



## Understanding Teacher Working Conditions: *A Review and Look to the Future*<sup>1</sup>

**Barnett Berry, Mark Smylie & Ed Fuller**  
**November 2008**

### Introduction

In this report, the [Center for Teaching Quality](#) (CTQ), informed by a team of education researchers and labor economists, presents a fresh approach to understanding teacher working conditions. As scholars we have a long track record of investigating working conditions — especially in light of schools as organizations and teachers learning from each other in order to improve their teaching practices and student learning. Most recently, major foundations and leading policymakers have begun to focus on the strategic management of human capital as the key variable in closing the unrelenting student achievement gap in America’s public schools. The strategic management of human capital has been defined as “the acquisition, development, performance management and retention of top talent in the nation’s schools.”<sup>1</sup> However, most of the current focus has been on recruiting talented teachers and paying them more for improving test scores in high-needs schools. However, it is one thing to identify and recruit talent; it is another to create conditions necessary for their success and their long-term retention in schools with students who are best served by a stable and cohesive group of effective teachers.

We believe strongly that recruiting the *right* teachers with the *right* preparation and qualifications is insufficient to ensure America’s public school students are taught well. Teachers must have the *right* conditions in place in order to teach effectively and for students to learn — especially at high levels. Efforts to transform high-needs schools and improve the academic achievement of their students have been befuddled by a revolving door of underprepared, inexperienced teachers who must cope with a complex array of dysfunctional working conditions. In the past, discussions of teacher working conditions have focused primarily on teacher salaries and benefits, class size, and internal transfer policies, as well as other similar issues addressed in traditional contractual arrangements agreed upon by both local school boards and teacher unions. We have come to understand that the most important working conditions — i.e., the ones that matter for meaningful teacher retention and student achievement — transcend these typical issues. In some quarters, researchers and practitioners are suggesting that working conditions may be viewed as opportunities to learn — and as a mediator of teacher qualifications and valued student outcomes. However, there is little agreement about which working conditions matter most. As Gary Sykes, one of our expert consultants told us, “Absent specification provided by theory or a model, causal relations — among working conditions and teacher and student outcomes — cannot but remain murky and unresolved.”<sup>2</sup>

---

<sup>1</sup> This paper has been developed with support from both the Spencer Foundation and the Ford Foundation.

This paper focuses mostly on recent experiences in which CTQ has engaged in a range of research and development initiatives at the state and local levels to begin unpacking what is known about the conditions under which teachers teach and how to improve them. Our work began in North Carolina — where Governor Mike Easley made the formal reporting of teacher working conditions central to his efforts to improve teaching and learning in the state. Over the last several years we have learned a great deal, and much of what has been uncovered is important for policymakers and practitioners to consider. But more needs to be done.

With initial support from the National Education Association, CTQ administered population- and web-based surveys over a three-year period. These surveys — see examples from [2006](#) and [2008](#) — focused on a limited range of working conditions issues — including time, facilities and resources, teacher empowerment, school leadership, and professional development. The survey items were built based in part on the extant literature as well as the needs of diverse education stakeholders in the states (e.g., Arizona, Kansas, Mississippi, Nevada, North Carolina, Ohio, and South Carolina) in which the instrument was administered and analyzed. With over 250,000 teachers responding to the survey, several trends have surfaced consistently in the states over time:

1. Most teachers want to remain in teaching and are committed to their students.
2. Teachers who intend to leave their schools and teaching are more likely to have grave concerns about their lack of empowerment, poor school leadership, and the low levels of trust and respect inside their buildings.
3. Elementary school teachers were far more sanguine about their working conditions, when compared to their middle and high school counterparts.
4. New teachers who have quality support are more likely to report they will remain in teaching.
5. Teachers who report relatively low levels of satisfaction with their professional development often do not have access to the kinds of training they believe they need.
6. Teachers with different characteristics (e.g., type of credential, years of experience, etc.) tend to respond more or less similarly (except in a few instances, and, not surprisingly, new teachers were less concerned about issues of empowerment).
7. Teachers' perceptions of working conditions may vary more inside of schools than between them.
8. Teachers' response rates vary by type of school (low poverty versus high poverty) in different states and appear to influence reports of positive or negative working conditions.

9. Teachers and administrators view teaching and learning conditions differently — and often quite dramatically so.<sup>ii</sup>

CTQ's more recent analyses as well as those of a number of other well-respected researchers have found some relationships between certain clusters of working conditions issues — e.g., school leadership — and teacher retention and student achievement. However, limitations of current instruments (e.g., that define the constructs too narrowly) and data (e.g., that do not distinguish between different types of teacher attrition) raise issues about making specific causal claims between conditions and teacher retention and student achievement. We suspect, as outlined later, that out-of-field assignments and teaching in high-stakes grades, as well as classes with high student mobility can have powerful impact on teachers' perceptions of working conditions — and subsequently on their willingness to stay in a certain school and teach effectively. We also suspect that teachers with different career intentions view working conditions differently — which can have consequences for whether they stay in teaching. Combined with our other research and development efforts in staffing high-need schools and creating professional learning communities and teacher networks, we believe there is a lot more to understand about measuring and improving working conditions — especially for 21<sup>st</sup> century schools and the teaching profession. With support from the Spencer Foundation and Ford Foundation, we are now launching a series of case studies and other action research to better understand the role teacher working conditions play in designing the strategic management of human capital systems in the future (See [linked document](#) for description of CTQ's planned efforts over the next several years).

Empirical efforts to more precisely unpack teacher working conditions for today's and tomorrow's schools will require new investments in management information systems and analytical capacity among researchers and practitioners. States and districts need to develop teacher, student, and administrator data systems that can track teacher and administrator teaching and learning conditions survey responses longitudinally and link them with other datasets — including fine-grained teacher characteristics, actual teacher turnover figures that distinguish various types of attrition, and robust measures of student achievement. Given the new demands on the public schools and the need for all students to meet higher academic standards and participate successfully in a global economy, policymakers and practitioners will need these tools if they are to focus more on the conditions that allow teachers to teach effectively in the future. Web 2.0 tools (and beyond) can help transform the archaic (and often characterized as moribund) school organization — and the conditions under which teachers work. The question is how to best assess those conditions for today's schools as well as tomorrow's.

Measuring important outcomes in education is no simple matter. In a recent *Education Week* commentary, Rick Hess and Jeffrey Henig call for “common sense and humility about what (education) research can provide” — given long-standing problems associated with far-removed metrics, diverse school contexts, and complex interactions among the variables under study.<sup>3</sup> Hess and Henig note that the metrics used — “no matter how seemingly precise” — are typically too far removed from the concept or issue to be assessed, and school contexts are so diverse that generalizations do not hold across

---

<sup>ii</sup> For more information on CTQ teacher working conditions efforts, visit [www.teachingquality.org](http://www.teachingquality.org).

different communities. They go on to say that the “gold standard” of scientific research and efforts to make causal inferences are inherently compromised in the complex social world of education, where human conditions get in the way of best-designed random trials — the hallmark of medical research. As David Berliner once described, education research is the hardest where the ubiquity of interactions easily can confound efforts of scholars to determine which variable — like school working conditions — can predict both teacher retention and student achievement. Berliner further noted, “We do our science under conditions that physical scientists find intolerable.” He claims that the “ordinary events of life” (e.g., a sick child, a messy divorce, a new child in the classroom, etc.) greatly influence the conduct of scientific inquiry in school settings by restricting the generalization of findings.<sup>4</sup> These issues are not unfamiliar to seasoned education researchers.

We appreciate the serious challenge of addressing a teaching quality issue with inevitable empirical shortcomings. We have no expectations to establish a unified theory or to confirm, without a doubt, the specific links between working conditions and whether teachers will remain in teaching, move to another school, or increase in effectiveness. However, with this paper, we do expect to advance the thinking and inquiries of scholars and ideas and practices of administrators and teachers. We hope to raise questions for policymakers — elevating their appreciation for teachers’ opportunities to learn and promote better outcomes for the students they teach and the schools in which they work.

Our paper, while not exhaustive by any means, has been built by assembling an amalgamation of the research literature, drawing on recently-surfaced survey data and analyses, and developing a framework for reconceptualizing teacher working conditions for tomorrow’s schools. With support from the Spencer Foundation, we have drawn heavily from a team of scholars — including Linda Darling-Hammond, Ed Fuller, Ken Futernick, Doug Harris, Helen Ladd, Tom Smith, Gary Sykes, Charles Thompson, and Jim Wyckoff — whose counsel contributed significantly to our paper. We begin with a review of relevant literature — and then move on to an overview of what CTQ and other researchers have discovered about teacher working conditions of late. We conclude with a reconceptualization of teacher working conditions and a look to the future.

## Relevant Literature

A wide variety of education researchers and economists agree that teachers make the most important in-school difference for student achievement.<sup>5</sup> However, little more than ephemeral agreement exists among not just researchers but also policymakers on how to recruit, develop, and retain teachers — particularly the most effective ones. Economists like Richard Murnane have claimed that America’s competitiveness in the global marketplace “depends heavily on the quality of teachers in the nation’s classrooms.”<sup>6</sup> Hardly anyone disputes the importance of teachers in closing the academic achievement gap of America’s increasingly diverse students. Researchers consistently reveal that teachers who are better trained, more experienced, and licensed in the subjects they teach are more likely to be teaching in low-poverty schools, serving more academically advantaged students.<sup>7</sup> However, despite more and better studies on the links between teacher quality and student achievement, the debate continues to rage

among researchers and think tank analysts about who gets recruited to teaching and how they are prepared and developed.

Over the last several years (especially with the advent of the No Child Left Behind “highly qualified” teacher provisions), the debate has tended to focus more on teachers and less on teaching. The former refers to qualifications of individual teachers and the requisite mix of knowledge, skills, and dispositions they bring to classroom teaching. The latter encompasses the former but necessarily refers to how teachers and students, as well as school organizations, interact in ways that allow learning to take place. Researchers have begun to demonstrate the role working conditions play in both teacher retention, and presumably, student achievement. Growing numbers of studies are beginning to show that the “character” of the workplace can influence which teachers choose to teach and which ones remain in teaching.<sup>8</sup> Rosenholtz’s landmark study of two decades ago concluded that “learning-enriched schools” were characterized by “collective commitments to student learning in collaborative settings... where it is assumed improvement of teaching is a collective rather than individual enterprise, and that analysis, evaluation, and experimentation in concert with colleagues are conditions under which teachers improve.”<sup>9</sup> Recent studies of highly-accomplished teachers and their career preferences indicate that working conditions matter more than salary when it comes to deciding where they will teach.<sup>10</sup> Others claim that growing student diversity can drive teachers away from or toward urban schools.<sup>11</sup>

Severe teacher shortages loom on the horizon with poor teacher retention as a major contributor to the problem. National research demonstrates the importance of addressing school conditions to improve teacher retention. Teachers who leave schools cite opportunity for a better teaching assignment, dissatisfaction with support from administrators, and dissatisfaction with workplace conditions as the main reasons they seek other positions.<sup>12</sup> Teachers indicate that a positive, collaborative school climate and support from colleagues and administrators are the most important factors influencing whether they stay in a school.<sup>13</sup> In national surveys, teachers identified excessive workload, lack of time, and frustration with reform efforts as areas in need of focus and improvement.<sup>14</sup> Additionally, a recent survey of 2,000 educators from California found that 28 percent of teachers who left before retirement indicated that they would come back if improvements were made to teaching and learning conditions. Monetary incentives were found to be less effective in luring them back.<sup>15</sup> Similarly, Hanushek and Rivkin recently concluded that “salary affects teacher mobility patterns less than do working conditions, such as facilities, safety, and quality of leadership.”<sup>16</sup> A 2008 study of teacher retention found that teachers left their schools primarily because of management breakdowns, challenging relationships (administrators and colleagues as well as students and parents), and the loss of creativity and control in their classrooms.<sup>17</sup>

But what counts for working conditions? One recent study revealed how high-stakes accountability negatively influenced teachers by forcing their instruction to become “less deliberate, less individualized, and more homogenized” and pushed decision-making power “further from the classroom and the school.”<sup>18</sup> Some analysts have claimed that addressing these working conditions and building a sense of trust in schools are critical factors in reforming schools, as both have been linked to greater teacher effectiveness.<sup>19</sup>

One of the most extensive examinations of working conditions data revealed “a clear but difficult lesson: if we want to improve the quality of our teachers and schools, we need to improve the quality of the teaching job.”<sup>20</sup>

While our survey research and others have suggested strongly that there are relationships between working conditions and certain teacher and student outcomes, little is known about the causal nexus associating independent, mediating, and dependent variables. For example, in some contexts, collegiality among accomplished, less able, and novice teachers may very well spread teaching expertise and innovative instruction, increase self-efficacy, and improve retention and student achievement. On the other hand, collegiality among veteran staff may assist in calcifying poor teaching practices and reinforce norms of resistance and maintenance of the status quo. Could collegiality enhance as well as detract from equitable student learning? Could harmony, as reported in surveys, come at the expense of other valued outcomes? In the same vein, Hanushek and Rivkin recently concluded, “An important agenda item, both for research and for policy, is to learn which working conditions are most important for teachers.”<sup>21</sup> Sykes has noted:

A main issue concerns how to bound and demark the concept. From one angle the question might be, ‘What does not count as teacher working conditions?’ The concept seems capacious to the point of conceptual vacuity. Anything and everything associated with schools, communities, teachers, students, et al. might conceivably be related to the conditions of teaching work. Here again some form of stipulation seems necessary, which in turn relies on theory.

Relatedly, there is no commonly accepted set of categories and sub-categories that make up teacher working conditions, no canonical understanding that allows for constant comparisons. One can imagine such categories; indeed these are coded into various instruments, but no established usage or justification has been formulated.<sup>22</sup>

In other words, almost anything can count for teacher working conditions. The words themselves carry specific connotations and implications. For example, if one types in the words “teacher working conditions” in a Google search, the listings primarily include links to work CTQ has done over the last several years. One link to the National Science Foundation refers to the concept primarily as salaries; others refer to those conditions found in union contracts like class size, tenure rules and regulations, and required hours to be on the job. Very little attention is paid to different conditions faced by different teachers (e.g., special education, those who teach in high-stakes testing grades) in different contexts. In a time when teachers report working more hours and having to hold second and third jobs to make ends meet, some researchers and analysts suggest teachers are paid too much given their truncated teaching schedules marked by days ending at 3:00 pm and summers off.<sup>23</sup>

## A Renewed Focus

Over the last decade Richard Ingersoll has conducted numerous quantitative analyses linking teacher qualifications, preparation, and working conditions with retention — and his work has contributed significantly to new thinking on the part of policymakers and practitioners. He has primarily drawn on the School and Staffing Survey (SASS), a nationwide sample survey of approximately 60,000 teachers administered every five years — with follow-up surveys to those who stay in their classrooms, move to others, or leave the profession altogether. Ingersoll has concluded that the nation’s teacher quality problems have less to do with who is recruited and more with who is retained. He found that a major source of teacher attrition is “dissatisfaction” — with poor administrative support and lack of faculty influence as the most prominent factors for those who leave high-poverty urban schools.<sup>24</sup> Ingersoll’s data trumps the conventional wisdom that the lack of qualified teachers rests on inadequate training, inflexible unions, or limited supply. Instead, he shows that the lack of qualified teachers has more to do with the “organizational structure of schools and the occupational conditions and characteristics of teaching.”<sup>25</sup>

In an effort to turn around low-performing schools, Ken Futernick has developed a “tipping point” strategy that in some ways defines working conditions. His strategy is “based on the belief that when given the opportunity to work on a team with other qualified teachers who share the same vision, teachers can actually jolt the school out of its disequilibrium and transform it into a high-achieving school.”<sup>26</sup> The tipping point elements include: (1) teams, (2) time, (3) physical environment, (4) class size reduction, (5) autonomy and shared governance, (6) leadership, (7) a well-rounded curriculum, (8) external support, and (9) parent/community involvement.

Other researchers, such as Mark Smylie and Susan Moore Johnson, have conducted extensive literature reviews on the topic. Smylie, drawing on the National Education Association surveys and a 40-year perspective, shows how individual motivation, instruments of accountability and control, and opportunities for learning and development can influence teacher attitudes and perceptions of their working conditions. His analysis captures a range of dimensions — structural, physical, social, and economic — drawing on both open- and close-ended survey items. He claims that there needs to be “new efforts to develop accurate and potentially more supportive understandings and attitudes about teachers and schools.”<sup>27</sup>

Johnson, with her work built more from case studies, has noted that working conditions can include (1) *physical* features such as the suitability of buildings and equipment; (2) *organizational* structures that influence workload, autonomy, and supervisory and collegial arrangements; (3) *sociological* components that influence teachers’ roles and status as well as experiences with students and peers; (4) *political* features that define teachers’ power and authority; (5) *cultural* dimensions that frame values, traditions, and norms; (6) *psychological* issues that may support or diminish teachers personally; and (7) *educational* policies, such as those related to teacher education, curriculum, and accountability, that may enhance or constrain what and how teachers can teach.

Johnson concludes that remarkably few schools — particularly among those serving low-income students — provide all or even most of the workplace conditions that teachers need to do their jobs well and stay in teaching.<sup>28</sup> In her review of the research on working conditions and teacher retention, Johnson and colleagues suggest that different subgroups of teachers respond differently in different contexts (e.g., school size, subjects and grade levels taught), and their priorities change over the course of their careers. She concludes that “far too many surveys about teacher retention brush superficially across the surface of many topics, rather than exploring any in depth, or they neglect to include answer choices that truly represent respondents’ opinions.”<sup>29</sup> Too few studies can link teacher working conditions with measures of “highly qualified” teachers and student achievement.

In addition, Karen Hunter Quartz and her colleagues at UCLA recently published a remarkable set of studies showing how rigorous and specialized university-based preparation may not be able to overcome the negative impact of poor working conditions on the retention of classroom teachers, but it can encourage new recruits to stay committed to their schools as teacher leaders.<sup>30</sup> Over the last several years, labor economists have dominated the research on different pathways into teaching and their effects on teacher retention and student achievement.<sup>31</sup> Simply stated, their findings — built on econometric assumptions and available data (not always complete) — have generally concluded that minimal differences exist between traditional and alternative approaches to preparation and certification — questioning the ability of universities to recruit academically-abled talent and prepare them to teach effectively in high-need schools.<sup>32</sup> Like other new generation recruits, Quartz and colleagues have found that new teachers, with specialized preparation for working in high-need schools, do leave their classrooms like their alternative counterparts, but they are far more likely to stay in education and remain as instructional leaders in their buildings — thus lessening the churn of teacher turnover. Her research suggests that preparation may mediate the relationship between workplace conditions and teacher attrition — and requires a much closer look at not only those who in stay in teaching, move to another school, and leave education altogether, but those who are role changers and same school stayers.<sup>33</sup>

### ***The CTQ Research Base***

There is a wealth of literature related to teacher working conditions. Here we first present a review of some of the key empirical findings associated with the five major domains addressed through the initial CTQ teacher working conditions initiatives — time, facilities and resources, empowerment, leadership, and professional development. This brief review, while not meant to be exhaustive, is intended to set the stage for addressing how we can assess CTQ findings in a larger context and consider how to best reconceptualize teacher working conditions for the future.

#### ***Time***

Researchers have begun to document that teachers are working longer hours than ever before.<sup>34</sup> A recent report indicated that teachers spend an average of 50 hours per week on instructional duties, including an average of 12 hours each week on non-compensated, school-related activities such as grading papers, bus duty, and club

advising.<sup>35</sup> While the idea of the shortened workday and workweek is a commonly held misconception about teaching, many teachers dedicate additional hours supervising student extra-curricular activities or further developing their teaching skills with evening coursework and/or graduate programs in the summer. As teaching becomes a more complex job in the 21<sup>st</sup> century, teachers claim they need more time to learn new skills and collaborate with their colleagues in figuring out what works best for the diverse students they teach. A recent survey indicated that 70 percent of the teachers responding did not have enough time to cover the topics demanded by their states' curriculum frameworks.<sup>36</sup> Studies suggest reduction in teacher workload increases teacher satisfaction and reduces attrition.<sup>37</sup>

Researchers have shown that collaboration time bolsters teachers' self-efficacy,<sup>38</sup> while frustrations with non-teaching, administrative routines and paperwork contribute to increased teacher dissatisfaction, withdrawal, and exiting the profession.<sup>39</sup> There is a wealth of studies — mostly qualitative — revealing how teachers' joint work leads to new teaching knowledge and the development of collective expertise.<sup>40</sup> In fact, some researchers have claimed for some time that more opportunities for teachers to collaborate with colleagues and engage in more expanded leadership roles result in educators increasing their teaching effectiveness, adopting new instructional strategies, and remaining in teaching longer.<sup>41</sup> Indeed, researchers of late have found that collaboration and common planning time in the context of teacher induction programs had the greatest influence on reducing novice attrition rates.<sup>42</sup> Teachers may or may not have planning periods where they can collaborate, however. And while high school teachers may have more time allotted for planning, often there is less time for joint planning — and school cultures may mitigate chances for effective collaboration. Unfortunately, while it is extremely important for administrators to schedule time for collaboration among faculty, many of them have not been prepared to create and implement school designs that offer more opportunities for teachers to learn from one another.<sup>43</sup> As Johnson and colleagues noted:

Collaboration among teachers requires more than good intentions and norms that promote joint work, for the open exchange of ideas and feedback takes time, and the school schedule seldom allows for ongoing interaction. Some school administrators deliberately arrange teaching assignments to align the preparation periods of teachers who need time to work together — for example, those teaching the same cluster of middle school students, the same elementary grade level, or the same high school students.

However, recent investigations into teacher networks suggest more time is not a panacea for teacher learning.

Creating more opportunities for teachers to meet may have limited impact if multiple priorities compete for teachers' time and attention. The design of coaching — especially, selection criteria, work roles, and the focus of professional development — not only influences teachers' access to expertise; it also has implications for the degree to which teachers interact with depth and substance.<sup>44</sup>

Time for instruction is another important element for consideration. Few studies indicate how much time different teachers need for teaching in different contexts. Teachers — and their unions — often call for smaller class sizes so teachers can have fewer students to serve, and thus more time to work with those they do teach. Nationwide, class sizes average about 25 students per class, but there is great variation between and within schools.<sup>45</sup> Schools serving poor students and those of color tend to have much larger class sizes.<sup>46</sup> Reduction in class size tends to improve teacher attitudes and increases their retention, but only marginally.<sup>47</sup> One study suggests class sizes need to drop considerably — e.g., from 30 to 20 students — in order to make a difference.<sup>48</sup> It is difficult to isolate the impact of class size, given a host of other factors, on teacher retention. Some researchers have shown that in relatively smaller classes, teachers are able to provide more one-on-one interaction as well as tailor curriculum and pedagogy that is differentiated to individual student needs.<sup>49</sup>

But just having a smaller class size does not necessarily mean that a teacher knows how to teach differently. Few teacher working conditions surveys attempt to make connections between reductions in class size and changes (and improvements) in teaching strategies. In addition, the literature does not offer much guidance on how much time teachers need in different contexts teaching different subjects.

### ***Facilities and Resources***

Some researchers have noted that while well-designed school facilities can assist teachers in teaching more effectively, what matters most is whether the building is maintained and resources are available.<sup>50</sup> As Johnson indicated:

Neglected maintenance not only conveys indifference or disdain for those who use the school but also interferes with effective instruction. Bunsen burners that malfunction in the chemistry lab, electrical systems that fail to support classroom computers, weak lighting that makes it hard to read, and poor acoustics that discourage discussions during class — all can compromise even the best teacher's effectiveness.<sup>51</sup>

According to the U.S. General Accounting Office (GAO), almost three-fourths of schools in the United States were constructed before 1970. As a result, about one-third of schools have need of extensive repair or replacement. In addition, almost two-thirds of schools have at least one inadequate building feature such as substandard plumbing, roofing, or electrical systems. Moreover, 58 percent have at least one unsatisfactory environmental condition such as inadequate ventilation, acoustics, or physical security.<sup>52</sup> The GAO estimates that upgrading (which includes only routine maintenance or minor repairs) existing schools according to federal mandates will cost approximately \$112 billion over a three-year period.<sup>53</sup> Indeed, improving the quality of school facilities is an expensive undertaking. Health hazards aside, leaking ceilings and poor heating or air conditioning systems are a distraction from the primary mission of schools.<sup>54</sup>

Besides general maintenance and construction issues, the GAO found most school facilities lacking 21<sup>st</sup> century features in the form of infrastructure, laboratories, and

instructional space. For example, about three-fourths of schools do not have the necessary infrastructure for modern technology, while about 40 percent cannot meet the functional requirements for laboratory sciences. More than half do not have sufficiently flexible instructional space for effective teaching to take place. Finally, space for before- and after-school care is available for only about one-third of schools.<sup>55</sup>

In a recent study undertaken in Washington DC, researchers reported that “facility quality” emerged as a major factor in determining whether teachers decided to remain teaching in their current positions. They concluded that “the benefits of facilities improvement for retention can be equal to or even greater than those from pay increases.”<sup>56</sup> Other researchers uncovered similar findings. A study in Chicago found that 40 percent of teachers who graded their facilities a “C or lower” on a scale of “A through F” reported that “poor conditions have led them to consider changing schools and 30 percent are thinking about leaving teaching.”<sup>57</sup> Without adequate facilities and resources, it is extremely difficult to serve large numbers of children with complex needs.<sup>58</sup> Out-dated and dilapidated facilities hinder both the teaching and learning experience in a classroom. For example, indoor air quality has been identified as a major contributor to asthmatic students’ absenteeism.<sup>59</sup> Researchers have noted that many schools suffer from what is termed “sick building syndrome,” which affects all students’ performance and increases absenteeism.<sup>60</sup>

Appropriate resources and personnel support are significant factors in the hiring and retaining of effective teachers.<sup>61</sup> However, it is unclear as to which facilities and which resource issues are most important — and often policymakers do not have strong evidence upon which to make decisions. For example, studies show that support personnel, such as paraprofessionals or instructional assistants, are considered an essential component to the success of both teachers and students.<sup>62</sup> However, while some studies show that instructional assistants’ supplementary instruction raises achievement in math and literacy,<sup>63</sup> others show the opposite effect.<sup>64</sup> The importance of support personnel cannot be overestimated, but some studies suggest there is an over-reliance on instructional assistants (who are not necessarily well-trained), resulting in unintended consequences such as a decrease in teacher engagement and peer interaction as well as limited access to instruction from the most highly-qualified instructor in the room.<sup>65</sup> Another concern is the high level of turnover among instructional assistants.<sup>66</sup>

Some researchers have found that adequate instructional materials and supplies were positively associated with gains on the National Assessment of Educational Progress (NAEP) mathematics and reading tests at the elementary and middle school levels.<sup>67</sup> Providing needed resources, along with directions for their use, positively influences individual teacher and collective efficacy belief.<sup>68</sup> Conversely, lack of resources contributes to teachers’ job dissatisfaction and attrition.<sup>69</sup> In addition, appropriate classroom lighting boosts the morale of teachers and students as well as reduces off-task behavior and improves test scores.<sup>70</sup> In fact, students with the most exposure to natural daylight were found to progress 20 percent faster in one year in math and 26 percent faster in reading than students who were taught in environments with the least amount of natural light.<sup>71</sup>

Still more researchers call for schools to be small, with evidence that overcrowding leads to increased aggression and decreased student involvement and interaction.<sup>72</sup> Investigators have recommended that schools decrease enrollment to no more than 500 to 600 students to encourage a more conducive education setting, where teachers and students can know each other better.<sup>73</sup> Research has documented that small schools do indeed help disadvantaged students perform better on standardized basic skills tests than their counterparts in larger schools, while it also has shown that small schools are more effective in closing the achievement gap.<sup>74</sup> In fact, the Consortium on Chicago School Research found that, “for both reading and math, small schools produce greater achievement gains than larger schools holding demographic and teacher characteristics constant so that this effect is independent of the particular students and teachers at the schools.”<sup>75</sup>

Finally, while small schools may be very important to teacher working conditions, so may large classrooms with few outside distractions. Classrooms with ample space are more conducive to providing a combination of secluded study spaces and cooperative learning centers. Creating private study areas as well as smaller learning centers reduces visual and auditory interruptions and is positively related to student development and achievement.<sup>76</sup> Classrooms that are associated with less external noise are positively associated with higher academic achievement compared to those where students are exposed to more distractions.<sup>77</sup>

### ***Teacher Empowerment***

Researchers have found some relationships between teacher decision-making and retention. However, decision-making often rests on principals who encourage teacher autonomy.<sup>78</sup> Nevertheless, teachers who report more control over the policies that affect their jobs are more likely to remain in teaching.<sup>79</sup>

Teachers’ level of autonomy in instructional practice directly influences feelings of efficacy and level of commitment to the organization.<sup>80</sup> In fact, participation in decision-making increases teachers’ feelings of trust and sense of fairness because they directly influence classroom activities and learn to defend their practices.<sup>81</sup> Conversely, the lack of control over classroom decisions, such as selecting curriculum and designing discipline policy in today’s high-stakes testing environment, is cited as a primary reason teachers leave the classroom.<sup>82</sup> The issue is not that teachers reject standards-based reforms and more centralized curriculum, but that they seek the flexibility needed to shape their teaching for the diverse learners in their classrooms.<sup>83</sup> A recent study showed that scripted curriculum at the elementary level frustrated teachers. One teacher responded:

Most of the curriculums are pre-scripted. We have to follow [them] and there is no time to be creative. This leaves no space to address students’ needs; we have difficult kids and sometimes need to be creative to meet their needs.<sup>84</sup>

When teachers lack influence over the teaching process, they often believe their efforts are for naught.<sup>85</sup>

In addition, some research has shown that school improvement efforts are advanced when teachers share the responsibility of hiring new faculty.<sup>86</sup> Similarly, teachers express dissatisfaction with the lack of career opportunities in the profession — which often is characterized as flat.<sup>87</sup> As well-respected sociologist Dan Lortie noted, compared with most other kinds of middle-class work, teaching is relatively “career-less.”<sup>88</sup> He noted that for teachers to advance in their profession they must separate themselves more and more from classrooms and teaching students. He argued that a career ladder (or perhaps lattice) can yield cycles of effort, attainment and renewed ambition, but the lack of “stages” can put the link between effort and reward out of sync. Other researchers have observed that career ladders, which keep teachers connected to students while giving them leadership opportunities outside their own classrooms, can be empowering and motivating to them, especially those teachers who are most talented and capable.<sup>89</sup>

Most research on teacher empowerment has focused on individuals’ perceptions of self-efficacy. However, recent research has identified *collective efficacy* as an equally, if not more, important component of school improvement.<sup>90</sup> Collective efficacy refers to an individual’s belief in the group’s capabilities and influences professional commitment. Further, collective efficacy is associated with school improvement —moving beyond solo teachers making decisions for individual classrooms and students and toward teacher teams and school faculty jointly making decisions in the best interest of students.<sup>91</sup> While it is important for new teachers to develop their own identities, they must increasingly become part of wider professional learning communities in order to meet the complex challenges posed by public education in the 21<sup>st</sup> century. Autonomy and personal growth must be balanced with teamwork and group goals.<sup>92</sup>

In addition, there are differences noted between new and experienced teachers when it comes to personal discretion and autonomy. New teachers are more concerned with classroom management, student discipline, and developing effective lessons, and are less concerned with the lack of personal autonomy in decision-making than their more seasoned counterparts.<sup>93</sup> Nevertheless, new teachers can and should be encouraged to set high standards for pupils and should be afforded the power to decide how to attain these goals in order to experience feelings of success and efficacy.<sup>94</sup> One area of research not yet fully explored is the role that perceptions of empowerment play in teacher retention among novices who are more or less prepared for the teaching jobs they are assigned. Today more teachers, especially those entering through short-cut alternative certification programs, report being far less prepared for the students they are teaching.<sup>95</sup> On the other hand, others have found that well-prepared teachers for high-need schools may seek even more autonomy than their peers who enter teaching less qualified for the tasks at hand.<sup>96</sup>

## ***Leadership***

Researchers have long documented how school administrators affect the conditions under which teachers teach,<sup>97</sup> and how a principal’s leadership style, communication skills, and supportive behaviors influence teacher recruitment and retention.<sup>98</sup> Indeed, in one recent study the role of the principal stood out as the most significant factor in

retaining teachers — however, most of the principals who worked with the teachers had no formal preparation for and assistance in “minimiz(ing) the burdens on teachers.”<sup>99</sup>

No one single model of leadership appears to be appropriate for all teachers in a given school. Thus, researchers need to examine the impact of leadership style on teacher and student performance, simultaneously with personal characteristics of leaders and their subordinates — such interactions and the context of their interactions matter.<sup>100</sup> Regardless of context, school leaders who are perceived as chilly, distant, and manipulative tend to have teachers who are not satisfied in and less committed to their jobs; while school leaders who are perceived as warm, caring, personable, and honest tend to have teachers that are happy in and more committed to their jobs.<sup>101</sup>

Considerable research on school leadership has focused on overall support, trust, communication, and participation. First, when teachers feel more supported by administrators, they are more likely to stay in teaching.<sup>102</sup> Leadership support has tended to mean administrators who back teachers up when it comes to student discipline, buffer teachers from outside-the-classroom forces, and minimize non-teaching obligations and duties — all of which have been shown to be related to new teachers’ commitment to teaching.<sup>103</sup> Indeed, principals who are willing to handle difficult situations for teachers are more likely to be viewed as supportive.<sup>104</sup> Teachers expect leaders to support all teachers fairly and consistently as well as establish routines and distribute resources fairly.<sup>105</sup>

Second, supervisors — in general — who exhibit high levels of competence, trustworthiness, and fairness produce greater employee satisfaction and motivation.<sup>106</sup> There is a growing body of research strongly suggesting that principals who can engender a sense of personal and professional trust in teachers as well as create an overall atmosphere of trust and respect are more able to retain teachers.<sup>107</sup> Sharing influence and control with teachers demonstrates a reciprocal trust and respect.<sup>108</sup> Administrators who communicated care for teachers’ well-being were perceived as credible and held in high regard.<sup>109</sup> Teachers are quick to discern when they are valued and respected by the principal; their daily behaviors match their words.<sup>110</sup> Principals are seen as “trustworthy” when they are “both accurate and forthcoming.”<sup>111</sup> Respect between teachers and principals is critical, with two significant contextual components, personal and professional. Regarding the former, teachers seek to work with principals who are courteous and humane. Regarding the latter, teachers seek to work with principals who hear their voices and take their ideas seriously.<sup>112</sup>

Third, researchers have reported that the lack of communication between teachers and principals contribute to the former’s dissatisfaction and attrition from the profession.<sup>113</sup> Teachers are more satisfied with “democratic managers who maintain open channels of communication [than] principals [who] exhibit a harsh and authoritative attitude.”<sup>114</sup> Teachers appreciate and seek “adequate explanations and timely feedback on decisions.”<sup>115</sup>

Fourth, researchers of late have begun to focus on teacher participation with administrators in distributed leadership activities. Distributed leadership is a *collective*

*activity* focused on *collective goals* whereby expertise dictates authority, rather than hierarchy. In order for distributed leadership to work, there must be a culture of collaboration, trust, professional learning, and reciprocal accountability that grows over time.<sup>116</sup> Some scholars refer to distributed leadership as a means to give teachers control over key instructional decisions.

In fact, school improvement experts are calling for principals to move from their primary role as instructional leaders to a more transformative one. Instructional leadership focuses on hierarchies where teachers are developed by school leaders who supervise them, while transformational leadership focuses on teamwork and collective responsibility, where teachers are encouraged to teach and evaluate one another's performance.<sup>117</sup>

Administrators who are transformational leaders pursue three fundamental goals: (1) to help staff develop and maintain a collaborative, professional school culture; (2) to foster teacher development; and (3) to help teachers solve problems more effectively.<sup>118</sup> Transformational leaders reduce teacher isolation, support cultural changes, delegate power, and actively communicate the school's norms and beliefs.

### ***Professional Development***

Over the last two decades, the education research community has devoted significant attention to understanding what and how teachers learn and the implications for instructional improvement and student learning. There is increasing, albeit still spotty, evidence of the kinds of professional development that leads to student achievement gains. Nevertheless, increasing numbers of studies are showing that certain forms of professional development not only increase teacher effectiveness, but also result in higher job satisfaction leading to greater teacher retention.<sup>119</sup> Several studies have surfaced suggesting that the most effective professional development focuses on the specific content that students will learn and the specific difficulties students encounter in learning the content.<sup>120</sup> Others have shown that in order for professional development opportunities to prove successful, they must be closely tied with the specific context of individual schools and teachers.<sup>121</sup> In improving schools, professional development is used to improve instruction; however, the instruction program is marked by coherence, and teachers offer a challenging curriculum with interactive teaching — coupled with social support for learning.<sup>122</sup>

One study (over a decade old), drawing on a survey of 1,000 elementary school teachers in California, found that schools were more likely to have high student achievement when teachers took part in professional development that focused on specific curriculum issues (teaching fractions, for example). Equally important, the teachers in higher achieving schools, had opportunities to work with other teachers, to use research methods in studying what their students did and did not know, and to improve their lessons based on what they learned. When teachers spent most of their staff development time studying general education strategies, their students did not perform nearly as well. These findings suggest that professional development needs not to focus

on generic (one size fits all) teaching behaviors but on the analysis of curriculum and student responses to it.<sup>123</sup>

Other researchers have noted that teacher learning that is linked to student achievement may hinge on the “strategic documentation of practice” that “cultivates (their) capacities to investigate teaching and learning” (e.g., assessing student work samples and video tapes of focused lessons on teaching two-digit multiplication).<sup>124</sup> Still others have found that teachers engaged productively in subject specific associations, special institutes and centers, subject specific projects, and university and school collaboratives implement greater changes in practice than those who are not. Providing opportunities for teacher inquiry promotes changes in teaching strategies and outcomes.<sup>125</sup>

A relatively recent large-scale study, utilizing surveys and case studies, surfaced six critical factors (underlined below) for creating effective professional development that is linked to the development of teacher knowledge and changes in teaching practices. The researchers concluded that professional development should focus on deepening teachers’ content knowledge and knowledge of how students learn particular content, providing opportunities for active learning, and encouraging coherence in teachers’ professional development experiences. School and districts should pursue these goals by using activities that have greater duration and that involve collective participation. Although reformed forms of professional development are more effective than traditional reforms, the advantages of reform activities are explained primarily by greater duration of the activities.<sup>126</sup> Their investigation revealed how structural characteristics (form, duration, and participation) affect core features (content, active learning, coherence), that in turn predict increases in teacher knowledge and skills and changes in teaching practices. However, their surveys and case studies revealed a mix of high- and low-quality structural and core features, and that most professional development studied was traditional in form and less than a week in duration. While the teachers’ professional development was increasingly focused on content and aligned with state and district curriculum standards, they had very little opportunity for actively learning and using the content.<sup>127</sup>

One national survey, conducted in 2003, found that only 50 percent of teachers responding indicated that the professional development they experience helps them teach more effectively.<sup>128</sup> However, studies have documented that school district-driven professional development has become more aligned with student learning standards, and in doing so connecting what teachers learn with what students achieve.<sup>129</sup> Smylie found that while teachers are experiencing more and better professional development “substantial proportions” still have too little access to training that offers them “time to think about, try out, and evaluate new ideas in their classrooms, follow-up activities, and opportunities to work and learn with teachers from other schools.”<sup>130</sup> Few teachers engage in the kind of professional development that allows them to do so. School districts — e.g., in Boston, New York, and San Diego (as well known exemplars) have begun to invest more in instructional coaches to improve teaching and learning. However, as noted in a recent study, coaching alone will not cure the ills of professional development:

Coaching is rapidly becoming the strategy du jour to support curriculum implementation. Yet this study provides preliminary evidence that the creation of the coach role alone does not increase teachers' access to expertise or the quality and rigor of their conversations with others.... Principals may choose to use coaches in ways that pull them away from direct interaction with teachers or that configure their time such that they rarely work with teachers in a sustained way.<sup>131</sup>

Indeed, in one recent study, coaches, who could have played a powerful role in teacher-led professional development, turned into one more layer of management. As the researchers reported, "While their roles varied, many coaches reported spending most of their time administering assessments and managing the resulting data, rather than modeling effective instruction."<sup>132</sup>

Finally, the professional development literature has included how teachers, not just as individuals, but as a cooperative learn together, with implications for school improvement and student achievement. Some researchers have shown that professional learning communities (PLCs) have proven key to school improvement, where teachers engage in group work to create a shared purpose and assume collective responsibility for the learning of all students. These findings have linked student learning of "high intellectual quality" and professional learning communities that afford the same for teachers.<sup>133</sup> Some researchers have shown how schools with strong professional communities promote teacher learning,<sup>134</sup> change teaching practices,<sup>135</sup> and advance the implementation of reform.<sup>136</sup> Trust has been suggested to be a critical factor in building social networks because it motivates teachers to share with each other.<sup>137</sup>

PLCs require regular and substantial time and close proximity for teachers to meet and deliberate.<sup>138</sup> PLCs have been proven to help teacher teams create knowledge of practice, utilize knowledge for practice, distribute and share "knowledge property," assess instructional alternatives, and enable "collective mindfulness." In doing so, PLCs are able to protect against "flavor of the month" curricular mandates, socialize new teachers to school norms of practice and professional expectations, and help teachers develop theoretical understanding of the skills and knowledge they need. Some analysts have shown that there is a wide range of statistical evidence that school-based PLCs improve teaching and student learning.<sup>139</sup> However, cautions are warranted. Little has warned that PLCs, or teacher-led collaborative groups, can be thwarted by their own "horizons of observation" where isolation from other schools or myopic school district curricular mandates can constrict visions of teaching and learning.<sup>140</sup>

Finally, some research has shown that newer as well more highly qualified teachers are more likely to seek PLCs.<sup>141</sup> Quartz and colleagues found that well-prepared new recruits were less likely to move to a different school or change roles if they reported good relationships with their colleagues. In addition, they were more likely to move if they taught with a large proportion of unqualified teachers.<sup>142</sup> Emerging evidence suggests that better trained teachers — especially those who teach in high-need schools — want to teach with those who have similar preparation and can collaborate effectively.

## A Brief Review of Initial CTQ Teacher Working Conditions Findings

With support from the National Education Association, CTQ worked — from 2004-07 — with coalitions of state policymakers and practitioners to better understand working conditions across several states.<sup>iii</sup> (For a review of several reports, go to [www.teachingquality.org](http://www.teachingquality.org)). Conducting full population surveys of all school-based licensed educators, the research evolved rapidly — and data have been used for improvements in both policy and practice.

Drawing on a collection of existing instruments — most notably the School and Staffing Survey (SASS) — CTQ and its teacher association (NEA state affiliates) and policy partners (e.g., governor’s office and/or state department of education) have examined how the factors of time, professional development, leadership, empowerment, and facilities and resources can influence student learning conditions and facilitate teacher retention. The instruments have been developed over time, building upon on a combination of well-honed national survey items as well as those negotiated among a diverse group of local stakeholders (e.g., teacher union leaders, school administrators, education advisors to governors, state education agency officials, etc.).

Several states have conducted the surveys more than once. In North Carolina, teacher working conditions data have been assembled in 2004 and 2006 (administered by CTQ), and most recently again in the Spring of 2008. Now teacher working conditions are being considered as a measure of accountability — especially for principals who are charged with managing a school climate that supports effective teaching and offers unique opportunities to reflect on the meaning of the results and the efficacy of the efforts. Initial findings from large-scale, teacher working conditions surveys in North Carolina as well as Arizona have indicated that supportive school environments — where teachers are partners in decision-making with school leaders who have a strong instructional emphasis — appear to be related to teacher retention. While clear claims to the direct connections between certain working conditions and student achievement gains may be premature, CTQ’s initial research has prompted a number of policymakers to pay more attention to “the resources needed to keep good teachers in schools.”<sup>iv</sup>

Over the three-year period, different approaches were used to finalize instrumentation, market the survey to increase response rates, and to assemble other student and teacher data to conduct analyses of the effects of working conditions on teacher retention and student achievement. As a result, the reports are not easily compared and assessed. While wording of the survey items focused on time, facilities and resources, empowerment, school leadership, and professional development have remained relatively the same, different analytic strategies have been used to meet a number of challenges: varied response rates and response-bias, the use of factor analysis and dealing with multi-collinearity, small cell sizes for specific analyses, and the lack of longitudinal student test scores and meaningful teacher retention data. For example,

---

<sup>iii</sup>Beginning in 2008, the National Education Association is working with the New Teacher Center (at the University of California-Santa Cruz) to expand the initiative — using similar instruments and analytical approaches.

<sup>iv</sup> See Governor Sebelius of Kansas, and her 2007-08 Education Commission of the States initiative, *Great Teachers for Tomorrow*, which focused on how policymakers and education practitioners can positively affect workplace conditions and create school environments that make teachers want to stay.

different state reports relied on different response rate thresholds (35-50%) to determine which schools were included in the analyses and which ones got access to their data for school improvement purposes. Recent analyses have suggested that the time and context in which teachers complete their web-based survey may have some influence on how they respond to the queries. Also, we have learned that in schools with “high” levels of poverty, teachers systematically had higher response rates — which may also bias results.<sup>143</sup>

Nevertheless, while different approaches have been used, and methodological improvements are warranted, some consistent findings have emerged. And while our analytical approaches have changed over time (especially from 2004 and 2006 to 2007), several themes have emerged, suggesting that working conditions do indeed matter for teacher retention and student learning.

Granted, we often could not find accurate teacher retention data at the school level to test for the precise relationships between working conditions and whether teachers remained teaching in their schools, moved to another, or left the profession altogether. These are very important issues to address. In the absence of sound attrition data, we asked teachers about their intentions. Consistently we found strong relationships between a number of working conditions issues and whether teachers intended to stay, move, or leave. For example, in our 2007 Arizona study we reported that the single greatest disagreement among stayers and non-stayers is on the issue of whether their schools are good places to work and learn. While 80 percent of stayers agree with this statement, only about half (55 percent) of leavers agree. In addition, teacher movers and leavers, compared to stayers, are most dissatisfied with the quality of leadership and with their perceived levels of empowerment (see Table 1).

**Table 1:  
Arizona Teacher Impressions of Empowerment and Leadership,  
by Career Intentions (2007)**

	Percent of Teachers Agreeing		
	Stayers	Movers	Leavers
<b>Empowerment Issues</b>			
Teachers are trusted to make sound professional decisions about instruction.	63%	32%	43%
In this school we take steps to solve problems.	68%	30%	47%
Teachers are recognized as educational professionals.	61%	29%	36%
<b>Leadership Issues</b>			
There is an atmosphere of trust and mutual respect within the school.	63%	22%	41%
Teachers feel comfortable raising issues and concerns that are important to them.	59%	21%	38%
Overall, the school leadership in my school is effective.	63%	23%	43%

The disparities between stayers and movers are not just reflective of whether working conditions are present, but also whether school leadership makes efforts to improve them. Teachers who want to stay in their schools are far more likely to believe leadership is working to improve teaching and learning conditions than are those who want to move to another school. While about half of stayers believe that leadership makes a sustained effort to address teacher concerns about empowerment (51 percent) and leadership issues (45 percent), less than one-sixth of movers agree with the same statements (16 percent). In addition, around one-half or more of those who want to stay in their current schools believe leadership supports concerns about improving other working conditions, versus only about one-fifth to one-quarter of movers (Table 2).<sup>144</sup>

**Table 2:  
Arizona Teacher Impressions of Leadership Efforts to Address  
Working Conditions, by Career Intentions (2007)**

School leadership makes a sustained effort to address teacher concerns about:	Percent of Teachers Agreeing			Difference in Percentage Points Between Stayers and Movers
	Stayers	Movers	Leavers	
Empowering teachers	51%	16%	28%	35
New teacher support	57%	25%	37%	32
The use of time in the school	49%	18%	29%	31
Facilities and resources	57%	26%	39%	31
Professional development	59%	29%	40%	30
Leadership issues	45%	16%	27%	29

Our findings over time regarding teacher working conditions and student achievement are not quite as straightforward. For example, with the 2006 North Carolina report, six different regression analyses were conducted on achievement — with two outcome variables at each school level: (a) the school performance index and (b) whether the school met or exceeded growth expectations. At the elementary, middle, and high school levels, different working conditions items seemed to explain the variance in the different school outcome measures. For example, at the high school level, reports of “reasonable” class size and school leaders who communicate clear expectations to parents and students were positively associated with school performance indices. At the middle school level it was reports of faculty commitment to student learning, effective group decision-making, and access to instructional materials. At the elementary level, it was reports of faculty commitment to student learning, teacher involvement in selecting instructional materials, and teachers held to high standards for delivering instruction.

In addition, for the 2006 Arizona report, correlations were run among the domain averages, teachers’ future intentions, percentage of students failing the state test (AIMS) and the percentage of students meeting or exceeding expectations on the state test. No other statistical tests were employed in the analyses and individual statements were not

included. Not surprisingly, the 2006 correlations were substantially different depending on the subject area of the AIMS tests in Arizona. The most consistent finding was that leadership was positively associated with high levels of achievement and negatively associated with low levels of achievement. The strongest level of association was between facilities and resources and mathematics achievement. Facilities and resources were only weakly associated with reading outcomes and not associated at all with writing outcomes. However, a number of leadership statements were associated with all student outcome measures, including atmosphere of trust and mutual respect, enforcement of discipline policy, clearly communicating expectations to teachers and parents, and having an environment where teachers are comfortable raising issues.

In 2007, we used the proportion of teachers reporting they intended to remain teaching in their current schools as an independent variable and residual gain scores from two years of state testing to examine the effects of working conditions on student achievement. Our regression analyses revealed important relationships between several teacher working conditions, teacher career intentions, and in very modest ways, student achievement gains. First of all, teacher perceptions of their overall school environment, the presence of school-wide problem-solving strategies, and the degree to which they believe that they are respected as professionals are directly related to their intent to stay at their current schools. However, results of analyses of the relationships between elementary, middle, and high school teacher perceptions of their working conditions and single-year *gains in student achievement* are mixed and suggest a need for multiple-year gains analyses to better understand several possible connections.<sup>145</sup> That said, in elementary schools, participation in the Arizona Career Ladder program appears to have a significant and positive impact on student achievement gains. Interviews with state and local officials suggest that differences in how school districts implement their career ladder models may explain the differential impact of this reform effort on student achievement.

In addition, in 2007, teacher responses to survey questions also were disaggregated and analyzed based on each teacher's declared participation in a mentoring program, whether as a mentor or as a teacher who received mentoring in her or his early career. Results from these analyses surfaced: (1) many Arizona novice teachers are mentored by teachers with heavy mentoring loads, mentored by other novice teachers, or not mentored at all; and (2) mentoring, if it is available, may help to buttress teacher working conditions that improve the likelihood that novice teachers will remain in teaching.

Several relevant patterns also emerged in analyses of the five major teacher working conditions categories addressed by the survey. First, educators are most positive about the ways in which *leadership* impacts individual faculty members, but their overall impressions of school leadership are muted by perceptions of problems with the broader school atmosphere established by principals and other administrators.

Second, Arizona educators' sense of personal *empowerment* ranges from marginally positive to very negative, with many noting the lack of opportunities to lead and to influence school policies and practices (but we do not know if they wanted those

opportunities). Third, *time* appears to be a major missing commodity in the eyes of most educators, and administrators appear to be at least somewhat aware of this problem. Fourth, in almost all areas, Arizona educators are generally positive about their *facilities and resources*, and most report feeling that their schools are safe. Fifth, Arizona educators express marginally positive support for the current availability of *professional development* opportunities, but fewer than half of all teachers report receiving substantial amounts of professional development in most teaching areas (including many areas in which they need the most support and preparation).

### Re-analyses of the North Carolina TWC Data

Just recently, Helen Ladd and colleagues at Duke University used the 2006 North Carolina dataset to examine working conditions, school characteristics, and teacher mobility. Their analysis focused on the departure decisions of individual teachers, with separate attention to the three levels of schooling. In their recently developed draft paper, the researchers concluded that “poor working conditions are predictive of teacher departure rates even after (they) control for many measurable characteristics of the school and that leadership, broadly defined, is the most important of the working conditions (they) were able to examine.”<sup>146</sup> However, given limitations of the current instrument, Ladd and her colleagues noted that their findings should be treated as descriptive, not as causal. They reminded readers, in their draft report, that there are a number of working conditions “components” not covered in the CTQ survey, and as such, attributing direct links between conditions and teacher mobility must be viewed with caution.

Ladd and her team also addressed a number of methodological issues that other teacher surveys have ignored. For example, they note that “teachers’ perceptions undoubtedly include a lot of random variation, or noise, relative to true signal” — especially at the level of the individual teacher. For example, they claimed that if a teacher completes the instrument “at the end of a difficult day,” then he or she may be far more negative than normal. Their solution was to aggregate teacher responses to the school level, thereby averaging out the random elements across teachers and reducing the variance relative to the signal (recognizing that there may be factors that affect all teachers and are capable of “creating noise”).

They also raised concerns about “reverse causation” — that is, a teacher who previously decided to leave her school or teaching altogether may “rationalize” the decision in part by rating her school’s working conditions as poor. In their analysis, this issue was minimized by excluding the teacher’s own perceptions when they constructed school-level aggregates to explicate teacher attrition. Finally, Ladd and her colleagues expressed concerns about multicollinearity among the measures, and the fact that “no one measure may have sufficient independent variation to generate a statistically significant coefficient.”<sup>147</sup>

Ladd and colleagues used factor analyses separately at the elementary, middle, and high school levels, to reclassify a number of questions among the categories into more coherent domains. Though Ladd and colleagues have labeled factors similar to those

used in the CTQ reports, there are [significant differences](#). Briefly, items for the six domains are summarized below.

1. *Leadership (all three levels)* includes the original 20 leadership items plus several that had been categorized under empowerment. The elementary and middle school factors also include questions related to teacher performance evaluations.
2. *Facilities and resources (all three levels)* includes items related to technology, office equipment and supplies, and professional space, as well as items regarding school environments that are clean, well-maintained and safe.
3. *Teacher empowerment (all three levels)* includes items related to whether teachers have roles in selecting instructional materials, setting grading and assessment practices, hiring new teachers, and school improvement planning.
4. *Professional development (all three levels, with some differentiation by level)* includes items related to sufficiency of funds, resources and time for teachers to take advantage of professional development opportunities, and at the high school level time available to collaborate with colleagues.
5. *Time (elementary and middle school only)* includes items about class sizes, time available to teachers to meet the needs of their students or to collaborate with colleagues, and the extent to which they are protected from administrative duties. (Note: The *class size* issue does not appear in any factor at the middle school level and *time* does not emerge as an independent factor at the high school level.)
6. *Teacher evaluation (high school only)* includes items related to the consistency, usefulness, and appropriateness of the evaluation of teachers.

Ladd and colleagues were able to use state administrative data to incorporate 15 school-level variables into their analytic model. These included student and teacher demographic data as well as information about age of the respective school buildings and district and school size. They also utilized the district's average salary supplement as a crude measure of salary differences across the state. (Note: North Carolina has a single salary schedule, but local school districts, based on their capacity and will, can offer a wide range of supplements to teachers.)

To set the stage for their analysis, Ladd and colleagues first examined generally how working conditions and the characteristics of the school are related to teachers' responses to one of the survey items: "Overall, my school is a good place to teach and learn." Not surprisingly they found "a clear and strong positive association between the leadership domain and the perceived quality of the school at all three levels of schooling, with the largest coefficient emerging at the middle school level."

In addition, facilities and resources were positively associated with perceived school quality, but just at the elementary and high school levels, and the coefficients are far

smaller than those for the leadership domain. Professional development did not relate positively to overall school quality at the elementary level and teacher empowerment did not appear to be positively associated with perceptions of school quality. For high school teachers, the perceptions of the consistency and appropriateness of teacher evaluations was positively, but weakly associated with perceptions of overall school quality. While “time spent outside of work” was negatively associated with perceptions of overall school quality, the “amount” of non-instructional time did not seem to make a difference in teachers’ views of whether their schools were “a good place to teach and learn.”

Interestingly, when there are more novices in a school and they entered teaching with lower than average licensure test scores, teachers in general are more likely to rate their school more negatively. While district salary supplements appear to have “no predictive power,” a teacher’s race does. In fact, black teachers at all three levels of schooling are more likely to have more positive views of school quality than their white counterparts.

Consistent with previous findings, the leadership domain emerges as a statistically significant predictor of teacher attrition at all three levels. Teacher empowerment also was a predictor of teacher attrition, but only at the high school level. Having a larger role in a variety of school activities – such as selecting instructional materials, planning, and budgeting – does not appear to be related to teachers’ overall rating of school quality. However, for teachers these issues do matter in terms of willingness to remain teaching at one’s high school. Time and facilities and resources did not seem to matter much, if at all. Only the variable for “time demands outside the work day” appears to influence teacher attrition and only at the elementary level. As a result the researchers concluded: “Findings such as these highlight the observation that not every working condition that affects the perceived quality of education in a school is a predictor of teacher departures.”

Interestingly, Ladd and colleagues note that teachers’ perceptions of the quality of school leadership are more highly predictive of teacher attrition rates than school characteristics. However, when school characteristics are excluded from the model, only at the elementary level does leadership affect teacher attrition. They also found that “teachers are reluctant to remain in schools with high proportions of black students.” But, their analyses also suggested that teachers’ “apparent reluctance” to teach in schools with minority students is “attributable to the poor working conditions in those schools.” The CTQ survey did not include questions about “support for students” and “accountability pressures” – both of which could more readily unpack these issues more carefully.

### **Toward Creating a Teacher Working Conditions 2.0 Survey**

Over the last several years, the TWC initiative has used a relatively common instrument in its state-level surveys with items focused on primarily five categories — time, facilities and resources, empowerment, leadership, and professional development. In some cases, a mentoring category is included. The literature suggests strongly that each one is important. However, there are a number of areas not covered that deserve consideration

— including preparation and assignments; student behavior, engagement, and mobility; and school-community relationships, as well as teachers’ lives outside of schools.

In addition, the instrument, as currently designed and used, does not distinguish clearly between the “hard” or task-related dimensions of the work environment (e.g., workload variables such as class size, hours of planning time, access to equipment, etc.) and the “soft” or social-related dimensions (such as teacher-principal trust, opportunities to participate in school level decision-making, etc.). We believe that some of the “hard” variables could be generally measured more accurately with either administrative data or through direct observation in a school. In any case, in consultation with our team of experts, we offer a critique of the current TWC instrument used in North Carolina — which pretty much has remained the same over three years (again see attached documents for copy of 2006 and 2008 TWC surveys used in NC).

### *Time*

Time is a critical construct as defined by the literature — and many of the items used have been vetted by other surveys of teacher working conditions. However, some of the items — e.g., related to class size — are likely to tap constructs other than time allocation. In addition, several items — e.g., those related to “non-instructional time” — need greater specificity. Given the research on the importance of content-specific professional development, it might be useful to add a question about time to collaborate with teachers in the same subject area (in middle and high schools, at least). Also, it might be useful to have more specific data on within-subject collaboration (parallel questions could be done for team or cross-subject collaborations).

In addition, given that teachers are still quite isolated from one another when it comes to the use of time, they are better situated to answer about their own position than about teachers in general (as the situation is often not the same). Other concerns raised included the lack of distinction between time for individual planning and time for collaborative planning. For example, elementary teachers may have a “common planning period” every day, but expectations for how often teachers in a grade level meet for “collaborative planning” may vary by grade. In some schools there are strong norms (or even union rules) that planning time for teachers is their “individual time” — even if it is “structured for collaborative planning.” Future surveys could pose separate questions about time available to meet with grade level teams and with teachers in the same subject area, and then follow up with how often teachers meet to plan lessons together and review student work.

While teachers may report that there is time to collaborate, the actual content of what they do during their joint work is important. If teachers use such time to plan lessons, serve as critical friends, review content and instruction, and devise new strategies to reach certain students, then time to collaborate may have a different impact on important outcomes (such as teacher retention and student achievement). If the time is used to collaborate on planning the next school dance or assembly, then time to collaborate may not have the same influence on intended outcomes. Thus, further questions about *how* time is used should be added to the survey.

Finally, the current survey doesn't distinguish between voluntary (e.g., coaching) and involuntary (e.g., developing lesson plans and grading) activities. Some of these tasks may not be completely voluntary, while others may or may not offer compensation. Tutoring is a good example — especially for teachers teaching in high-needs schools where the press to improve student test scores may force some teachers to “work on school-related activities outside of the regular school day.” These matters are critical to consider in assessing the role that “time” plays in framing teacher working conditions and their impact on teacher retention and effectiveness.

### *Facilities and Resources*

There is a relatively large body of evidence that school facilities, such as square feet per classroom, ability to control heating and cooling, and the availability of natural light, affect student achievement and teacher satisfaction. The facilities and resources section should include questions about the actual school buildings and classrooms. The current TWC survey raises important issues, but the items in this domain may place an overemphasis on technological tools as opposed to use of technology for teaching and learning. Twenty-first century tools are very important — but these items may not capture the school conditions in which teachers are most interested.

In addition, school safety is a critical issue, although the topic may fit well with facilities and resources (yet they might be correlated). Teachers might also worry about parking (and its safety) — an issue in some urban communities. There are also no questions about whether the classrooms are overcrowded. Finally, several items in this category are “double barreled” — e.g., teachers might have access to phones but not network drives (or vice versa), making it difficult to answer the question in a meaningful way.

### *Teacher Empowerment*

The current TWC survey raised important teacher empowerment issues, and mirrors, to a slight degree, items used in the national School and Staffing Survey (SASS). More precise paralleling of the SASS on the TWC items would allow comparisons to a longer time series and data from a single state. Using SASS data over time, Ingersoll has found very different influences of school policy and classroom control over planning and teaching as well as teacher retention.<sup>148</sup>

However, while the existing empowerment questions are relevant, they do not delve deeply enough into the content of the decision-making and its importance. For example, teachers may want to be involved in decision-making about educational issues, but which issues? Teachers also may not be able to play a role in selecting their teaching techniques or hiring new colleagues — but they may not want to do so.

Indeed, teachers can have considerable influence on “educational issues” or “professional decisions about instruction,” but the outcomes of those decisions may run counter to research-based evidence and could be negative for students. For example, teachers may want to track students according to ability or harshly discipline students for minor infractions. In addition, teachers' increased involvement in decision-making may increase retention for certain teachers, but not others in the same building. Some

teachers are not ready for empowerment — perhaps because of the lack of preparation for the tasks at hand.

In any case querying teachers about “educational issues” is less specific than “professional issues” — and thus any future surveys should focus more on the latter, rather than the former. Other questions currently in this category reflect a mix of “trust” and “positive school climate” constructs that, while they are extremely important, are not the same as “teacher empowerment.”

### **Leadership**

The school leadership items used in the current TWC instrument may be the strongest of any category. A number of scholars have used similar items in their own work. However, the instrument’s use of the term “school leader” may cause some confusion among teacher respondents as they rate their principal or assistant principal. Granted, the current instrument does ask teachers to identify “which position best describes the person who most often provides instructional leadership at (their) school.” The lack of specificity may affect how different teachers respond to the core items. Nevertheless, the items used appear to be the most comprehensive of those assembled for the survey — and may explain why in the re-analyses undertaken by Ladd and colleagues, leadership appears to trump other domains in explaining important outcomes.

Creating an atmosphere of trust and respect has emerged in both the TWC state analyses and other studies as an important leadership behavior. In fact, the 2006 TWC Clark County report concluded that “particular emphasis should be placed on building trust and development appropriate for distributed leadership approaches.” Yet, the

**To what extent do you agree or disagree that your principal (or assistant principal) does the following? (strongly disagree to strongly agree)**

- a. Makes clear to the staff his or her expectations for meeting instructional goals in mathematics
- b. Sets high standards for mathematics teaching
- c. Understands how children learn mathematics
- d. Sets high standards for student learning in mathematics
- e. Presses mathematics teachers to implement what they have learned in professional development
- f. Carefully tracks student academic progress in mathematics
- g. Knows what’s going on in my classroom
- h. Actively monitors the quality of mathematics teaching in this school
- i. Communicates a clear vision for mathematics instruction

**To what extent do you agree or disagree with the following statements? (strongly disagree to strongly agree)**

- a. The purpose of my school principal (or assistant principal) visiting my classroom is to directly assist me in improving my teaching.
- b. The purpose of my school principal (or assistant principal) visiting my classroom is to evaluate my teaching in terms of job performance.
- c. My principal (or assistant principal) possesses a thorough knowledge of the curriculum and related instructional materials.
- d. My principal (or assistant principal) appreciates the challenges involved in using the curriculum effectively.

current instrument has not been developed in order to begin unpacking how trust is developed and maintained. Tom Smith, another one of our expert consultants, has been using some items that get at the specific support that principals provide to teachers, which may prove helpful in surfacing how trust is established and sustained — and may be useful in any future iterations (see above sample items).

### *Professional Development*

Our consulting team concluded that the current TWC survey raised important professional development issues but would benefit from more precise paralleling of the SASS items in this domain. Specifically, the instrument should capture more about the quantity (10 hours over two years is too blunt) and quality of professional development (content focus, enduring, job embedded, participation with colleagues, etc.). With the 2006 TWC instrument, teachers were asked to answer a series of yes/no questions regarding whether strategies learned through professional development were useful. Likert scale items could surface more precise descriptions of the utility of a teacher's professional development experiences (see below).

**To what extent do you agree or disagree with the following statements about school and district professional development sessions this school year (including last summer)?**

*The professional development sessions:*

- a. Included opportunities to work productively with other teachers
- b. Advocated practices I do not believe in
- c. Led me to try new instructional approaches with my students
- d. Led me to use strategies that engaged all my students in challenging, problem-solving tasks
- e. Made me question my beliefs and assumptions about which teaching methods work best with students
- f. Focused on too many topics
- g. Were successfully linked to each other to form a coherent program (and not just a bunch of disjointed sessions)
- h. Were consistent with the way my teaching performance was evaluated
- i. Were consistent with my own goals for instruction

Several other suggestions also surfaced. Most teachers do not know who sponsors the professional development they experience — e.g., that provided by the local school district or the state. It would be more instructive to know if the professional development teachers experienced occurred in their schools and whether it was embedded in their teaching and focused on content from their classrooms. It is important to know the extent to which teachers teach high-needs students, but in doing so it would be more instructive to ask teachers to report the percentage of special needs or second language learners they teach, as opposed to just querying whether they teach students who fit these categories. In asking teachers questions about second language learners and their professional development, it will be important to query them as to the different native languages represented in the classrooms they teach. Finally, several

other professional development topics seemed to be missing, including the use of coaches, study groups, and professional learning communities.

Our efforts suggest that improved technical tools and analytical processes will be essential if policymakers and practitioners are to have the information they need to improve the working conditions that matter most for student achievement. Progress has been made in developing the working conditions constructs that more definitively influence valued teacher and student outcomes, but more work needs to be done.

A recent study of teacher retention highlights a number of working conditions variables that deserve some attention in the design of future instruments. For example, challenging relationships with parents and students may be more important than those with colleagues. Researchers found that of the former teachers who voluntarily left their schools, 70 percent reported that their relationships with their colleagues in their former school met their expectations. In addition, they found that the quantity and disconnectedness of curricular reforms confounded teachers and have become a major source of frustration. The researchers concluded: “New tasks constantly bombard many teachers and distract them from being able to focus on teaching. This new work results from changed curricula, additional assessments, team meetings, new procedures for working with students, and other reform initiatives.”<sup>149</sup> However, teachers were perhaps most challenged by the time spent responding to high stakes accountability (e.g., test preparation and paperwork) that did little to assist them in serving students. We are especially interested in beginning to better understand the working conditions that promote effective teaching and learning for today — but also for tomorrow.

## **Re-Conceptualizing Teachers’ Working Conditions 2.0**

With our analyses in mind we now move toward a more systemic view of teacher working conditions. In other words, it may be very productive to think more about working conditions as a dynamic, interactive system of influences on teachers. There are several reasons to think this way. The descriptive literature on teachers’ work, not to mention a visit to most any school, indicates that teachers rarely experience different aspects of their workplaces as discrete, independent sources of influence.<sup>150</sup> Instead, they experience them concurrently as an interactive, dynamic system of influences. A systemic perspective on teacher working conditions is also consistent with long-standing perspectives from other fields on individuals in organizational contexts, notably organizational theory and the social psychological theories of organizations.<sup>151</sup> In relation, there is some recent empirical work that indicates that school effectiveness can be better understood in terms of combinations of organizational factors and educational practices than in terms of these factors and practices as discrete independent elements.<sup>152</sup>

A systemic perspective would lead us to think about multiple aspects of working conditions and interactions among them. Some scholars who have considered more comprehensive frameworks have pointed to similar elements.<sup>153</sup> These include but are not necessarily limited to the structural and physical aspects of school and school district organization, social relationships among adults and students, school climate and culture (norms and values of the workplace), the politics of the workplace, the presence

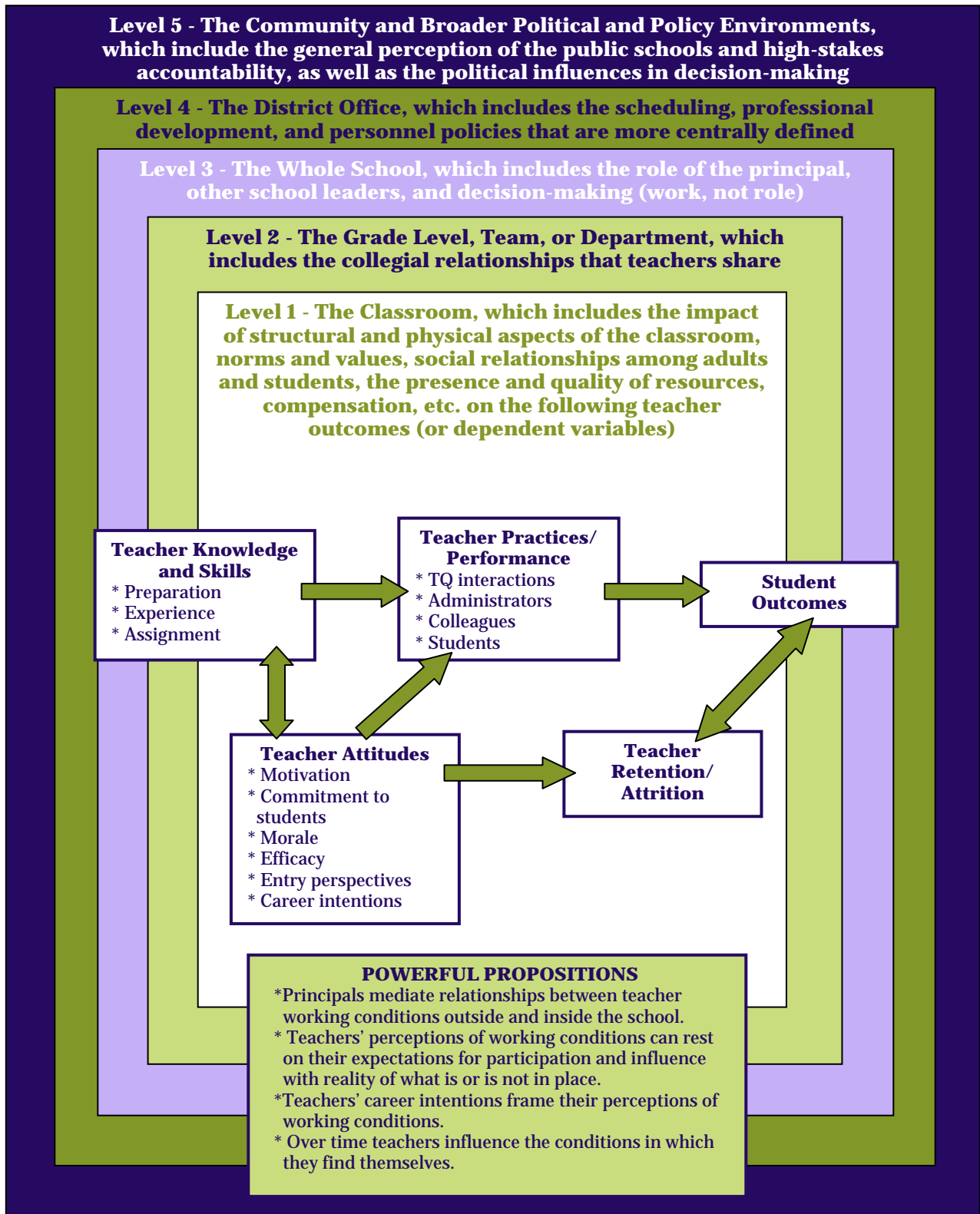
and quality of resources, the financial conditions of work (usually thought of in terms of teacher compensation), demographic features, and leadership and administrative practices. There is a small but growing body of literature that examines a number of these aspects of working conditions, usually independent of or controlling for other aspects. This literature has done much to advance our understanding; however, other literature (e.g., organization theory) suggests important relationships among such aspects in their relation to individual and organizational performance and effectiveness (e.g., between structure and power and politics, between power relationships and social relationships, etc.) and give reason to believe that different aspects of working conditions may function in a similar manner for teachers.

A systemic perspective would also lead us to think about such multiple aspects of working conditions within and across different levels of the school or workplace organization.<sup>154</sup> This perspective would lead us to think about at least five, multi-layered levels of teacher working conditions. First, classrooms are the most proximal to teachers' daily work and perhaps the most influential. Second, grade level, team, or departments can have a differential impact on teacher working conditions. Third, the whole school, especially given the role of the principal, readily shapes the conditions under which teachers work. Fourth, the district office frames working conditions as well, in terms of schedules, professional development, and personnel policies that are more often centrally defined. Fifth, the community and the broader political and policy environments — including general perception of the public schools and high-stakes accountability — affect teacher working conditions. There may be reason to believe that different aspects of various levels of a system of working conditions might have different influences on teachers' thinking, decision-making, practice, and effectiveness. For example, there is some evidence that classroom-level factors are more predictive than school-level factors of teachers' change in classroom practices through professional development.<sup>155</sup> There is also some evidence that the organization, policies, and practices of central offices can have important effects on teachers' work at the classroom level in interaction with and independent of school-level factors.<sup>156</sup>

We have sketched a rough model of how we begin to re-conceptualize teacher working conditions (next page).

## (Re)Conceptualizing Teacher Working Conditions

Teachers do not experience the various aspects of their workplace independently. This systemic approach attempts to view working conditions as a multi-level, interactive system of influences.



We do not claim that the model is fully inclusive, but we do try to identify multiple levels and dimensions of working conditions, including the structural, the social, the normative, the political, and the physical and tangible. This model specifies a number of “dependent” variables and relationships among them, a matter that we will discuss below. The model also makes provision for thinking about interactive influences of different dimensions of working conditions across different levels on different dependent variables. If nothing more, it offers a way to begin to consider the pieces of a system of working conditions together.

Briefly, the dependent variables identified in the model include teacher knowledge and skills, attitudes, practices and performance, student outcomes, and teacher retention/attrition. The model suggests that teachers’ knowledge, skills, and attitudes relate to their practice and performance, which relate to student outcomes. We are careful to note that preparation and experience as well as teaching assignment mediates a teacher’s knowledge and skill. As noted previously, recent research has shown how specialized preparation may increase teachers staying in their schools, even if their role changes.<sup>157</sup> Teacher retention is related to teachers’ perceptions of student outcomes and attitudes. [See discussion below about dependent variables.] These dependent variables are primarily influenced by conditions at the classroom level, which are embedded in conditions at the school level. Conditions at the school level (and perhaps the classroom level) are influenced by conditions at the district and community level, as well as in the larger policy environment. Leadership may mediate the relationship between conditions outside the school and inside the school (boundary management) and work more directly to shape conditions at the school level and classroom level. While the model needs additional work, it can be useful to guide research and provide some basis for interpreting findings from varied research studies on teacher working conditions.

By drawing on a systems perspective, teacher working conditions are seen as having dynamic, not static, qualities. Researchers (as well as policymakers) need to think about working conditions changing over time in their relationship to individual teachers and groups of teachers. And one would think that individuals possess some agency and influence over the conditions in which they find themselves — an issue we return to later.

### *A Definition and the Dependent Variable*

Our review suggests that there are no consistent definitions or shared understandings about what is meant by the term “working conditions,” nor what aspects of teachers’ workplace, job, occupation, or context writ large constitute their working conditions. As mentioned above, most efforts to bring together multiple aspects of working conditions into a single framework share some common elements. However, one matter to be considered is what should be included in a conceptualization, a definition of a system of working conditions. What factors are “in” and what factors are “out”? Should working conditions be defined in terms of the context(s) in which teachers work? Should the structure and functions of the work itself be included in such a definition? How far away from the immediate contexts of teachers’ work (e.g., classrooms, work groups, and schools) might a definition of a system of working conditions extend? To the broader

policy environment? To the institutional contexts of teachers' work and the occupation itself?

There are a number of ways to begin answering such questions. One approach is to conceptualize and define working conditions in terms of those “that matter.” Of course this requires thinking about what matters and to whom. One might think about this philosophically, ethically, politically, as well as empirically (among other ways). One might think about what matters in terms of particular “dependent variables” or outcomes of value; that is, those working conditions that are related significantly to these variables (empirically and practically) are “in.” As foregrounded in our graphic model, those dependent variables might include but might not be limited to the following (each with its own definitional challenges):

- *Teacher behavior, job performance* (e.g., teaching quality, interactions with others, etc.)
- *Teacher attitudes.* There are likely to be some attitudes more directly related to teacher performance, improvement, retention, etc. than others. For example, job satisfaction is an attitude that may not be as predictive of performance and effectiveness as other attitudes in that satisfaction may relate as much to complacency as performance. A few more “promising” attitudes include:
  - Motivation
  - Commitment to students, school, occupation, etc.
  - Morale
  - Efficacy
- *Teacher learning, development, and improvement of practice and job performance*
- *Occupational intentions, choice, and actions — entry, transfer among schools and districts, retention in the occupation*
- *Student outcomes (e.g., academic learning and achievement)*

There are alternative ways to conceptualize different aspects of teacher working conditions. These ways are not mutually exclusive, but they come at the matter from different directions. For example, most current thinking and research on teacher working conditions focus on traditional sociological and organizational issues, including school characteristics — structures as well as social power relationships, power relationships, etc. Some also include demographic characteristics among these factors. However, another way is to think about working conditions in terms of their psychological and political properties. So one might think about and define working conditions in terms of concepts such as autonomy and self-determinism, certainty and ambiguity, coherence and fragmentation, flexibility and rigidity, and stability and

turbulence. Any of these qualities might be found in different configurations of structure, social relationships, power relationships, etc. What might matter most is the presence, quality, and intensity of particular properties rather than the organizational configurations that “house” them.

Thinking about what matters now in teacher working conditions may be different than what may matter in the future. The design of teachers’ work and the design of school organization may need to be very different in a future of increasing uncertainty and rate of external change. (Current surveys of teacher working conditions focus more on, at best, a late 20<sup>th</sup> century model of schools and not on a 21<sup>st</sup> century model.) The general argument is that schools need to reorient themselves from a focus on stability to a focus on flexibility and continuous improvement to adapt to and innovate in increasingly ambiguous and turbulent environments. Indeed, the design of teachers’ work and organization of the school may need to be very different to promote the type of student learning and development envisioned for the future.<sup>158</sup> For example, the emergence of teacher-led schools and cooperatives, the global trade in pedagogy, “24/7” virtual teaching and learning, and the creation of residency models that could replace current university-based and alternative preparation programs — all posit different ways to think about working conditions. The point is that while it may be important to continue to conceptualize teacher working conditions according to how things are now, it may also be important to think about conceptualizing, defining, and contemplating working conditions of the future.

We are not completely clueless about this. Studies of different types of organizations in public, private, for-profit, and non-profit sectors have documented a number of organizational design features and capacities that are different from the ways in which schools are currently structured and that are likely to be more conducive to continuous organizational improvement, innovation, and success in increasingly uncertain and fast-changing environments.<sup>159</sup> Such design features and capacities may “rewrite” to some extent the nature of teacher working conditions and/or the relationships between their working conditions and the outcomes in which we are interested.

There is one more consideration and that is defining working conditions in terms of things that are malleable and can be manipulated through leadership and/or policy. This may be an important concern that would give greater weight to factors such as class size and composition, than to factors such as the institutional characteristics of the teaching occupation. It is not that the institutional contexts of the teaching occupation might not matter. It is a question of level of attention and emphasis. When it comes to designing survey research, we need to ask questions that matter without asking too many so that we do assemble honest and reliable responses.

### *Looking More Closely at the Individual*

Systems and ecological perspectives emphasize not only the multiple dimensions and levels of context but also the role of the individual in interaction with those dimensions and levels.<sup>160</sup> What happens with regard to individual thought, decisions, and actions comes not simply from direct and unfiltered influence from context but through the

interpretation of that context by the individual, indeed, the individual's own agency in and influence on the context. As noted previously, much of the current thought and inquiry about teacher working conditions does not consider the individual teacher very much or tries to "control" for the individual to understand the direct influences of particular aspects of working conditions. We believe this is very important given that the leader of the schools of the future will not be able to plan on recruiting and retaining teachers for the traditional 30-year stint or those who will serve in similar roles irrespective of dispositions, training, and career intentions.

If we were interested in going further to understand the relationship between teacher working conditions and their attitudes, performance, and decisions, we might consider how the system of working conditions might relate to different demographic groups of teachers, to teachers at different stages of their careers, and to teachers at different stages of adult development.<sup>161</sup> For example, that attrition among beginning teachers is so high and that their decisions to move from their schools to others or to leave the occupation entirely are associated in significant part to their working conditions suggests that something may be occurring differently with them than with teachers further in their careers and perhaps further in their adult development who work in similar conditions. Or the issue may be generational and economic. The U.S. Department of Labor estimates that today's young adult will hold 10-14 jobs — by age 38. Nevertheless, for teachers, interactions and relationships with their working conditions might change not only as those conditions change but as they learn new things, develop in career and as an adult, or respond to shifting cultural and economic norms.

The importance of considering the individual teacher can be inferred from a number of different types of studies. For example, many studies have documented how individual cognition shapes in significant ways the interpretation and enactment of programs and policies.<sup>162</sup> Another example is a small group of studies conducted some time ago on teacher participation in decision-making, an aspect of many recent treatments of teacher working conditions. These studies found that teachers' individual norms and perceptions mediated their interest in, willingness to, and satisfaction with their ability to participate in different domains of school-level decision-making.<sup>163</sup> A central concept in this work is that of "decision deprivation." *The idea is that the actual opportunities for participation and influence matter less to teachers than the difference between what they desire or expect and the real or perceived opportunities they have for participation and influence. (We note again that in the past teachers have been asked questions related to their role in influencing policies and programs irrespective of asking them whether it mattered.)*

### **Understanding the Nature of Influence**

Our research as well as the overall literature has not gone very far in theorizing or exploring empirically how and why individual elements of working conditions or systems of working conditions might influence teachers in particular ways. One way to think about this is to employ the concept of levers or mechanisms of influence that have been used to explore the nature of policy influence and the influence of work redesign

and various reforms on teachers and their classroom practice. For example, in reference to policy influence, Lorraine McDonnell and Dick Elmore refer to mandates, inducements, initiatives to develop capacity, and the redistribution of authority.<sup>164</sup> Brian Rowan examines various “commitment” and “control” strategies as orientations of school organization conducive to teacher effectiveness.<sup>165</sup> Smylie and his colleagues consider the role of incentives, social-professional and bureaucratic controls, and learning or capacity-building opportunities as mechanisms of influence in the design of teachers’ work and in organizational reforms designed to influence teachers’ work in classrooms.<sup>166</sup>

There are deep and rich theoretical and empirical literatures inside and outside of education on such mechanisms in organizational context that might be used to help better understand how and why working conditions might have specific influences on teachers. Particular working conditions or systems of conditions might be thought to “contain” or “evoke” particular mechanisms (e.g., incentives, controls, learning opportunities) that might explain teacher motivation, decision-making, and behavior. Exploring theoretically and empirically how such ideas relate to teachers and their working conditions might be especially productive.

## **Recommendations**

We have learned a great deal about working conditions and their potential effects on teacher retention and student achievement. CTQ’s multi-year history of conducting population surveys in seven states, combined with a wealth of literature and expert opinion, lead us to offer specific recommendations and ideas for further investigations.

Our review of recent research and relevant research suggests that there is a great deal written on the topic, and there is no shortage of claims that working conditions make a difference for teacher retention, and in some cases, student achievement. No doubt working conditions matter, but most claims — even our own — can be overstated or too broadly specified to be of much good for policymakers and practitioners alike. The research to date has been important — and in some cases groundbreaking. However, empirical work has not defined clearly what counts for working conditions and how they matter inside of schools and between them as the teacher labor market becomes more competitive and demands for more effective teaching increase. Much more needs to be learned about the intersection of salaries and non-pecuniary working conditions as most researchers address these issues separately.

Our review of the CTQ approach and findings suggest clearly that more work needs to be done in designing studies of working conditions that can more clearly and reliably inform policymakers and practitioners. One instrument may not be able to do both well — at least not without more investments in the research process as well as the education of the consumers of the data. Missing data and non-response bias have implications for how policymakers as well as practitioners interpret and use the teacher working conditions survey results. Survey wording and analytical tools matter a great deal. Different approaches easily surface different findings. However, no matter how well designed an instrument or careful the analyses, no one study or approach can clearly

define teacher working conditions. The topic is too big and complex. As a result we wonder how different researchers, using different tools and methods, could build off a common framework in order to begin piecing together a more coherent story of teacher working conditions.

Our re-conceptualization includes a graphic representation of *the key working conditions constructs that reveals the potential causal chain of how they affect student outcomes*. Such a framework is a necessary component of the larger goal of identifying potential influences of working conditions on teacher retention and student achievement. It will also aid in creating a common and coherent language. As Charles Thompson, one of our team members noted, “In the absence of some theoretical structure, one can easily fall into mere correlation fishing.”

We are not cavalier about the difficulty in disentangling the effects of working conditions on student achievement — especially isolating those key factors that make a difference for important outcomes over time. We believe there is likely to be a strong interaction between working conditions and the ability to attract and retain more effective teachers — and that having more effective colleagues is a working condition in and of itself. We believe the working conditions that make a difference for some teachers (e.g., in terms of retention) may not for others. What makes a difference for teacher retention may or may not make a difference for student achievement — depending on which working conditions influence which teachers stay or leave — and how the remaining teachers work together or not in efforts to improve student learning.

We believe it is time for both scholarly and practice communities to come together and develop a “theory of action” behind working conditions. As suggested earlier we are under no delusion that we can create a unified theory — but it is time to build one that can inform (if not perfect) both future research and the improvement of the conditions that allow good teaching to flourish and spread. In developing a theory of action, we hope to shed light on whether all teachers prefer the same types of working conditions or whether many forms of “positive” working conditions work best for some educators in one context but not another. We believe this area of inquiry needs greater clarity about “subjective versus objective” factors affecting working conditions as well as those that can be addressed at the classroom, school, district/community, state, and national levels. To do so we offer a set of *ten* recommendations — some very global and others very specific — followed by a “look” at how we might proceed in the future.

1. Clarify teacher working conditions research in order to improve policy and practice. It is difficult for one instrument and process to serve both ends. A research design with a matrix sampling approach may help resolve inherent tensions in serving the needs of policymakers and practitioners.
2. Create a team of researchers and practitioners to redesign and periodically update the survey — based partly on focus groups with the users of the survey, case studies of higher- and lower-achieving schools (with different TWC results), and research evidence about which factors appear to be most important for teacher retention and student achievement.

3. Refocus the current instrument in order to:
  - a. Address findings from new factor analyses, including ways to better distinguish school leadership and teacher empowerment;
  - b. Refine and improve survey items related to time and empowerment;
  - c. Include important working conditions related to curriculum, student behavior and engagement, community and student support, and high-stakes accountability; and
  - d. Include additional demographic data to better understand how teacher characteristics and assignments mediate the effects of working conditions.
4. Develop and use better measures of teacher turnover — including a finer-grained analysis of “good” and “bad” attrition as well as a much closer look at not only those who in stay in teaching, move to another school, or leave education altogether, but those who are also role changers and same school stayers.
5. Improve response rates and test for non-response bias by:
  - a. Conducting analyses of schools with higher and lower response rates and making adjustments for both reporting and analytical purposes;
  - b. Using more items benchmarked to the School and Staffing Survey (testing for non-response bias by comparing the results of the items that overlap the two instruments);
  - c. Establishing a consistent and research-based response rate threshold for use in any analyses; and
  - d. Reviewing insightful analyses of how to treat missing data and their implications for teacher working conditions surveys.<sup>167</sup>
6. Develop strategies to merge teacher working conditions with other student and teacher data sets to answer other important policy questions — e.g., linking school ID/address with NCES district mapping or GIS data to provide additional information about the socioeconomic context of the neighborhoods where schools are located.
7. Employ open-ended questions that ask teachers who have been at the same school about what policies, practices, or behaviors have most affected teacher working conditions.
8. Conduct additional surveys of school principals, with a focus on preparation and support they need to improve teacher working conditions.<sup>168</sup>

9. Conduct in-depth comparative analyses of high-need schools that have high levels of retention and relatively high levels of student achievement to high-need schools with low levels of teacher retention and relatively low levels of student achievement. These comparative analyses should focus on the characteristics of the school leaders as well as the specific actions of the school leaders.
10. Conduct in-depth comparative analyses of working conditions for teachers who enter teaching through different pathways and with different preparation — and determine how they affect individual and whole school retention.

## **A Look to the Future**

As we look to the future it is important to reflect on the past. Researchers have only recently surfaced evidence that teachers have the most powerful influence on whether students will learn in school. Yet, in high-need school districts throughout our nation, low-income students and those of color are far less likely to be taught by qualified, well-supported, and effective teachers. Across the country, schools and districts routinely implement a variety of interventions designed to address their failure to provide high-quality educational opportunities for all students.

Recently, major foundations and leading policymakers are promoting the strategic management of human capital as a key to closing the student achievement gap in America's public schools.<sup>169</sup> Defined as “the acquisition, development, performance management and retention of top talent in the nation's schools,”<sup>170</sup> initial attention has been directed more heavily toward recruiting and rewarding teachers for improved test scores in high-need schools than on creating the conditions that retain teachers and promote their success in teaching high-need students. As more school districts focus on recruiting teachers with the “right” dispositions necessary for teaching in high-need communities, they often overlook the cultural competencies and professional learning communities necessary to teach effectively.<sup>171</sup> High-need schools present many challenges to teachers — who need to see themselves as change agents, but also must have the supports in place in order to play that role successfully.

There is no question that much more work needs to be undertaken to understand and improve teacher working conditions for the here and now. Granted, policymakers and practitioners need stronger evidence to improve teacher working conditions. However, on a moral basis, the lack of perfect data should not get in the way of progress. As Sykes noted:

Teachers are owed decent working conditions as a term of their employment and as a function of their office. Certain minimal conditions, for example, may be specified in terms of occupational health and safety together with provisions in the contract (an example might be the maximum number of “preps” that a high school teacher will be assigned; or the duration of the work day, week, and year). Such conditions are relatively uncontroversial even if they may not be fully realized in many locales.

However, he also claimed:

While setting the floor for working conditions may be relatively easy in principle, establishing the higher ground associated with the office of teacher — framed by the idea of professionalism — is much more difficult.

We must measure teacher working conditions more accurately. But even if we do, how do we know what counts for “good” working conditions. What is standard for how much time teachers should have to plan together or how much influence they should have in instructional decisions? Should all teachers be empowered to make professional decisions? Or should just the professionals be empowered to do so? To make matters more complicated are we considering teaching as a profession today — or one tomorrow?

Consider the press for 21<sup>st</sup> century schools and the working conditions needed for teachers to develop and use:

- Deep knowledge of individual student characteristics and capacities and rapidly changing content, as a precursor to setting learning goals and planning lessons (as opposed to teaching all students at a grade level or in a course the same things as preparation for a test);
- Virtual tools that create a risk-free, interactive, student-centered learning environment which nurtures creativity as well as global perspectives and communications skills, as well as a venue for their own professional development;
- Diverse and valid forms of assessment — including “serious gaming” — and experience in using the data to diagnose student learning difficulties and prescribe strategies to address them as well as share with colleagues inside their schools and across different professional learning communities — throughout the United States or even around the globe;
- The integrated health and social services available with full-service schools so student needs can be more effectively addressed in improving academic achievement and readiness for the 21<sup>st</sup> century global economy and America’s evolving democracy; and
- The growing trade in global pedagogy so that teaching expertise can be rapidly spread (through video streaming and online mentoring) and opportunities to earn more professional compensation through entrepreneurial pedagogical activities and initiatives.

Preparation for teaching content in the future “looks different” when the amount of new technical information is doubling every two years — and predicted to double every 72 hours by 2010. One study has estimated that 40 exabytes (that’s  $4 \times 10^{19}$ ) of unique new information will be generated worldwide this year — which is more than what was

produced in the previous 5,000 years. Time for teachers to learn could be redefined with Web 2.0 tools such as MySpace, which had over 100 million registered users — two years ago — and at that time the average page was visited 30 times a day. Access to and processing of data and ideas is the coin of the realm. Third generation fiber optics under development pushes 10 trillion bits per second down one strand of fiber. (For more details go to “Shift Happens” on [YouTube](#).)

Globalization will bring more and more ideas about accelerating the effectiveness and professionalization of teachers to the forefront. Web 2.0 (and soon 3.0) tools can drive changes and ramp up the de-isolation of teaching — and transform what is meant by the right teacher working conditions. Generation Y recruits to teaching who are not expected to (nor will) stay in teaching for 10 years, much less a career, will demand working conditions different from those seasoned experts who are needed to stay for the long haul (and who can mentor the less experienced itinerant teachers who will also serve the system).

However, serving all public school students well into the future will require more than just the transformation of the teaching profession. We will need to create community schools that are "hubs of educational services" for children and families and offer disadvantaged school communities additional resources for safe housing and health care.<sup>172</sup> Such efforts would require some teachers to be pedagogical experts as well as community organizers. The “right” working conditions must provide teachers with space to work with other adults in the “system” around issues of change — how to promote civic participation, public action, and negotiation to build a new non-partisan political force that can help transform public education for all students in all communities. *Now is the time to understand and assess teacher working conditions 2.0 — and the future of a 21<sup>st</sup> century teaching profession. With support from several prominent philanthropies (including the Ford Foundation and the Spencer Foundation), the Center for Teaching Quality has begun to do just that — developing a series of longitudinal case studies and new instrument development as well as public forums that can inform new insights and strategies for developing and sustaining highly-functioning human capital systems for our nation’s public schools. Teaching is the profession that makes all others possible.*

(See [linked document](#) on CTQ’s next steps).

## Endnotes

- <sup>1</sup> Odden, A. and Kelly, J. (2008) Strategic Management Of Human Capital in Public Education. Madison WI: CPRE.
- <sup>2</sup> Sykes, G. (2008). *An inquiry concerning Teacher Working Conditions*. Paper prepared for the Center for Teaching Quality, Hillsborough, NC.
- <sup>3</sup> Hess, R. & Henig, J. (2008, February 6). Scientific research and policymaking: A tool, not a crutch. *Education Week*. <http://www.edweek.org/ew/articles/2008/02/06/22hess.h27.html?qs=Hess>
- <sup>4</sup> Berliner, D. (2002). Educational research: The hardest science of all. *Educational Researcher*, 31(8), 18-20.
- <sup>5</sup> Sanders, W.L. & Rivers, J.C. (1996). *Cumulative and residual effects of teachers on future student academic achievement*. Knoxville: University of Tennessee Value-Added Research and Assessment Center; Rowan, B., Chiang, F. & Miller, R.J. (1997). Using research on employees' performance to study the effects of teachers on students' achievement. *Sociology of Education*, 70(4), 256-284; Murnane, R.J. & Phillips, B.R. (1981). What do effective teachers of inner-city children have in common? *Social Science Research*, 10, 83-100; Hanushek, E., Kain, J. & Rivkin, S. (1998). *Teachers, schools, and academic achievement*. Working Paper 6691. Cambridge, MA: National Bureau of Economic Research; Darling-Hammond, L. & Youngs, P. (2002). Defining highly qualified teachers: What does scientifically-based research actually tell us? *Educational Researcher*, 31(9), 13-25; Clotfelter, C., Ladd, S. & Vigdor, J. (2007). *Teacher credentials and student achievement in high schools: A cross-subject analysis with student fixed effects*. Working Paper 11. Washington, DC: CALDER.
- <sup>6</sup> Murnane, R. & Steel, J. (2007). What is the problem? The challenge of providing effective teachers for all children. *The Future of Children*, 17(1), 15-43.
- <sup>7</sup> Lankford, H., Loeb, S. & Wycoff, L. (2002). Teacher sorting the plight of urban schools: A descriptive analysis. *Educational Evaluation and Policy Analysis*, 24(1), 37-62; Ingersoll, R. (1999). The problem of underqualified teachers in American secondary schools. *Educational Researcher*, 28(2), 26-37; Mayer, D.P., Mullens, J.E. & Moore, M.T. (2000). *Monitoring school quality: An indicators report* (NCES 2001-030). Washington, DC: NCES.
- <sup>8</sup> Johnson, S.M., Berg, J.H. & Donaldson, M.L. (2005). *Who stays in teaching and why: A review of the literature on teacher retention*. Cambridge, MA: Harvard Graduate School of Education, The Project on the Next Generation of Teachers.
- <sup>9</sup> Rosenholtz, S. (1989). *Teacher's workplace: The social organization of schools*. New York: Longman.
- <sup>10</sup> Berry, B. (2007). *Recruiting and retaining quality teachers for high-needs schools: Insights from NBCT summits and other policy initiatives*. Washington, DC: National Education Association.
- <sup>11</sup> Hanushek, E., Kain, J. & Rivkin, S. (2004). Why public schools lose teachers. *Journal of Human Resources*, 39(2), 326-54.
- <sup>12</sup> National Center for Education Statistics (2004). *Teacher attrition and mobility: Results for the Teacher Follow-up Survey, 2000-01*. Washington, DC: NCES.
- <sup>13</sup> See Loeb, S. & Darling-Hammond, L. (2005). How teaching conditions predict teacher turnover in California schools. *Peabody Journal of Education*, 80(3), 44-70.
- <sup>14</sup> Loeb, H., Efers, A., Knapp, M. & Plecki, M. (2004). *Preparation and support for teaching: Working conditions of teachers*. Working Paper 2. Seattle: Center for the Study of Teaching Policy at the University of Washington.
- <sup>15</sup> Futernick, K. (2007). *A possible dream: Retaining California teachers so all students learn*. Sacramento: California State University.
- <sup>16</sup> Hanushek, E.A. & Rivkin, S. (2007, Spring). Pay, working conditions, and teacher quality. *The Future of Children*, 17(1), 69-86.
- <sup>17</sup> Reichardt, R, Snow, R, Schlang, J., and Hupfeld, K. (2008). Overwhelmed and Out: A Research and Policy Report from Principals, District Policy, and Teacher Retention. Connecticut Center for School Change. <http://www.nctq.org/nctq/research/1220022778926.pdf>
- <sup>18</sup> Banicky, L.A. & Noble, A.J. (2001). *Detours on the road to reform: When standards take a back seat to testing*. Publication T01.022.2. Newark, DE: Delaware Education Research and Development Center, University of Delaware. Available online at <http://www.rdc.udel.edu/reports/t010222.pdf>
- <sup>19</sup> For example, see Rosenholtz, S.J. (1989). *Teachers' workplace: The social organization of schools*. New York: Longman; Talbert, J., McLaughlin, M. & Rowan, B. (1993). Understanding context effects on secondary school teaching. *Teachers College Record*, 95(1), 45-68; Bryk, A.S. & Schneider, B. (2002). *Trust in schools: A core resource for improvement*. New York: Russell Sage Foundation.
- <sup>20</sup> Ingersoll, R.M. (2003). *Who controls teachers' work?: Power and accountability in America's schools*. Cambridge, MA: Harvard University Press.
- <sup>21</sup> Hanushek, E.A. & Rivkin, S. (2007, Spring). Pay, working conditions, and teacher quality. *The Future of Children*, 17(1), 69-86.
- <sup>22</sup> Sykes, G. (2008). *An inquiry concerning Teacher Working Conditions*. Paper prepared for the Center for Teaching Quality, Hillsborough, NC.
- <sup>23</sup> Vedder, R. (2003, Summer). Comparable Worth. *Education Next*, 3(3). <http://www.hoover.org/publications/ednext/3347411.html>
- <sup>24</sup> Ingersoll, R. (2001, Fall). Teacher turnover and teacher shortages: An organizational analysis. *American Education Research Journal*, 38, 499-534.

- <sup>25</sup> Ingersoll, R. (1999). The problem of underqualified teachers in American secondary schools. *Educational Researcher*, 28(2), 26-37.
- <sup>26</sup> Futernick, K. (2007). *Excellence loves company: A tipping point turnaround strategy for California's low-performing schools*. San Francisco: WestEd.
- <sup>27</sup> Smylie, M. & Allen, L. (2005). *Workplace conditions of the American public school teacher: A 40-year perspective*. Washington, DC: National Education Association.
- <sup>28</sup> Johnson, S.M. (2006). *The workplace matters: Teacher quality, retention, and effectiveness*. Washington, DC: National Education Association.
- <sup>29</sup> Johnson, S.M., Berg, J.H. & Donaldson, M.L. (2005). *Who stays in teaching and why: A review of the literature on teacher retention*. Cambridge, MA: Harvard Graduate School of Education, The Project on the Next Generation of Teachers.
- <sup>30</sup> Quartz, K.L. (forthcoming). The careers of urban teachers: A synthesis of Findings from UCLA's Longitudinal Study of Urban Educators. In M. Bayer and U. Brinkjaoer. *Anthology on Teachers' Career Trajectories*.
- <sup>31</sup> Murnane, R.J. & Phillips, B.R. (1981). What do effective teachers of inner-city children have in common? *Social Science Research*, 10, 83-100; Hanushek, E., Kain, J. & Rivkin, S. (1998). *Teachers, schools, and academic achievement*. Working Paper 6691. Cambridge, MA: National Bureau of Economic Research; Clotfelter, C., Ladd, S. & Vigdor, J. (2007). *Teacher credentials and student achievement in high schools: A cross-subject analysis with student fixed effects*. Working Paper 11. Washington, DC: CALDER; Murnane, R. & Steel, J. (2007). What is the problem? The challenge of providing effective teachers for all children. *The Future of Children*, 17(1), 15-43; Podgursky, M., R. Monroe, et al. (2004). "The Academic Quality of Public School Teachers: An Analysis of Entry and Exit Behavior." *Economics of Education Review* 23(5): 507-518; Rivkin, S., E. A. Hanushek, et al. (2005). "Teachers, Schools and Academic Achievement." *Econometrica* 73(2): 417-458; Rockoff, J. E. (2004). "The Impact of Individual Teachers on Students Achievement: Evidence from Panel Data." *American Economic Review* 94(2): 247-252; Ballou, D. (1996). "Do Public Schools Hire the Best Applicants?" *Quarterly Journal of Economics* 111(1): 97-13; Goldhaber, D. (2004). *Why Do We License Teachers? A Qualified Teacher in Every Classroom: Appraising Old Answers and New Ideas*. F. Hess, A. J. Rotherham and K. Walsh. Cambridge, MA, Harvard Education Press: 81-100.
- <sup>32</sup> Lankford, H., Loeb, S. & Wyckoff, L. (2002). Teacher sorting the plight of urban schools: A descriptive analysis. *Educational Evaluation and Policy Analysis*, 24(1), 37-62;
- <sup>33</sup> Quartz. *Ibid*.
- <sup>34</sup> Darling-Hammond, L. (1997). *Doing what matters most: Investing in quality teaching*. New York: National Commission on Teaching & America's Future.
- <sup>35</sup> National Education Association (2008). *Teacher professional pay*. Washington, DC: Author. Retrieved on July 19, 2008 at <http://www.nea.org/pay/teachermyths.html>
- <sup>36</sup> Doherty, K.M. (2001). Poll: Teachers support standards—with hesitation. *Education Week on the Web: Editorial Projects in Education*, 20(17), 20.
- <sup>37</sup> Allen, M.B. (2005). *Eight questions on teacher recruitment and retention: What does the research say? A summary of the findings*. Denver: Education Commission of the States (ECS). Report available online at: <http://www.ecs.org/trrreport>
- <sup>38</sup> Watkins, P. (2005). The principal's role in attracting, retaining, and developing new teachers: Three strategies for collaboration and support. *The Clearing House*, 79(2), 83-87; Ware, H. & Kitsantas, A. (2007). Teacher and collective efficacy beliefs as predictors of professional commitment. *The Journal of Educational Research*, 100(5), 308-321.
- <sup>39</sup> Ma, X. & MacMillan, R.B. (1999). Influences of workplace conditions on teachers' job satisfaction. *The Journal of Educational Research*, 93(1), 39-53; Thompson, D.P., McNamara, J.F. & Hoyle, J.R. (1997). Job satisfaction in educational organizations: A synthesis of research findings. *Educational Administration Quarterly*, 33, 7-37.
- <sup>40</sup> McLaughlin, M.W. & Talbert, J. (2001). *Professional communities and the work of high school teaching*. Chicago: University of Chicago Press.
- <sup>41</sup> Rosenholtz, S.J. (1989). *Teachers' workplace: The social organization of schools*. New York: Longman.
- <sup>42</sup> Smith, T.M. & Ingersoll, R.M. (2003). *Does teacher mentoring matter?* Unpublished manuscript.
- <sup>43</sup> Watkins, P. (2005). The principal's role in attracting, retaining, and developing new teachers: Three strategies for collaboration and support. *The Clearing House*, 79(2), 83-87; Ware, H. & Kitsantas, A. (2007). Teacher and collective efficacy beliefs as predictors of professional commitment. *The Journal of Educational Research*, 100(5), 308-321.
- <sup>44</sup> Coburn, C. and Russell, J. (2008). District Policy and Teachers' Social Networks. *Educational Evaluation and Policy Analysis*. September. 30, 3, pp 203-35.
- <sup>45</sup> Darling-Hammond, L. (1997). *Doing what matters most: Investing in quality teaching*. New York: National Commission on Teaching & America's Future.
- <sup>46</sup> *Ibid*.
- <sup>47</sup> Pate-Bain, H., Achilles, C.M., Boyd-Zaharias, J. & McKenna, B. Class size does make a difference. *Phi Delta Kappan*, 74(3), 253-256.
- <sup>48</sup> *Ibid*.

- <sup>49</sup> Fowler, W.J. (1992). *What do we know about school size? What should we know?* Paper presented at the American Educational Research Association Annual Meeting.
- <sup>50</sup> Johnson, S.M. (2006). *The workplace matters: Teacher quality, retention, and effectiveness*. Washington, DC: National Education Association.
- <sup>51</sup> Ibid.
- <sup>52</sup> Howell, P., Miller, B. & Krantzler, N. (1997). Appendix A: School facilities. *The Future of Children*, 7(3), 127-132.
- <sup>53</sup> Ibid.
- <sup>54</sup> Firestone, W.A. & Pennell, J.R. (1993). Teacher commitment, working conditions, and differential incentive policies. *Review of Educational Research*, 63(4), 489-525.
- <sup>55</sup> Howell, P., Miller, B. & Krantzler, N. (1997). Appendix A: School facilities. *The Future of Children*, 7(3), 127-132.
- <sup>56</sup> Buckley, J., Schneider, M. & Shang, Y. (2004). *The effects of school facility quality on teacher retention in urban school districts*. Chestnut Hill, MA: National Clearinghouse for Educational Facilities.
- <sup>57</sup> Schneider, M. (2003). *Linking school facility conditions to teacher satisfaction and success*. Washington, DC: National Clearinghouse for Educational Facilities.
- <sup>58</sup> Murnane, R.J. & Steele, J.L. (2007). What is the problem? The challenge of providing effective teachers for all children. *The Future of Children*, 17(1), 15-43.
- <sup>59</sup> Buckley, J., Schneider, M. & Shang, Y. (2004). *The effects of school facility quality on teacher retention in urban school districts*. Washington, DC: National Clearinghouse for Educational Facilities.
- <sup>60</sup> Ibid.
- <sup>61</sup> Murnane, R.J. & Steele, J.L. (2007). What is the problem? The challenge of providing effective teachers for all children. *The Future of Children*, 17(1), 15-43.
- <sup>62</sup> Cortese, A. (2005, February). Take a good look at paraprofessionals. *American School Board Journal*, 13; Giangreco, M.F. & Broer, S.M. (2007). School-based screening to determine overreliance on paraprofessionals. *Focus on Autism and Other Developmental Disabilities*, 22(3), 149-158; Lane, K.L., Fletcher, T., Carter, E.W., Osdejud, C. & DeLorenzo, J. (2007). Paraprofessional-led phonological awareness training with youngsters at risk for reading and behavioral concerns. *Remedial and Special Education*, 28(5), 266-276.
- <sup>63</sup> Ibid.
- <sup>64</sup> Gerber, S.B., Finn, J.D., Achilles, C.M. & Boyd-Zaharias, J. (2001). Teacher aides and students' academic achievement. *Educational Evaluation and Policy Analysis*, 23(2), 123-143.
- <sup>65</sup> Giangreco, M.F. & Broer, S.M. (2007). School-based screening to determine overreliance on paraprofessionals. *Focus on Autism and Other Developmental Disabilities*, 22(3), 149-158.
- <sup>66</sup> Ibid.
- <sup>67</sup> Grissmer, D. & Flanagan, A. (2001). *Brookings Papers on Educational Policy*. Washington, DC: Brookings Institute.
- <sup>68</sup> Ware, H. & Kitsantas, A. (2007). Teacher and collective efficacy beliefs as predictors of professional commitment. *The Journal of Educational Research*, 100(5), 308-321.
- <sup>69</sup> Buckley, J., Schneider, M. & Shang, Y. (2004). *The effects of school facility quality on teacher retention in urban school districts*. Chestnut Hill, MA: National Clearinghouse for Educational Facilities; Stockard, J. & Lehman, M.B. (2004). Influences on the satisfaction and retention of first-year teachers: The importance of effective school management. *Educational Administration Quarterly*, 40(5), 742-771.
- <sup>70</sup> Ibid.
- <sup>71</sup> Ibid.
- <sup>72</sup> Moore, G.T. & Lackney, J.A. (1993). School design: Crisis, educational performance and design application. *Children's Environments*, 10(2), 1-22.
- <sup>73</sup> Ibid.
- <sup>74</sup> Lee, V. & Smith, J. (1994). *Effects of high school restructuring and size on gains in achievement and engagement for early secondary school students*. Madison, WI: Center on Organization and Restructuring of Schools; Lee, V., Smith, J. & Croniger, R. (1995). *Understanding high school restructuring: Effects on the equitable distribution of learning in mathematics and science*. Madison, WI: Center on Organization and Restructuring of Schools.
- <sup>75</sup> Bryk, A.S., Easton, J.Q., Gladden, R.M., K ochanek, J. & Luppescu, S. (1999). *Elementary school size: Its effect on academic productivity in Chicago elementary schools*. Chicago: Consortium on Chicago School Research, The University of Chicago.
- <sup>76</sup> Moore, G.T. & Lackney, J.A. (1993). School design: Crisis, educational performance and design application. *Children's Environments*, 10(2), 1-22.
- <sup>77</sup> Buckley, J., Schneider, M. & Shang, Y. (2004). *The effects of school facility quality on teacher retention in urban school districts*. Chestnut Hill, MA: National Clearinghouse for Educational Facilities.
- <sup>78</sup> Watkins, P. (2005). The principal's role in attracting, retaining, and developing new teachers: Three strategies for collaboration and support. *The Clearing House*, 79(2), 83-87.
- <sup>79</sup> Bogler, R. (2001). The influence of leadership style on teacher job satisfaction. *Educational Administration Quarterly*, 37, 662-683; Ingersoll, R. & Kralik, J.M. (2004). The impact of mentoring on teacher retention: What the research says. *ECS Research Review: Teaching Quality*. Available from Education Commission of the States (ECS) at <http://www.ecs.org>; Stockard, J. & Lehman, M.B. (2004). Influences on the satisfaction and retention of first-year teachers: The importance of effective school management. *Educational Administration Quarterly*,

- 40(5), 742-771; Ware, H. & Kitsantas, A. (2007). Teacher and collective efficacy beliefs as predictors of professional commitment. *The Journal of Educational Research*, 100(5), 308-321; Watkins, P. (2005). The principal's role in attracting, retaining, and developing new teachers: Three strategies for collaboration and support. *The Clearing House*, 79(2), 83-87.
- <sup>80</sup> Firestone, W.A. & Pennell, J.R. (1993). Teacher commitment, working conditions, and differential incentive policies. *Review of Educational Research*, 63(4), 489-525; Kirkman, B.L. & Rosen, B. (1999). Beyond self-management: Antecedents and consequences of team empowerment. *Academy of Management Journal*, 42, 58-74.
- <sup>81</sup> Firestone, W.A., & Pennell, J.R. (1993). Teacher commitment, working conditions, and differential incentive policies. *Review of Educational Research*, 63(4), 489-525.
- <sup>82</sup> Buckley, J., Schneider, M. & Shang, Y. (2004). *The effects of school facility quality on teacher retention in urban school districts*. Chestnut Hill, MA: National Clearinghouse for Educational Facilities; Darling-Hammond, L. (1997). *Doing what matters most: Investing in quality teaching*. New York: National Commission on Teaching & America's Future.
- <sup>83</sup> Janssen, O. (2004). The barrier effect of conflict with superiors in the relationship between employee empowerment and organizational commitment. *Work & Stress*, 18(1), 56-65; Johnson, S., Kardos, S., Kauffman, D., Liu, E. & Donaldson, M. (2004). The support gap: New teachers' early experiences in high-income and low-income schools. *Education Policy Analysis Archives*, 12(61), 1-25; Spreitzer, G.M. (1995). Psychological empowerment in the workplace: Dimensions, measurement, and validation. *Academy of Management Journal*, 38, 1442-1465; Watkins, P. (2005). The principal's role in attracting, retaining, and developing new teachers: Three strategies for collaboration and support. *The Clearing House*, 79(2), 83-87.
- <sup>84</sup> Reichardt, et.al. (2008). *Ibid.*, 9.
- <sup>85</sup> Firestone, W.A. & Pennell, J.R. (1993). Teacher commitment, working conditions, and differential incentive policies. *Review of Educational Research*, 63(4), 489-525.
- <sup>86</sup> Copeland, M. (2003). Leadership of inquiry: Building and sustaining capacity for school improvement. *Educational Evaluation and Policy Analysis*, 25(4), 375-395; Wise, A.E., Darling-Hammond, L. & Berry, B. (1985). *Effective teacher selection: From recruitment to retention*. Washington, DC: RAND Corporation.
- <sup>87</sup> Rinehart, J.S., Short, P.M., Short, R.J. & Eckley, M. (1998). Teacher empowerment and principal leadership: Understanding the influence process. *Educational Administration Quarterly*, 34, 608-630.
- <sup>88</sup> Lortie, D. (1975). *Schoolteacher: A sociological study*. Chicago: University of Chicago Press.
- <sup>89</sup> Hart, A.W. (1987). A career ladder's effect on teacher career and work attitudes. *American Educational Research Journal*, 24(4); Hart, A.W. (1995). Instruction-based teacher work redesign in schools. In S.B. Bacharach & B. Mundell (Eds.), *Organizational behavior in educational administration*. Newbury Park, CA: Corwin Press, 151-199; Hart, A.W. (1994). Creating teacher leadership roles: The impacts of core group support. *Educational Administration Quarterly*, 30(4), 472-497.
- <sup>90</sup> Ware, H. & Kitsantas, A. (2007). Teacher and collective efficacy beliefs as predictors of professional commitment. *The Journal of Educational Research*, 100(5), 308-321.
- <sup>91</sup> Wayne, A. & Youngs, P. (2003). Teacher characteristics and student achievement gains: A review. *Review of Educational Research*, 73(1), 89-122.
- <sup>92</sup> Watkins, P. (2005). The principal's role in attracting, retaining, and developing new teachers: Three strategies for collaboration and support. *The Clearing House*, 79(2), 83-87.
- <sup>93</sup> Buckley, J., Schneider, M. & Shang, Y. (2004). *The effects of school facility quality on teacher retention in urban school districts*. Chestnut Hill, MA: National Clearinghouse for Educational Facilities; Rosenholtz, S.J. & Simpson, C. (1990). Workplace conditions and the rise and fall of teachers' commitment. *Sociology of Education*, 63, 241-247.
- <sup>94</sup> Firestone, W.A. & Pennell, J.R. (1993). Teacher commitment, working conditions, and differential incentive policies. *Review of Educational Research*, 63(4), 489-525; Watkins, P. (2005). The principal's role in attracting, retaining, and developing new teachers: Three strategies for collaboration and support. *The Clearing House*, 79(2), 83-87.
- <sup>95</sup> Rochkind, J., Ott, A., Immerwahr, J., Doble, J. & Johnson, J. (2007). *Working without a net: How new teachers from three prominent alternate route programs describe their first year on the job*. New York: Public Agenda Foundation.
- <sup>96</sup> Quartz. *Ibid.*
- <sup>97</sup> Papa, F., Lankford, H. & Wyckoff, J. (2003). *Hiring teachers in New York's public schools: Can the principal make a difference?* University at Albany, SUNY; Clotfelter, C., Ladd, H., Vogdor, J. & Wheeler, J. (2006). *High poverty schools and the distribution of teachers and principals*. Sanford Working Paper Series, SAN 06-08.
- <sup>98</sup> Ballou, D. & Podgursky, M. (1998). Teacher recruitment and retention in public and private schools. *Journal of Policy Analysis and Management*, 17(3), 393-417; Bogler, R. (2001). The influence of leadership style on teacher job satisfaction. *Educational Administration Quarterly*, 37, 662-683; Ingersoll, R. & Kralik, J.M. (2004). The impact of mentoring on teacher retention: What the research says. *ECS Research Review: Teaching Quality*. Available from Education Commission of the States (ECS) at <http://www.ecs.org>; Lyons, J. (1987). A study of public school principals' decision-making authority and autonomy. *Contemporary Education*, 58(4), 197-200;

- Miller, R. & Rowan, B. (2006). Effects of organic management on student achievement. *American Educational Research Journal*, 43(2), 219-253.
- <sup>99</sup> Reichardt, et. al. (2008). Ibid, 4.
- <sup>100</sup> Somech, A. & Wenderow, M. (2006). The impact of participative and directive leadership on teachers' performance: The intervening effects of job structuring, decision domain and leader-member exchange. *Educational Administration Quarterly*, 42, 746-772.
- <sup>101</sup> Porter, H., Wrench, J.S. & Hoskinson, C. (2007). The influence of supervisor temperament on subordinate job satisfaction and perceptions of supervisor sociocommunicative orientation and approachability. *Communication Quarterly*, 55(1), 129-153; Tschannen-Moran, M. (2004). *Trust matters: Leadership for successful schools*. San Francisco: Jossey-Bass.
- <sup>102</sup> Johnson, S., Kardos, S., Kauffman, D., Liu, E. & Donaldson, M. (2004). The support gap: New teachers' early experiences in high-income and low-income schools. *Education Policy Analysis Archives*, 12(61), 1-25.
- <sup>103</sup> Buckley, J., Schneider, M. & Shang, Y. (2004). *The effects of school facility quality on teacher retention in urban school districts*. Chestnut Hill, MA: National Clearinghouse for Educational Facilities; Stockard, J. & Lehman, M. B. (2004). Influences on the satisfaction and retention of first-year teachers: The importance of effective school management. *Educational Administration Quarterly*, 40(5), 742-771.
- <sup>104</sup> Tschannen-Moran, M. (2004). *Trust matters: Leadership for successful schools*. San Francisco: Jossey-Bass.
- <sup>105</sup> Bryk, A.S. & Schneider, B. (2002). *Trust in schools: A core resource for improvement*. New York: Russell Sage Foundation.
- <sup>106</sup> Porter, H., Wrench, J.S. & Hoskinson, C. (2007). The influence of supervisor temperament on subordinate job satisfaction and perceptions of supervisor sociocommunicative orientation and approachability. *Communication Quarterly*, 55(1), 129-153.
- <sup>107</sup> Tschannen-Moran, M. (2004). *Trust matters: Leadership for successful schools*. San Francisco: Jossey-Bass.
- <sup>108</sup> Ibid.
- <sup>109</sup> Porter, H., Wrench, J.S. & Hoskinson, C. (2007). The influence of supervisor temperament on subordinate job satisfaction and perceptions of supervisor sociocommunicative orientation and approachability. *Communication Quarterly*, 55(1), 129-153.
- <sup>110</sup> Bryk, A.S. & Schneider, B. (2002). *Trust in schools: A core resource for improvement*. New York: Russell Sage Foundation.
- <sup>111</sup> Tschannen-Moran, M. (2004). *Trust matters: Leadership for successful schools*. San Francisco: Jossey-Bass.
- <sup>112</sup> Reichardt, et.al. (2008). Ibid.
- <sup>113</sup> Thompson, D.P., McNamara, J.F. & Hoyle, J.R. (1997). Job satisfaction in educational organizations: A synthesis of research findings. *Educational Administration Quarterly*, 33, 7-37.
- <sup>114</sup> Bogler, R. (2001). The influence of leadership style on teacher job satisfaction. *Educational Administration Quarterly*, 37, 662-683.
- <sup>115</sup> Tschannen-Moran, M. (2004). *Trust matters: Leadership for successful schools*. San Francisco: Jossey-Bass.
- <sup>116</sup> Copeland, M. (2003). Leadership of inquiry: Building and sustaining capacity for school improvement. *Educational Evaluation and Policy Analysis*, 25(4), 375-395.
- <sup>117</sup> Sagor, R.D. (1992, February). Three principals who make a difference. *Education Leadership*, 49(5), 13-18; Leithwood, K.A. (1992, February). The move toward transformational leadership. *Education Leadership*, 49(5), 8-12.
- <sup>118</sup> Leithwood, K.A. (1992, February). The move toward transformational leadership. *Education Leadership*, 49(5), 8-12.
- <sup>119</sup> Ma, X. & MacMillan, R.B. (1999). Influences of workplace conditions on teachers' job satisfaction. *The Journal of Educational Research*, 93(1), 39-53; Firestone, W.A. & Pennell, J.R. (1993). Teacher commitment, working conditions, and differential incentive policies. *Review of Educational Research*, 63(4), 489-525; Stockard, J. & Lehman, M.B. (2004). Influences on the satisfaction and retention of first-year teachers: The importance of effective school management. *Educational Administration Quarterly*, 40(5), 742-771.
- <sup>120</sup> Birman, B.F., Desimone, L., Porter, A.C. & Garet, M.S. (2000). Designing professional development that works. *Educational Leadership*, 57(8), 28-33; Kennedy, M. (1998, December). *Form and substance in inservice teacher education*. Madison, WI: National Institute for Science Education.
- <sup>121</sup> Loeb, S., Rouse, C. & Shorris, A. (2007). Introducing the issue. *The Future of Children*, 17(1), 3-14.
- <sup>122</sup> Bryk, A. Nagaoka, J., and Newmann, F. (2000). "Chicago Classroom Demands for Authentic Intellectual Work: Trends from 1997-1999. Chicago: Consortium on Chicago School Research
- <sup>123</sup> Cohen, D.K. & Hill, H. (1997). Teaching and learning mathematics in California. Paper presented at the annual meeting of the American Educational Research Association, Chicago.
- <sup>124</sup> Cohen, D.K., Raudenbush, S.W. & Ball, D. (2000). Education resources, institution, and research. Paper prepared for the Center for Study of Teaching and Policy, University of Washington.
- <sup>125</sup> Little, J.W. (1993, Summer). Teachers' professional development in a climate of education reform. *Educational Evaluation and Policy Analysis*, 15(2), 129-151.
- <sup>126</sup> Birman, B.F., Desimone, L., Porter, A.C. & Garet, M.S. (2000). Designing professional development that works. *Educational Leadership*, 57(8), 28-33.
- <sup>127</sup> Ibid.

- 128 Farkas, S., Johnson, J. Duffett, A., with Moye, L. and Vine, J. (2003). *Stand By Me: What Teachers Really Think About Unions, Merit Pay, and Other Professional Matters*. Public Agendas p. 43.
- 129 Leithwood, Steinbach, and Jantzi 2002;
- 130 Smylie, M., Allensworth, E., Greenberg, R., Harris, R., and Luppescu, S. (2001). *Teacher Professional Development in Chicago: Supporting Effective Practice*. Chicago. University of Illinois-Chicago.
- 131 Coburn, C. and Russell, J. (2008). District policy and teachers' social networks. *Educational Evaluation and Policy Analysis*. September. 30(3). 203-35.
- 132 Reichardt, et.al;. (2008). *Ibid*, 5.
- 133 Newmann, F.M. & Wehlage, G.G. (1995). *Successful school restructuring*. Madison, WI: Center on Organization and Restructuring of Schools, School of Education, University of Wisconsin-Madison.
- 134 Grossman et al., 2001; Little, 2003; McLaughlin & Talbert, 2001; Rosenholtz, 1991
- 135 (Elmore et al., 1996)
- 136 (Louis et al., 1996; Louis & Marks, 1998; Newmann et al., 1996; Newmann et al., 2000).
- 137 Adler, P.S. and Kwon. S.W. (2002). Social capital: Prospects for a new concept. *Academy of Management Journal*. 27(1), 17-40.
- 138 Louis, K.S. & Kruse, S.D. (1995). *Professionalism and community: Perspectives on reforming urban schools*. Thousand Oaks, CA: Corwin Press.
- 139 McLaughlin, M. & Talbert, J. (2006). *Building school-based teacher learning communities: Professional strategies to improve student achievement*. New York: Teachers College Press.
- 140 Little, J.W. (2003, August). Inside teacher community: Representations of classroom practice. *Teachers College Record*, 105(6), 913-945.
- 141 Quartz, *Ibid*; Johnson, et.al. (2005), *Ibid*.
- 142 Quartz, *Ibid*.
- 143 Henry, G. (forthcoming). Estimating impacts of leadership on high school student achievement. Draft report. Chapel Hill, NC: University of North Carolina.
- 144 Many of the findings in this section reflect findings in another recent report on teacher working conditions in Arizona: Amrein-Beardsley, A. (2007, Sept). Recruiting expert teachers into hard-to-staff schools: what are the obstacles to pairing the best teachers with the lowest-achieving students? And what would it take to overcome them? *Phi Delta Kappan*, 89(1): 64(4).
- 145 In the 2006 Arizona Teacher Working Conditions pilot, the relationship between working conditions and student achievement was measured by looking only at correlations between survey items and absolute performance on the Arizona Instrument to Measure Standards (AIMS) assessments in math, reading, and writing.
- 146 Clotfelter, C.T., Ladd, H. & Vigdor, J. (2008). *Working conditions, school characteristics and teacher mobility: Evidence from North Carolina*. Working Draft.
- 147 *Ibid*.
- 148 Ingersoll, R. (2001). Teacher turnover and teacher shortages: An organizational analysis. *American Educational Research Journal*, 38(3), 499–534; Ingersoll, R. (2003). *Who controls teachers' work?: Power and accountability in America's schools*. Cambridge, MA: Harvard University Press.
- 149 Reichardt, et.al. (2008). *Ibid*, 4.
- 150 Jackson, P.W. (1968). *Life in classrooms*. New York: Holt, Rinehart & Winston; Nespor, J. (1997). *Tangled up in school*. Mahway, NJ: Erlbaum; Palonsky, S. (1986). *900 shows a year*. New York: Random House; Yee, S. M-L. (1990). *Careers in the classroom*. New York: Teachers College Press.
- 151 Argyris, C. (1964). *Integrating the individual and the organization*. New York: Wiley; Burke, W.W. (2008). *Organization change* (2<sup>nd</sup> ed.). Los Angeles: Sage; Katz, D. & Kahn, R.L. (1978). *The social psychology of organizations* (2<sup>nd</sup> ed.). New York: Wiley; Mowday, R.T., Porter, L.W. & Steers, R.M. (1982). *Employee-organization linkages: The psychology of commitment, absenteeism, and turnover*. New York: Academic Press.
- 152 Sebring, P.B., Allensworth, E., Bryk, A.S., Easton, J.Q. & Luppescu, S. (2006, September). *The essential supports for school improvement*. Chicago: Consortium on Chicago School Research.
- 153 Johnson, S.M. (1990). *Teachers at work*. New York: Basic Books; Johnson, S.M. (2006). *The workplace matters: Teacher quality, retention, and effectiveness*. Washington, DC: National Education Association; Lee, V.E., Bryk, A.S. & Smith, J.B. (1993). The organization of effective secondary schools. *Review of Research in Education*, 19, 171–267; Leithwood, K. & McAdie, P. (2007). *Teacher working conditions that matter: Evidence for change*. Ontario, Canada: Elementary Teachers' Federation of Ontario; Smylie, M.A. & Allen, L.E. (2005, December). *Workplace conditions of the American public school teacher: A 40-year perspective*. Washington, DC: National Education Association.
- 154 Burke, W.W. (2008). *Organization change* (2<sup>nd</sup> ed.). Los Angeles: Sage.
- 155 Smylie, M.A. (1988). The enhancement function of staff development: Organizational and psychological antecedents to individual teacher change. *American Educational Research Journal*, 25, 1-30.
- 156 Hightower, A.M. with M.W. McLaughlin (2005). Building and sustaining an infrastructure for learning. In F.M. Hess (Ed.), *Urban school reform: Lessons from San Diego*. Cambridge, MA: Harvard University Press, 71-92; McLaughlin, M.W., & Talbert, J.E. (2003). *Reforming districts: How districts support school reform*. Seattle: University of Washington, Center for the Study of Teaching and Policy; O'Day, J.A. (2005). Standards-based reform and low-performing schools: A case of reciprocal accountability. In F.M. Hess (Ed.), *Urban school reform:*

- 
- Lessons from San Diego*. Cambridge, MA: Harvard University Press, 115-137; Spillane, J.P. & Jennings, N.E. (1997). Aligned instructional policy and ambitious pedagogy: Exploring instructional reform from the classroom perspective. *Teachers College Record*, 98(3), 449-481.
- <sup>157</sup> Quartz. *Ibid*.
- <sup>158</sup> Friedman, T. (2006). *The world is flat*. New York: Farrar, Straus, and Giroux; Gardner, H. (2006). *Five minds for the future*. Cambridge, MA: Harvard Business School Press; Levy, F. & Murnane, R.J. (2004). *The new division of labor: How computers are creating the next job market*. New York: Russell Sage Foundation.
- <sup>159</sup> Smylie, M. Personal communication. June 15, 2008.
- <sup>160</sup> Bronfenbrenner, U. (1979). *The ecology of human development*. Cambridge, MA: Harvard University Press; Lewin, K. (1997). *Resolving social conflicts and field theory in social science*. Washington, DC: American Psychological Association; Scott, W.R. (1998). *Organizations: Rational, natural, and open systems* (4<sup>th</sup> ed.). Upper Saddle River, NJ: Prentice-Hall.
- <sup>161</sup> Huberman, M. (1993). *The lives of teachers*. New York: Teachers College Press; Yee, S. M-L. (1990). *Careers in the classroom*. New York: Teachers College Press.
- <sup>162</sup> Cohen, D.K. & Ball, D.L. (1990). Policy and practice: An overview. *Educational Evaluation and Policy Analysis*, 12(3), 233-239; Jennings, N.E. (1996). *Interpreting policy in real classrooms*. New York: Teachers College Press; Lipsky, M. (1990). *Street-level bureaucracy*. New York: Russell Sage Foundation; Spillane, J., Reiser, B.J. & Gomez, L.M. (2006). Policy implementation and cognition: The role of human, social, and distributed cognition in framing policy implementation. In M. Honig (Ed.), *New directions in education policy implementation*, Albany: State University Press of New York, 47-64.
- <sup>163</sup> Duke, D.L., Showers, B.K. & Imber, M. (1980). *Teachers as school decision-makers*. Stanford, CA: Institute for Research on Educational Finance and Governance, Stanford University; Duke, D.L., Showers, B.K. & Imber, M. (1981). Studying shared decision making in schools. In S.B. Bacharach (Eds.), *Organizational behavior in schools and school districts*. New York: Praeger; Smylie, M.A. (1992). Teacher participation in school decision making: Assessing willingness to participate. *Educational Evaluation and Policy Analysis*, 14, 53-67.
- <sup>164</sup> McDonnell, L.M. & Elmore, R.F. (1987). Getting the job done: Alternative policy instruments. *Educational Evaluation and Policy Analysis*, 9, 133-152; Hannaway, J. & Woodroffe, N. (2003). Policy instruments in education. *Review of Research in Education*, 27, 1-22.
- <sup>165</sup> Rowan, B. (1990). Commitment and control: Alternative strategies for the organizational design of schools. *Review of Research in Education*, 16, 353-389.
- <sup>166</sup> Smylie, M.A. (1994). Redesigning teachers' work: Connections to the classroom. *Review of Research in Education*, 20, 129-177; Smylie, M.A. & Perry, G.S., Jr. (1998). Restructuring schools for improving teaching. In A. Hargreaves et al. (Eds.), *International handbook of educational change*. Dordrecht, The Netherlands: Kluwer, 976-1005.
- <sup>167</sup> Graham, J.W., Taylor, B.J. & Cumsille, P.E. (2001). Planned missing data designs in analysis of change. In L. Collins & A. Sayer (Eds.), *New methods for the analysis of change*. Washington, DC: American Psychological Association, 335-353; Schafer, J.L. & Graham, J.W. (2002). Missing data: Our view of the state of the art. *Psychological Methods*, 7, 147-177.
- <sup>168</sup> For sample surveys go to <http://www.vanderbilt.edu/lisi/valed/index.html> and <http://www.studyofschoolleadership.com/>
- <sup>169</sup> Berry, B., Smylie, M. & Fuller, E. (2008). *Understanding teacher working conditions: A review and look to the future*. Hillsborough, NC: Center for Teaching Quality.
- <sup>170</sup> Odden, A. & Kelly, J. (2008) *Strategic management of human capital in public education*. Madison, WI: Consortium for Policy Research in Education.
- <sup>171</sup> Berry, B. (forthcoming). *High-needs schools and the next generation of teachers*. Hillsborough, NC: Center for Teaching Quality.
- <sup>172</sup> Forum for Education and Democracy. *Democracy at Risk: The Need for a New Federal Policy in Education*. (Washington DC: 2008). [http://www.forumforeducation.org/upload\\_files/files/FED\\_ReportRevised415.pdf](http://www.forumforeducation.org/upload_files/files/FED_ReportRevised415.pdf)