other teachers occasionally chaperone, and hope that those teachers also connect to the concepts in their own curriculum.

And so when we’re doing stuff at Lake Lakena, the English teacher knows what we're doing at Lake Lakena and she can build that right in to her lesson plans and her discussions. The math teachers know that we’re taking data on salinity and dissolved oxygen and making graphs and the math teacher can build that right in.

--Larry, SETA co-lead and science teacher

Sometimes, Larry explains, a teacher who goes on a great field trip will realize the value of the experience for his or her classroom and become more willing to connect their curriculum to the academy theme.

Table 11

Conditions that Facilitated Lead Teachers’ Interdisciplinary Curriculum Work

<table>
<thead>
<tr>
<th>Facilitating Conditions</th>
<th>NEWER CPAs</th>
<th>OLDER CPAs</th>
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<tr>
<td></td>
<td>STEM Riverside</td>
<td>HSSA Bayview</td>
</tr>
<tr>
<td>Daily collaboration</td>
<td>Admin support for release from site PD</td>
<td>Daily collaboration time</td>
</tr>
<tr>
<td>time</td>
<td>Added 9th grade team with experience collaborating</td>
<td>Admin support for release from site PD</td>
</tr>
<tr>
<td>Admin support for release from site PD</td>
<td>PBL PD from CCO</td>
<td>Congruence between CPA goals and site goals</td>
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<tr>
<td>PBL PD from CCO</td>
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The condition that facilitated CPA lead teachers’ ability to organize their teams for interdisciplinary project planning across three of the four cases was the support provided by the district’s CCO, in collaboration with site administration. The CCO arranged for teams to participate in ongoing professional development on project-based learning, beginning in the summer and continuing over the course of the school year.

The newest CPAs experienced similar stressors due to high teacher turnover, and organizational growth. The larger of the two, STEM Academy, focused on getting specific grade level teams to try out integrating curriculum. While they had daily collaboration time available, they had constraints on the strength of their grade level teacher teams due to problems in the master schedule. The younger, smaller HSSA had three of five teachers teaching both tenth and eleventh grade cohorts. They addressed those same stressors related to newness and growth by working as a tight team, collaborating both on developing and revamping an interdisciplinary project for each grade level, and on developing their program of study so that they could pull all teachers in for a majority of their schedule, with courses that readily connected to the academy theme.

The mature academies both faced major obstacles to developing authentic curricular integration. At Riverside the lack of pure cohorts forced revision of previously developed projects. Lacking common student work products for assessment and discussion, PSA teachers began a peer observation routine to ensure that they would be in conversation about instructional strategies and problems of practice. The conditions that facilitated that approach at Riverside was the existence of a collaboration period in addition to the standard prep period, and the existence of a collaborative, reflective teacher culture within their team. At Bayside, SETA redefined integration as thematic connections, and relied upon the established norm that centered project-based learning in the core science classes around field-based projects and trips. The condition that facilitated that approach was support from the administration in communicating the requirement to all staff assigned to the STEM academy that participation in some field trips was mandatory.

Facilitating the Industry/Community-Classroom Connection

CPA lead teachers differ from other teacher leaders, like mentor teachers, math coaches, or department chairs in that they bring a powerful third force into their classrooms, programs, and schools. Industry and community partnerships provide relevant connections to the world of work, and to practical applications that give knowledge purpose. They bring resources, experiences, internships and volunteers. They provide teachers insights into the skills and concepts that will serve students best in a given career field. Industry and community partners devote considerable resources to academy students, many of which are felt by the school at large, from peer health programs to energy efficiency audits to student courts. In school organizations, community relationships are generally the purview of the principal, but the State of California requires CPA leads to find industry or community partners to match the grant funds, sit on Advisory Boards and provide guest speakers, mentors, and internships. Rarely is site leadership aware of this work, and rarely do the structures organized by site administrators take this work into account.

Stressors in Lead Teacher - Industry Partner Relationship

Surprisingly, none of the lead teachers reported experiencing issues or concerns with finding industry partners or involving them in their classrooms. All had multiple
positive examples of how those relationships were affecting their classroom content and practice. Although the degree of support differed, all had experienced direct support from the district College and Career Office in building their work-based learning program. SETA received less support because the CCO was created out of the district’s Career Technical Education staff, and SETA did not incorporate any CTE.

The district College and Career Office assigned Deanna, CTE specialist, to support Riverside leads in developing community partnerships and work-based learning. Deanna explained that the CCO basically bypassed site administrators because “they have a lot of stuff to do and so we try not to put on extra pressures or requests.” Yet Deanna’s work developed important leadership skills among pathway staff, facilitated enhancements in both college and career readiness components of pathway programs, and brought valuable and extensive new partnership resources to campuses, about which administrators knew next to nothing. Deanna imagines how helpful administrative acknowledgement and support could be:

*I feel like if the welcome wagon was a little bigger, I think that would help facilitate more involvement from community members. Professionals who come to the school – maybe if they could get lunch for free, even if it’s the crappy student lunch, like, ‘Here’s a lunch ticket, thank you for participating with our school today.’ I mean, not just having it be a letter from the teacher thanking the industry, but a letter with the principal’s signature, highlights on the website, highlights with the parent group.*

--Deanna, CTE specialist, CCO district office

Deanna’s work has eased some of the overload lead teachers experience in building a work-based learning program. She provides connections for Advisory Boards, arranges college visits and career exploration visits, supports district paperwork, like requisitions and reimbursements, as well as grant reporting, processes field trip forms and consults with leads and teams on things like incorporating industry partners into project based learning. It was clear that the CCO’s support improved the leads’ success in this work. To some extent that success added to their overload.

*I was so torn... I had a list of like 27 unread emails from community partners saying, just logistical questions, like when can we drop off the materials? Are you ready for a second Junior Achievement day? What are the requirements of a host site if we’re going to host an intern? If we want to intern this summer like what do we need to be able to offer? It is an immense amount of email communication and follow-up.*

--Briana, PSA lead and CTE teacher
All four CPA leads experienced stress due to administrators’ lack of acknowledgement, appreciation, or support for these partnerships. Both Riverside CPA lead teachers expressed consternation at the fact that the administrative team seemed completely unaware of and uninterested in their work with community partners. Every lead mentioned inviting administrators to Advisory Board meetings, or activities partners were sponsoring on campus. None reported any attending.

*We have not had in three years anyone from our administration at our advisory board meetings to say “Thank you for working with our students at Riverside.” Never. We’ve never had that.*

---Jean, STEM Academy lead, CTE and science teacher

Briana could think of only one time that the former principal, Mr. Burson, ever related to any of her community partners, when she brought the Pine Hills Kids First Director into his office and introduced them so that he would finally sign an MOU he had been ignoring. Briana brought Kids First to the school three years ago because they provide content and curriculum on educational equality and college access. They also train PSA seniors to provide freshmen college-going information workshops throughout Riverside High School – an incredibly valuable resource at a school where the counselors had been eliminated and the administrators are trying to do double duty.

*I put it on his radar, "Hey we’re teaching the last two workshops in freshmen classes." And he would say, "That’s awesome. You’re incredible." And I’d say, "You should come check them out." And he was never able to make it.*

---Briana, PSA lead and CTE teacher

Briana ascribed this to the fact that “he was stretched so thin all the time.” When Mr. Burson went out on leave, the acting principal, Mr. Unsler, who spent half his time as the senior counselor, had never heard of the program. Jean evoked a sense of being invisible, as she wished aloud for acknowledgement:

*What a joy, if you saw the principal coming in maybe once a month to the (habitat) restorations. “What are you guys working on? How’s that design coming along from last time I saw it?” How cool would that be? When you see the principal say “Man, how does this cistern thing work?” or one of the grade-level administrators saying “How much energy are we saving by that solar panel?”*  

---Jean, STEM Academy lead, CTE and science teacher

Lead teachers’ desire for administrative acknowledgement and support was reinforced by the pressure for acknowledgement and support that came from industry partners.

*Show us off. That’s a really consistent way to build a culture of pride as a school, to have the administrator get behind something and really show it off and talk it up.*  

---Dr. Ulyses Nuncio, Director, FACES Coalition, Public Health Institute

SETA prided itself on the incredible opportunities its community partnerships offered to students, particularly since they do not put any of their resources to curriculum development or paying teachers to collaborate. It all goes to the field trips. Where the leads at Riverside hypothesized that lack of administrative acknowledgement was due to administrative overload, Luanne attributed SETA’s lack of acknowledgement to administrative concerns about the ethnic distribution of students. “Even though we’ve recruited massively and we’re improving, that’s their focus.” She does not believe they read
the information she sends about what SETA is doing because the ethnic distribution of students “overwhelms everything.” Karen, one of SETA’s community partners, from the Saxe Foundation, met with the principal at Bayview to launch a project to make the school more “climate resilient.” She felt that the principal welcomed this resource, saying “Sure, if you can find some way to pay for it,” but she also wanted a closer relationship – “that kind of relationship where a principal is really actually thinking about how we could help each other.”

The desire to establish a reciprocal relationship with site administration was also expressed by George DeLeon, an architect and a green building science college instructor who has worked in Pine Hills on educational initiatives for many years. He worked with Jean to articulate a course for Riverside High school, which is now offered at a local community college as a summer intensive, and available to students throughout the district. He comes in regularly as a guest instructor, has assisted in developing the internship program, job shadowing and other aspects of the program for a number of CPAs in Pine Hills, including SETA. He has also been active in developing teacher externships and trainings to increase the skills of Pine Hills high school teachers in a rapidly changing field. George rarely has contact with administrators. He sees it as a missed opportunity for both the schools and the industry partners.

_It would be great for them to attend some meetings during the course of the year and just get to know us better. An administrator may have some thoughts about what industry could bring to a school as well. ...When you do have guest speakers in the classroom, that’s an opportunity, hopefully an easy opportunity, for an administrator to see what’s being brought into the classroom and what kind of possible interactions could follow as a result of that._

--George, Pine Hills Community College

Building Efficiency for a Sustainable Tomorrow (BEST) Center

The lack of communication between industry partners and administrators also meant uncertainty about whether the site could meet the concrete logistical demands of these partnerships. One of HSSA’s current partners, FACES for the Future Coalition, had dropped an internship site because of the administration’s lack of communication and support.

_We’re bringing in outside resources which tangibly result in changes in behaviors in your student population. ...a lot of these kids are going to be motivated for hands-on learning. They’re going to be motivated by internships. ...But it is very, very hard when it isn’t built into the master schedule and kids are missing classes and teachers are resenting it. It creates tremendous havoc._

-- Dr. Ulyses Nuncio, Director,

FACES for the Future Coalition, Public Health Institute

Even HSSA experiences a gap in administrative connections, despite the facts that a former principal set up the pathway to meet defined needs at the site, in close collaboration with a community partner that has an active daily presence of many staff members on site, and a supportive administrator collaborates closely with the lead. Nevertheless, Linda reports that the administration has not had a consistent role on the Advisory Board, nor attended events related to HSSAs work with their community partners, or connected with HSSA’s community partners in any formal setting regarding their work with HSSA. A key community partner, PHAYC, provides mental health and social services through a center
established on campus. The Director of that health center wrote grants that brought HSSA significant resources, and served as a co-lead for the first year of HSSA’s operation. PHAYC’s relationship to HSSA is tied to its role as a community partner assisting the school to move toward becoming a full-service community school. The director sits on the Site Instructional Leadership Team, SILT, and participates in school-wide conversations about direction, so PHAYC’s role as a pathway partner is fairly unique. But as Karen has been developing HSSA’s internship program with several other industry partners, and as her administration is turning over yet again, she is now concerned about whether the new master schedule will address the needs of her fledgling work-based learning program. Her new partnerships with the local public hospital and the Public Health Institute will require substantial support from the administration. Yet she does not know if the administration understands the value of these partners’ contributions and will collaborate to make the partnerships effective.

Melody, the CTE specialist assigned by the CCO to work with pathways at Bayview, describes the academies there as “doing their own thing, trying to sustain themselves without a lot of support from the administration.” She arranged a visit by Chevron’s top executives, who spent two hours working with students in a Project Lead the Way engineering program, doing mock job interviews, to which the principal was invited repeatedly. But he only came in by happenstance, pulled from the hallway as he walked by, “unprepared to engage or to see this as an opportunity to build the relationship or bring more resources into the school.”

We are becoming full-service community schools, and I think it’s important for schools to have relationships with industry. ...Building the bridge between industry and schools, or industry and academies – I think that administrators should help support that and be present because you’re like the face, really, of the school. --Melody, CTE Specialist, CCO

CPA lead teachers are charged with building extensive community and industry partnerships, but lack the authority to represent their schools, or to create the conditions in those schools that facilitate partnerships. So Jean stresses over paying for her work-based learning enrichment programs, because no one on site tracks her budget. Briana throws up her arms in defeat as her internship program is undermined by the placement of classes in the master schedule. Linda has just been told she cannot have a block period for her seniors so they will no longer be able to participate in the just-barely-launched Transcendental Meditation program. And Luanne mobilizes against a plan to add a collaboration period like Riverside’s that will drastically affect how her 16-year old water-testing project fits into the school day. The capacity of the administrators on site, including the extent of their role overload, their skill with master scheduling for CPAs, and their understanding of the value added to their site by industry and community partners, stressed CPA lead teachers’ relationships with industry partners.

The strategies all four CPA leads employed to manage the stressors in this relationship include making maximum use of the resources offered by the district, primarily through the CCO, such as the career exploration visits, college and related department visits, and the ECCO summer internship program; creating teams that experienced some aspects of work-based learning through peer education or service learning projects, either on or off site; and involving partners in working with classroom instructors. Most direct involvement by community or industry partners occurred in CTE
(or in SETA, the core science) classrooms, but two of the four lead teachers could describe ways their other academic teachers found their instructional strategies affected by their interaction and relationships with industry partners (PSA and HSSA).

Three of the four CPA leads used internal distribution of leadership to address the work overload stressors they experienced in this arena, sharing the management of field trips and career exploration visits with other team members, introducing other team members to aspects of the budget, or of community relations, and discussing or enacting co-lead positions. At Bayview, because of the work of a VP experienced at small learning community and pathway master scheduling design, both CPAs used internally created blocks to facilitate their work-based learning components, including embedded field-study projects, internships, and Transcendental Meditation. Advisory Boards met at most twice a year, and were valuable sources of input and support, but organized and run by the overloaded lead teachers.

Table 13

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<thead>
<tr>
<th>Strategies and Facilitating Conditions for Reducing Stressors in Industry Partner/Lead Teacher Relationship</th>
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<tr>
<td><strong>STEM (new)</strong></td>
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<td>Strategies</td>
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<td>Service learning projects on site for internship credit</td>
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<td>Distribution of leadership</td>
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<td>Facilitating Conditions</td>
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The primary condition that facilitated the lead teachers’ relationships with industry partners was support from the district’s College and Career Office, enhanced by the
strength of support for public education within the civic context. I observed four and interviewed five industry partners, with only one overlap. All of those partners expressed a strong sense of civic responsibility to support public education, and all had a history of work with the district beyond just the specific sites. The district’s College and Career Office was able to tap into that civic context, augmenting the experience and resources at the lead teachers’ disposal, through the work of the CTE specialists and by providing other supports to help lead teachers develop their work-based learning programs. While generally circumventing site administration, this district strategy appears to have eased some teacher overload, increased the involvement of community partners in pathway programs, and assisted pathways to effectively incorporate work-based learning into the curriculum.
Chapter 5: Discussion of Findings and Further Questions for Inquiry

This case study was designed to investigate the work of the CPA lead teacher, who plays a crucial role implementing the CPA model, the most established and clearly delineated version of the Linked Learning reform. This research examined the role of the CPA lead teacher in a specific context: comprehensive schools with multiple career pathways in a district with active civic participation, pursuing a Linked Learning secondary school reform to meet the goal of making schools fully serve their communities. Established by legislation, CPAs often serve as cornerstones of the Linked Learning reform in comprehensive high schools, and the issues addressed here present challenges in many comprehensive schools. The CPA lead teacher is at the crux of this reform: negotiating with site administration to meet requirements like “pure cohorts” and common preps; leading a team to reorganize instruction for diverse student cohorts around interdisciplinary project-based curriculum related to a particular industry field; and establishing community and industry partnerships that thoroughly integrate with the CPA. In each of these areas, the CPA lead orchestrates programmatic components, such as internships, teacher externships, academic supports and mentoring. And of course, they are also teachers, released only 20% to do this work.

This exploratory case study raises significant questions about the sustainability of this teacher leadership position. By looking closely at the stressors these four leads are managing, this study also shines a light on the school change process. CPAs are organized on a very different set of norms and assumptions than are traditional high schools. When instituted as a single school-within-the-school, as designed, CPAs provide an alternative to traditional norms, and can be accommodated more readily than when multiple CPAs and/or career pathways become priority programs in a comprehensive high school, as each adds a layer of complexity affecting class sizes, requiring common preps, “pure cohorts,” and, with small CPAs and AP pullouts, many singletons. In these four cases, district and site administrative efforts have played a valuable role in ameliorating tensions for lead teachers, such as those related to workload and work-based learning. But building small teams within a comprehensive school and transforming the entire school are very different processes. As this reform is scaled up to become a major organizing component in comprehensive schools, the model calls for fundamental structural and cultural changes in the organization of schooling. What was contra-normative vies for position as a new norm.

The lead teacher is at the crux of this reform, yet the responsibilities of a lead teacher are largely undefined, and the authority of lead teachers to affect the conditions that facilitate success in their work is extremely limited. After looking closely at the major stressors affecting lead teachers, at their strategies for addressing those stressors both in relation to their role, and in relation to three relationships critical to this reform (with administrators, the peer team, and the industry or community partners), and having noted specific conditions that facilitate lead teachers’ ability to manage those stressors, a few issues move to the foreground.

Summary of Central Findings

This study found that the lead teacher role lacks definition and is overloaded with responsibilities, resulting in a high risk of turnover, which has implications for the
sustainability of this model. The contra-normative nature of this reform was evident in the conflicts that arose for lead teachers in each of the three relationships examined.

First, the reform seeks to offer all students access to both college and career preparatory curriculum in institutions that have been designed to track students into one or the other. This conflict emerged in relation to the routine used to place students into classes, the master schedule, which is negotiated between the lead teacher and the administration. The study found that traditional patterns of student placement into AP and non-AP tracks conflicted with the effort to create pathways in which all students can access both college and career opportunities. Where CPA programs were identified as “high track” and “low track,” student academic achievement was more clearly tied to teachers’ identity and status, and efforts to address the disparities were politicized.

Second, the collaborative and interdisciplinary nature of the reform model conflicts with the autonomous, individualistic and subject-oriented nature of teacher culture in secondary schools, examined through the lead teachers’ work with their peers on interdisciplinary curriculum development. This study found a relationship between patterns of leadership distribution and lead teachers’ ability to influence collaborative teacher norms conducive to pathway development and interdisciplinary work. That the pattern of leadership distribution at the site level may facilitate the development of a collaborative school culture and open the doors to progress toward more coherent schoolwide pedagogical approaches is consistent with recent research findings regarding school leadership (Louis, Leithwood, Wahlstrom, & Anderson, 2010).

Finally, the community and industry partnerships that lead teachers build and integrate into the CPA instructional program challenge the traditional segregation of academic and vocational education. This dynamic was examined by looking at work-based learning routines. Lead teachers’ ability to integrate work-based learning into their CPA academic program was greatly facilitated by district support but limited by the capacity of site administrators who were often unaware of these partnerships, unable to support them beyond signing permission slips, and not developing systemic ways to include these partnerships in the school’s vision or program.

**Role Overload**

Foremost among the findings from this study is that the role lacks definition and is overloaded with responsibilities. This should not come as a surprise, but rather is a predictable outcome of the role design. Originally, this role relied on finding highly dedicated teachers who would devote themselves far beyond the normal school day to the vision of schooling contained in the model. For alternative programs on the margins of comprehensive schools, such super-teachers were findable, especially when CTE teachers could play a key role. CTE teachers had connections to the industry partners key to the model, instructional practice geared toward the applied, hands-on approach essential to project-based learning, and they tended to put a greater emphasis on addressing student needs (J.W. Little, Erbstein, & Walker, 1996). But as the model became a movement, and career pathways replicated and moved to centerfield, demands on the have role increased. The integration of academic and career-technical content required more emphasis on instructional leadership. The shift from serving an overwhelmingly “at risk” population to serving a student population that represents the school at large requires a significant shift in instructional practice to address the broader range of student skill levels. Moreover, as
the number of programs within comprehensive schools increased, the number of people trying to get their little programs' needs met multiplied. The comprehensive schools' boundaries of manageable complexity were often pushed to the level of unworkable, leaving lead teachers without important programmatic needs met. Inclusive and collective leadership structures such as those that developed at Riverside required lead teachers to adopt a school-wide perspective, rather than the somewhat insular and marginalized perspective of an alternative program.

The four lead teachers in this study uniformly experienced their positions as unsustainable. Although all four were respected in their peer relationships based upon their hard work, their advocacy, and their ongoing instructional practice, the workload built into their position was far beyond what could be accomplished in the .2 release time they received. Sharing the administrative tasks associated with implementation of this model was only a partial solution, as few of their peers had room to squeeze in substantial leadership work while teaching full time. Overload was overwhelmingly the largest stressor for lead teachers in this study, far outweighing all others.

Patterns in the Distribution of Leadership on Site

Lead teachers' ability to negotiate with the administration for the structural and human resources required of the model were affected by the distribution of leadership on site. To orchestrate conditions conducive to interdisciplinary teacher teaming and the prioritization of industry and community-based learning, substantial changes in normative school culture are required. The existence or lack of a coherent, collaborative, and inclusive leadership team affected the dynamics of school culture and the ability of leadership on site, including lead teachers, to influence school culture.

Collaborative Cultural Norms vs. Teacher Autonomy

The most salient tensions related to norms of school and teacher culture in these cases were norms of teacher autonomy and of subject-orientation, as is to be expected of a reform requiring interdisciplinary collaboration with a strong career technical core. This study found a relationship between patterns of leadership distribution and lead teachers' ability to influence collaborative teacher norms conducive to pathway development and interdisciplinary work. For SETA at Bayview, norms of teacher autonomy and academic subject orientation were so strong as to preclude the development of a collaborative interdisciplinary teacher team. There, an effort put forward by one Bayview leadership body, the SILT, to establish school-wide collaboration time, was opposed by a parallel leadership body, the Faculty Council. But at Riverside the revision of the traditional Faculty Council to include pathway representation allowed for the development of a more cohesive approach to the instructional program. Both sites had interdisciplinary teaming at the ninth grade level and in the third of the school in pathways. Only at Riverside, however, was this experience able to influence teachers' values to support a substantial expansion of teacher collaboration time, reducing competition for available time to build pathway teams and structures. The increase in collaboration time at Riverside resulted in benefits for departments as well as pathways, and opened the door to reciprocal relationships focused on improving instruction.
Equitable Access to BOTH College AND Career

Schools traditionally sort students into college and non-college tracks, a norm that affects teachers’ status and identity, as well as student success. This norm conflicts with the expectation that CPA lead teachers will recruit pathway cohorts with at least 50% at-risk students, and that represent the overall distribution of student demographics at the school. The stresses lead teachers experienced due to this conflict differed, however, as the conditions at each site had different entailments. Within all four CPAs, the traditional pattern of tracking students into AP and non-AP classes remained a strong norm. At Riverside, where CPA lead teachers were consciously trying to serve all skill levels, the AP tracking pattern devastated CPA cohorts. At Bayview, where greater between-CPA disparity existed, the high track students became resources and the low-track students became liabilities. Where one program was clearly the “high track” program, student academic achievement was more clearly tied to teachers’ identity and status, and efforts to address the disparities were politicized.

Infusing Work-Based Learning into the Academic Program

Lead teachers’ ability to build the partnerships and routines that could integrate community and work-based experiences into the instructional program was greatly facilitated by district support through the College and Career Office, but limited by the capacity of site administrators. Although principals were supported by the district to develop new pathways as part of becoming full-service community schools, both sites were hindered by high turnover in site leadership and by most administrators’ limited experience integrating the demands of multiple pathways with those of the comprehensive high school. This was particularly evident in the stresses experienced by lead teachers regarding the master schedule. District support assisted lead teachers in building creative and innovative programs that brought substantial resources not only to their own pathways, but also to the school at large, for instance through peer education, recycling programs, energy audits, etc. Yet administrators were often unaware of these programs, unable to support them beyond signing permission slips, and not developing systemic ways to include these partnerships in the school’s vision or program.

Connections to the Literature

Teacher leaders’ roles in school reform are varied and constantly evolving. Smylie (Smylie, Conley, & Marks, 2005) describes newly developing roles that reframe teacher leadership as a more collective, task-oriented and organizational enterprise. Self-managed teacher teams such as those led by CPA lead teachers, Smylie argues, when part of a broader organizational reform, contributes to an emerging conception of school leadership that no longer rests solely upon the shoulders of the principal, but is vested in the teachers, administrators and others who collectively perform the tasks of leading the school organization. Fullan’s conception of successful school reform (2006) requires a strategy that can change the beliefs and practices of individuals and the culture of the system in which they work. In this district, and at both these sites, school leaders were attempting to create new leadership structures to support the reform, which affected lead teachers’ ability to influence their teams and their school culture, as well as to negotiate the stresses they confronted. The finding that the sites’ patterns of leadership distribution appeared to be related to the capacity of school leaders to shift instructional norms from individualistic
to more collaborative, lends support to Spillane’s (2005) assertion that “what matters for instructional improvement and student achievement is not that leadership is distributed, but how it is distributed” (pg. 149).

Little’s (1996) investigation of teacher leadership in high school restructuring and vocational reform argued that providing every student access to both college and career preparation is a fundamental transformation of the role of the school, a “deep change” requiring “the bridge (the new structures), an incentive to cross it, and a reason to stay in new territory” (38). At both sites, new structures existed but were in conflict with old structures. The role of leadership in the reform was pivotal in determining the outcome of those conflicts. At Riverside, there appeared to be growing incentive to cross that bridge, concretized in the structures supporting teacher collaboration, and in an inclusive and collectively co-performing leadership body. At Bayview, the parallel leadership bodies reflected a conflicted school culture, politicizing the dialogue regarding collaboration time and evidencing some of the characteristics of what Hargreaves and Macmillan (1995) call a “Balkanized” school culture: small groups with low permeability, high permanence, strong personal identification, and a political complexion. Neither school had yet initiated a school-wide discussion of the relationship between academic study and career preparation, as Little (1996) suggests.

CPA lead teachers in comprehensive high schools faced a wide range of such tensions, many of which have been described in prior research (Judith Warren Little, 1995a; J.W. Little, et al., 1996; Oakes, Wells, Yonezawa, & Ray, 2000; York-Barr & Duke, 2004). In the areas in which this reform conflicts with entrenched structures and norms of the comprehensive high school (Wallach & Lear, 2005), such tensions were heightened. For instance, the structural conflict between diverse pathway cohorts and the institutionalized sorting of students into high and low tracks, and the struggles over collaborative teacher cultural norms versus individualistic norms, represent fundamental differences in beliefs and practices regarding the purpose of schooling. Previous researchers examining career academies (J. J. Kemple & Rock, 1996; Stern, 2005; Stern, et al., 2000) identified these same tensions, which were primary sources of stress for all four lead teachers. Stern (2005) argued that where small learning communities become segregated by achievement it is more difficult to improve the achievement of low performing students. Oakes’ (2005) research on student and teacher expectations and outcomes in tracked classes provided substantial evidence to support that concern. In none of the cases in this study were successful strategies identified for addressing the tension over student placement in high and low tracks -- evidence of the depth of this fissure between normative beliefs and structures and the contra-normative reform’s goals.

Little’s (1995a) examination of the “contested ground” created by the introduction of new interdisciplinary school structures noted the significance of subject organization and subject affiliation of teachers as a basis of professional identity and community, as subject orientation has traditionally shaped definitions of leadership among teachers. Little identified issues of legitimacy as a major concern for such lead teachers, because traditions of autonomy and norms of equal status and noninterference leave such lead teachers unable to exercise authority. This stress was evident when SETA’s lead, Luanne, who really wanted to lead an interdisciplinary team, found herself running around begging teachers to come to meetings. When the administration, at her request, required teachers to attend, “they’d just sit there like they swallowed a frog.” But for the three lead teachers who were
also Career and Technical Education (CTE) teachers, legitimacy was not an issue, even though two of the three had been assigned to their positions by their principals.

Despite the fact that CTE teachers have lower status in the hierarchy of teaching (Grossman & Stodolsky, 1994), and perhaps because CPAs and other Linked Learning pathways are organized around industry fields, the three CTE lead teachers’ basis of legitimacy lay, in part, in their subject expertise. That expertise could provide the glue for CPA industry-field-related curriculum collaboration, and brought with it a second factor that affects lead teacher legitimacy: access to valuable industry and community resources for both teachers and students.

As school reform efforts focused on providing access to college for all students, Career Technical Education faced a major crisis. In Kazi’s (2005) volume of essays, Remaking CTE, Medrich (2005) argues that CTE programs needed to either up their level of academic rigor or die. The CTE lead teachers in this study, supported by substantial district resources, were integrating work-based learning into academic curriculum. The partnerships thus developed brought powerful resources to bear on the CPAs’ instructional programs. Coupled with the aura of authority bestowed by strong district support, and by CPA grant resources, these elements appear to have strengthened the legitimacy of the CTE lead teachers.

**Implications of this Research for Future Research**

*CPA Lead Teacher Role Overload*

Teacher leader overload has implications as the model scales up. There is a finite number of teachers willing and able to take on such an overloaded leadership position. Research on the experience of new lead teachers, when the number of CPAs nearly doubled in 2008, could give us some insight into what might reduce attrition and make the position more sustainable in this period of expansion. Documentation of the actual responsibilities of lead teachers, and of the time involved in fulfilling them would also contribute to developing a more sustainable model. Research on the impact of these positions on union contracts or other agreements, in terms of duties, compensation, release time, and selection procedures, and in relation to department chair positions could help districts seeking to systematize new leadership structures and lead teachers seeking to advocate for appropriate release time and compensation for their work.

*Equity and the Sorting Function of Schools*

The stresses these lead teachers experienced in relation to the master schedule reflected the increasing organizational complexity of comprehensive high schools that are expanding pathways, and these stresses overlap with issues of equity and cultural norms. As an institution traditionally associated with sorting students to either college or work, a reform that attempts to create multiple pathways by which all students have access to both, runs head-on into cultural and pedagogical beliefs as well as established norms and routines. What strategies are being developed to provide high quality instruction to all students without tracking them? How effective are such strategies, and what resources, structures and supports are required to make them sustainable and replicable?

*School Culture and Organization*

Scaling up the CPA model to include multiple pathways within comprehensive high schools, as the Linked Learning reform envisions, requires a substantial shift in school
structures, norms, routines, and identities. This research indicates that teacher cultural norms regarding status and subject specialization have implications for pathway dynamics and teacher leadership. To what extent do CPAs that emphasize high status subject areas experience greater difficulty serving a broad spectrum of students, as was apparent in this research? What strategies support those programs to develop differentiated, equity-based approaches to these disparities? As industry and community partnerships grow and extend into the classroom context, are teacher norms regarding status and subject specialization affected? What role is the CTE teacher playing in facilitating access to valued academic learning experiences, and does that affect teacher status norms? To what extent are these new roles for industry and community partners reflected in formal or informal leadership bodies and routines?

Norms of individualism and autonomy have long defined the teaching profession. Interdisciplinary teaming models therefore require significant time and leadership to develop the relational trust and appreciation for each other's perspectives required of an authentic integrated project-based curriculum process that promotes teacher reflection and has the potential to transform teacher practice (Grossman & Weinburg, 2001). The process by which a comprehensive high school transforms from one with pockets of interdisciplinary collaboration, as exist within a well functioning CPA, to a whole school culture that values interdisciplinary teacher collaboration is worthy of further study. The impact of such a cultural shift on student achievement, and student success would also be valuable to identify. If transformation of instructional practices to improve student success is the goal of this reform, collaborative norms appear to be an essential component of the process.

Yet collaborative norms alone do not ensure improved instructional practices that impact student success (Horn & Little, 2010). The nature of the collaborations are also key to their impact on student learning. Only in the mature academy at Riverside did this researcher observe a focus on teaching practice within the CPA teacher team’s professional community. The new academies were still getting their feet under them, forming teams and setting the curriculum and structures in place. They were creating curriculum together for the first time, and neither had reached the point of reflecting on student work or on teaching practices. Research on the developmental phases of career academy teams, and productive routines for developing teacher discourse on problems of practice could provide guidance to lead teachers, who are so often simply juggling the next ball thrown to them.

Revision of Structures and Routines

Making collaboration time a systemic priority is an expensive proposition, and administrators attempting to change teacher culture walk a careful line between flexibility to ensure buy-in and structure to ensure that the investment is truly spurring change in instructional practices. Yet administratively imposed protocols can simply add bureaucratic layers and compliance behaviors. Further research is therefore indicated regarding the relationship of leadership distribution to changes in school structures and norms related to this reform model. Does the distribution of leadership pattern at the school-wide level affect the ability of a comprehensive school with multiple pathways to develop a cohesive approach to instructional practices? Hamilton's (2011) case study of leadership practices at five Linked Learning schools adapted a typology Spillane (2006)
developed to analyze patterns of leadership distribution, and applied his framework (J.P. Spillane & Coldren, 2011) to assess the impact of the Linked Learning vision and reform strategy on leadership routines, but focused solely on independent small schools. Her findings included a pattern of crucial teacher instructional leadership through interdisciplinary grade level teaming. How and when are such instructional leadership roles fostered in comprehensive high schools with multiple Linked Learning pathways? Where grade-level teaming develops, what kinds of leadership skills are required of a CPA lead teacher to develop an articulated and cohesive instructional program that can also productively relate to departments? What kinds of collaboration or professional development time and structures facilitate those relationships? How are reforming comprehensive school sites revising traditional structures and routines such as departmentally-defined faculty councils or leadership teams, or school-wide professional development planning, to incorporate new CPAs and career pathways? Is there a relationship between leadership distribution patterns and leadership’s capacity to develop a coherent school-wide instructional approach, as this research would seem to indicate? How are professional development routines shifting where collaboration and interdisciplinary teaming become more normative? Do specific modes of leadership distribution within a Linked Learning site support a positive, reciprocal relationship between pathways and departments focused on improving instructional practices?

**Administering the Community-Connected School**

This research identified a gap in communication and coordination between site administration and CPA lead teachers regarding industry and community partnerships that lead teachers establish on behalf of the school community. Given the extent to which the Linked Learning reform seeks to expand work-based learning as an essential component of both programs and instruction, the role of the high school site administrator in community and industry partnerships warrants research and re-visioning. Is the lack of information about or connection to CPA community and industry partnerships indicated in these case studies typical? Does it impact the administration’s ability to create effective pathways to college and career within their sites? This research noted that stressors related to master scheduling significantly hindered the effectiveness of the CPA model, in part because some site administrators lack necessary skills and understandings to adequately implement the model. What do site administrators need to know and be able to do in order to work effectively within a multiple-pathway comprehensive school environment? Are site administrators overloaded? How are sites restructuring their administrative teams to support pathway expansion?

**Implications of this Research for Pathway, Site and District Leaders**

CPAs began as alternative structures within comprehensive schools. Because they served an at-risk population, and generally improved graduation and persistence rates, the norms that have grown up around them have been, as Melody, a CCO CTE specialist observes, “the hands-off approach and letting them do their own thing.” And, she says, “it isn’t working.”

> I guess if you’re a teacher and you can write a grant, then you can get a bunch of money and start an academy. But what’s the district evaluation of the teacher, whether or not they’re capable of managing a team of people? That’s
In addition to teaching expertise and knowledge of the pedagogical basis of the CPA reform, lead teachers need the skills to manage teams, negotiate with those in authority, and build industry and community partnerships that not only take students into the community and the world of work, but also reach into and transform classroom practice. This is a tall order, for which most teachers have not been trained. It would behoove site administrators to develop a pool of capable teacher leaders, particularly given the implications of these findings for lead teacher turnover. Lead teachers would do well to advocate for and access such training not only for themselves, but for others on their team. District and site leadership investment in professional development to address the shift in skills and cultural norms required of this reform would expand the pool of teacher leaders. New lead teachers in particular need training in facilitation and team building; in developing programs of study that offer all students access to a wide range of both college and career options; and in the pedagogical foundations of the career academy model. Specialized teacher training programs are currently being developed to emphasize the skills needed to work in a Linked Learning context, but all teacher training programs could incorporate interdisciplinary teacher collaboration skill development.

As this model expands, site administrators and lead teachers in comprehensive high schools are likely be confronted by between-pathway disparities in student demographics, competition for high performing students, and pressures to dump low-performing students back into the comprehensive high school. Site leaders may want to closely study a range of factors related to student demographics, and to consider a variety of ways to impact pathway composition. Lead teachers in these case studies were better equipped to understand equity-related problems, to act in the best interests of all the students, and to have an influence on their context when they established a formal collaboration with other lead teachers on site. Teacher assignment policies, including lead teacher assignment, should take into account the level or stage of pathway team development.

The lead teacher duties are clearly far more than can be accomplished in a .2 release mandated by law. In these cases, district resources (channeled through the CCO) were used effectively to lighten the load on lead teachers, particularly in partnership and work-based learning development, as well as in providing appropriate professional development opportunities. The job of the lead teacher should be made explicit, and shared with both their team and their administrator. Shared leadership within teams was a valuable strategy in place or under discussion in all four teams studied here, but appropriate release time should also be made available to adequately accomplish the work. Lead teachers’ work ought not to be “Balkanized”. If pathways are to be part of a coherent school instructional program, they ought to be included in strategic planning and leadership structures, and accountable to the administration. This may require re-organization and retraining of the site administrative team. Site leadership structures should also shift to include pathway representation. Integrated, collaborative relationships between departments and pathways may be a promising way to develop a school-wide culture of interdisciplinary collaboration toward improving instructional practices.

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*the part that I think is missing. Because a lot of the time I'm not seeing great leaders in our teachers who are leads...*  
--Melody, CTE specialist, CCO
Implications of this Research for Policy
This research suggests a number of possible policy measures that might support the successful scaling up of CPA-type Linked Learning models.

Sustainable Teacher Leadership Roles
The CPA model needs explicit definition of the lead teacher role, and expansion of the release time provided to lead teachers. Lead teacher overload could be ameliorated through funding strategies that incentivize districts to provide additional release time. An initiative aimed at sharing or distributing leadership within teams could begin with an effort to define the duties assigned to the lead teacher position. If coupled with professional development opportunities that build leadership capacity, this would not only ease lead teacher overload, but also address some of the problems of turnover by increasing the number of teachers with leadership experience and skills. Groundwork would then be laid to develop appropriate evaluation tools for administrators working with lead teachers.

Professional Development for Teachers and Administrators
A second area of policy intervention, professional development, is indicated by the substantial shifts in school norms and organizational processes required for this reform and discussed in this research. As this reform approach is impacting an increasingly large percentage of secondary schools, both teacher and administrator training programs should be incorporating the skills and knowledge professionals need to work productively in a dynamic change process characterized by inter-disciplinary collaboration and teacher teaming. Programs that train administrators should also be supported to differentiate secondary school administration from elementary school administration, and to prepare administrators to work effectively in comprehensive secondary schools with multiple CPAs and other Linked Learning pathways. Because Common Core and Next-Generation Science standards implementation is an essential component of instructional program planning, funds should be allocated for teacher professional development. As CPAs and other Linked Learning pathways incorporate the interdisciplinary and applied tenets of these new standards, a synchronous, coherent approach to pathway development should be encouraged so that districts and sites do not experience these as competing demands.

Equitable Access to College and Career Opportunities
The third area in which this research indicates potential for policy measures is in the arena of ensuring equitable access to both college and career opportunities. One of the main obstacles to such equitable access, as noted in this research, is the current pattern of placing students into high, middle and low tracks. This norm affected all four CPAs in this research, and impacted class size, “cohort purity,” and disparities between CPA student demographics. A program that can serve as a model for affecting these dynamics is the currently funded University of California Curriculum Integration (UCCI) Institute, which strategically applied resources to combine CTE courses with a-g approved courses, thus addressing both concerns about the rigor of CTE programs of study and the overcrowding of most secondary school schedules on the six period day. Similarly, strategic application of resources could be used to develop effective ways to address “cohort purity” issues, by creating appropriate augmentation or enrichment programs that would support serving high performing students within CPA cohorts, while making college preparatory and career related curriculum available to all students. In collaboration with the College Board, a pilot
program could provide teacher professional development and a network of support for inclusion of AP content and preparation in 9th and 10th grade, followed by the infusion of advanced material integrated into CPA courses with augmentation. The State of California could support such an effort by offering waivers on the amount of CPA grant funds that could be used for personnel if used for this purpose, or by offering a bonus grant to cover the additional FTE required for sites that pilot this approach. An alternative approach might be to develop a blended learning model that integrates with the regular academic classes. By utilizing the UCCI model of gathering CPA teachers with particular academic subject area expertise, supported by the College Board or the UC Office of the President, standardization of a range of options in different subject areas might be achieved, making it more possible for CPA teachers to differentiate within diverse classrooms, and serve the needs of a wide range of students.

**Researcher’s Final Thoughts**

As exploratory research tends to do, this paper raises far more questions than it answers. When a contra-normative reform moves into the mainstream, there is tremendous pressure to conform to the norms and beliefs that it was intended to counter. Constant debate swirls around what level of compromise is acceptable in the interest of acquiring legitimacy. This reform requires major shifts in both structures and cultural norms if it is to transform student success by reorganizing teaching and learning in a number of complex ways. Currently, the figure upon whom responsibility for implementation rests is provided neither adequate time nor authority, and must rely heavily upon systemic processes established to support an entirely different set of norms. Mobilizing a teacher team to implement this reform in a comprehensive high school requires vision and leadership skills, organizational and teamwork skills, pedagogical expertise, patience and inexhaustible energy. I intend this research to shine a light on the work of the CPA lead teacher at the crux of this reform. It is my hope that that light is bright enough to provide insights and impetus for change, in order to strengthen the possibility that this reform model can help transform teaching and learning, and thus increase equitable student outcomes.
Bibliography


Medrich, E. A. (2005). Change or Die: The Challenge Facing Career and


## Appendix 1  
**Data Collection Table**

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Appendix 2 - Interview Protocols

Lead Teacher Interview Protocol #1 (Focus: Interdisciplinary Curriculum)

Name of interviewee ____________________________________________ Date __________________________
CPA, School and District ________________________________________ Age of CPA ________________
Industry field _________________________________________________ # yrs in teaching: _______________
# of years as Lead Teacher ______ Subject(s) taught: ____________________________ CTE?

Briefly describe the purpose of the study. Review the consent form. Explain: this is the first of
three formal interviews, each focusing on a different relationship. This conversation will focus
on how a team lead works with a team of peers to develop integrated, industry-related project
based curriculum.

1. Tell me about how you got into your lead role in the CPA team. Followup: How has being a
lead teacher affected your working relationships?

2. I would like to get a sense of what your days look like. Think back to three workdays ago.
Would you describe what you did chronologically? Day 1: arrived….?

3. People do cross-curricular integration in so many ways. Can you talk about an example of a
cross-curricular project your team has created that is related to your industry field?

Followup: 1) how long ago _____ 2) grade level ______ 3) subject taught by teachers
involved ____________________________________________ 4) duration _______________
5) student work product ________________________________________
6) did project count toward student grade in more than one course? ◊ yes ◊ no
7) did teachers collaborate in evaluating the student work products? ◊ yes ◊ no
8) Were industry partners involved in aspects of this project? ◊ yes ◊ no

4. How was this project was organized? Can you describe the process by which you planned
this interdisciplinary curriculum?

Followup: What were some challenges that you faced as a team leader in working on this
project?

5. How did you come to choose this example? Is there another example that differs from this
one? (went more or less smoothly) Why did it go (more or less) smoothly?

6. Can you give me some examples of other ways that your team integrates your industry field
focus across the academic curriculum? Followup: How are those organized?

7. What are some of the main challenges you face as you facilitate this work with your team?

8. To what extent do teachers in different content areas participate in integrated curriculum
projects? Followup: If some are less involved, how do you manage that?
9. Do teachers on your team discuss and help each other with the problems they face in implementing collaboratively developed curriculum? Followup: how does that happen?

10. What kinds of supports did you receive to be able to lead this work? How did that work for you? What other supports would you like to receive?

11. Is your administrator aware of your needs? How do you work with your administrator to get those supports?

12. What is your school’s focus for professional development this year? To what extent does that focus support your teacher’s needs as they grapple with developing effective, rigorous integrated project based instructional practices?

13. Where is your team now in the process of creating, teaching, and assessing cross-curricular industry-related projects?

14. Would it be possible for me to look at some of the project descriptions, rubrics, and student work from your program?

15. Is there a collaborative meeting that I could observe in which cross-curricular project-based collaboration or assessment is the topic?
Lead Teacher Interview Protocol #2
(Focus: Admin Relations, Schedule/Staffing/PD)

Name of interviewee __________________________ Date __________________
CPA, School and District ___________________________ Age of CPA_______
Industry field ___________________________ Administrator: ________________
# of students in each grade level: 10th ______ 11th ______ 12th ______ #CPA classes ______

Briefly review the purpose of the study, 2nd of 3 interviews, focus on how lead teachers work with administrators implement the CPA model, especially around schedule and hiring.

1. I’m going to repeat an exercise you did the last time we had an interview, so that I can get a sense of your work over time. Think back to three workdays ago. Would you describe what you did chronologically? Day 1: arrived…? 

2. Tell me about the administrator you work most closely with at this school.

3. What are the areas in which you feel you get the most support from that administrator?

4. Can you describe a time in your work with that administrator when you did not get the support you needed? Followup: How did you deal with that situation?

5. Would you describe the leadership structures at your school, and your relationship to them?

6. Have you seen any changes in these structures as the number of pathways increased?

7. On a scale of 1 – 5, where 1 is not at all, and 5 is a whole lot, how much say do you feel you have in setting school-wide priorities? 1 2 3 4 5 Why do you score it that way?

8. How do you decide on professional development priorities in this school?

9. How do you decide on professional development priorities within your CPA?

10. Has the development of the pathways changed professional development processes at this school? If so, in what ways? If not, how well do they serve your work with your team?

11. CPA scheduling is difficult. Can you explain the process you use when you work with your administrator on the CPA schedule?

12. How do you deal with the CPA requirements for both “pure” and diverse cohorts?

13. How do you organize your program to address the needs of diverse students?

14. Are your cohorts “pure”? How do you manage the pressure for AP classes for your high performing students, and the need for ELL support for your English learners?
15. There are many other scheduling challenges for CPAs. Can you describe a scheduling challenge you have faced, and how you dealt with it?

16. Has your scheduling process changed as the number of career pathways increased?

17. Can you give me some examples of the methods or tools that you use to convey your needs to your administrator?

18. How does staff get assigned to your CPA? How well has this process worked for your program? To what do you attribute that?

19. How have you worked with administrators on staffing and hiring for your CPA?

20. Has there been a time when you had difficulty getting the staffing needs of your program addressed? What did you do to deal with the problem?

21. How do you relate to your administrator’s evaluation of teachers in your team?

22. Have you ever had a teacher on your team that did not support the CPA approach? If so, how was that dealt with? If not, how was that avoided?

23. Are there some things that you do as a lead teacher that traditionally are the responsibility of administrators? Can you give me an example?

24. How do you feel about having this responsibility? Are there some responsibilities you take on that you feel differently about?

25. Is there a meeting, with teachers, leadership, or your administrator, where schedule, staffing or PD are discussed that it might be appropriate for me to observe?
Lead Teacher Interview Protocol #3 (Focus: Partners/Internships)

Name of interviewee ________________________________ (CTE?) Date __________
CPA, School and District _____________________________ Age of CPA __________
Estimated % of students participating in internships: juniors ______ (summer?) seniors ______

Describe: 3rd of 3 interviews, focus on relationship with industry partners.

1. For this final interview, Let’s repeat the exercise you did during the previous interviews, so that I can get a sense of your work over time. Can you describe your last three days of work?

2. Which of your industry/community partnerships are most valuable to you and why?

3. How did those relationships get built? Followup: How do you maintain them?

4. Has industry or community involvement in your program changed teachers’ instructional practices? Can you give me an example?

5. How do the various teachers in your program work with industry or community partners?

6. Can you please describe your internship program?

7. Is there any student academic work associated with their internships that I might be able to look at?

8. Do you think having internships has affected student achievement? In what ways, how?

9. Are there other ways your students are involved in work-based learning?

10. Can you describe other ways your industry/community partners are involved in your program?

11. How does your administrator relate to your industry or community partnerships?

12. What supports do you need from administrators to make this program effective?

13. How do you, as a lead teacher, work with your administrator and principal to understand the value of internships, and to get the supports you need for them?

14. Followup question from previous interview: Can you talk about your relationship to the CCO staff? How useful have they been to your work as a lead teacher? What do you wish they would do to support you as a lead teacher?

15. Are there any upcoming events, meetings, or classes I could observe that would get me a better picture of the work you are doing with students around work-based learning?
Admin Interview Protocol #1 (Focus: Master Scheduling)

Name of interviewee ___________________________ Date __________________________
CPA, School and District __________________________

Briefly describe the purpose of the study. Review the consent form. Explain: this is the first of two formal interviews focusing your work with CPA lead teachers. This conversation will provide me with information about your respective roles in the school structure, and the master scheduling process and staffing process.

1. First can you tell me a bit about your background?

   Length of time as admin for that CPA ___________________________ As Admin: ___________________________
   Subject(s) taught when teaching: ___________________________ CTE experience? ___________________________

2. Can you describe your specific areas of responsibility as an administrator?

3. How would you describe the leadership model in this school? (Do leadership structures involve CPA lead teachers? Relationship to department chairs, other program leaders?)

4. How are CPA lead teachers selected?

5. Can you give me your estimation of the strengths of the CPA lead teacher in X Academy?

6. Can you tell me about the master schedule process as an example of how your work with the CPA team and lead teacher are structured?

7. Is this CPA cohort “pure”? How do you attract a diverse student population, including high performing, ELL and Special Education students?

8. Do you provide a common prep so that CPA teachers can work together on interdisciplinary project-based curriculum and assessments? How does that affect the way you do scheduling?

9. Have you made other changes, such as in course offerings or enrichment programs, to support the ability of the CPA to serve students at all skill levels?

10. How have you worked with the CPA lead teacher to address these challenges?

11. How does your work with the CPA relate to your equity goals for this school?

12. Is there a collaborative meeting that I could observe in which you and the lead teacher are both engaged in addressing any of the issues we have discussed here today?
Admin Interview Protocol #2 (Focus: Staffing and PD)

Name of interviewee ___________________________ Date ______________________
CPA, School and District __________________________

Briefly describe the purpose of the study. Explain: this is the second of two formal interviews focusing your work with CPA lead teachers. This conversation will provide me with information about how you are working with lead teachers on professional development and the staffing process.

1. Can you talk about how the CPA you are responsible for, and the other pathways at this school, affect your vision of a coherent instructional program for the whole school?

2. What is your school’s focus for professional development this year? To what extent does that focus support the CPA teachers’ needs as they grapple with developing effective, rigorous integrated project based instructional practices?

3. How do you decide on professional development priorities in this school?

4. Since developing content and pedagogical expertise is traditionally a professional development goal centered in departments, has the development of the pathways changed professional development processes at this school?

5. Do you involve the CPA lead teacher in any way in the annual process that you go through as you determine staffing needs?

6. Are there challenges or tensions that have arisen in the hiring and staff assignment process with this CPA? If so, can you tell me about these?

7. Can you talk about the challenges you face in implementing a hiring and staff assignment process that supports CPA’s needs, for instance for cross-curricular collaboration and long-term relationships with students?

8. Can you describe the professional development you’ve experienced related to CPAs or Linked Learning pathways?

9. In the annual performance evaluation that you experience as an administrator, is your work with CPAs or Linked Learning Pathways been assessed?

10. Is there a collaborative meeting that I could observe in which you and the lead teacher are both engaged in addressing any of the issues we have discussed here today?
Team Teacher Interview Protocol

Name of interviewee ___________________________ Date ______________
CPA, School and District _________________________ Yrs in CPA ______
# yrs in teaching: ____ # CPA classes ____ Subject(s) taught: ________________

Briefly describe the purpose of the study. Review the consent form. Explain: This conversation will focus on how your team develops and uses integrated, standards-based and industry-related project based curriculum, and on the challenges you experience in that process.

1. Tell me about how you became an XXX teacher. What was your career path?

2. How did you become part of the CPA team?

3. Would you describe the process of developing an industry-related cross-curricular project with your team?

Followup: 1) how long ago ______ 2) grade level _______ 3) subjects taught by teachers involved _______________________________ 4) duration __________
5) student work product ____________________________
6) did project count toward student grade in more than one course? ◊ yes ◊ no 7) did teachers collaborate in evaluating the student work products? ◊ yes ◊ no 8) Were industry partners involved in aspects of this project? ◊ yes ◊ no  How? ____________________________

4. Were all students involved in all aspects of this project? If not, why not? If so, did you make accommodations for particular students, such as those who were exceptionally high performing or those with IEPs or ELL status?

5. Can you give me some examples of other ways that your team integrates your industry field across the academic curriculum? Followup: How are those organized?

6. Do you collaborate more often with some of the CPA teachers? If so, in which specific content areas? And why do you think that is?

7. Can you give three traits that you think characterize your CPA team? Explain.

8. Can you give three traits that you think describe your CPA lead teacher? Explain.

9. How do the many responsibilities associated with running a CPA get divided up in your team?

10. What relationship does your lead teacher have to the integrated curriculum work that you do?

11. Do you work directly with industry partners? How does that happen?
12. Do you also relate to a department within this school? If so, with which do you spend more time? Does work in your department relate to or support the work in the CPA?

13. What is your school’s focus for professional development this year? To what extent does that focus support your work developing effective, rigorous integrated project based instructional practices?
Industry Partner Interview Protocol #8 (Focus: Advisory Board & Work-Based Learning)

Name of interviewee ___________________________ Date _____________________
CPA, School and District ___________________________ Job Title: ________________
Organization: ___________________________ 

Briefly describe the purpose of the study. Review the consent form. Explain: This conversation will provide me with information about your work with the CPA, in particular with the Advisory Board and Internships.

1. First can you tell me a bit about your career path: How did you get into this industry and to your current position?

2. Tell me about your job: How does the career pathway fit into it?

3. How did you become involved in working with this CPA?

4. What are some of the things you do in collaboration with this CPA over the course of a year to provide work-based learning experiences?

5. Can you describe the internship program that you have developed with the students in this CPA?

6. How has that worked for you? Are you getting what you want from this effort?

7. Can you describe an activity you have been part of that brought you into a working relationship with the CPA teachers?

8. Have you connected with the teachers around curriculum? What has been the focus of that work? OR What might you contribute if you could?

9. Which teachers in the CPA do you work with the most, and in what capacity?

10. Have you been to a CPA Advisory Board meeting? Can you describe to me what one is like?

11. What do you feel is the most valuable aspect of your work with this career pathway? What would make this more valuable?

12. From your perspective as an industry partner, what is difficult about this work?

13. What supports at the school site would facilitate this work for you?
Appendix 3
CPA and School

Observation Date:
Location:
Event Title:
Start Time:

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## Appendix 4 – Initial Analysis Case by Question

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<td>Collaboration Lead pathway + prepapation for Faculty, Council, main advisor, etc.</td>
<td>CCO PBL training; Grade level; Coach AP not offered in pathways; Some CTE co-lead; Leadership does not have distribution of leadership within CTE but is very programmatic.</td>
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<td>Recruitment - book accessible</td>
<td>Email role to PBL</td>
<td>CTE Course embedded for all in, targeted AP; Lead lottery; Student population w/in 5% of schoolwide/sex except in gender (2/3 female)</td>
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<td>Advocating for &amp; Ambitious; Feisty</td>
<td>Collaboration Lead pathway + preparation for Faculty, Council, main advisor, etc.</td>
<td>CCO PBL training; Grade level; Coach AP not offered in pathways; Some CTE co-lead; Leadership does not have distribution of leadership within CTE but is very programmatic.</td>
</tr>
<tr>
<td>CTE SPS</td>
<td>Recruitment – book accessible</td>
<td>Recruitment – book accessible</td>
<td>Email role to PBL</td>
<td>CTE Course embedded for all in, targeted AP; Lead lottery; Student population w/in 5% of schoolwide/sex except in gender (2/3 female)</td>
</tr>
</tbody>
</table>
Appendix 5: Code Tree

**CPA Mandates:**
- Common Preps
  - Extent of collaboration time
  - Impact on PBL
  - Use of collaboration time
- CPA Pure Cohorts
  - Class size
  - AP
  - Backfilling
  - ELL
  - Special Ed
- 50% of Cohort "at risk"
  - Cohort heterogeneity
  - Student support
  - Recruitment

**Integrated Project Based Curriculum**
- Parallel integration: thematically connected activities with independent products and assessments
- Authentic project-based integration: work product demonstrates proficiencies in all subject areas involved, with common rubrics and authentic audience
- Industry field/academics integration: industry field incorporated into academic curriculum
- Project Based Curriculum Routines
  - Exhibitions
  - Grade level teams
  - Project based curriculum PD

**Work Based Learning**
- WBL Routines
- WBL Career Exploration
- WBL Curricular Integration
- WBL Industry Buy-In
- WBL Partnership Development
- CTE issues
- WBL logistics

**Role-Related Stressors:** Sources of stress and tension related to the definition of the lead teacher role with the particular context.
- Role Ambiguity: lack of specificity regarding duties
  - Autonomy: ability to determine approach within bounds of professional expertise.
  - Mandates: specific demands for which one is accountable to a supervisor
- Role Conflict: Simultaneous conflicting priority demands
- Role Overload: Too much to do given time allotted

**Legitimacy:** Perceived respect for leadership practice
- Capacity
- Lack of Administrative Support
- Administrative Support
- Resource Acquisition
- Equity Focus
- Advocacy
- Expertise
- Leadership Development
- Team Building

**Authority:** Ability to exert influence
- Empowerment: Participation and social integration with school leadership structures
  - 5 = weekly participation w/site ldship
  - 4 = biweekly part w/site ldship
  - 3 = ~monthly part w/some site ldship
  - 2 = regular meetings with admin in charge
  - occasional meetings with admin in charge
  - 0 = no contact.
- Instructional Focus: maintaining focus on teaching & learning, for instance introducing instructional strategies or defining learning goals.
- Collective Vision: Ability to express and mobilize collective action around a coherent vision and mission, that aligns with instructional practices
- Trust building: Establishing trusting and constructive relationships that allow conflict to flourish productively