# The Long Climb:

## School District Human Capital Development Systems

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## Funding

## Connecticut Center for School Change

The Connecticut Center for School Change is a not-for-profit school reform organization that partners with school districts to improve student achievement. The Center uses a systemwide, integrated approach focused on improving instructional practice and building leadership at all levels. The Center supports comprehensive educational reform through technical assistance, leadership development programs, policy research and application of best practices. Our work is informed by the concept that "system success = student success." We believe educational excellence and high-quality public schools require strong leadership, organizational focus, and program coherence. Our goal is to improve the capacity of school districts to teach all students to achieve high academic standards.

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# Welcome

As JPMorgan Chase has evolved into one of the world's largest and most influential global financial institutions, our approach to philanthropic investment has also evolved. However, throughout this evolution and change, one thing has remained constant: our firm's unwavering commitment to making a positive difference in the communities where we operate.

JPMorgan Chase's philanthropic goal is simple: be the catalyst to meaningful, positive, and sustainable change within our highest-need neighborhoods and communities across the globe. One key strategic focus is to ensure that all children, particularly those from disadvantaged backgrounds, have access to high-quality educational opportunities with a particular focus on K-12 public schools that help them acquire the knowledge and skills needed to be productive, engaged students.

This is why we have partnered with the Connecticut Center for School Change to help produce this world-class research project.

We hope that you will find the material challenging and useful.

Mark Rigdon, Ph.D.
Executive Director
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# Acknowledgments

# Foreword

Educational research has shown that the single most important factor in student achievement is the quality of teaching, a finding confirmed by our experience at the Center for School Change. The second most important school factor affecting student performance is the quality of educational leadership. The ability to close Connecticut's achievement gap depends upon policies and practices that ensure equity in how these two fundamental factors – teacher quality and instructional leadership – play out in our schools and communities. Hence our motto at the Connecticut Center for School Change, "System Success = Student Success."

Over the past five years, we examined Connecticut school- and district-level practices in teacher recruitment, hiring, and support (Reichardt and Arnold 2006) and the role of school leadership in creating the conditions to attract and retain the highest quality teachers (Reichardt, Snow, Schlang, and Hupfeld 2008). This report reviews the challenges facing school districts in developing a human capital development system that ensures that teachers, principals, and district leaders have the information, the tools, the authority, and the accountability to provide educators with the professional development they need to become highly effective at raising student achievement for all students.

Connecticut districts play a key role in the development of the men and women whose skill and knowledge determine whether students learn and succeed. The Connecticut Center for School Change is committed to supporting local and state administrators and policymakers who pursue the goals of a quality educator in every classroom and effective educational leaders in our schools and districts. We hope that this report helps schools and districts ensure that all of Connecticut's students have access to high-quality teachers and principals. Achieving that goal is the key to closing the achievement gap and ensuring that all students succeed.

Andrew Lachman
Executive Director
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# Introduction

Research into teacher quality has both revolutionized education policy and created a significant challenge for schools and districts.  Developments in value-added research over the past 15 years have provided three findings that drive the need for improved human capital development systems for recruiting, retaining and supporting teachers in school districts.  First, this research has confirmed and re-emphasized the importance of teachers to student learning. A related finding from this research has emphasized the simple fact that a series of effective teachers can help students catch-up – move from below to above proficient levels of performance – and move ahead.  Equally important, this research has shown that a series of less effective teachers can practically doom a student to poor learning outcomes throughout the K-12 experience (Hanushek 2009; Sanders and Rivers 1996).  Finally, this research has shown that there is great variation in teacher quality within schools and that traditional measures of teacher quality, such as experience or degree level, do a very poor job of helping schools identify effective teachers (Goldhaber 2007; Harris and Sass, 2009).

This research reinforces the common sense idea that for a school district to improve student learning, it must improve the effectiveness of its teacher workforce. In other words, districts must work to increase the overall knowledge, skills, and abilities – human capital – in their schools to improve student learning. Districts have essentially three mechanisms for improving their human capital (The New Teacher Project 2011):

- Recruit and hire more effective teachers
- Retain effective teachers while exiting those who are not effective
- Improve the professional skills of teachers in the workforce

These fundamental strategies are visualized in the theory of action shown in Figure 1 above.  While the tools for improving the human capital of a workforce are easy to describe, implementation is challenging.  The key implementation challenge is accurately and reliably identifying teachers' strengths and needs and using that information to recruit, exit, retain, and support teachers. Systems to identify effective new

recruits, exit those who are not effective, and provide the right professional learning to improve individual teacher's effectiveness are complex and challenging to develop and maintain.

Over the past five years, the Connecticut Center for School Change (the Center) has investigated all three of these mechanisms in Connecticut schools and districts. Each study has focused on describing existing human capital systems and made suggestions on how to improve them. These studies are rooted in the perspective that districts can improve their human capital systems through a systematic approach using the principles of continuous improvement.  The first study, *In Search of Quality*, addressed recruitment (Reichardt and Arnold 2006).  The second, *Overwhelmed and Out*, (Reichardt, Snow, Schlang, and Hupfeld 2008) addressed retention.

**Figure 1: Basic Theory of Action for Educational Improvement**
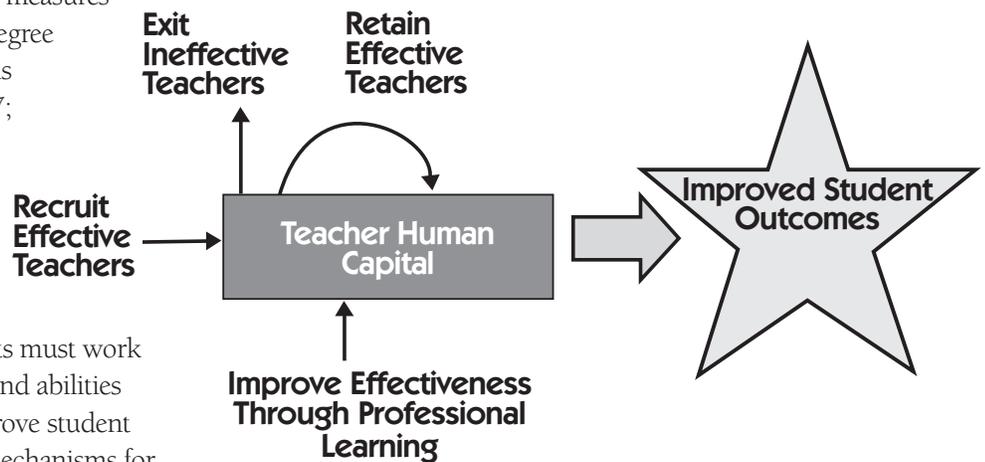


This study, *The Long Climb* (2011), is an exploratory study addressing systems to improve the professional practice (skill and knowledge) of teachers working in schools; what we call professional learning systems.  The remainder of this report details the findings from a study of professional learning systems in three Connecticut school districts.  The report conceptualizes professional learning systems in terms of three key components: 1) the information required to make informed decisions affecting professional learning, 2) the decision-making process for ensuring high-quality professional learning, and 3) the activities for achieving effective professional learning.  The report includes a discussion of the policy implications of these findings, with points of reflection for school and district leaders throughout.

# Professional Learning Systems

Research has confirmed that high quality teaching matters in improving student achievement, without providing very much information on *how* to improve teacher quality (Hanushek 2009). There is a paucity of research on effective human capital development practices (recruitment, selection, retention, evaluation, and professional learning) in schools and districts that can lead to improved student outcomes (Toch and Rothman 2008; DeArmand, Shaw, and Wright 2009; Rice 2009). Given this lack of a strong research base on integrated human resource practices, it may not be surprising that the Center's retention study (*Overwhelmed and Out*) identified a plethora of poorly integrated reform and professional learning initiatives in districts. This is unfortunate since studies suggest that an integrated and systemic approach to human capital development contributes to making progress in improving teacher effectiveness (Honig et al. 2010; Reichardt and Arnold 2006; Weiss and Pasley 2006).

This exploratory study is focused on describing existing professional learning systems in schools and districts that are intended to improve the effectiveness of their teachers. The intent of the study was to understand the professional learning systems in each of the three districts, focusing on teachers and principals. This study describes the three components of a professional learning system:

- **Information** about human capital development needs
- **Decision-making** that links authority and accountability for improving teacher knowledge and skills
- **Professional learning activities**

(Loucks-Horsley et al. 1998; Ball and Cohen 1999; Ferguson 2006; Regional Education Laboratory Southeast 2009). This system can and should learn from itself so that student learning and feedback from activities inform needs assessments that inform the next round of professional learning activities (see Figure 2).

The body of this report provides detailed examples of how the professional learning systems worked in three Connecticut school districts.

# Definitions

Professional learning activities were defined as being made up of two components: the content of the professional learning, and the process or events used for the learning activity (NSDC 2001; Garet et al. 2001). The content of the professional learning was defined as a skill or knowledge that a teacher or principal needed to improve their ability to do their job. Domains of skills or knowledge were defined using the standards developed by Charlotte Danielson to describe important teaching skills (1996):

- *Aligning Instruction:* align instruction and content with standards (such as selection of instructional goals and coherent instruction)
- *Classroom Management:* classroom management skills (such as developing a culture of learning, student behavior, and classroom procedures)
- *Classroom Assessment:* use of classroom assessments
- *Instructional Approach:* variety of instructional approaches (for example, questioning techniques)
- *Special Populations:* skills in teaching special populations (such as second language learners or students with disabilities)
- *Differentiated Instruction:* skills in instructional differentiation
- *Improving Data Use:* use of data in instructional decisions
- *Using Technology:* use of technology for instruction and data management to improve student learning
- *Content Knowledge:* knowledge of the content within a given subject area such as reading, writing, mathematics, science, foreign language, and social studies

**Figure 2: Professional Learning Systems**
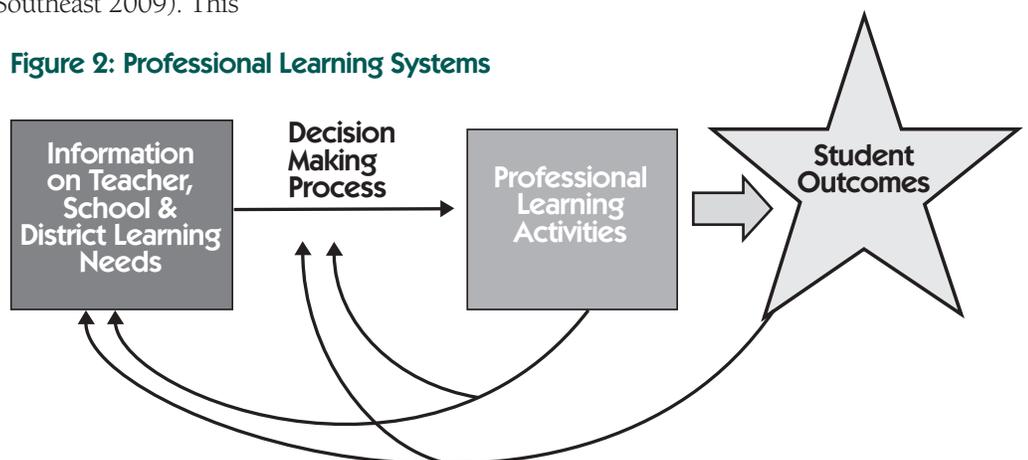
This list of skills and knowledge was used in this study to ask teachers about their learning needs and the content of their learning. Principal skills were defined using a combination of sources (see Appendix A for details).

For this study, professional learning activities describe the processes or events that are intended to help people improve their ability to do their job. The domains of professional learning activities were derived from the NSDC standards (National Staff Development Council 2001; Wei et al. 2009). Professional learning activities were defined as:

- Acted as Coach/Mentor
- Informal Self-Directed
- Participated on Committee or Task Force
- Received Coaching/Mentoring
- Participated in Study Groups
- Teacher Network/Collaboration/Team
- Workshop or Training
- Other

Teachers and principals were asked about the professional learning activities that they had participated in or that had occurred in their school.

## Methodology

This study focused on three research questions:
1. What are the learning needs of principals and teachers, i.e. what additional skills and knowledge do teachers and principals need to do their jobs better?
2. What professional learning activities did people experience?
   A. What resources did districts dedicate to professional learning?
3. What decision-making process was used to decide which professional learning content and activities were implemented?

This last question, how learning activities were chosen to be implemented, was a primary focus of the study. Creating an effective decision-making process is the long climb for districts: it has to integrate needs across the individual, school and district level, identify both the content and form of professional learning activities, and incorporate feedback to refine and improve the professional learning.

This study took place in three mid-sized suburban Connecticut districts during the fall of 2008 (SY 2008-09). Their enrollment ranged from 4,000 to 6,000 students.

The size of these districts is in line with those that serve the majority of Connecticut students, but small compared to the size of districts serving the majority of students in the nation. The majority of Connecticut students attended districts with enrollments between 3,000 and 9,999 students (NCES 2007). Free and reduced lunch eligibility is similar to most of the districts in the state: eligibility in the study districts ranged from 5 to 25 percent, the average for the state was 22 percent and the median was 12 percent in 2008. The percent minority in the study districts ranged from 19 to 68 percent which was higher than the state average of 25 percent and median of 28 percent (NCES, 2008). The per pupil expenditures in the study districts bracketed the state average of $12,000 per student with a range of $11,500 to $13,000 per student in 2008.

Data for this study was collected through surveys and focus groups with teachers and school administrators, as well as interviews with district administrators. Within each district, three to six district level administrators were interviewed (including the superintendents), two to four school leaders were interviewed, and 12 to 20 teachers participated in focus groups. Districts also provided detailed administrative information on expenditures. Survey respondents received a $10 gift certificate for their participation. To encourage valid and reliable information, participants were promised anonymity and district names will not be revealed here. They will be referred to as Districts A, B and C. Table 1 below shows survey response rates:

**Table 1: Survey Response Rates**

| District | School Admin. Response Rate | Teacher Response Rate |
|----------|------------------------------|------------------------|
| A | 27% | 28% |
| B | 39% | 53% |
| C | 50% | 68% |
| Total | 39% | 50% |

The remainder of this report describes the professional learning systems observed in these three Connecticut districts. Each district has its own context in terms of students, work-forces and labor markets that should drive strategic decisions around human capital development. Consequently, each of the three districts had different professional learning systems. However, districts are also facing similar common challenges within each of the three components of their professional learning systems. Identifying and describing these challenges is intended to help school and district leaders think strategically

about professional learning systems in their organizations. In the end, this framework is intended to help leaders in schools and districts conceptualize the systems they have in place as they work to organize their efforts to improve student learning.

## Information in Professional Learning Systems

Information is used to identify learning needs and to provide feedback on whether decision-making processes and learning activities were successful. Teachers, teams of teachers, school leaders, and district leaders all have different perspectives and information on human capital needs. Implicit in this discussion is the fact that school districts are multi-leveled organizations.

The individual teacher has very powerful, immediate information about his/her own interests and improvement needs. This information comes from many sources including day-to-day interaction with students, review of formative assessment data, and self-reflection.

Peers on teams can often have information about their colleagues' learning needs. They bring knowledge about

student needs in a school, understand curricular demands, and are capable (potentially) of close observation of their peer's teaching and instruction. For example, one district in this study used teams as a core mechanism for identifying and directing the professional learning needs within schools. These teams had many functions, but a key function was to work together to develop teacher knowledge and capacity to deliver aligned curriculum and identify how to support students who had fallen behind. In this instance, the district created team protocols to use in analyzing the implementation of aligned curriculum and instructional design.

School leaders have different types of information than teachers. They have less intimate information about any individual teacher's practice given the average elementary school size of 23 teachers (NCES 2008). However, they have a wider scope of information that can help them understand trends across a school.

For example, principals in this study are much more focused than teachers on implementing standards-based reform. Figure 3 compares principal and teacher perceptions of teacher learning needs across the entire sample. It shows the proportion of respondents who agreed with the statement that improving skills in a certain area was very important to

**Figure 3: Principal and Teacher Perceptions of Teacher Learning Needs**
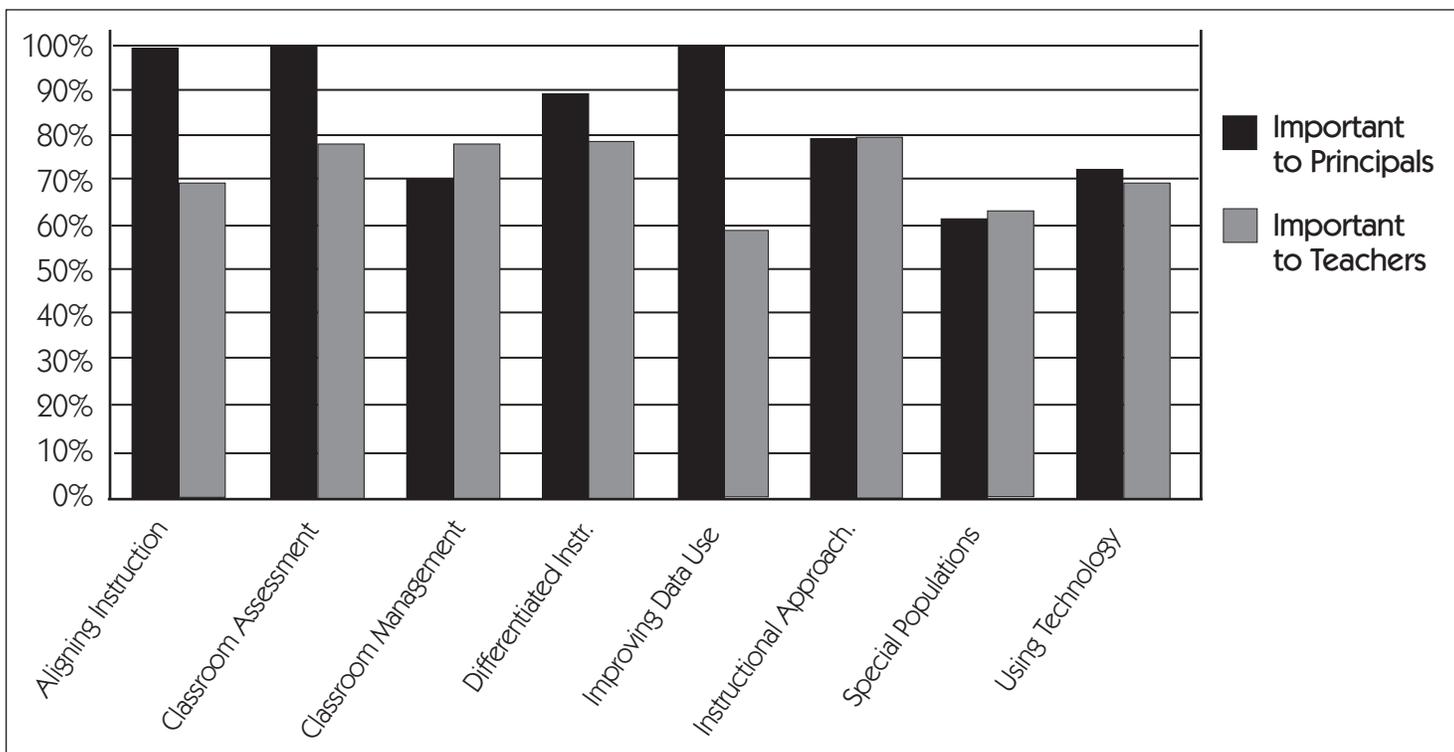
improving teaching. More so than teachers, principals placed higher priority on each of the three key components of standards-based instruction: *aligning instruction* and content with standards, use of *classroom assessments*, and *improving data use*. At the same time, the top four priorities for teachers included use of *classroom assessments,* as well as learning needs more focused on instructional and classroom practices: *classroom management,* use of a variety of *instructional approaches,* and *differentiating instruction*.

School leaders also have learning needs. Lack of knowledge can be a key source of stress for new principals. When asked about their professional learning activities, principals, in most cases, reported self-directed activities with little shared effort across schools. This was despite the fact that most new principals reported having the same learning needs around school management and operations. At the same time, new principals and secondary school principals reported feeling isolated from their colleagues.

District leaders have an even broader scope of information across the district and use that information to shape organizational priorities. Each of the district leaders in this study was pursuing different goals and priorities for professional learning. District A focused on curriculum alignment as a key tool for instructional improvement. District B focused on closing the achievement gap. Both Districts B and C focused on creating the expectation that all children could learn. District C also focused on integration of activities across schools and creating a common language arts curriculum across elementary grades.

The capacity of individuals to manage and use information is a significant issue: too much information can limit its effective use. District leaders who are exercising authority over professional learning activities must also manage a significant amount of information on teacher learning needs to ensure that professional learning is valuable to schools, teams, and teachers. There may be a limit to the amount of information and nuance that a district leader can incorporate into making decisions about professional learning (Reichardt 2002).

### Points of Reflection

People at each level of the system have different sources of information and perspectives on professional learning needs.

- What are the sources of information being used to identify professional learning needs?
- Does this information inform strategic goals and strategies?

- How is information being used to measure progress towards strategic goals and outcomes?
- Is this information being used to refine professional learning activities?
- Are professional learning goals, strategies, and activities being reassessed in light of new information?

## Activities

Learning activities are the content and form of professional learning implemented to improve the professional skills of teachers and principals. This section describes the learning activities in the three study districts. It begins with the content of professional learning activities and then discusses the format of these activities. This section ends with an estimate of the resources used for professional learning by district.

The content of professional learning activities describes the knowledge and skills people should gain from an activity. Table 2 describes the proportion of teachers who reported participating in professional learning by content area. Over 8 out of 10 teachers reported participating in professional learning to improve their content knowledge and to align instruction.

### Table 2: Topics of Professional Learning

|  | Teachers Reporting Professional Learning in this Area |
| --- | --- |
| Content Knowledge | 89% |
| Aligning Instruction | 83% |
| Instructional Approach | 75% |
| Classroom Assessment | 74% |
| Using Technology | 74% |
| Differentiated Instruction | 70% |
| Improving Data Use | 68% |
| Classroom Management | 63% |
| Special Populations | 48% |

This content knowledge focus was reinforced in interviews with district leaders, principals, teacher leaders, and teachers about professional learning activities. Across all of these groups and all districts a common focus was on refining and aligning

curricula. Interviewees reported that professional learning on content knowledge occurred mostly during summer academies and student-free days.

A key question raised by district leaders was whether this work on curriculum development improved instruction. While having teachers work on developing curriculum deepens their knowledge of the content that is to be delivered, it may not develop instructional capacity. In other words, the deep content knowledge that comes from developing curriculum is an important component of effective teaching, but may not be sufficient on its own to ensure more effective instructional practices that produce better student outcomes.

A question to consider is whether the content of learning activities matches the learning needs as perceived by teachers or as perceived by principals as reported in Figure 3. A measure of this match is a correlation coefficient which ranges from -1 (completely opposite) to 1 (completely match). The learning activities teachers report engaging in are more correlated with principal priorities (.68) than with teacher priorities (.23). This suggests principal information on learning needs was prioritized over teacher information in the decision-making process.

### Table 3: Form of Teacher Learning Activities

| Activity | Mean Engagement in this Form |
| --- | --- |
| Workshops | 44% |
| Peer Networks | 12% |
| Self Directed | 9% |
| Study Groups | 2% |
| Was Coached | 2% |
| Acted as Coach | 1% |
| Other | 1% |
| Committee/Task Force | 0% |

Because some forms of professional learning are more effective than others, it is important to understand whether or not teachers are engaging in more or less effective professional learning formats. Table 3 shows the average participation level in teacher learning activities by format across all topics as reported in all of the participating districts. After being asked about the importance of a learning topic, teachers were asked

about the forms of learning activities for that topic. The first column shows the various forms for professional learning and the second shows the mean participation in each form. Workshops were the primary type of professional learning activity. Teachers reported participating in workshops for 44 percent of the different professional learning topics. Other significant forms of professional learning were peer networks and self-directed study. Very few teachers reported participating in study groups, acting as a coach, receiving coaching, participating in committees or task forces, and other activities. Professional learning activities like workshops are common, but the research indicates they are not as effective as reform types of activities such as study groups, networks, and committees (Wei et al. 2009; Garet et al. 2001).

Another way to measure the form of teacher learning activities is through the resources expended to implement different learning activities. The interview data combined with a review of district budgets (which provided information on travel, materials, tuition, and fees) was used to calculate a rough estimate of the amount of resources districts were dedicating to professional learning. District leaders provided information on common activities across schools. Teacher leaders and principals provided information on activities within schools and teachers provided confirmatory information on district-wide activities. Hours of activities were estimated by school and multiplied by an average hourly pay rate for Connecticut teachers. A more detailed explanation of methodology is included in Appendix B.

The estimated resource usage for professional learning per teacher was:

District A: $6,000 per teacher
District B: $4,000 per teacher
District C: $7,000 per teacher

These estimates are in line with previous estimates of professional development costs of between $2,100 and $7,900 for urban districts in 2002 (Miles et al. 2004). These estimates are driven largely by the cost of paying for teacher, coach, and facilitator time.

A breakdown of professional learning by activity is shown in Figure 4. These activities do not exactly match those from the survey shown in Table 3 since they are derived from interview and budget data. In particular, the workshop category from the survey (Table 3) overlaps with the workshop and the academy category below as well as student-free days.

Student-free days represent a significant investment for all of the districts. These data show that there were differences in patterns of resource use by district. District C is most intensive in its use of coaching with less of a focus on team time. District A is most intensive in its use of student-free days. District B has more focus on student-free days.

Several insights are clear from comparing the survey and interview data. First, there are many different learning activities occurring within districts and schools. Second, although districts are using considerable resources on coaching, teachers do not perceive coaching as a central professional learning activity. This may be due to the limited scope of one-on-one or small group coaching on a large system compared to the scope of whole school workshops or other learning activities.

## Points of Reflection

A fundamental question for leaders in schools and districts is whether professional learning activities are aligned with organizational goals and needs. It is a complex task to have a complete understanding of professional learning activities in an organization. This section provided three lenses for describing professional learning activities in a district: the topics covered, the activities themselves, and the resources going towards these activities. Data on professional learning activities provide opportunities for leaders to reflect on:

- Are the professional learning topics aligned with district and school goals and needs?
- Do the learning activities match the scale and scope of learning needs in a district?
- Are the resources for professional learning activities aligned with professional learning needs in the organization?

## Figure 4: Resource Usage
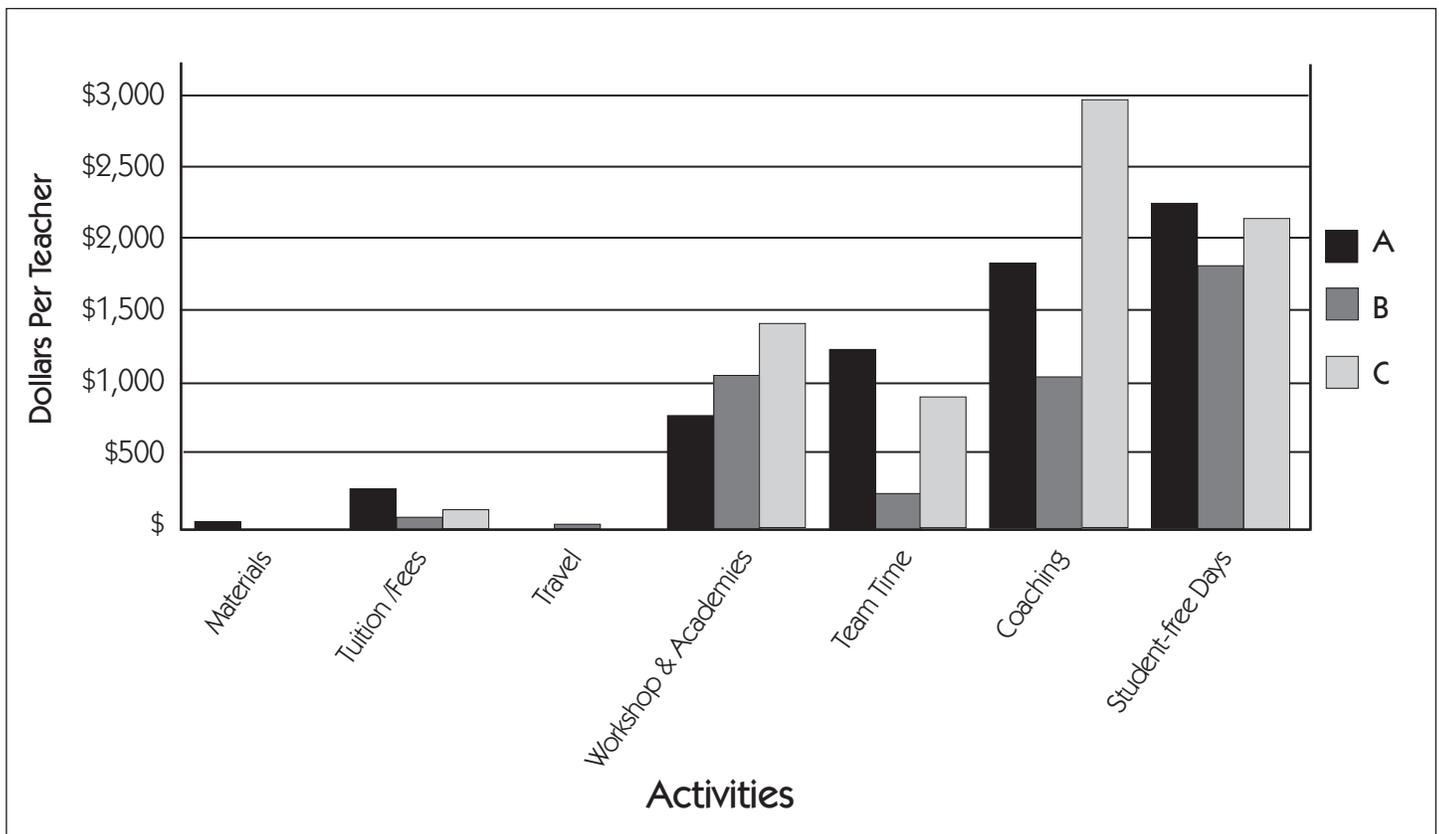
# Decision-making

Decision-making is the process of deciding on the type and topic of professional learning activities. The process of decision-making for professional learning activities brings together two factors: authority and accountability. District leaders and principals have the authority to direct professional development by requiring teachers to participate, but they can also influence professional development through communicating priorities and simply offering opportunities to participate in activities (without requiring participation).

The organizational context can and should influence professional learning decision-making. Key factors may include student and teacher populations, the state of practice in a given school or district, available resources, and the expertise of available professional developers (Loucks-Horsley et al. 1998). For example, if a district has many new teachers it may make sense for much decision-making on professional learning experiences to occur at the district level. Strong district leadership on professional learning also makes sense if students are moving frequently between schools and having similar approaches across schools can help prevent those students from falling behind. A district with an experienced teacher workforce may want to push decision-making to the teacher level to support teacher engagement in professional learning.

Leaders can use information to influence those working within the organization by providing messages about learning priorities and challenges that are common across schools or districts. This was seen across all the districts in the study as leaders analyzed state assessment results and identified weaknesses in student performance. However, when district leaders were unable to also provide teachers with solutions (i.e., skills the teachers needed to gain) aimed at meeting those challenges, information on weaknesses in student learning caused confusion and tension without actually influencing teacher learning.

The survey data suggests authority to make decisions on professional learning was spread across levels in the study districts. When asked about who had authority over professional learning decision-making, principals reported that teachers and teacher leaders had significant authority over professional learning choices in schools (Table 4).

**Table 4: Principal Impressions of Authority over Professional Decision-making**

|  | Who Decides |
| --- | --- |
| Teacher | 14% |
| Teacher Leaders | 32% |
| Principal | 25% |
| District | 29% |

Through interviews, the authority teachers held over professional learning was identified as occurring when the district held voluntary (compared to mandatory) district professional learning activities, during collaboration between teachers and teacher leaders on development of activities, and/or when teachers were able to request to participate in workshops outside the district. This provided teachers with significant influence over the professional learning that occurred within a district. These findings are similar to Marguerite Roza's findings that over a quarter of all resources were allocated in one school district through individual discretion (2010).

In districts A, B, and C, three main sources of accountability for professional learning were evident from the interview data: individual, group, and district (Abelmann and Elmore 1999). Individual accountability is found when teachers and other professionals feel accountable to themselves for improving their own practice. Throughout our interviews, teachers described their expectation to grow professionally and improve their own practice. Group accountability took the form of teacher teams who felt accountable to each other for improving their group's efforts to meet student needs. District accountability can be found in professional evaluations where teachers worked with supervisors to set professional learning goals and in incentives to get higher degrees to increase compensation. Teachers had mixed perceptions of the value of these evaluations in focusing their learning. Some felt the evaluations provided valuable guidance and a structure for accountability for professional learning needs, others felt the evaluation process was not useful. At the same time, research is fairly clear that master's degrees, in general, are not correlated with improved teacher effectiveness (Rice 2003).

Each of the districts had a different decision-making process for professional learning. In District A the decision-making was team-based with clear communication of goals by top leadership. The district had horizontal (grade level or course level) and vertical (between grade level) teams. The teams used explicit protocols for identifying group learning needs and teams were a source of accountability for improving practice. Interviews at all levels of the system reflected a shared understanding of district goals and values: that all children can learn with a focus on academic excellence and the value of collaboration. Accountability for professional learning was reinforced by an evaluation system that included both learning goals and measures of student outcomes.

Districts B and C had less consistency in decision-making processes. In both districts the decision-making authority and accountability for professional learning varied by school. In some schools, individual teachers were the primary decision-maker for professional learning, while in others the principal was the primary decision-maker. When teachers were the decision-makers, they would select their own professional learning activities with only a pro forma approval process by the principals. Where principals were the primary decision-makers, almost all professional learning in a school was directed by the principal.

In some schools, principals held teachers accountable for professional learning. For example, a principal held a teacher accountable by observing that teacher's classroom and discussing with the teacher how a professional learning experience was incorporated in a particular lesson. In other schools the primary source of accountability was individual teachers. In these instances, teachers would reflect on how a recent learning experience was incorporated in a lesson. In District C, teachers reported professional learning goals were included in the evaluation system; however, follow-up on achieving those goals was inconsistent.

### Points of Reflection

There are many different decisions being made about the topics, activities, and resources going into professional learning activities.

- Where does the authority rest for making decisions on learning activities and topics?
- How much of the resources for professional learning is expended by each of these decision points?

- What source of information is given priority over other sources in decision-making about professional learning?
- How are the people making decisions about professional learning activities accountable for outcomes in ways that are aligned with district goals and needs?

# Common Challenges

Districts faced similar challenges as they worked to implement effective professional learning systems. These challenges surfaced in each of the components of a professional learning system.

Two common challenges were related to the use and development of **information**: 1) developing data systems, and 2) developing and maintaining functioning teacher teams. Districts did not have data systems that provided teachers, school and district leaders with information on student learning, student growth, and, by extension, teacher learning needs and accomplishments. In particular, no district was able to quickly provide standardized student learning (or growth data) to teachers, school or district leaders.

Strong teams were a source of feedback for teachers on practice and identifying teacher learning needs. Each of the three districts had different levels of experience and expertise working with teams. However, a particular challenge of reliance on teaming is how to respond to teams that are not functioning well due to internal conflicts. Helping teams develop and overcome the tensions of the change process was an important skill for leaders in all three districts.

Finding the right mix of professional learning **activities** around curriculum, leadership, and secondary school reform were common challenges across districts. Each district was working independently on developing curriculum that is aligned with the state standards. As noted above, a significant amount of resources was devoted to writing curriculum with some question about whether this activity actually improved instructional practice.

A second challenge was developing an effective model for coaching and teacher leadership. District and school leaders struggled with defining the right balance of duties, skills, and authority for coaches and instructional leaders. A related challenge was training and supporting new school leaders. New school leaders across all districts needed support around understanding district and school operations.

A final challenge noted across the districts was secondary school reform. Each district had one middle and one high school. Principals in these schools reported feeling isolated in their efforts to improve practice, while both teachers and district leaders were not satisfied with those efforts.

Frequent changes in policy due to changing leadership and priorities, i.e. policy churn, were an issue in professional learning **decision-making** (Reichardt, Snow, Schlang, and Hupfield 2008; Hess 1999). Part of this challenge was communicating a coherent vision to teachers as leadership changes or as leadership refines its understanding of challenges facing the district. Often district- and school-level professional learning priorities and activities changed regularly. This led to incomplete implementation of new initiatives and a level of cynicism among teachers.

These common challenges suggest district and school leaders in districts A, B, and C, and potentially across the state, could benefit by working together on shared problems. Recent federal policy initiatives (such as Race to the Top) have also supported some of the common needs identified in this study. The state department of education should invest in the development of common data systems and teacher evaluations that support professional learning and can potentially provide reliable information across districts on learning needs and effectiveness of learning activities. Districts could work together on developing common curricula and a knowledge base on secondary school reform and coaching practices.

# Operating a Human Capital System

School and district leaders from this study are keenly aware of the need to improve teacher professional practice to support increased student achievement. This is no easy task given the complexity of school systems. This study was intended to provide leaders with a way to understand and reflect upon professional learning activities in their organizations. Taken together this leads to several high-level questions for leaders:

- What are the strategic goals for the organization?
- What is the role that professional learning plays in reaching these goals?
- How are resources allocated in support of those goals?

- Where do authority and accountability for professional learning decision-making reside?
- How is information collected and used to evaluate and refine goals and activities?
- Are leaders in other school districts facing similar challenges and are there opportunities to work together in solving these problems?

Building effective systems for human capital development is a poorly understood and typically disconnected art. Pockets of promising practices are present (Jaquith et al. 2010). Districts struggle to grow these pockets to scale through systematic improvement processes for their professional learning efforts (Weiss and Pasley 2006). Our education system needs districts to both experiment with new tools and record their learning. It is also possible for the state and the philanthropic community to provide seed investments in new human capital systems with explicit requirements to identify promising practices for integrating information, accountability, and professional learning. For example, districts could explore the use of tools that are not currently in wide use such as alternative compensation and portfolio management to support the development of effective professional learning systems (Hill et al. 2000). These explorations should be done in collaboration with university researchers who can document these efforts to make sure the lessons learned are not lost to other districts, many of which are facing similar challenges (Weiss and Pasley 2006).

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# Appendix A: Principal professional learning topics

Principal professional learning topics were defined using a variety of sources including the National Staff Development Council (2000), Connecticut Standards for School Leaders (1999) and the Interstate School Leaders Licensure Consortium (ISLLC) Standards (2008). They were defined as:

- **School Vision:** ability to articulate and implement a clear vision to improve student achievement

- **Align Instruction:** ability to align curriculum with standards, school goals, and assessments

- **School Culture:** ability to create a culture of respect and learning for staff and students

- **Using Data:** ability to assist staff in utilizing data to make instructional decisions

- **Using Technology:** use of technology for instruction and/or data management to support teaching and learning

- **School Management:** school management including completing repairs, scheduling classes, promoting safety (or safety plans), and organizing activities

- **Leading Change:** ability in planning and leading school change/development

- **Leading Teams:** skills in leading/supervising teams

# Appendix B: Resource usage methodology

The estimate uses the resource-cost model as its key framework for estimating costs of professional development (Chambers, 1999). The model used here identifies the "physical ingredients" of the professional learning service delivery system and then assigns costs to these ingredients.

The resource usage estimate combines information from interviews and analysis of budget information. The framework used here is similar to the one proposed by Odden, et al., but it provides additional detail on the form of professional development activities (2002). Budget data was used to capture costs for materials, tuition and fees, and travel. Interview data was used to identify the primary cost

ingredients in terms of the content, form, number of participants, and length of professional development activities. District leaders (such as professional development directors and subject matter coordinators) provided information on major professional learning activities across the district (such as mentoring, coaching, summer workshops, and overall estimates of activities teachers attended outside of the district). Principals, teachers, and teacher leaders provided information on school level activities. These activities were listed on a spreadsheet with an estimate of the number of participants and total time. A classification of activities was derived into the four professional learning forms categories listed below:

**Table B1: Types of Professional Learning Used in Resource Use Calculations**

| What | Whose time is counted | Definition | Examples |
|---|---|---|---|
| Workshops and academies | Individual, team, and substitute if during school year | Off-site individual or team training. Includes substitute time | Lesson study training, critical friends group, BEST mentor training, summer curriculum academies |
| Team time | Teams | School time spent working together, based on teacher or principal estimate of team time spent working on professional learning | Grade level or subject matter teams, includes teams meeting with subject specialists |
| Coaching | Coach and individual | Coach or facilitator and teacher(s) working together. Does not include time on data entry | Literacy coaching, mathematics coaching |
| Student-free days | All teachers | District organized student-free time (before and after school year—early release)—only count time reported as focused on professional learning. | District professional development prior to the school year or early release day |

An estimate was made for total time spent within each district for these activities. Table B2 shows the assumptions used for time calculations when activities described as weekly, monthly or an entire day. Note that eight months are used for a year instead of nine because interviewees consistently reported that the pace of year-long activities slowed at the beginning and end of the school year.

**Table B2: Time Assumptions Used in Resource Calculations**

| Time | |
| --- | --- |
| Hours in a day | 6.25 |
| Days in a month | 20 |
| Months during school year | 8 |
| Days a week | 5 |
| Weeks a month | 4 |

The resource estimates are rough and conservative. The input data on time allocated to various activities is believed to have a margin of error of plus or minus 20% of actual time allocated to professional learning. The data collection methodology was effective at capturing and confirming resource usage for district-wide activities, coaching, and team time. However, it was not as effective at completely capturing resources used for mentoring and workshops.

This time for professional learning was multiplied times an estimate of hourly rates for teacher time that was applied to teachers, coaches, and substitute time. Most of the substitutes were full-time district employees who were assigned to schools based on needs. The cost of time was not differentiated between normal contracted hours and paid time during summer workshops. The teacher rate used was $69.50 per hour, based on an annual Connecticut salary per FTE of $63,700 in 2007-08, 1,100 hours of work per year, and a benefits rate of 20 percent (per interviews with district budget officers).

Using a common cost of teacher time across districts means that the main driver in differences in costs estimates between districts is the amount of time allocated to professional learning activities. This supports the intent of the study of focusing on decisions being made around professional learning instead of other structural factors. This use of average salary data masks differences in salaries between districts being studied which varied by plus or minus 7%. This variation between districts in average salary could be a function of different salaries, differences in experience and education levels of the workforce in each district, or differences in comparable wages in the different locations involved in the study (Taylor 2007). The Comparable Wage Index that captured differences in wage costs between locations suggests wages in the labor markets where these districts exist vary by about 2%. These differences in wage costs between districts being studied are smaller than the margin of error for the time estimates. In other words, the estimates of time are less precise than the differences in wages between districts.

Estimates were also made as to the total number of teachers in the district and in elementary, middle and high schools using data from the 2007-08 strategic school profiles. This data is not shared to support district anonymity.

# Appendix C: Form and topic of teacher learning activities

Table C below shows the form of teacher learning as reported by teachers in all of the districts participating in the study. Teachers reported whether they had professional learning in a given content area and in a separate question reported on the form of that learning activity. The bottom row shows the proportion of teachers who did not report professional learning activities for that content area. For example, over half of the teachers did not report professional learning to improve their skills in teaching special populations (such as second language learners or students with disabilities) and 37 percent did not participate in professional learning to improve classroom management. This can be compared to only 11 percent of teachers who reported not having professional learning to improve their content knowledge.

**Table C: Learning Activities by Form and Topic**

| Form of Activity | Topic of the Learning Activity | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Aligning Instruction | Classroom Management | Classroom Assessment | Content Knowledge | Differentiated Instruction | Improving Data Use | Instructional Approach | Special Populations | Using Technology | Mean |
| Workshops | 55% | 32% | 39% | 61% | 44% | 37% | 46% | 27% | 51% | 44% |
| Study Groups | 3% | 1% | 3% | 2% | 2% | 3% | 4% | 1% | 1% | 2% |
| Peer Networks | 14% | 11% | 19% | 10% | 13% | 14% | 11% | 10% | 8% | 12% |
| Acted as Coach | 1% | 2% | 1% | 1% | 0% | 1% | 2% | 1% | 1% | 1% |
| Was Coached | 1% | 3% | 2% | 1% | 1% | 1% | 2% | 2% | 2% | 2% |
| Committee/ Task Force | 1% | 1% | 1% | 0% | 0% | 1% | 0% | 0% | 0% | 0% |
| Self Directed | 7% | 12% | 8% | 11% | 8% | 10% | 10% | 7% | 9% | 9% |
| Other | 1% | 2% | 1% | 2% | 2% | 2% | 1% | 1% | 2% | 1% |
| No prof. learning in this area | 17% | 37% | 26% | 11% | 30% | 32% | 25% | 52% | 26% | 28% |

# Notes