An Effective Teacher for Every Student: Developing a Research Agenda to Further Policy Change

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In nearly every state across the country there has been recent legislative or judicial activity aimed at amending policies that shape the quality of the teacher labor force (e.g., Marianno, 2015). At the heart of this recent legislative and judicial action is the desire to attract and retain a high-quality teacher for every classroom. That good teachers are critical to student success is not up for debate; over the last decade, research has shown that a high-quality teacher is *the most* important school-based input into students' achievement and long-term outcomes. Having a bad teacher rather than a good teacher for a single year can cost a student an entire year of learning gains (Hanushek, 1992; Hanushek & Rivkin, 2012). Moreover, recent research shows that students assigned to higher-quality teachers are also more likely to attend college, to attend higher-quality colleges, and to earn higher salaries than their peers who were assigned to lower-quality teachers. These benefits compound if students are consistently in classrooms with high-quality teachers throughout their schooling (see, for examples, Rivkin, Hanushek, & Kain (2005) and Chetty, Friedman, & Rockoff (2014)).

An extensive body of research also suggests that low-income and minority students are disproportionately assigned to lower quality teachers. This is the case whether quality is measured by teacher qualifications (e.g., experience levels) or by teachers' "value added" contributions to student test achievement (Clotfelter, Ladd, Vigdor, & Wheeler, 2006; Glazerman & Max, 2011; Goldhaber, Lavery, & Theobald, 2015; Grissom, Kalogrides, & Loeb, 2015; Isenberg et al., 2013; Kalogrides & Loeb, 2013; Lankford, Loeb, & Wyckoff, 2002; Mansfield, 2015; Sass, Hannaway, Xu, Figlio, & Feng, 2012). Other research suggests that in some contexts and by some measures these differences are modest (Isenberg et al., 2016), but inequities may nevertheless matter a great deal not only to the individual students whose lives are shaped by the teachers they have, but also by the extent to which public schooling truly promotes the equality of educational opportunity and upward mobility for those who have historically been disadvantaged.

Given the importance of teachers for students' short- and long-term success, and the inequitable distribution of teachers across students, state and local policymakers and advocacy groups across the nation have worked to ensure that every student has access to high quality teachers. For example, the recent *Vergara v. California, Wright v. New York* and *Forslund v. Minnesota* cases attempted or are attempting to convince state courts that extant state laws governing teacher policies such as tenure, evaluation, due process and collective bargaining are unconstitutional because they permit and sometimes encourage the inequitable distribution of teachers to students along race and class lines. Similarly, several state legislatures have proposed and enacted laws that seek to reduce these teacher protections. In 2010, for instance, Louisiana adopted legislation increasing the frequency with which teachers are evaluated, and requiring many teachers to be evaluated in part based on students' standardized test scores. And in 2011 the Michigan legislature passed a series of laws weakening

teachers' traditional tenure protections, requiring that teachers be evaluated in part based on measures of student growth, and limiting the extent to which many personnel issues could be collectively bargained between districts and teachers' unions.

These high-profile court cases and legislative actions have helped focus public attention and debate on teacher quality and the extent to which existing laws and regulations promote or hinder efforts to improve the teacher workforce. A 2016 PACE/USC Rossier poll, for example, found that California voters believed, on average, that 41 percent of teachers in the state are "not as effective as they could be and should be supported to improve." When asked instead how many teachers "are ineffective and should be replaced," the mean response was 33 percent. According to a 2016 Education Next national poll, 65 percent of the general public believes teacher salaries should increase, 53 percent support basing part of teacher salaries on how much their students learn, and 58 percent oppose giving tenure to teachers. (See http://www.edpolicyinca.org/polls and http://educationnext.org/files/2016ednextpoll.pdf for more detail). Given this public interest and policy attention given to issues of teacher quality, policymakers around the country now have a window of opportunity to lead the way in setting policy that will ensure that every student, regardless of race, ethnicity, socioeconomic status, or geographic residence has access to an effective teacher.

Good policy should be based in empirical evidence of what works to affect change. But what research evidence exists when it comes to improving teacher quality? What new knowledge is needed to inform policy development? Much is known about teachers and schools, but there is still much left to be learned. To move the conversation forward, we gathered together approximately 50 education experts – researchers, philanthropic leaders, and policymakers – for two days with the express purpose of considering what we know and what is left to be learned about the trajectories and career paths of potential and inservice teachers, and how policies can impact the teacher labor force (See Figure 1 for a list of attendees). Discussions covered topics such as the choices that potential teachers face when deciding whether to become educators, the effects of pre-service teacher education, and the career development and advancement of inservice teachers. We focused on what is known about the policies and practices that influence the different parts of the teacher pipeline, and, importantly, where there are key gaps in the empirical evidence.

This report synthesizes the main outcomes of our two-day meeting. In what follows, we first explain how we conducted the meeting in order to facilitate a consensus of sorts around the most pressing areas for research to inform teacher policy. We then briefly summarize the main research questions presented in each topic area, and discuss some considerations about the opportunities and challenges presented in engaging in work on these topics. We conclude with a discussion of cross-cutting considerations for teacher policy research and a call to action.

The Teacher Policy Conference

We held the teacher policy conference over two days in May, 2016. Hosted by the University of Southern California's Rossier School of Education and PACE, the meeting brought together experts in teacher policy to flesh out and move forward a coherent research agenda that might help inform evidence-based policy in California and beyond.

At the outset, we had five goals for this meeting:

1. Identify the most pressing teacher-related policy issues facing California and our nation today;
2. Share some of the most recent research about the teacher-related policies under discussion (*what we know)* and identify gaps in this knowledge base (*what we don't know*) – with the goal of narrowing in on a set of high-leverage areas of research to inform policy;
3. Develop recommendations for a teacher policy research agenda that can help district administrators build and maintain an effective teaching force and help policymakers craft a coherent set of policies ensuring high-quality teachers for all public school students (*what we need to know*);
4. Begin to generate partnerships between researchers and philanthropic organizations to help launch a larger research agenda around these issues;
5. Determine how to make sure that the research identified during the meeting can be used to inform policy and practice.

In order to ground our discussion in questions that matter to policymakers, we began the conference with a panel of state and district policymakers. They were asked to reflect on the most pressing questions related to teacher policy that faced them in their work, and the kinds of research that are most helpful to them and of which they would like more. The remainder of the first day was spent in two small group working sessions focused on teachers' early careers and then their mid- to late-careers. Participants were asked to discuss *what we know, what we don't know,* and *what we need to know* about teachers in the respective stages of their careers, and what policies and practices we might want to study that are intended to improve teacher quality throughout teachers' careers, spanning teacher supply, recruitment, preparation, induction, early service, in-service development, advancement, retention and retirement. We closed the day with a large-group discussion and report-out of the conversations we'd had in our small groups.

After the work was done for the day, we asked participants to list the six most important topics for study that emerged from the day's discussions in rank order of importance. We compiled these responses and emerged with 21 main topics that conference attendees believed were among the most important for teacher policy research. (See Figure 2 for a list of all 21 main topics.) We then selected the six topics that had received the most "votes" in the top three of each participant's rankings. These research topics represent those that conference attendees felt would provide the most necessary and compelling data to inform a new wave of teacher policy reforms.

These research areas are:
1. Teacher preparation and certification;
2. Teacher selection and hiring;
3. The diversity of the teacher labor force;
4. In-service professional development;
5. Differentiating teachers' roles;
6. Principal effectiveness.

On the second day of the conference, participants selected themselves into discussion groups based on these six areas. In these groups, they discussed promising research questions, designs, and methodologies to advance work in the selected area. We closed the day with report-outs from the group discussions and a general conversation about how to move research forward in ways that could

be useful for policy and practice. All group discussions throughout both days of the conference were recorded by graduate student note-takers.

This report provides a summary of the conversations and ideas that came to the fore during the teacher policy workshop. To produce this summary we reviewed all of the notes from the group discussions and highlighted specific topics and questions that were raised multiple times by different participants. Many important issues were discussed during the meeting, but we report here only on those where there was some consensus or on issues that were raised by a substantial number of participants. Rather than reviewing the extensive scholarly literature on each of these important topics, we instead focus on a call for the kinds of research that might be undertaken to help inform policy and practice.

> *"An important component of improving outcomes for students is gaining a clear understanding of the most pressing problems facing schools and communities across the country. Over the years, we've learned that the best solutions come when researchers, practitioners, community members, policymakers, and philanthropy come together to generate priorities. The USC-PACE conference provided an incredible opportunity for some of the brightest thinkers in the field of teacher quality research to come together and do just that. The convening revealed six important priority areas that will help shape the next few years in teacher quality research."* – Drew Jacobs, Research Officer, Walton Family Foundation

We hope that this report serves as a starting point for a conversation between researchers, policymakers, practitioners, foundations, education stakeholders and advocacy organizations. It is our intent that this conversation inspires interested parties to work together to generate an objective and relevant body of evidence that policymakers can use to inform policy about teachers and teaching, so that every child can learn from an exceptional teacher.

Priority Research Areas

Teacher Preparation

A great deal of attention has been given to improving teachers' performance once they are in classrooms, whether through professional development initiatives, high-stakes teacher evaluation and accountability policies, or even expanded opportunities to "deselect" teachers if they are not effective. Less attention has been paid to the opportunity to improve the quality of the teacher labor force before they enter schools and classrooms through teacher preparation programs, which include the full range of university-based, district-based, and other alternative routes. Pre-service training and experiences are clearly an important venue for teacher development, but there was broad agreement among workshop participants that there are few measurable differences in the outcomes of different preparation programs. A substantial subset of participants also cited research suggesting that there is little value to preservice education, at least as indicated by conventional measures of student achievement. In short, little is now known about what kinds of preparation programs produce the sort of teachers we want for our schools. Moreover, traditional, university-based pre-service preparation programs represent barriers to entry to teaching, because training is expensive both in terms of time and resources. These cost have to be assessed carefully, especially in times of teacher shortage.

Given the potential for pre-service training as a lever to improve teacher quality and the lack of current knowledge about the characteristics of effective programs and the potential tradeoffs inherent in some of the requirements surrounding teacher preparation, workshop participants highlighted a set of important research questions:

- Does pre-service teacher preparation improve teacher quality?
- Are there particular models of teacher preparation and/or experiences provided within preparation programs that lead to better-prepared and more effective teachers?
    - What models of and experiences in teacher preparation programs impact teacher and student outcomes?
- Are different kinds of teacher applicants / K-12 students better served by different kinds of teacher preparation programs?
- Are teacher preparation programs cost-effective?
- Should traditional teacher preparation programs be screening out more prospective teachers before they're certified or get into classrooms?
- How can teacher preparation programs become more effective at collecting and using data on candidates and their progression to differentiate instruction for candidates and inform overall program improvement?
- What features of student teaching experiences are important for preparing high quality teachers for and retaining them in different school and district contexts?
    - How can effective mentor teacher/school placement matches be achieved, especially in adequate quantity?

> *"The USC-PACE conference conversations were both frustrating and inspiring: frustrating because this process will take time; inspiring because experts, policy makers, funders and other stakeholders are responding to the call to action and are pushing through challenges and obstacles. The solution might be a combination of traditional and non-traditional pathways for teacher certification and teacher preparation programs. In the meantime, District and Site Administrators will do their very best to place the most qualified teacher into every classroom." – Roy Mendiola, Assistant Superintendent, Firebaugh-Las Deltas Unified School District*

As with other areas of education research, it can be difficult to adequately study teacher preparation and pre-service training. In particular, it is challenging to obtain the kinds of data needed to completely address the questions listed above. Teacher preparation programs are in the business of developing teachers, not necessarily collecting data on them or tracking them into their future jobs. Moreover, traditional preparation programs are housed in post-secondary schools of education, which rely on enrollment dollars, and have little incentive to screen out potential applicants before they enroll. In addition, available data are subject to substantial selection bias because in many instances we only learn about the teachers and schools that are willing to participate in studies or to experiment with innovative solutions. State policy governing teacher certification was also seen as an important policy lever for improving teacher preparation, though it was not a major focus in the meeting.

Even in the face of these difficulties, researchers in the workshop suggested numerous ways in which we might begin to tackle the important questions posed above. For example, it would be useful to survey a population of teacher preparation and certification program applicants, continuing to survey them throughout their pre-service training and into their careers. This would enable researchers to

understand some of the beliefs, experiences and practices of this broad group as they go through their training and into their careers as teachers. Experiments that test the efficacy of specific teacher preparation structures, pedagogical approaches, or training experiences could contribute a great deal to our understanding of teacher preparation. Mixed-methods studies that pair randomly-allocated instruction-related interventions with interviews and case studies and other qualitative data collection would enable researchers to better understand not only the efficacy of innovative or different models of pre-service instruction, but also prospective teachers' beliefs about their usefulness in the field and why interventions were or were not effective. Researchers should also take advantage of natural variation between teacher preparation programs within individual states and across states to better understand what specific aspects of pre-service training might lead to outcomes of interest.

Teacher Selection and Hiring

Although media and public discourse about teachers has recently shifted from educator quality to educator supply and concerns about teacher shortage, many school systems still have a surplus of applicants for open teaching positions. The consensus among working group attendees was that there is a great deal of potential for states and districts to improve the ways in which teachers are selected and hired. There may be many opportunities to better identify teachers who are strong fits for the profession or for individual schools and districts, but we are only just beginning to learn how teacher selection processes play out today.

Working group attendees identified several questions about teacher selection that they considered to be especially high priorities.

- How are teachers screened and hired in different contexts, and do differences across contexts matter?
    - For example, are hiring processes different in urban districts than in suburban or rural districts? Do schools in affluent communities screen teachers differently than schools in poorer communities?
- Are teacher screening and hiring different for different kinds of teachers?
    - For example, are special education teachers hired differently than general education teachers?
- What constraints do administrators face when hiring teachers?
    - For example, are administrators constrained by collective bargaining agreements, budgets, or the supply of teachers to their communities?
    - Are different administrators more or less able to navigate and work around those constraints to fill open teaching positions effectively?
- To what extent can compensation systems be used to improve the supply of teacher applicants in general, or to fill harder-to-staff positions in particular?
- Under what circumstances do improvements in the supply of teacher applicants lead to improvements in the new hires actually made by schools and districts? Are administrators able to identify and hire higher-quality teachers when they are available?
- What criteria do administrators have for their new teacher hires, and how do they try to select teachers who meet those criteria?
    - Do different administrators have different criteria for new hires?
    - Do administrators have different criteria for different kinds of teachers (e.g., elementary vs. secondary, or science vs. English/language arts)?

- Do schools and districts have the capacity to screen during the hiring process for teachers who will be effective in the long-term?
    o Do different hiring systems (e.g., centralized at the district office or delegated to individual school sites) have different affordances or limitations for teacher screening?
    o What information do districts already collect and use from teacher applicants, and can they collect additional useful information to make better hiring decisions?

Research on these issues has been limited by challenges inherent to studies of labor markets and human resource management. For example, a full understanding of the effectiveness of a hiring process requires information about candidates who are not hired. Researchers often cannot observe teachers who are not hired in a district, however, and they are therefore unable to make inferences about whether such teachers would be more or less effective than those who are selected. Additionally, good qualitative evidence about how decisions are made during the hiring process can be difficult to collect because of concerns surrounding self-reports about why a job offer was made, accepted, or rejected.

Working group attendees suggested that these challenges can, in principle, be overcome using mixed-methods studies of teacher hiring across entire labor markets, as opposed to quantitative or qualitative studies of individual schools or districts. A mixed-methods approach is likely to make the results of any particular finding in this area more interpretable and useful. Moreover, studies of entire labor markets (e.g., metropolitan areas) offer the dual advantages of putting findings in a broader macroeconomic context and offering the potential to observe teachers who do (or do not) receive offers from specific districts as well as those who are not hired by any district.

Such large-scale studies are resource-intensive. They require collaboration between district officials and researchers from different specialties, and depend also on the existence of data systems that can link teachers across districts. This is one of many areas in which funders can promote research with important policy implications by investing in district-researcher partnerships and data-collection infrastructure.

Diversity of the Teacher Labor Force

Throughout the meeting, participants affirmed the importance of having a teacher labor force that reflects the racial, cultural, linguistic, and gender diversity of the student population both within each district and nationally, and the difficulties districts face in achieving this goal. Much of the conversation focused on the potential tradeoffs of "barriers to entry" into teaching – that is, factors related to preparation, credentialing, and hiring that make it difficult or undesirable to enter the profession. Many of these barriers are intended by policymakers to "raise the bar" for new teachers, and thereby improve quality. In fact, though, it is often unclear which barriers are truly important for selecting higher-quality teachers and which serve only to needlessly exclude potential teachers. Because such barriers may further limit the supply of teachers who are already difficult to recruit (e.g., special education teachers, teachers willing to teach in rural areas, or teachers of color), the tradeoffs that such barriers entail need to be carefully considered by policymakers and practitioners.

Priority research questions emerging from these discussions focused on entry requirements, earlier experiences in undergraduate education, and the nature of teacher preparation programs:

- What are the barriers that constrain prospective teachers, particularly high-quality teachers from diverse backgrounds, from entering and staying in the teacher labor force?

- What is the role of licensure requirements? What is the role of broader contextual factors such as geographic proximity/location of preparation programs, the availability of child care, school culture, etc.? What role do principals play (e.g., how do their biases and competencies and level of authority shape hiring decisions)?
  - Are there different challenges and opportunities for different communities of potential teachers (e.g., Latino/a versus African American vs. Asian/Pacific Islander)?
- What are the tradeoffs when states attempt to raise the bar for prospective teachers?
  - Are enhanced standards for prospective teachers associated with teacher quality? Do the effects vary by different kinds of teachers (e.g., do they pose greater challenges for prospective teachers of color than for white teachers)?
- What aspects of undergraduate education encourage young people to pursue teaching?
  - What are the experiences that encourage undergraduates of color to pursue teaching, and how do these experiences differ among higher education pathways (e.g., community college, for-profit institutions, minority-serving institutions)?
  - How do location, program delivery structures, and curriculum (e.g., emphasis on cultural competence) relate to individuals' choices to enter and stay in the teaching profession?
- What is the role of teacher preparation programs (TPPs) in fostering a diverse teacher labor force?
  - To what extent and how well do TPPs promote cultural competency among pre-service teachers, and how does this relate to the recruitment and retention of teachers of color?

One research approach suggested by the group was to survey undergraduate students at the point at which they are deciding next steps or applying to TPPs, and ask them what did and did not lead them to consider teaching (e.g., tutoring experience, mentoring from faculty, social justice orientation). Another suggestion was to compare labor markets between states that differ in the rigor and rigidity of paths to teaching, examining the relationship between policy contexts and the characteristics of teachers.

Conducting research on this topic presents several challenges and opportunities. First, participants acknowledged that there may be some discomfort in discussing issues of race. Second, they recognized that broader systemic and structural issues contribute to the teacher diversity problem, such as differences in access and opportunities for students of color entering preschool and issues of residential segregation, racism, and poverty that shape experiences at every stage of the K-16 pipeline. As such, the proposed research agenda must be understood as incomplete without additional efforts to tackle these broader issues. In addition, as above, there are limitations to the data that are collected about prospective teachers. We would ideally like to observe individuals who consider teaching but opt not to enter the profession to determine why teaching is not attracting a sufficient number of qualified teachers from diverse backgrounds.

In-Service Professional Development

Participants agreed that there is a significant opportunity and need to improve *current* teacher practice, particularly given new national standards that call on students to produce rather than simply receive knowledge and teachers to instruct in new ways. They acknowledged, however, that there is little evidence that the majority of in-service professional development (PD) is effective in improving student achievement, particularly after the first few years in the profession. Many attendees nevertheless cited promising evidence about certain kinds of in-service supports, including specific professional development programs that improve teacher knowledge and practice. In particular, participants highlighted instructional coaching and feedback, often tied to rigorous evaluations, and asserted that this was a critical place for ongoing, actionable research. Participants also noted that while evidence

suggests large-scale PD efforts are ineffective, there are examples of effective, smaller scale programs that are worth investigating further. Others asserted the importance of recognizing that teacher learning also occurs in more informal settings.

Priority research questions emerging from these conversations include:

- What kinds of PD are schools and districts currently offering?
  - What do teachers want, and how do teachers' desires and offerings vary by context?
  - How much do different PD programs cost, and are they cost-effective?
- What are the features of effective PD programs for teachers in different stages of their careers, contexts, and types of classrooms (e.g., instructing English learners and other student subgroups)?
  - For example, what types of PD can improve the practice of mid-career teachers?
- What kinds of collaborative practices matter for teacher improvement and student learning?
  - How do different design features of Professional Learning Communities (PLCs) differentially affect teacher learning and practice, and student outcomes? What are the tools that can help teachers productively participate in PLCs?
- What kinds of coaching matter for teacher improvement and student learning?
  - How do different design features of coaching (methods of delivery such as in-person vs. virtual, dosage hours, etc.) differentially affect teacher practice and student outcomes?
  - Does coaching work when teachers are not self-selecting? How can coaching be scaled?
- To what extent does PD adopted on a large scale reflect evidence of effectiveness from rigorous small-scale trials?
  - Under what circumstances can the benefits of effective small-scale PD be preserved when that PD is scaled up?
- What do meaningful student learning progressions look like and how can they be measured? How might interventions for teachers be designed to promote these progressions?

As discussed at length during the conference, studies in this domain face considerable challenges and opportunities. Many noted the expense involved in implementing in-service PD and by extension research designed around experimenting in this area. Others cited the ways in which collective bargaining agreements can limit the structure and time allocated for in-service PD and support, leading some to suggest that charter schools could offer greater opportunities to study innovation in this area. Participants also widely cited concerns about defining "effectiveness" solely by student achievement and suggested an opportunity and need to focus on proximal outcomes more closely related to the intervention. (For example, the Writing Project's effects on teacher practice in the area of writing, such as recognizing what quality writing looks like.) Finally, a particular constraint to PD-related research is the typical self-selection of teachers into professional development and coaching programs.

One research approach that many researchers suggested to address some of these concerns was to experiment with "short cycle intervention" or "quick turnaround" studies. In such studies researchers work with sites experimenting with innovative or "outlier" practices by setting up short-term random control trials (RCTs) to measure proximal outcomes (e.g., effects on teacher practice). Innovations that fail to produce results in the short run offer little reason to expect positive effects on long-term student outcomes, and should be terminated. Studies that yield positive results on proximal outcomes can be expanded and studied further. Some participants suggested that researchers should better articulate the theory of learning embedded in PD efforts to identify appropriate metrics for this research.

Differentiating Teachers' Roles

Although it is clear to educators and researchers that teachers have diverse strengths and face distinct challenges, and that different teachers prefer different aspects of their jobs, there are few opportunities in teachers' careers to specialize in a specific area, or to take on roles that capitalize on their particular strengths or interests. This happens in two main ways. First, it is difficult for teachers to move into new, more senior positions without entirely leaving the classroom to become administrators. This lack of a "career ladder" may lead good teachers looking for new challenges or responsibilities to exit the classroom when they might prefer to stay in the classroom for at least part of their time. Second, teacher work is organized in ways that oblige most teachers to fill similar roles, taking on the broad range of responsibilities of teaching each day, week and year. As a result, teachers who prefer to focus on and are comparatively better at one particular aspect of teaching are not permitted to specialize. Of course, the differentiation of teachers' roles is also caught up in issues related to teacher compensation (largely dictated by CBAs that require teachers to be paid according to their experience and education levels, and not for the work they do), and the ways teachers are and are not promoted throughout their careers.

There was substantial interest among the conference participants in considering how we might restructure teacher work and career progression both to retain high quality teachers in their schools and in the profession and to better utilize teachers' specific skills and interests. Although some experimentation has been done in this vein (e.g., Rocketship Charter Schools, Kowal & Brinson, 2011), it appears that most schools and districts organize teachers' work and teachers' career progression in similar ways. This seems like an area that is ripe for further research. In particular, workshop attendees asked the following questions:

- What structures have schools and districts implemented to provide teachers with differentiated roles and development opportunities?
    - How have charter, Achievement School Districts and other non-traditional school systems structured career ladders?
    - How have charter, Achievement School Districts and other non-traditional school systems differentiated teachers' roles?
- What impact have those structures had on valued outcomes such as teaching effectiveness, teacher satisfaction, and retention?
- What are the effects of taking (good) teachers out of the classroom to become coaches or administrators?
    - What are the impacts on teacher retention? On improvements in teacher quality?
- Can certain aspects of teacher work be allocated to other types of employees or contractors to allow teachers to concentrate on their core work and set of interests?
    - What are the possible impacts of doing this?
- How can systems re-organize the school day to enable teachers to specialize in their strengths?
- Does new technology enable innovative alternative structures of content delivery, thus freeing up teachers to focus on specific aspects of instruction?

As with the other main topic areas for research discussed above, there are substantial challenges to embarking on this kind of research. Not only would there need to be a willingness on the part of schools and districts to try innovative and risky practices, but structures would need to be in place to enable the rigorous study of these programs. Conference attendees agreed that there are specific districts and schools already experimenting with career ladders and role differentiation, and that these systems provide opportunities for study. Where such structures are not already in place, attendees suggested partnering with foundations and other support providers to carefully plan out how roles might be differentiated – for instance, separating functions by content delivery, practice, diagnostics and individual intervention, data analysis, compliance, planning, and professional development – and experimenting with different ways of allocating teachers to these individual roles. Given the structural barriers to fundamentally altering teachers' jobs (e.g., collective bargaining agreements), and the risks involved, , attendees suggested that it may be necessary to recruit and study charter schools or schools undergoing turnaround reforms, who may be more willing and able to innovate in these ways.

> "The USC conference brought together researchers who view the challenge of studying and improving teacher quality very differently. Some are convinced that it can best be understood and addressed by focusing on individual teachers—their preparation, hiring, and compensation. Others think that the greatest leverage for change rests in studying the organizational context of teachers' work—their experience with colleagues, their opportunities for advancement and influence, their responses to different school leaders. Two days of intense discussion and debate illuminated how these perspectives are ultimately complementary and how employing a range of research methods can both enrich understanding and inform policy and practice." – Susan Moore Johnson, Jerome T. Murphy Research Professor, Harvard Graduate School of Education

Principal Effectiveness

The subject of teacher effectiveness has recently dominated education research and policymaking, and this work has tended to focus on teachers in isolation or in relationships with one another. The researchers in attendance agreed that this focus on teachers has left open many questions about school principals' roles in improving teacher performance and student learning. Questions about the importance of principals should be the focus of more research going forward for at least three reasons. First, principals mediate many of the factors that we often think of as important to teacher quality, for example by making decisions about teacher hiring, in-service training, tenure, and dismissal. Second, principals may represent a powerful lever for school improvement because principals are fewer in number than teachers, and each principal oversees many teachers and students. Third, there is an emergent research literature suggesting that principal quality is an important determinant of school effectiveness.

Working group attendees determined that the following research questions are particularly important in understanding the role that principals play in influencing teacher effectiveness.

- What role do principals play in the recruitment, selection, development, and retention of teachers in general and of high-quality teachers in particular?
- What are the short-term and long-term responsibilities and outcomes that define an effective principal?
- What are the attributes of more- or less-effective principals?

- What do effective principals do? What decisions do they make that improve outcomes, and how do they make those decisions?
  - How do principals think about teacher assignment, instructional leadership, and other components of their work?
  - How do principals assess and improve teacher quality?
  - How do principals establish productive school cultures in circumstances where there are limits on their ability select their staff or teaching faculty?
- What structural and cultural factors might constrain principals in their work?
- What are the pathways into the principalship, and how do they vary in nature and quality?
- How can preparation programs, districts, and states assess and improve principal capacity?

Though urgently important, research on principals is often constrained in important ways. For example, principals move between schools frequently, and and principal moves are far from random. This makes it extremely difficult to isolate the effects of individual administrators on outcomes of interest. Additionally, it is challenging to define high-quality principal work because, as with teachers, principals are responsible for many important outcomes simultaneously, including facilities maintenance, school culture, and faculty quality.

Overcoming these difficulties should nevertheless be possible if researchers attend to them carefully. For example, researchers and districts may consider partnering to move principals between schools systematically. Random assignment of principals to schools is unlikely to be feasible (and likely to be undesirable), but by coordinating with districts to anticipate specific mobility events researchers may be better able to collect data both before and after schools or principals experience a transition. Districts are also likely to be able to provide valuable insight into why principals are moving and what they consider to be principals' most important roles and responsibilities, helping researchers to identify potential outcomes of interest. Funders have an important role to play in facilitating this kind of research, which can involve onerous data collection across both schools and years, requiring investments in both staff and data infrastructure.

Considerations in Pursuit of this Research Agenda

Throughout the two-day convening, participants discussed both constraints and opportunities to pursuing a teacher policy research agenda. Notably, they generally agreed that reaching consensus on the priority areas for research would be a challenging endeavor for any group of scholars, funders, and policymakers, and that if we were to assemble 50 different participants we might produce a somewhat different list. One researcher, for example, noted that everyone in attendance would likely identify different "moonshot" goals for supporting long-term improvement in the teacher labor force. Yet, despite the different perspectives brought to the table, participants nevertheless endorsed a set of important considerations that should guide whatever agenda emerged from the meeting.

First, attendees believed that in pursuing research on teacher quality all stakeholders – especially policymakers and practitioners – need to embrace an attitude of experimentation, and recognize that some experiments will be failures. In particular, attendees suggested that schools and districts should be given an assurance of continued support should a carefully-planned and good-faith effort to experiment fail to produce its intended outcomes. Many acknowledged, however, that the current political climate and persistent financial pressures made it difficult for policymakers and practitioners to

accept such a proposition. Policymakers, administrators, and teachers may have much they like, are comfortable with, or doubt they can change under the status quo. The philanthropic community may therefore have a role to play in providing sustained support for district-level innovation, including the provision of funding to enable and incentivize stakeholders to accept the costs and risks inherent in experimentation.

Participants also recognized the importance of infusing methodological and disciplinary diversity into this research. The problems we face in improving teacher quality cannot be solved with simple answers. We must build our understandings of why and how various aspects of teaching quality operate at the same time as we investigate how to develop and deploy specific policy interventions. If we hope to make significant progress on solving these persistent problems, we must use all the methodological tools at our disposal and bring multiple disciplinary perspective to bear on the same problem.

While many participants came to the table with different orientations—for example, some focused on generating rigorous academic research and others on informing the immediate needs of policymakers and practitioners in "real time"—they nonetheless agreed that a research agenda should identify studies that address both the short-term needs of local and state policymakers and the longer-term needs of building knowledge for the field. This two-pronged strategy would necessitate a variety of methodological and disciplinary approaches. Others noted that this agenda would require support from the funding community to ensure that research produced is useful to local and state decision-makers, and closer connections between researchers and policymakers. Some participants suggested that intermediary organizations could play a role in brokering the work of these two communities.

Attendees frequently cited practical constraints to conducting teacher-related research, most notably the limited availability of data. In fact, many researchers recommended that funders invest in efforts to build better data systems to support the proposed research, such as systems that link teacher preparation and K-12 data. In addition, attendees recognized the difficulty many researchers face in accessing state and district datasets. Several participants noted that researchers in certain states, including California, have difficulty accessing longitudinal administrative data on students and teachers. There was discussion of the need for more collaboration from state and local education agencies to enable research and for open access datasets that would be useful to researchers as they work to answer important questions related to teacher quality and teacher labor markets. In addition, some participants made clear that the political interests involved in crafting teacher policy make it difficult for policymakers to use research to inform policy. When research suggests that policies may benefit some students more than others, or may challenge adult interests, policymakers may be unwilling or unable to utilize such research in policy formation.

> *"The USC conference was incredibly useful for pointing out places where there are holes in our empirical knowledge about how to improve the quality of the teacher pipeline and starting discussions about the nature of the research that could fill those holes. The discussions also starkly illustrated some of the data challenges that researchers face and the challenges we all face in making empirical evidence matter for kids in a policy environment full of institutions with adult interests." – Dan Goldhaber, Vice President, AIR and Professor, University of Washington*

Accordingly, many attendees raised concerns about the feasibility of experimentation in education research, and particularly in research on teachers. Participants noted the expense that would be involved in implementing many of the interventions they proposed. Others cited the ways in which

collective bargaining agreements limit possibilities for adjusting current structures and practice, leading some to suggest that charter schools offer important opportunities to study innovation in some areas.

Finally, many participants highlighted the great potential for and importance of partnerships. The conference itself, which brought together researchers from different disciplinary and methodological backgrounds alongside policymakers and leaders from philanthropic organizations interested in teacher quality and policy, was helpful in starting to identify where there are opportunities to embark upon productive partnerships to begin to address some of the research questions identified over the two days. In addition to charter schools and innovation networks, specific states, districts, and universities that are known to be willing to experiment with new policies and practices (and have the capacity to do so) were repeatedly mentioned as potential sites in which to experiment and conduct research. At other times during the convening, however, participants cautioned against continually returning to the same sites to conduct research. Arguing that much of what we know comes from a narrow set of places, they identified a significant need to build knowledge about what is occurring and working across a variety of contexts and across time. For example, attendees repeatedly cited a need to study rural contexts. Others noted that given the changes that occur in programs over time, studies should adopt a longer time period in which to conduct analyses. (For example, several researchers noted the changes now occurring to IMPACT in Washington, DC).

Paths Forward

In this report we have presented a set of research questions and parameters to guide a research agenda supporting improvement in the teacher labor force. These ideas derive from thoughtful conversations among a group of scholars, state and local policymakers, and philanthropic leaders. They represent the first step in what we envision to be a longer process of continued collaboration among these multiple communities.

One possible next step is for a group of foundations to partner with researchers and policymakers around a subset of the priority topic areas identified herein. These smaller working groups—organized for example around teacher preparation or in-service professional development—could develop more concrete partnerships and plans for advancing this work.

For example, a consortium of foundations might partner with one or two lead scholars to establish a national task force on one of the six topics outlined herein. Scholars interested and engaged in research on this topic could be recruited to participate in a series of meetings to first establish what is already known on the topic and where the gaps lie (building on what was started at our conference). To frame the work, scholars could be asked to develop and present a series of papers or literature reviews that define the problems and existing knowledge about current policy and practice, resulting in the form of an edited book, special issue of a journal(s), or edited conference proceedings. Policymakers and practitioners could be asked to join the group to respond to the scholars' work, identify needs, and collaboratively design new studies to address the identified gaps and priorities. Foundation leaders could then sponsor research aligned with these priorities, by developing a new grant program with specified Requests for Proposals or commissioning task force scholars to conduct this work. As noted, funding should not only support researchers, but also encourage the participation of schools and school systems in innovative partnerships that may include experimental designs. Sponsored convenings for

researchers, participating school system leaders, and task force members could enable the sharing of emergent findings, facilitate dialogue across research projects, and ultimately disseminate new knowledge nationally.

Considering the incentives for all involved parties, there will be a likely tendency to establish this set of collaborative endeavors for a relatively short period of time – perhaps two-to three years. While likely productive and able to satisfy short-term needs (e.g., published articles for involved scholars, demonstrable returns on investment for foundation leaders, expedient solutions to technical problems for practitioners), such efforts may fall short of the even greater potential benefit that could arise out of longer term collaborations. Building on shared understandings and commitments to the same problems across the funder, practitioner, and researcher communities, long-term partnerships might allow for more politically risky research that school systems are not necessarily inclined to do (e.g., experimental research) and research designs that are best built on longer term data. We encourage all stakeholders to consider this longer term commitment to advance the collective cause of ensuring that all children have access to high-quality teachers.

> *"The problem of how to improve teaching quality is a pernicious and persistent one. The USC–PACE conference was a rare opportunity to take a step back, think across the funding, research, policy, and practice communities and identify critical areas for future work. If we hope to make rapid progress on this problem, it is clear we will need longer term collaboration across communities that have different goals, resources, and tools. The work may not be easy, but to paraphrase Teddy Roosevelt, 'Nothing in life worth doing or having is easy.'" – Courtney Bell, Senior Research Scientist, ETS*

Acknowledgements

About The Authors

KATHARINE O. STRUNK, PhD, is an associate professor of education and policy at the University of Southern California. Her research centers on K–12 education policy with a focus on education labor markets, accountability policies, and governance. In particular, she studies teachers' unions and the collective bargaining agreements they negotiate with district administrators and the implementation and impacts of various teacher retention, evaluation, and compensation policies, as well as broader accountability policies.

JULIE A. MARSH, PhD, is an associate professor of education policy at the University of Southern California's Rossier School of Education, who specializes in research on K–12 policy. Her research blends perspectives in education, sociology, and political science. Her research focuses on the implementation and effects of accountability and instructional reform policies, including the roles of central office administrators, intermediary organizations, and community members in educational reform and the use of data to guide decision making.

PAUL BRUNO is a PhD student studying K-12 policy at the University of Southern California's Rossier School of Education, with a focus on economic perspectives on education policy. His primary research interests include teacher labor markets, teacher selection & hiring, collective bargaining, and school finance.

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Figure 1

Attendees	Affiliation
Justo Avila	Los Angeles Unified School District
Stephanie Banchero	Joyce Foundation
Courtney Bell	Educational Testing Services
Eric Brunner	University of Connecticut
Teri Clark	California Commission on Teacher Credentialing
Julie Cohen	University of Virginia
Josh Cowen	Michigan State University
Morgaen Donaldson	University of Connecticut
Chris Edley	The Opportunity Institute
Karen Gallagher	University of Southern California
Steve Glazerman	Mathematica
Dan Goldhaber	AIR/University of Washington
Kenji Hakuta	Stanford University
Jane Hannaway	Georgetown University
Drew Jacobs	Walton Family Foundation
Sarah Johnson	Overdeck Foundation
Julie Kidd	Silver Giving
Cory Koedel	University of Missouri
Julie Koppich	Koppich & Associates
Matt Kraft	Brown University
Jana Luft	Bechtel Foundation
Anu Malipatil	Overdeck Foundation
Julie Marsh	University of Southern California
Josh McGee	Laura and John Arnold Foundation
Jamie McKee	Gates Foundation
Roy Mendiola	Firebaugh-Las Deltas USD
Julie Mikuta	Schusterman Foundation
Susan Moore Johnson	Harvard University
Emily Penner	University of California, Irvine
David Plank	PACE
Morgan Polikoff	University of Southern California
Jane Robb	California Teachers Association
Matt Ronfeldt	University of Michigan
Tim Sass	Georgia State University
Patrick Shields	Learning Policy Institute
Rick Simpson	California Assembly Speaker's Office
Matthew Steinberg	University of Pennsylvania
Ilene Strauss	California State Board of Education
Katharine Strunk	University of Southern California
Eric Taylor	Harvard University

John Tyler	Brown University
Nancy Waymack	Gates Foundation
Marty West	Harvard University
Jim Wyckoff	University of Virginia
Peter Youngs	University of Virginia

Figure 2

Participants' Highest Ranked Areas for Research
(Topics rated highest priority are in bold)

1. Why do people choose teaching? What makes teaching an attractive or unattractive occupation?
2. Teacher supply and shortages
3. **Teacher diversity and barriers to entry for teachers**
4. **Teacher preparation, alternative certification, student teaching**
5. District collaboration with universities & teacher preparation programs
6. **Teacher selection and hiring**
7. Early career teacher recruitment and retention
8. The equitable distribution of (effective) teachers
9. **Principal effectiveness and quality, and the relationship of principal quality to teacher effectiveness and growth**
10. Teacher supervision
11. Teacher evaluation
12. **In-service teacher coaching, professional development, and collaboration**
13. Teacher tenure
14. Compensation and differentiation
15. **Career ladders and teacher leadership**
16. Flexible classrooms and job structures; teacher specialization and professional roles
17. School culture and climate
18. Teacher retention, exit, and associated consequences
19. Teacher working conditions and the labor market
20. Metrics to measure teacher improvement and predict quality, including non-cognitive and non-achievement outcomes
21. Use of research by policymakers and practitioners