College and Career Academy Support Network, University of California, Berkeley

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Report to the Field:

Leadership and Capacity Building in College and Career Pathways

COLLEGE AND CAREER PATHWAY RESEARCH SYMPOSIA SERIES

Leadership and Capacity Building in College and Career Pathways

November 13, 2018, Cal State LA Golden Eagle Ballroom, Los Angeles, CA

Introduction

College and career pathways represent a significant national educational reform movement supported by federal, state, and philanthropic funding. High school pathways combine career and technical education with rigorous academics, work-based learning, and student supports to provide equitable access to postsecondary opportunities. Strong research evidence supports this specific combination of interventions as a means to address the opportunity gap and the underlying causes of disparate high school outcomes[1]. Four symposia — described below — were designed to identify the available research related to equitable implementation of college and career pathways with the aims of prioritizing a research agenda that could impact policy and practice, and promoting collaboration among researchers. Virtual researcher communities of practice (CoPs) are being encouraged to share definitions, leverage each other's data, and collaborate on specific research proposals to strengthen the pathway evidence base. Such collaboration is also expected to stimulate interest among policy makers and funders as well as providing guidance to the field.

This symposium was the third in a series of four symposia focused on four aspects of pathways research.
- The first was *The Secondary Student Experience*, held October 17, 2017, examining how to measure student success in college and career pathways. Researchers looked at measurement and research approaches addressing enrollment through engagement and achievement, concluding that an equity lens is critical to any investigation.
- The second symposium, *Equity Issues in College and Career Pathways Teaching and Learning Practices*, held April 26, 2018, examined instructional practices, student supports, and structural and cultural factors facilitating successful, equitable implementation of pathways, and the implications for teacher preparation.
- This third symposium, *Leadership and Capacity Building in College and Career Pathways,* held on November 13, 2018, focused on leadership and capacity-building and the research questions required to address problems of practice faced by pathway administrators, teachers, counselors, and other student support specialists.
- The fourth and final symposium will be April 26, 2019, on *Aligning College and Career Pathway Systems for Equity,* planned to identify the high priority problems of system alignment affecting equitable pathway development, and the specific research questions that need to be answered in order to guide policy and practice.

In addition to individual reports from each of the symposia, a summary review of the literature and conclusions from this series, with an analysis of the implications for a college and career pathway research agenda, will be produced.

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[1] We use the term "pathways" throughout the document to refer to "college and career pathways," defined as including the components described.

The College and Career Pathway Research Symposium series is a joint effort by multiple research-based organizations active in policy development led by UC Berkeley's College and Career Academy Support Network (CCASN). The Planning Committee includes: Career Ladders Project; the California State University (CSU) Collaborative for the Advancement of Linked Learning (CALL); Jobs for the Future; the Learning Policy Institute; the Linked Learning Alliance; PACCCRAS (Promoting Authentic College, Career, and Civic Readiness Assessment Systems) Working Group; MDRC; SRI International; and WestEd. This work has been generously supported by the James Irvine Foundation, the Spencer Foundation, and the Stuart Foundation, and by Planning Committee host organizations. Symposium 1 was hosted by UC Berkeley's CCASN; Symposium 2, by WestEd; Symposium 3, by the CSU CALL and Cal State LA; and Symposium 4, by SRI International.

Symposium Goals and Structure

This third of four research symposia, *Leadership and Capacity Building in College and Career Pathways,* focused on identifying key problems of practice in leadership and capacity-building and the research questions required to address those problems. Simultaneously we intended to develop capacity among researchers, college and university faculty, and scholar-practitioners to create Research Practice Partnerships (RPPs) that align high priority research questions with key problems of practice in equitable implementation, identified in the previous symposia in this series. Finally, we sought to connect faculty and scholar practitioners responsible for preparing pathway educators with researcher CoPs examining those priority issues.

The redesign of high schools into pathways requires transformative changes in education systems in order to meet the goals of equity and readiness for all students (Johnston, 2013; Little, Erbstein, & Walker, 1996). This reform presents particular leadership and capacity-building challenges for system actors in all roles; we focused here on site and district administrators, teachers, and counselors and other student support specialists (Stern, Dayton, Lenz, & Tidyman, 2002). While much of the literature on leadership and capacity building is relevant, little of the research has focused on the specific demands of leadership and capacity building for college and career pathways. Therefore the third symposium invited forty (40) researchers, faculty, and scholar-practitioners (Appendix 1) to first discuss the findings of leading researchers, and then engage in an exploratory research exercise. We asked participants to explore possible RPPs that could address the high priority research questions identified in symposia 1 and 2 (Appendix 2) so that we could collect data on the key leadership and capacity-building problems of practice that arose. We intended to both build on the work of previous symposia and to promote a strategic, capacity-building approach to research on the key problems of practice that impede equitable pathway implementation.

Overview of the Day

An opening activity built upon participant pre-work to identify the essential characteristics of leadership required for equitable college and career pathway implementation. Participants then heard from a panel of experts on how to prepare educators in all roles to lead in implementing equitable pathways. Dr. Pedro Noguera, who moderated the panel, provided reflections, and the ensuing discussions led to further refinement of the essential elements of change necessary to redesign the preparation of

educators and education leaders. Dr. Linda Darling-Hammond, the lunchtime keynote speaker, addressed the potential of college and career pathways to provide deeper learning experiences for all students, and examined the leadership and capacity-building required to accomplish that goal. In the afternoon, participants split into three strands — administrator, teacher, and student support specialist — to explore how RPPs could tackle the high priority problems of practice and research questions already identified in earlier symposia. Their final reflections focused on the leadership and capacity-building problems of practice that arose in that exercise, and the research questions that, if addressed, would help to improve leadership and capacity building.

Symposia series coordinator Dr. Annie Johnston framed the day, emphasizing the leadership and capacity building demands specific to college and career pathway reform. Drawing from the literature, she argued that leadership is second only to instructional practice in impact on student learning (Louis, Leithwood, Wahlstrom, & Anderson, 2010), and a key resource for school redesign, particularly when shared or distributed (Spillane, 2006). Promoting successful equitable college and career pathway implementation requires the empowerment and mobilization of leaders throughout the system to drive substantive change in student learning. Just as "every system is perfectly designed to get the results it gets," education systems have been designed to reproduce inequities (Bourdieu & Passeron, 1977). Redesigning schools to transform student experiences and success is a complex problem of practice that requires new forms of leadership and capacity building at every level and in every role (Fullan, 2006). RPPs were emphasized in the symposium design as a means to connect researchers with the experience and perspective of practitioners addressing critical equity-based problems of practice (Penuel, Fishman, Cheng, & Sabelli, 2011), while simultaneously building leadership and capacity at all levels.

Highlights from Panel

Dr. Pedro Noguera, Distinguished Professor of Education at the Graduate School of Education and Information Studies at UCLA, moderated a panel of scholars who conduct research on college and career pathway-specific education leadership and capacity building, with focuses on administrators, teachers, and counselors and student support specialists.

- Dr. Jay Fiene, Dean Emeritus of the College of Education, and Professor Cal State San Bernardino
- Dr. Don Hackmann, Professor of Educational Leadership, University of Illinois at Urbana-Champaign
- Dr. Corinne Martinez, Associate Professor of Teacher Education, Cal State Long Beach
- Dr. Milbrey McLaughlin, Professor of Education and Public Policy Emerita, Stanford University
- Dr. Jake Olsen, Assistant Professor in School Counseling Program, Cal State Long Beach

Panelists were asked to first highlight a single overarching concept from the research, then to respond to four questions about preparing educators to lead in equitable pathway development:

> **What Leadership Should Look Like:** What leadership behaviors promote requisite transformative changes in beliefs, vision, behaviors, routines and systems?

> **System Change:** How do leaders effectively engage peers, staff, and community partners in transforming routines, roles, and skills to build capacity across the whole system?

Preparation and Professional Development: What professional development experiences, practices, and curricular content support administrators, teachers, counselors and other education specialists to equitably implement college and career pathways in schools or districts?

Equity: What transformational changes in systems for educator and educational leadership preparation are needed to do this work?

Dr. Fiene opened with the idea that schools need to reconnect to their communities and become relevant and engaging centers of the community again. They need to become "student ready." For this to occur, leaders need to seek answers to problems of practice in collaboration with researchers willing to work closely with practitioners (Boyer, 1990; Shulman, Golde, Bueschel, & Garabedian, 2006). Education leadership needs to embrace experimentation, for example, using summer school to offer engaging community college courses to high school students, not just make-up credits in courses students have already found unengaging. In order to engage others in such transformation, leaders need to know and understand themselves first. They must love to learn and become a model for what they want to see—that learning is safe, failures are to be expected, but so is new learning. For the transformation in instructional practices we are trying to implement, teachers should have experience outside of school walls: pre-service and inservice teachers need externships in industry fields and advisories to help develop practical applications. The transformational change needed in our systems to allow for this kind of educator preparation also opens up opportunities for communities to dream—and for leaders to build trust and change relationships (Greenleaf, 1977) in order to create success for ALL students.

Dr. Hackmann posed the idea that distributed leadership was essential, not just within schools — civic and business leaders also need to be engaged. School leaders, he argued, need to create a vision of college AND career, to disrupt obstacles to pathways, creating and pushing an integrated college and career readiness program in which all students participate, not just to which they have "access" (Malin & Hackmann, 2017). He gave the example of a pathways resource center developed by the state of Illinois[2] to enhance and strengthen K-20 pathways, whose mission includes improving equitable outcomes. Dr. Hackmann's research (Chattin & Hackmann, 2013; Malin & Hackmann, 2016) indicates that leaders engage others in this transformation by paying attention to the realities of the local labor market (Symonds et al., 2011), and by setting expectations that all adults in the school participate in the college and career readiness of students. In order for that to occur, professional development needs to include elementary, middle, and high school educators. In addition, college and career readiness must be added to the topics in the curriculum of principal and administrator preparation.

Dr. Martinez noted that although college and career pathway school reform has changed many students' lives, for others, school remains a place of limited options. Culturally responsive pedagogy[3], she argued, can be a lens to examine the role of teachers, and a tool for resetting educator beliefs and ideologies. Student culture, language, and experiences permeate the classroom, impacted both by

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[2] https://occrl.illinois.edu/prc
[3] Culturally responsive pedagogy begins with teachers reflecting on their own place in society and examining "their actions, instructional goals, methods, and materials in reference to their students' cultural experiences and preferred learning environments" (Irvine, 2012, p.12). This pedagogy "not only addresses student achievement but also helps students to accept and affirm their cultural identity while developing critical perspectives that challenge inequities that schools (and other institutions) perpetuate" (Ladson-Billings, 1995, p.469).

teacher and student identities and experiences. Tremendous knowledge and skill development is required to transform instruction from content transmission to engaged, meaningful problem solving (Cochran-Smith & Lytle, 2009; Cochran-Smith & Villegas, 2015). Teachers need to learn to teach experientially, (Ball & Cohen, 1999), co-plan and integrate problem and project-based instruction, including work-based learning, and to design authentic assessments. CSU Long Beach trains principals to work on this with teachers by focusing on five principles: awareness about their own identities and role in college and career readiness; critical analysis of the contextual experience of students; curriculum planning; teacher collaboration; and teacher leadership. Leaders who brought counselors, principals, and teachers together to collaboratively work with data or address a defined problem of practice had the most impact (Farnan, Hudis, & LaPlante, 2014). Professional development on the subject of creating interdisciplinary curriculum can help frame teachers' beliefs about pathways and collaboration by locating educator practice in rigorous curriculum development and reflection.

Dr. McLaughlin argued the importance of changing mindsets when preparing educators to lead in implementing equitable college and career pathways. Her research on the California Career Pathways Trust (CCPT) grants (McLaughlin, Groves, & Lundy-Wagner, 2018) found that stakeholders experience tension between what has always been done in the past and adaptation to new practices. College and career pathways require a new type of leadership, one that builds cross-sector relationships in order to learn about contexts beyond the leader's immediate administrative boundaries. Four leadership behaviors that support this change in mindsets are: 1) leaders recognize that building partnerships is a systemic issue and they address it in a systemic manner (i.e., what can we all do together); 2) leaders in these partnerships must see themselves as intermediaries; 3) leaders possess a special skillset: political and relationship building skills, as well as organizational, technical, and political capacities; 4) leaders were boundary spanners, able to move between contexts easily. McLaughlin found that professional development on incorporating work-based learning into instruction was most effective when being modeled, and in conjunction with teacher externships. In exemplary CCPT partnerships, problem-based cross-sector professional learning communities were seen as integral to the sustainability of pathways. Leadership training, she argued, must prepare leaders to analyze data from their specific context, in order to be responsive servant leaders (Gardner, 1990) who can enable the success of others.

Dr. Olsen's overarching concept was that it was possible to integrate pathways into the work of counselors. The best approach is for counselors to learn to use data so that they can support schools and pathway teams to address equity issues. Counselors need to align their work with pathways—all adults in the school need to know what the other adults are doing so that all may support students (Ruiz de Velasco, Newman, & Borsato, 2016). Counselors can support career education and pathway development in elementary and middle school as well as high school. In order to integrate counselor preparation with college and career pathway redesign, Olsen intentionally aligned his national standards-based counseling program with pathways core concepts (Olsen, 2017). Pre-service counselors learn many skills that contribute to meeting pathway goals (Dollarhide, Gibson, & Saginak, 2008), such as how to set up an internship. Counselors are trained to support people through complex processes that require investigation, goal setting, motivating and planning, and add tremendous value to pathways as leaders, advocates, collaborators, and systems change agents (ACSA, 2012).

In a short question-and-answer session, one participant asked how to balance labor market needs and student interests. A challenge in both rural and urban areas, the panelists agreed that when collaborative structures exist (e.g., a relationship between district leaders and the Chamber of

Commerce), stakeholders feel safe expressing their needs. All members of the community must have a voice in community planning.

When asked about the role of pathways in college transitions, panelists noted that students need to be advised to take the most rigorous sequence of courses available to them; it is incumbent on pathway leaders to ensure that pathways address equity by offering all students a college preparatory course of study. This avoids the college or career dichotomy, and helps move students away from gaming the system or choosing courses and pathways that are inconsistent with their career interests.

Dr. Noguera's Reflection on Panel Presentation

Panel moderator Dr. Noguera's reflections focused on two themes: the problem of disconnected youth, and the lack of attention paid to student motivation. First he described a large structural problem: According to the Brookings Institution, five million adults aged 18 to 25 are disconnected from school or work.[4] In Los Angeles alone, there are 250,000 disconnected youth. White middle class youth may also need direction, but they tend to have a safety net. Poor and minority students do not. They often end up in jail or in low-wage jobs for extended periods of time. Yet there are opportunities in high-tech jobs— how can we connect students to those opportunities?

Hawkins High School in South Los Angeles provides an example of a high school making those connections. Hawkins serves disadvantaged students, including unaccompanied minors and students who are not literate in either their own language or in English. As in many such schools, the least experienced teachers are usually assigned to teach there (Darling-Hammond, 2003). Hawkins staff decided to set up small learning communities, including a Critical Design and Gaming School. Students are very interested in it, and have become engaged in school. Industry representatives visit the school now, summer jobs are being set up, and connections are being made.

Another example is Westinghouse High School in Pittsburgh PA. It is also a troubled school: over 50% of students have an IEP. They are a school "set up to fail," as Noguera put it. But the cosmetology department is an oasis of engagement. The teacher demands commitment. The district, however, does not know how to take up what is working. We need to engage systems and leadership at the highest levels, so that college and career readiness is a part of their commitment and can be taken to scale.

Next, Dr. Noguera discussed the importance of focusing on student motivation. We cannot force students to learn or study, but why aren't more students saying, "school was awesome today?" Even the best students put up with boredom or become fixated on grades over substance. Big Picture[5] schools, based in Providence, RI, addresses the motivation issue. The approach is thoughtful and adaptive to the needs of students. Students work with advisors and mentors to develop personalized learning plans. One Big Picture high school senior said she entered high school interested in fashion design but hated it after taking some classes. She then did a hospice internship and found her direction. If a school offers strong pathways, it matters less if students shift from one pathway to another, because they are exploring their options, and that gets them excited and motivated. Dr. Noguera always tells students to

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[4] https://www.brookings.edu/blog/the-avenue/2018/01/31/millions-of-young-adults-have-entered-the-workforce-with-no-more-than-a-high-school-diploma/

[5] https://www.bigpicture.org/

try something; don't sit around waiting. He argued that this generation needs some get up and go — they need to be exposed to things, to expand their horizons.

Participant Synthesis of Essential Elements of Leadership

After the panel and reflection, participants worked to synthesize the top priority concepts of leadership essential in the preparation of education workforce leaders in any role, to support equitable implementation of college and career pathways. They did not attempt to describe **all** of the essential characteristics of such leaders, but rather those concepts deemed essential to the process of leading a college and career pathway development school reform process that can seriously disrupt inequities and redesign education systems. Many of the priorities identified reflect best practice in educational leadership (Spillane & Coldren, 2011; Wahlstrom, Seashore Louis, Leithwood, & Anderson, 2010). The concepts participants identified that appear to be unique to developing college and career pathways are indicated in italics.

Conceptions of Leadership
- Leaders serve the communities they lead, as facilitators of change, supporting communities to weigh the disruptive challenges of change against the destructive damage of doing nothing
- Leaders share authority, decision making, and resources broadly, and develop others' leadership
- Leadership is a process of inquiry, using evidence and reflection to respond and make changes
- *Leaders build partnerships — community, professional, and across educational levels — to enhance the capacity of educators to build and sustain successful programs*
- Leaders create time and space for many to lead and for leaders to reflect and collaborate
- Leaders model reflection, collaboration, and cultural competency
- Leaders model advocacy — they question and problematize the system, especially in relation to students who have traditionally been poorly served

Essential Beliefs and Understandings
- Have an unwavering commitment to diversity, equity, and inclusion
- Have empathy and a deep understanding of context and culture
- *Believe that all students can learn and be prepared for both college and career*
- *Understand college and career readiness as connected and integrated*
- Understand how the organization fits into the larger system, *economically*, politically, and socially

Leaders Need the Skills to be Able to:
- Collaboratively create a vision for education in a community
- *Develop cohesive systems that empower students to follow their interests, define their career goals, and connect to pathways to pursue them*
- Engage with community in strategic work to change systems and subvert systemic inequities
- *Understand the local community and job market, and build career pathways for students to access those opportunities*
- *Navigate and broker partnerships across sectors and contexts, understanding different norms and political landscapes*
- Know the students and their needs, and work to align structures and transform practices to meet those needs

- Understand and use data on student needs and effective practices in reflection and decision making
- *Develop faculty capacity to integrate academic and career education*
- Develop innovative problem solving approaches, think outside the box

We analyzed this list using an adapted version of Linda Lambert's (Lambert, 2003) leadership self-assessment (available in the CCASN Leadership Guide). CCASN had already adapted that self-assessment to emphasize cohesive and shared leadership approaches to developing college and career pathways within the overall school vision and priorities, and we found most of those components reinforced here. Other leadership skills critical for college and career pathway contexts, such as team building, were absent here, or implied in larger constructs: "Leaders create time and space for many to lead and for leaders to reflect and collaborate."

The exercise highlighted new expectations of leaders in the college and career context, particularly related to the integration of academic and career education, leadership responsibility for developing partnerships (community, industry, post-secondary) and system redesign to prioritize career pathway development. The role of leadership in a reform that so upends the current norms of schooling, and that seeks to undermine systemically ingrained inequities, raised the priority of transformative leadership approaches: college and career pathways call for "servant leaders," and "change facilitators" who can "weigh the fear of change against the fear of doing nothing."

The closing discussion introduced RPPs as a mutually beneficial means of leadership and capacity building. One team of attendees had already begun an RPP focused on the problem of low college-going rates. They described to the participants how, as their partnership began to develop safe relationships, they found capacity building began to happen. They reported that practitioner partners are learning to think about their data and the role of research as part of a continuous improvement cycle, and district level researchers are learning about the context for their data and how data cannot tell the whole story.

Lunchtime Keynote – Dr. Linda Darling-Hammond

Leadership and Capacity Building to Facilitate Educator Preparation for Deeper Learning in College & Career Pathways

Dr. Linda Darling-Hammond, President and CEO of the Learning Policy Institute (LPI) and the Charles E. Ducommun Professor of Education Emeritus at Stanford University, delivered a keynote address at the third College and Career Pathways Research Symposium on Leadership and Capacity Building, November 13, 2018. Her remarks drew upon her recent LPI report (Darling-Hammond & Cook-Harvey, 2018) that cites school climate surveys and neuroscience findings to argue for new ways to teach and learn that respond to today's needs and contexts. In these remarks, she discussed how college and career pathways, with appropriate leadership and capacity building, can facilitate deeper learning.

Students need to feel safe and comfortable in order to learn. But research on social emotional learning in schools has shown that more than 70% of high school students identify negative emotions with

school, such as boredom, stress, or anxiety; only 29% of students tend to see school as a caring or supportive environment (Collaborative for Academic, Social, and Emotional Learning, 2013). However, college and career pathways provide a different, more purposeful environment for teachers and students as they work together toward a common goal — to help students find their way in a changing economy.

The workforce requires people who have strong analytical skills, who work well together, and who have the flexibility to adapt to ever more dramatic economic shifts. The amount of knowledge and information developed in one year has gone from linear to exponential growth, and the implications for learning are profound. These implications are being taken up most effectively in the college and career readiness frameworks of pathways and academies. In the modern world, people need to be able to find information, combine it, and use it to improve their work. Google executives found that judging job candidates on measures such as school grades and test scores did not predict success at Google. Rather, the ability to learn proved more predictive of success, so their hiring process puts candidates through performance tasks as ways to display their ability to learn.

How, then, do we prepare teachers to bring deeper learning to students? One barrier is the high school curriculum itself. High school requirements and the courses that are believed to prepare students for college were determined by the Committee of Ten in 1892: algebra, geometry, trigonometry in that order (alphabetically); biology, chemistry, physics in that order (also alphabetically). However, computer science and other courses — such as interdisciplinary sciences like biochemistry — are pushing on this old system. California's Smarter Balanced assessment system, that uses both computer-based tests and performance tasks, is a step forward with respect to active learning, but it is not enough. In Singapore, students design and conduct science experiments and write them up for publication[6]. What are the implications for teacher education?

Some teacher preparation programs have equity and social justice as explicit parts of the program. The Learning Policy Institute team identified seven programs across the country — large, small, public, and private — that work to ensure that students learn to learn. Three of the seven are in California: the San Francisco Teacher Residency (a collaboration of the San Francisco Unified School District, United Teachers of San Francisco, Stanford University, and University of San Francisco), the High Tech High Graduate School of Education in San Diego, and the Berkeley Educators for Equity and Excellence program at UC Berkeley's Graduate School of Education. The LPI team found five features common to all seven of these teacher preparation programs:
1) Learning is developmentally grounded. It is necessarily personalized to support cognitive and social-emotional development. Teachers need to know their students and what they know. Teachers are culturally responsive and their teaching is designed to scaffold experiences.
2) Learning is contextualized. People use tools in real world contexts, connected to student experiences.
3) We do not learn by rote. 90% of rote learning disappears. We apply learning so that it can be transferred—teachers learn how to teach that way.
4) Learning happens in productive communities of practice, where participants develop a set of relationships and connect that to learning and content. Every turn of conversation builds

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[6] Guha, R., Wagner, T., Darling-Hammond, L., Taylor, T., & Curtis, D. (2018). *The promise of performance assessments: Innovations in high school learning and college admission.* Palo Alto, CA: Learning Policy Institute.

cognitive capacity and linguistic abilities. Teachers need to know how to create these learning communities in the classroom so that instructional conversations take place for long-term learning.

5) Learning is equitable and oriented to social justice. This requires teachers to confront bias proactively and address threats or discrimination toward marginalized populations.

In addition, these teacher education programs did several rare things: 1) courses were integrated with each other and with the clinical experience; 2) professors in the programs modeled those practices in their own teaching (i.e., coaching, feedback); and 3) candidates were in a clinical experience from the start so that they were continuously applying what they were learning: to teach diverse learners in a competency based manner without ranking or sorting.

It is important to broadly examine how teacher preparation is being developed, and to expand schools like these. Deeper learning schools should be at the forefront, like teaching hospitals. Some states have funding streams that create school-university partnerships with a research and a practice component. California needs to provide residencies in high-need communities, and to underwrite candidate training with loans that become grants when teachers work for a given number of years.

California is moving toward a more learner-centered, holistic approach as opposed to transmission teaching, providing guidelines for educators wishing to adopt such an approach. The state Commission on Teacher Credentialing (CTC) is now surveying graduates of all teacher preparation programs to learn whether they felt their preparation was sufficient. This information will inform the accreditation process in a regular continuous improvement cycle. Teacher performance assessments need to shift focus as well, however, and in that arena, California has a way to go.

In closing, let's recall a quote from John Dewey (1907), who said that "Only by being true to the potential of each individual can a society be true to itself."

Discussion

Darling-Hammond and the symposium participants discussed a number of issues that arose in response to her remarks: 1) aligning teacher credentialing to the new demands facing those who are building college and career pathways; 2) developing a recognition portfolio of authentic work that could be a common college application; 3) including externships as part of pre-service teachers' field experiences; and 4) engaging employers in the partnership process so that they, too, are learning.

Exploratory Exercise

In order to identify key leadership and capacity-building problems of practice and the research questions required to address them, we conducted an exercise initiated in the prework. We asked participants to review the high priority research questions that resulted from the first and second symposia, and to postulate an RPP that could address one or more of those questions with leadership and capacity building as one outcome. We provided resource material on RPPs.

In the symposium plenary, we introduced the value of RPPs, both in connecting researchers to critical problems of practice, and in building leadership and capacity among education practitioners in all roles.

Participants selected to join one of three strands based on those roles: administrators, teachers, or student support specialists. In order to clarify the nature of an RPP, the strand workgroups began by using the Framework for Assessing Research-Practice Partnerships (Henrick, et al., 2017) to reflect on the partnerships they had prioritized in their prework, and to individualize one or two of the indicators in that Framework.

Participants then completed a graphic tool (Appendix 3), using their prework. This tool was designed to align the research questions and problem of practice of a real or hypothetical RPP, and to discuss the relevant literature and appropriate methodology for that RPP. Participants who had never been involved in an RPP found the exercise challenging. However, analyzing how research could address high priority problems of practice engaged the participants, who found the conceptual framework a useful tool even for non-RPP research. Participants shared their ideas for RPPs on high priority research questions, and used a protocol (Appendix 4) to provide feedback on the proposals deemed most promising, including ideas for methodology, potential partners, and ways to integrate leadership and capacity building into the work.

Pathway Administrators

Many of the 14 participants in the administrators strand were uncomfortable sharing hypothetical RPP plans. However, one longstanding RPP team from the Los Angeles area presented, as did one technical assistance provider working with education leaders from across the state to incorporate a work-based learning assessment into the state accountability system. The tuning of these two RPPs was helpful to the presenters, and engaged the participants who provided excellent and valuable feedback. After tuning both RPPs, the group returned to each in turn to reflect on the leadership and capacity building problems of practice and researcher questions that related to each. We have summarized below each RPP problem of practice, as reported to the strand, and the feedback received, followed by a summary of the key issues related to leadership and capacity building discussed for that specific problem of practice.

Administrator Problem of Practice 1: Low and Inequitable College-Going Rates

Although not many symposium participants had experience with an RPP, a team from a long-standing RPP attended, including the Los Angeles Unified School District (LAUSD), Claremont Graduate University, the Los Angeles Education Research Institute, and UCLA. The team provided an example of a mature RPP engaged in a continuous improvement process. 25 leaders from across LAUSD had been collaborating for the past eight years, with a focus on improving equitable access to rigorous curriculum. Their expectation had been that their efforts would improve equitable access to college opportunities in the process, but the problem of practice they presented was low and inequitable college-going rates, described with a number of different components:

- Curriculum in many schools is not organized with college-going as the expected outcome. Students in pathways don't necessarily have access to a college preparatory program of study (PoS).
- There are gaps in the teacher workforce needed to offer a college preparatory curriculum to all; they said, more teachers are needed in core curriculum areas who also know how to teach integrated coursework and work with pathway colleagues.

- Adding dual enrollment courses increased failure rates, for example, when courses were more rigorous than expected. Students were not taking higher level math courses. There is a need to redesign PoS, perhaps with developmental coursework as dual enrollment.
- College counseling resources are limited.
- Student aspirations may be based on their need to generate income in low-income communities, and career choices may lean toward jobs prevalent among their community/family network.

The research questions they are investigating include:
- Who is eligible for college, and where are the gaps in that eligibility?
- What does eligible mean?
- Are eligible students applying for college, and applying to "reach" schools?
- College "match" – are high achieving, low income students applying to selective colleges?
- Do students actually attend the colleges they apply to and for how long?
- What are the student transfer patterns?
- What are effective ways to reduce summer learning drop-off?

The RPP team is conducting interventions, for example, reviewing math pathways, providing counseling resources, monitoring A-G course taking, putting resources behind postsecondary leadership teams, and researching what school sites are doing to promote a college-going culture. Members of the administrator strand then used the RPP tuning protocol in Appendix 4 to query the group. The discussion included the following topics, with comments on research methodology indented:

- How to shift the systems mindset that pushes kids to fit into the system versus pushing the system to change
  - Tap into student voice: Capture stories of students of color, how to capture that data?
  - Use descriptive and qualitative methods: interviews, observations, (Central Office, counselors…)
- Think about ways to nurture a culture of care
  - Use predictive modeling around school effects; $3^{rd}/5^{th}$ grade performance indicators to identify students for early interventions
- At what age/grade does the school develop college awareness/exposure?
- How do parents participate in developing college goals, planning for college?
  - At each site, identify professional learning teams (PLTs) and provide resources, set up summer programs, build bridges, including to community colleges
- What are the bright spots or glimmers of hope; promising practices?
  - Identify students of color who are successful—what worked for them?
  - Look at patterns both outside and inside the educational systems
  - Identify student networks that impact postsecondary planning
  - Conduct focus groups
- Focus on barriers built into the system rather than on deficits in motivation or culture
  - Look at the variance across career pathways in college-going orientation
  - Design interventions to address systemic barriers such as increasing the number of Summer Melt counselors

- o Landscape study on types of supports provided: participant observations, student surveys

Key Issues Related to Leadership and Capacity-Building in College and Career Pathways

The leadership and capacity building problems and potential research questions that this high priority problem of practice needed to address to be able to move forward effectively were identified as:

- Communication to appropriate audiences, and formats for sharing RPP data
- How to be accountable to stakeholders in the most effective way
- Given the many different offices with different relationships to the data, how to get all the important stakeholders in the room?
- How to tie in the school site leaders where relevant?
- How to understand decision-making norms, and build capacity around using and valuing the RPP data in decision making?
- How to build the capacity of leaders to engage with, value, and model best practices around the use of research?
- How to inspire action? How to involve leaders at all levels to understand and disseminate data and assess its implications for practice?
- How to build leaders' skills and capacity to work with teachers/staff on practices that research shows make a difference?
- How to engage leaders at all levels to define research topics?
- How to use RPP data to mitigate the effects of turnover and enhance onboarding norms and processes?
- How to make RPP research flow out of the district vision and work, integrate with district initiatives, connect departments across silos, and inform the next research cycle?

Administrator Problem of Practice 2: Measuring Work-Based Learning at the State Level

The second administrator problem of practice was posed by a technical assistance provider coordinating a team of education leaders seeking to impact policy on California's new statewide accountability system. Her team was struggling with how to measure work-based learning (WBL) as a statewide student performance indicator in the state accountability system. She was not working with an RPP or any researchers; rather, she facilitated a group of education leaders who have been working to include a measure of WBL in the state College and Career Readiness Indicators (CCRI), but who have been unsuccessful in identifying a scalable way to measure WBL across the range of different types of WBL experiences. She described her problem of practice as: Needing to know how to measure the efficacy of WBL on student learning. Her research question was: How can WBL be captured as a learning indicator in a scalable way for inclusion as a California College and Career Readiness Indicator in the state accountability system?

Some of the challenges she noted included:

- College-going services are more widely available than services to support career education and WBL;
- The resources required for districts to collect data on WBL experiences have been overwhelming. Los Angeles started to gather data but stopped for lack of resources; in a pilot effort to collect WBL data, only 3 of the 9 Linked Learning districts were able to collect data that could be linked to CalPADS (April 2019) on paid/unpaid internships, including the equity issues

connected to who gets which type of internship, but the resources required created challenges in measuring;

- We do not understand what equity issues underlie this problem of practice around measuring WBL;
- We do not have assessments that are useful in measuring the quality of students' WBL experiences; and.
- What counts as WBL when we try to assess it? Who is eligible to participate?

In providing feedback, participants noted that the WBL continuum describes a wide range of experiences, making it very difficult to calibrate and leaving it open to a wide range of interpretation.

Key Issues Related to Leadership and Capacity-Building in College and Career Pathways
In discussing how the leadership skills, knowledge, and commitment involved in measuring career readiness skills could be developed, participants noted that the historical and cultural status of career education and work based learning, or "cultural coloring," influences leaders' willingness to engage this issue. In addition, measuring career readiness skills requires specialized knowledge of how to assess complex, subjective competencies. Participants raised the following leadership and capacity building issues:

- How can local education leaders affect state policy around College and Career Readiness Indicators?
- How can local education leaders collaborate to identify model College and Career Readiness Indicators that can capture missing "4C competencies" (i.e., critical thinking, communication, collaboration, and creativity) developed through work-based learning?
- How can local education leaders involve business leaders in creating models for measuring work-based learning-related competencies?
- How can leaders become engaged in identifying and sharing best practices/successes in developing measures for work-based learning-related competencies?
- What educational infrastructure do district leaders need to develop to implement a WBL career readiness measure?
- What would motivate district education leaders to prioritize the College and Career Readiness Indicator?

Pathway Teachers

The 12 participants in the teacher strand began the afternoon session by looking at the RPP framework. However, instead of individuals thinking about their own context (as suggested), the strand members engaged in a somewhat lengthy discussion of general problems of practice associated with RPPs. As the majority of the participants were scholars/researchers (with some in a teacher education role), the discussion focused on issues that were most problematic for researchers attempting to work inside schools (e.g., issues of access and participation, finding authentic mutual benefit, and sustainability). The group identified the following questions/issues related to RPPs that are important to address.

- Getting coherent buy-in across the school system: Establishing RPPs organized at the district level that involve site leaders or at the teacher level that have district support.

- The heavier workload and lack of collaboration time that college and career pathway teachers tend to experience makes it challenging to involve teachers as RPP partners. Adequate time and structural supports rely on district and site leaders' commitment.
- How to establish University partnerships that can assure mutual benefit, align with district goals and problems of practice, and build upon strong University professor–K12 teacher relationships.
- College and career pathway RPPs need to include industry and community partners. How to incorporate such actors into University-K12 RPPs?

Key Issues Related to Leadership and Capacity-Building in College and Career Pathways
In analyzing this discussion, we identified a number of leadership and capacity building challenges:

- Focusing on district, site, and pathway level college and career related equity issues in determining the research priorities for those RPPs;
- Preparing leaders to support investigation into college and career pathways at all levels, district, site, and pathway, as well as postsecondary teacher education leaders;
- Creating the time and structural supports for RPP participants to engage in collaborative research;
- Soliciting and providing concrete support for RPPs to document effective college and career pathway-specific instructional models and models for teacher preparation.

One idea that emerged from this strand was for a system of California State University (CSU) "lab schools" that could build mentorship and support for RPPs at the institutional level. After this discussion of RPPs, the group moved into small group and individual work on their ideas for RPPs related to equitable college and career pathway implementation. These were reported to the group as a whole, and captured in the following table:

Table 1: Teachers

Setting	Problems of Practice	Priority Research Questions	Literature	Methodology	Impact on Leadership and Capacity Building
Ongoing collaboration with teachers in two high schools	(a) Lack of adequate teacher training in career/vocational/college tracks (b) How to support teachers in building quality pathway programs.	How do we identify the needs of pathway teachers?	Blankenship, S. S., & Ruona, W. E. (2007). Professional Learning Communities and Communities of Practice: A Comparison of Models.	(a) mobile-COP [virtual community of practice] being prototyped in two high schools (b) collecting data through focus groups, online surveys, and interviews	Provides soft tools (e.g., resources, knowledge, training) and hard tools (e.g.,tech knowledge, skills) for all stakeholders – teachers, administrators, students, and parents.
Teacher education program	(a) What career pathway knowledge do teachers need on top of pedagogical knowledge? (b) How do we bring that new level of knowledge and how does it?	How do we create systems where development of CCP knowledge is integrated? How can we support teacher education in addressing problems of practice?	-pedagogical issues -core practices -funds of knowledge -critically relevant pedagogy -science literacy -science identity and agency	[N/A]	Shift of teacher role and identity to a facilitator of knowledge and helping students build their *identities* as scientists, engineers, etc.

			-NGSS		
Teacher education program	(a) Teachers do not have access to collaborate and learn with one another in order to implement CCPs. (b) Teachers do not have the opportunity to collaborate beyond the school (i.e., with industry partners).	What are the best practices? To what extent do teachers want this collaboration? Can we create schools where students see teachers as active learners? How can schools facilitate spread of best practices?	-Collaboration	Improvement science (small cycles); indicators would change with each cycle	Capacity-building because it would take a lot of teacher leaders. Important to train leaders to see value of collaboration (i.e., don't discuss operational issues at staff meetings, but make a space for PLCs).
Ongoing study of CCP implementation in one school	Lack of district support for college and career pathways	How do teachers develop agency to influence pathways? How do they develop capacity within the constraints of daily work?	-Distributed leadership (e.g., Spillane) -Adaptive/ Technical challenges (e.g., Heifetz)	[N/A]	Creating teacher leaders who are adept at facilitating
Teacher education program	How to incentivize teachers to continue to develop/grow within sustaining structures (i.e., NOT using grants or one-time funds).	How can we design sustainable on-going structures to support development of teachers?	-pilot schools -PD literature (e.g., Linda Darling-Hammond) -comparative ed literature	Pilot program with teachers who have established relationships with researchers/ professors; grow it -surveys, observations, retention rates, interviews	Teachers are empowered to continue developing to prepare students for postsecondary life within sustaining structures.

After sharing out and discussing the individual projects, the teacher strand members attempted to summarize the key problems of practice related to leadership and capacity-building for teachers and those in the field of teacher education. The key overarching theme that the participants identified was the need for ongoing pre-service and in-service skill development for teachers and leaders. While this concept is not new, the types of skills and trainings need to shift.

- The changing role(s) of teachers and teacher leaders requires them to be able to:
    - Expand and build "identities" – of their students as scholars and scientists, and of themselves as leaders and learners
    - Grow their pedagogical knowledge related to college and career pathways
    - Advocate for themselves and their students
    - Develop political capacity
    - Be autonomous collaborators
- Teachers need to learn to be leaders.
- Additionally, the definition of "teacher" in the context of college and career pathways must expand: The focus tends to be on secondary teachers, but the roles of elementary teachers,

middle school teachers, community college teachers, and university professors must also be considered.

Counselors and Pathway Student Support Specialists

The student support specialists strand participants each brought to the table pre-work identifying promising high priority problems of practice and research questions that would benefit from an RPP, centered on the role of the high school counselor and other student support specialists in equitable college and career pathway implementation. An initial discussion focused on counselors, although a proposal to use an RPP to better understand the role of work-based learning staff in ensuring equitable access to work-based learning opportunities was also raised.

Teachers are unable to provide everything students need to prepare for college and career, so counselors find themselves in an instructional role at times, teaching career development skills. Although there is some research on the relationship between lowering the student to counselor ratio and improving student discipline and achievement (Carrell & Hoekstra, 2014), as well as increasing student college-going rates (Gilfillan, 2018), little research can be found on counselors' impact on student performance in college and career pathways. The optimal amount of counselor contact and what that contact should look like remain understudied. Some districts have moved to virtual counselors for parents to monitor their child's progress[7] or for online high schools (Herold, 2013).

An administrator reported that her district was training counselors to be more engaging in the classroom, to align their work with district pathways, and to ensure that standards relate to pathway students' needs. Such approaches can change counselors' work away from deciding who is "college bound" and who is "career bound." Instead of trying to work with students once they are behind in credits, this approach is to not let students get behind (Ruiz de Velasco, 2016). But, this administrator noted, the schools must have principals who believe in this work, or they might reassign counselors. Participants recommended developing an RPP study on a counselor professional development model that prepares a district's counselors to do their work in the context of pathways (see, for example, Olsen, 2017). Such an RPP could look at measuring the impact of that counselor preparation on student self-efficacy, college and career considerations, and confidence of pathway choice. This would be of interest to districts, which often underutilize counselor expertise that could be applied to improve student motivation and performance. Researchers could gain evidence on a counselor-based intervention and probe what college and career preparation looks like in practice.

Another idea for an RPP to expand counseling capacity involved work-based learning and the role of employers: Many employers already serve as mentors. Could employers help to offset the low counselor to student ratio by providing extra adult mentors?[8] Strand members debated this idea, arguing that employers rarely have degrees in counseling or experience working on mental health issues and other issues relevant with high school students, and could not provide the social-emotional support that students needed. The group feared the idea might unintentionally lead some school officials to think

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[7] http://bcps.browardschools.com/VirtualCounselor/
[8] The California Partnership Academy requires students receive an employer mentor in 11th grade, cf. https://www.cde.ca.gov/ci/gs/hs/cpaoverview.asp

that counselors are expendable, and participants concluded that it was preferable to build counselors' capacity rather than "farming out" their duties to others.

This group selected the counselor professional development idea to take through the exploratory RPP exercise, which is displayed in Table 2 below:

Table 2: Counselors and Student Support Specialists

Problems of Practice	Priority Research Questions	Literature	Methodology	Impact on Leadership and Capacity Building
Varying levels of access to counseling services that may result in inequitable outcomes for students.	What is relationship between access to and participation in counseling services and college and career readiness student outcomes/academic achievement? 1. What is the impact of high quality college and career pathways? For whom and under what conditions? 2. What supports do pathway students need to be successful? 3. Who is involved in providing those supports? 4. What are the outcomes of providing those supports?	Conceptual framework: Cummings (2014); Kelley-Hall (2010); Olsen & Lopez (draft submitted for publication); Ruiz de Velasco, Newman, & Borsato (2016)	Program level data on student usage of counseling services, from various sites. Unit of analysis = student. Looking at associations between those outcomes and the supply of services at that site. Big multinomial analysis, needs partners to participate	Expands principal's reach/ influence Elevates status of counselors, increasing their capacity to be leaders Builds distributed leadership among counselors Quantifies impact, so it teaches counselors to use data Aligns counselors with pathways in an organizational way Addresses equity across schools in a district Building capacity: counselors need to know: Role definition- counselors need to understand that everyone is going into a career and that aligning their work with pathways would build their capacity to serve.

Key Issues Related to Leadership and Capacity-Building in College and Career Pathways
- Counselors and other student support specialists need to develop specific skills to align their work with district pathways
- Counselors and other student support specialist leaders need to work with administrators to restructure duties and assignment norms in order to align their work with pathway themes and standards
- Counselor and other student support specialists' preparation programs need to provide college and career pathway-specific training to enhance counselor's skills in college and career guidance

Cross Strand Analysis

The leadership and capacity building issues specific to RPPs that investigate college and career pathway high priority research questions differed for each of the three roles identified in the breakout strands. Nevertheless, all three strands reported needing to develop new skills and self conceptions. Administrators need to learn to share and develop leadership effectively, to influence priorities, and to

translate research findings into substantive changes in district and site routines and practices. Teachers need to learn to collaborate, lead, acquire pathway-specific content, and develop new "deeper learning" pedagogical approaches. Counselors and student support specialists needed to learn about and be connected to pathways, and to have their strengths and skills utilized, including in classroom instruction.

The administrators' strand identified many more leadership issues than either teachers or counselors. As administrators occupy formal leadership positions, it is not surprising that leaders who try to engage bureaucratic systems in collaborative research on such a transformative reform are often swimming upstream. The leadership challenges included how to get all the decision makers in the same room, on board, looking at the research, and using it in making decisions about the development of college and career pathways. Where district administrators are working to affect state policy, a key capacity building issue was how to work collaboratively across districts to develop models that can be scaled.

The strands addressing teachers and counselors/student support specialists, on the other hand, emphasized challenges due to a lack of authority, as they often must struggle to get administrative support. For example, major structural changes that require administrative support are often needed for teachers to be able to collaborate, whether to implement college and career pathways or to participate in studying the instructional practices involved. Similarly, organizational issues and large counselor caseloads make it difficult for counselors to take on leadership roles even in areas for which their skills are clearly needed, such as college and career guidance. Both the teacher and the counselor and student support specialist strands highlighted the importance and potential for teachers and counselors to serve as leaders in this work, and to collaborate across roles in new ways.

Final Reconvening: Collaborative Project Themes

College and career pathway-specific leadership and capacity building problems of practice and research questions identified by each strand -- administrators, teachers, and counselors/student support specialists – were presented to the plenary session. The organizers announced the fourth college and career pathway symposium on system alignment, and the plan to produce a report on each symposium as well as a final synthesis. Participants were introduced to the informal network of college and career pathway researchers organized through the research symposia series, and invited to join and/or form a hub around a specific high priority topic on that network.

Conclusion

The morning exploration of leadership and capacity building challenges highlighted many of the changes in skills and identity discussed further in the strands. For example, throughout the day, counselor and student support specialists' leadership was identified as a strategic area for development, given their training and focus on the "whole child," and their potential to provide leadership in both data analysis to identify equity issues within pathways and in the development of embedded student supports.

Similarly, teachers' changing roles were discussed in the plenaries, by the panel, in Linda Darling-Hammond's keynote, and again in the RPP exploratory exercise. Throughout, these changes were highlighted as necessitating both significant skill development and changes in teacher identity.

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Professional development was identified as essential to prepare teachers to be leaders, to address teachers' career-pathway specific pedagogical knowledge gaps, and to enable them to contribute fully as faculty for career pathways that extend across educational segments, from kindergarten through college to career.

The administrators' strand was the largest of the three, and consisted of the leaders formally designated to create the conditions conducive to equitable college and career pathway development. Clearly both district and site administrators working to prioritize college and career pathways face significant challenges as they strive to influence school priorities, structures, and work roles. A critical strategy emphasized throughout the day was building the leadership and capacity of others, and developing empowered shared leadership structures around the goal of equitable educational outcomes.

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Appendix 1: List of Participants and Their Affiliations

KEYNOTE PANELISTS

Name	Title	Affiliation
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Appendix 2: Symposia 1 and 2 High Priority Research Questions

PRIORITY RESEARCH QUESTIONS FROM COLLEGE AND CAREER PATHWAYS RESEARCH SYMPOSIA 1 AND 2

PURPOSE

This document lists the high-priority research questions generated by participants in the first two College and Career Pathway Research Symposia, "*The Secondary Student Experience*" and "*Equity Issues in Pathways Teaching and Learning*." Participants analyzed the research base for many aspects of college and career pathways, defined gaps and priorities, and initiated collaborative partnerships and research proposals applying an equity lens to college and career pathway design, assessment, and pedagogy. This document organizes those research questions by the topical strands identified for each symposium.

For the third College and Career Pathway Research Symposium, "*Leadership and Capacity Building*," we invited participants to build upon the work of previous symposia, for which we provided two reports. We asked participants to identify the research question(s) that could potentially be addressed, or are being examined, through research practice partnerships, and that could simultaneously build leadership and capacity to implement equitable college and career pathways. We are providing this compendium of high-priority research questions here to facilitate that pre-work.

The third symposium will support participants to align critical problems of practice implementing equitable pathways with those research questions through a collaborative process so that educator leadership and capacity at all levels is strengthened. We expect the resultant research to advance evidence-based, equity-focused college and career pathway reform efforts in both policy and practice.

SYMPOSIUM 1: THE SECONDARY STUDENT EXPERIENCE

Attendees came to the first symposium having identified gaps (i.e., unstudied or understudied elements of college and career pathways) in both research and methodology regarding the secondary student experience in pathways. They brought this pre-work to the symposium, where they worked together in groups to prioritize the research gaps and identify the most strategic areas for further work. Attendees then regrouped themselves into five groups according to these strategic areas of pathways research: Data, Quality, Measurement, Policy, and Equity. Following are the research proposals that each group put forward; some were more developed than others.

1. ENGAGING STAKEHOLDERS THROUGH DATA

Data Gaps in the Research Base

- How can we use data to change the rules and let the people access it?
- How do we enable parents and students to interrogate the data, including the influence of racial and cultural bias?

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Overarching Proposal Question: Can inquiry by students, parents, educators, community members, and other stakeholders promote more equitable access and outcomes in pathways in high schools?

Research Sub-questions:

- How can we "the researcher" look at data differently + flip it? How can view the school system as place of inquiry?
- What are existing assets and data platforms that can be used for inquiry?
- Students: What do students think should be measured?
- Parents: How can we use data at local level and make it accessible to parents?
- Humanizing the data and sharing the story: How do we help parents and students connect the dots with existing data?

Individual Proposal – Engaging Parents in Pathway Inquiry and Advocacy through Data

Can inquiry by parents promote more equitable access and outcomes in pathways in high schools?

Individual Proposal – Students Engaging through Data

Can inquiry by students promote more equitable access and outcomes in college and career readiness in high schools?

Individual Proposal – Engaging the Community through Data

Can inquiry by community members including civic, employer, and postsecondary promote more equitable access and outcomes in pathways in high schools?

2. HIGH QUALITY COLLEGE AND CAREER PATHWAYS

Quality Gaps in the Research Base

- What defines a quality pathway? What conditions support that quality?
- What types of programs have the greatest impact on student outcomes?

Overarching Proposal Question: What is the impact of high quality college and career pathways, for whom and under what conditions?

Research Sub-questions:

- What is a high quality career pathway?
- What are the essential components or combination of components that are essential for high quality pathways (and interaction effects among the components)?
- What does it take to implement the essential components?
- What are the supplemental components over and above the essential components?
- What is the needed dosage within each component to achieve desired results?
- (sidebar question) What is the return on investment (ROI) of the program for employers and the district?

Individual Proposal – High Quality College and Career Pathway Components

What are the essential components or combination of components that are essential for high quality pathways (and interaction effects among the components)?

3. MEASUREMENT

Measurement Gaps in the Research Base

- How do we engage employers in pathways? Does ROI matter for sustainability?
- How do we ensure pathways are aligned with labor statistics so that the jobs are out there?
- What are successful pathways teachers' attitudes around student social capital?
- What are successful pathways teachers' attitudes around policies and practices seen as barriers?
- What are the career outcomes of pathway students? Not just wages but satisfaction, self-efficacy, and connection

Overarching Proposal Question: What are the measures of engagement and short-term outcomes associated with pathways students' long-term success?

Research Sub-questions:

- What are the jobs of the future and the skills they demand?
- How can we measure the benefits of employers' participation in career pathways?
    - ROI
    - Employers' perceptions
- What are the measures and milestones of students' engagement in a pathway experience that lead to life success?
- What are the constructs we should use to measure career readiness that are generalizable across occupation types? Sector-specific?
- How should we measure whether students are developing 21st Century skills that are in demand by the workforce?
    - Mindsets
    - Self-regulation
    - Teamwork, collaboration

Individual Proposal – Measures and Milestones of Student Engagement: Implementation Study

1. What are the key components (behaviors, mindsets, values, abilities) of engagement in a high school pathway that predict future life success (college and career readiness)?

- What are the best sources of evidence (extant data, tasks, situations) of engagement?
- How do we interpret evidence of engagement for the purpose of identifying impact of pathway experiences on engagement?

2. What aspects of the pathway experience are associated with high-levels of student engagement?

3. What strategies for implementing pathways lead to high-levels of student engagement?

4. What are the key milestones that indicate high-levels of student engagement in a high school pathway?

- What, if any, are important early indicators (first or second year) of engagement in pathway?
- What, if any, are important late indicators (third or fourth year)?

Individual Proposal – Measures and Milestones of Student Engagement: Retrospective Study

What are the measures and milestones of students' engagement in a pathway experience that lead to life success? What effect does student engagement in a high school pathway have on postsecondary and career success?

- Did successful adults who completed a high school pathway experience higher levels (or different forms) of engagement in high school compared with comparable adults who were not in a pathway?
    - Do successful adults who were in a high school pathway say they experienced a high level of engagement in the pathway? What was the nature of their engagement (or lack of engagement) and what aspects of the pathway experience do they feel best explain their level of engagement?
    - In what ways was the high school engagement of a comparable group of adults who were not in a high school pathway similar or different from that of pathway completers?
- What are the implications of the experience of successful adults for identifying key components (behaviors, mindsets, values, abilities) of engagement in a high school pathway that are associated with future life success?

4. POLICY

Policy Gaps in the Research Base

- What policies stand in the way of pathway development and implementation?
- What are important evidentiary warrants for promoting change?
- How do we measure the outcomes of fiscal investments?

Overarching Proposal Question: How are school districts leveraging local, state, and federal policy to develop, implement, and sustain high quality college and career pathways that serve students to and through postsecondary education?

Individual Proposal – Interpreting College and Career Pathways Policy at the Local Level

1. How can a school district's vision for college and career pathways drive local interpretation of local, state, and federal policy?
2. How can policy be changed to promote the integration of rigorous academics and career and technical education?

5. EQUITY AND ACCESS

Equity Gaps in the Research Base

- Who has access to high quality pathways and under what conditions?
- Which programmatic practices impact the social good?
- What is the role of postsecondary transitions in furthering/inhibiting opportunity gaps?
- How do students' race and SES exclude them from college and career preparation due to school tracking structures, funding and resource inequities and private-public school disparities?
- How can we call out the role of structural racism in promoting opportunity gaps?
- What has to happen to make education a national priority?

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Overarching Proposal Question: What does equitable access to pathways look like and how does it work?

Research Sub-questions:

- To what degree is there equitable access to high quality college and career pathways?
  - What students have access to what pathways – themes and quality of the pathway?
- How does the process work?
  - What do schools do to inform students to make decisions about pathways and what role do state and local policies play?
  - How do students and families make decisions about pathways?
  - How do these patterns vary by gender, race, and subgroup status (socioeconomic status, EL, migrant students, etc.)
- Process questions:
  - What is the process by which students make decisions about selecting a pathway?
  - To what extent is the counselor, parent, teacher, student, etc. involved?
  - How does the school structure that process?
  - Is there a selection criteria?
  - Are these processes differential as it relates to who has access to information?
  - Does the location of a pathway matter in the decision-making process?
  - When do students begin to make decisions? (Exposure and awareness)
- Equity lens:
  - Who is in what pathway? Race, socioeconomic status
  - What can make a difference?

SYMPOSIUM 2: EQUITY ISSUES IN COLLEGE AND CAREER PATHWAY TEACHING AND LEARNING PRACTICES

Attendees of the second symposium were assigned to one of four strands based on their expertise and completed pre-work prior to the symposium: each attendee researched a subtopic in their strand and identified three bibliographic sources reflecting current knowledge about that teaching and learning issue, and to what extent an equity lens had been applied to this research. They were to focus on unstudied or understudied elements of teaching and learning in college and career pathways. This work was the foundation for breakout sessions, which prioritized the research questions within the following strands: Pathway Structures and Culture, Instructional Practices, Student Access and Supports, and Teacher Preparation.

1. PATHWAY STRUCTURES AND CULTURE

The Pathway Structures and Culture group examined topics such as career and technical student organizations (CTSOs), small high schools, and student supports. In the end, they identified the influence of business and industry on pathways as a topic worthy of deeper study.

Research Questions:

- What role does industry play in which pathways are available in a given locale?
- Does industry have an influence on which students enroll in which pathways?

- Is industry involved in student recruitment processes (i.e., helping create recruitment materials, etc.)?

- Is industry involved in the student selection process?

- Are pathway opportunities equitably distributed and are the outcomes being shared proportionally among groups, or even helping to close opportunity/diversity gaps?

- What influence do advisory board members have on pathway structures and practices?

- To what extent do pathway teachers gain an understanding of a particular industry? And to what extent do teachers incorporate that understanding in preparing students to enter that industry? To what extent is teachers' understanding of the industry affected by that industry engagement through the advisory board? Do pathway teachers feel that that particular industry becomes a big part of their identity at their school?

- To what extent are industry and pathway staff goals aligned? What barriers exist to increasing alignment?

- Are there successful models to learn from?

2. INSTRUCTIONAL PRACTICES

The Instructional Practices group explored the following topics: work-based learning, increasing student engagement, project-based learning, and integrated and culturally responsive curriculum. In the end, this group proposed applying an equity lens to defining, exploring, and measuring various pathway instructional practices.

Research Question:

How do we apply an equity lens to define, explore, and measure high-quality college and career pathway instructional practices, not just to develop consistent definitions, but also to develop a framework of pathways instructional practices that support teacher growth, ensure equity across pathways, and monitor student progress?

3. STUDENT ACCESS AND SUPPORTS

The Student Access and Supports group explored intensive tutoring, the trajectories of English Language Learners (ELL) and students with disabilities, and student supports more generally. They proposed to develop a common definition of student supports given that many subpopulations of students require targeted supports (i.e., English language learners, special education students).

Research Questions:

- What supports do students in pathways need to be successful?

  o What does the research say?
  o What do educators say?
- What are the structural barriers?

  o What does the research say?
  o What do educators say?
- What skills and characteristics are necessary for effectively working with struggling students within pathways and how are these similar/different than in general education?

4. TEACHER PREPARATION

The Teacher Preparation subgroup examined increasing professional capacity in various ways. They proposed to focus on increasing the diversity of the college and career pathway teacher workforce. A second project would document effective models integrating pathway instructional practices into educator preparation programs with the ultimate objective of creating modules for pre-service and in-service educators.

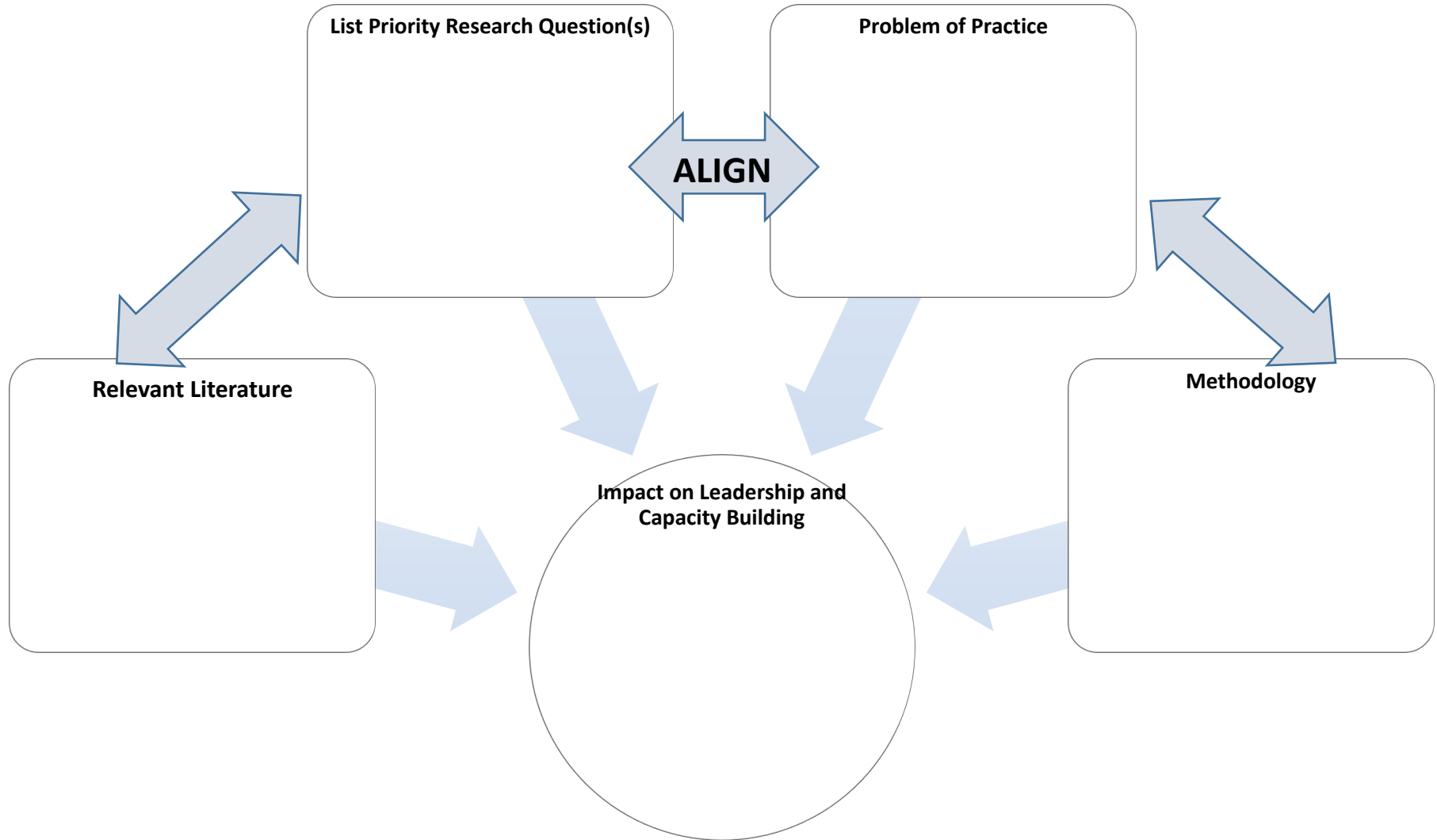*Individual Proposal – Aligning Systems to Diversify Teaching*

1. What are the facilitative supports for student transitions and success in the teaching profession?

2. How can educator preparation programs prepare counselors to play a leading role in integrating career guidance and embedded student supports?

Individual Proposal – Integrating/Documenting College and Career Readiness in Teacher/Educator Preparation Programs (Successes, Challenges, Lessons Learned)

OVERALL METHODOLOGICAL CHALLENGES FROM SYMPOSIUM 2

- How can we efficiently and effectively gather data on WBL and PBL experiences?
- We need larger sample sizes for greater power, especially samples with higher percentages of minority students for more robust results.
- Data on educator preparation programs and new educator outcomes are inadequate. We need to know not just how many enter the teaching profession, but how many sustain their commitment to teaching over time.

Appendix 3: Conceptual Framework for Developing Research Practice Partnerships

List Priority Research Question(s)

Problem of Practice

ALIGN

Relevant Literature

Methodology

Impact on Leadership and Capacity Building

Appendix 4: RPP Tuning Protocol

The tuning protocol is a process for getting feedback on planned research in an effort to "tune" the plan with additional perspectives. (25 minutes)

RPP Presentation (5 minutes)
Participants are silent. Presenter speaks to…

1. RPP Context: Who are partners and at what stage of formation is RPP partnership?
2. Key literature informing the planned research
3. Equity-based problems of practice the research is designed to address
4. Research questions whose findings would support efforts to address those problems of practice
5. Methods proposed for gathering and analyzing data to investigate those research questions
6. How proposed research will build leadership and capacity to implement equitable college and career pathways
7. Focusing question for feedback:
   a. How well do the problem of practice and the research questions align?
   b. How could this RPP plan strengthen its impact on equitable implementation of college and career pathways?
   c. How can leadership and capacity building be strengthened as an integral element of this plan?

Clarifying Questions: (2 minutes)
Group members can ask clarifying questions that have brief, factual answers.

Probing Questions (3 minutes)
Participants ask probing questions to better understand where the proposal seems to be in tune with goals and where there might be problems. They make notes about their warm and cool feedback.

Warm and Cool Feedback (12 minutes)
Participants discuss plan while the presenter is silent. They identify where the plan has strengths, make suggestions for ways to build upon those, and then continue with possible disconnects and problems. Make sure to address the focus questions. Presenter takes notes, but does not engage in dialogue.

Presenter Debrief: (3 minutes)
Presenter speaks to any comments and questions he or she chooses to while participants are silent. This is not a time to defend oneself, but a time to explore interesting ideas that came out of the feedback session.

The College and Career Pathway Research Symposium series is a joint effort by multiple research-based organizations active in policy development led by UC Berkeley's College and Career Academy Support Network (CCASN). This work has been generously supported by the James Irvine Foundation, the Spencer Foundation, and the Stuart Foundation, and by Planning Committee host organizations. Symposium 1 was hosted by UC Berkeley's CCASN; Symposium 2, by WestEd; Symposium 3, by the CSU CALL and Cal State LA; and Symposium 4, by SRI International.

The planning committee for the symposia series includes representatives from the following organizations:

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