

In Search of Quality:

Technical Report

Recruiting, Hiring,
and Supporting
Teachers



A Research and
Policy Report from

Connecticut Center
for School Change
System Success = Student Success

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Additional copies of the Executive Summary and the complete Technical Report are available online at the Connecticut Center for School Change website:

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Introduction

Much has been written, both by academic researchers and by the press, about the looming teacher shortage. Most of this material focuses on the need to train and hire replacements for the thousands of teachers retiring from the workforce over the next decade.

This study looks at the teacher shortage issue from a different perspective. The Center for School Change believes that it takes strong leadership, a systems approach, a commitment to continuous improvement, an understanding about change, and a singular focus on instruction in order for districts to produce improved student achievement. Given this bias, therefore, we asked the researchers to focus not on the supply side of the labor market, but on the demand side. We asked them to study what districts – as organizations – did or did not do to attract and retain a sufficient number of high-quality teachers in their classrooms.

This study is best understood as a snapshot in time of current public school system practices of teacher recruitment, hiring, and retention. While we knew about the relationship of quality teachers to student learning, we learned through this study that not all Connecticut students have equal access to high-quality teachers. While we knew that the failure to retain first-year teachers incurs huge costs both in terms of student learning and lost recruitment and training expenses, we learned through this study that nearly one-third of the teachers surveyed intend to leave their current school or district. While we knew from the research literature that mentoring makes a difference in teachers' skills and improves retention rates, we learned through this study that principals received little training or guidance in how to foster that support. While we determined that at least \$40 million is spent each year in the state to recruit, hire, and support new teachers, we learned through this study that neither the data nor the systems exist to track the results of those expenditures, identify the most effective practices, and embed them in district operations.

As best we could, we have attempted to convert what we learned into some practical actions for positive change at the state- and district-level. These are policy and practice changes that school districts can make that would improve the likelihood that every student in Connecticut has access to high-quality teachers. The recommendations focus on building capacity and changing systems in order to ensure that people have the skill and knowledge they need, and the organizational support that is required, to ensure that the changes are sustained and institutionalized. Only then will these best practices become the norm in school systems and only then will school systems be able to deliver the results our students need and deserve.

There is much more we need to study about teaching and learning. We must investigate the best (and worst) practices currently used by Connecticut districts to recruit, hire, retain, and improve quality teachers. We must investigate the relationship of leadership, school culture, and working conditions to teacher retention. Most important, and sooner rather than later, our state must create a common measure to quantify the value added by teachers and schools to student achievement.

In the interim, we must do more to recruit, hire, and keep the best teachers in our classrooms since that is the most direct and high-value route to improved student achievement. We hope and trust that this study and its recommendations are a good first step in that direction.

Andrew Lachman
Executive Director
Connecticut Center for School Change

In Search of Quality: Recruiting, Hiring, and Supporting Teachers

Executive Summary

Teachers hold the key to student achievement. Research shows clearly that teachers are the biggest single factor in student learning. Consistent exposure to high-quality teachers can reduce or eliminate the achievement gap between white and minority students (Rice 2003; Hanushek et al 1998).

This study, commissioned by the Connecticut Center for School Change with the support and assistance of the Connecticut State Department of Education, is an initial effort to investigate how state and district teacher recruitment, hiring, and support policies and practices affect the ability to hire and retain high-quality teachers.

Connecticut, like other states, faces the challenge of ensuring that all public schools have high-quality teachers. It has been a recognized national leader in crafting state-level policy initiatives to increase the number and quality of teachers. Now, however, with many baby-boomers retiring, state data suggest that the demand for teachers is increasing and that the competition for newly trained teachers is becoming fiercer. **The result is that differences in teacher qualifications between schools serving different populations of students appear to be widening.** With one of the largest achievement gaps in the country, Connecticut must pay attention to this pressing issue.

Study Framework and Findings

Framework

Using statewide data collected by the State Department of Education and evidence from interviews and surveys in 11 representative school districts, this study provides information about three points:

- characteristics and distribution of teachers in Connecticut
- the Connecticut teacher labor market
- state and local policies concerning teacher recruitment, hiring, and support.

Surveys of newly hired teachers in the 11 case study districts provide evidence of teacher preferences and perceptions concerning their hiring and support. The aggregated data from state and local sources are used to estimate the total statewide costs of teacher recruitment, hiring, and support. Drawing upon the collected evidence, the researchers offer recommendations for state- and district-level policy changes targeted at more uniform and effective teacher recruitment, hiring, and support. Topics for future research are identified that will allow state and local educational leaders to understand how their policies and practices are linked to quality teaching and student achievement.

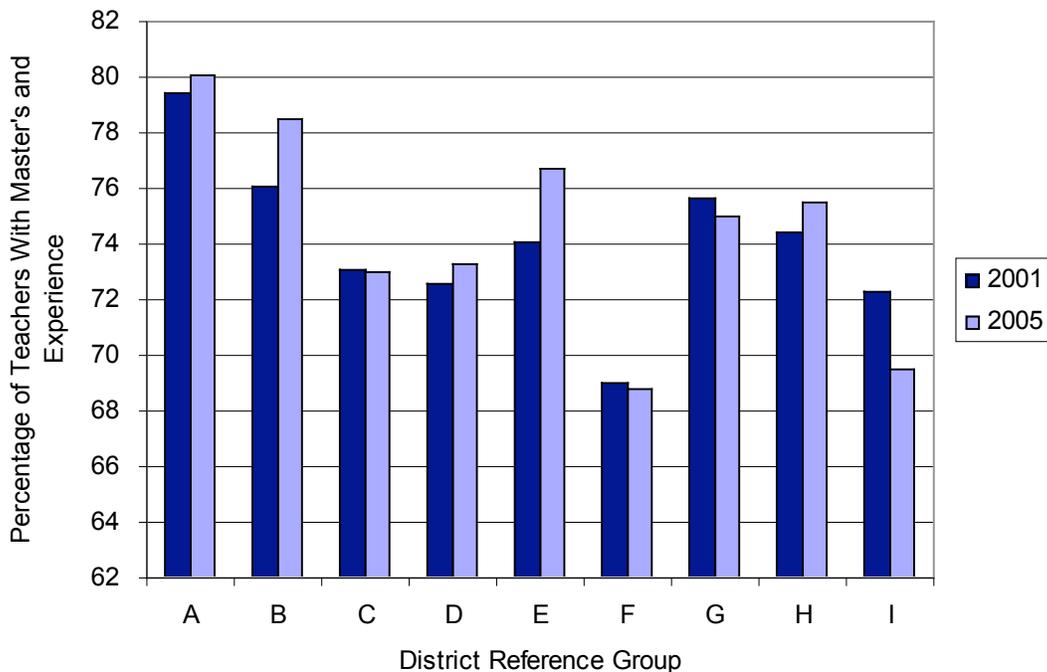
What is a DRG and an ERG? District Reference Groups (DRG) were created by the Connecticut State Department of Education to group districts that serve similar populations of students. DRG replaced the older classification of Education Reference Groups (ERG) in June 2006. In both systems, Group A districts have fewer students from single parent households and higher than average household incomes. Group I districts have higher proportions of students from low income households and include the state's major urban centers. For more information see: http://www.csde.state.ct.us/public/cedar/databulletins/db_drg_06_2006.pdf

Findings

Not all Connecticut students have equal access to high-quality teachers

This study used teacher experience (one year and above) and education level (master's degree or above) as proxies for teacher quality. (This differs from the definition of teacher quality used by the federal No Child Left Behind legislation.) As Figure 1 shows, using those criteria the data indicate that as poverty levels increase in districts the level of teacher qualifications generally declines. Another indicator related to this finding is that in 2005, 37 percent of newly hired teachers in DRG A districts had a master's degree plus experience compared with only 21 percent in the DRG I districts.

Figure 1 Teacher Qualifications by DRG



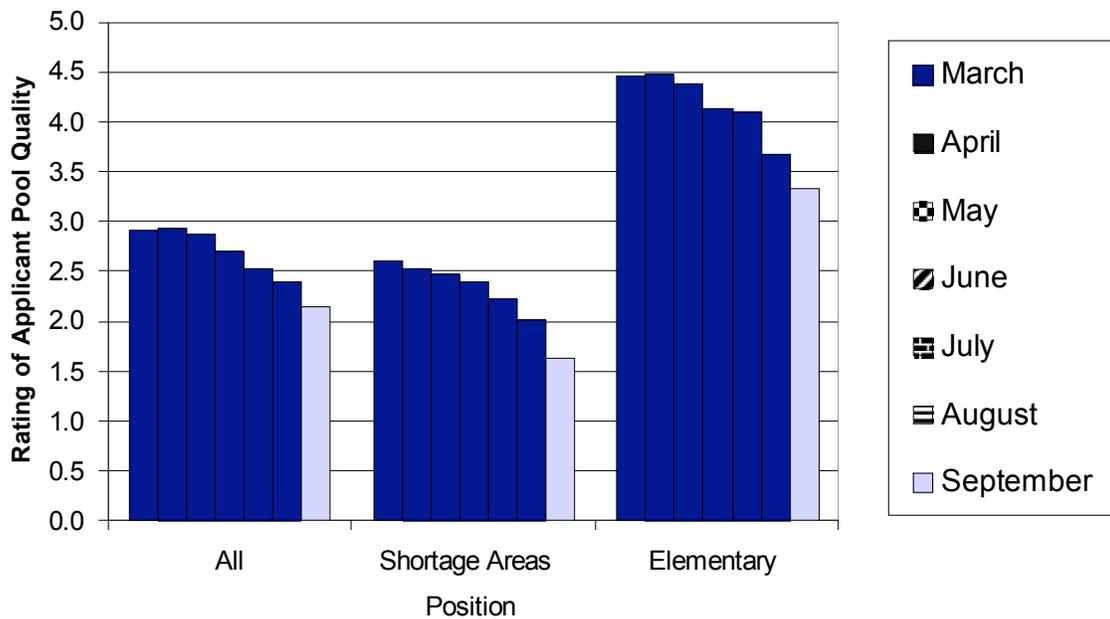
Source: CSDE staff data

In addition to having generally less-qualified staff, Connecticut’s poorest districts have lower retention rates for first-year teachers and greater difficulty filling vacant positions. Districts in DRGs A through H were unable to fill between 0.7 percent and 4.3 percent of their 2005 teacher vacancies. Districts in DRG I, serving the poorest children in the state, were unable to fill 15.3 percent of their vacancies with qualified applicants (Prowda and Ellsworth 2006). Furthermore, a review of teacher transfer data reveals that the poorest districts have more teachers transfer out than transfer into them. In contrast, the wealthier districts have a positive net flow of teachers.

Earlier recruitment yields better response and higher quality teachers

School districts report that when they begin the hiring process earlier in the year, the quality of the applicant pool is higher. Figure 2 shows district ratings of the quality of applicant pools (5 is best, 1 is the worst) by the month that the search began for several different types of vacancies.

Figure 2 Quality of Applicant Pool by Month of Vacancy Announcement



Rating System: 1= few or no qualified applicants, 5 = many qualified applicants

Source: CSDE Hiring Survey

At the district and school level most vacancies are due to teachers who have left or changes in enrollment. Since poorer districts generally have the greatest outflow of teachers, their hiring burden is intensified. The general trend in the data indicates that poorer or urban districts tend to hire later in the year and that the majority of their hires occur in the summer. This practice can have negative consequences.

The timing of hiring is often driven by when state and municipal budgets are approved. Districts hesitate to hire before the budget passes because of uncertainty around funding. This postpones the start of the hiring season and leads to a poorer quality applicant pool. One DRG I district addressed this issue and improved its hiring prospects by working with the city council to move the budget process up earlier in the year.

In addition to budget timing, other issues impede hiring. In the case study districts the responsibility for winnowing the applications down to one or two top choices resides at the school level. Paper applications are the norm. As districts increase in size, managing that paper becomes more complex and labor intensive. This complexity can slow the hiring process and create competition between schools for teachers.

How teachers are treated affects whether they take and remain in a job

How newly hired teachers feel they are treated in the hiring process and while they are working influences whether they will stay in a district. Personal connections are important to teachers seeking new positions. Many educators use those links as the start of their own research to find the best teaching opportunity. Friends and colleagues, together with personal contacts by district officials, were the primary sources of information about jobs for new teachers in the 11 case study districts.

Teachers work hard to find the right job.

A new teacher who works in a shortage area described her efforts to find a school that was a good fit for her. She sought out students from all schools where she had job offers. Ultimately she chose a job in a school with a diverse population of students who were excited about their school.

Support has been linked with higher teacher retention (Ingersoll and Smith 2004) and improved instruction (Kelly 2004; Wong 2004). Once hired, personal connections remain important for teachers; they report that colleagues are the main source of support as they transition into their new jobs. As direct supervisor of a new teacher and often the person that assigns the mentor to that teacher, the school principal plays a key role. **Yet principals were rarely provided with guidance on how to organize and deliver new teacher support.**

The consequences of good hiring and retention practices become evident in teacher satisfaction data. About a third of the new teachers surveyed in the 11 case study districts said they intended to leave their current school or district. On average, those who were leaving were more likely to say they were poorly informed during the hiring process, had more issues with their workload, were unhappy with their classroom space, and were also more likely to feel isolated and unsupported.

Substantial resources are used to recruit, hire and support new teachers despite little information on what works

The resources – cash, donated time, etc. – used to recruit, hire, and support new teachers are substantial: a minimum estimate is an average of \$10,000 per hire, or a

total of \$40 million every year across the state. Regardless of the level of resource use, districts often lacked the tools to learn if their recruiting, hiring, and support processes were effective. When asked, most district leaders (superintendents and school board chairs) had vague goals for the processes; they looked for a “good fit” or teachers that “get it.” Few districts collected information from teachers through surveys and exit interviews on whether their human resource activities worked well. The state does not provide information that would allow districts to compare their teacher retention rates. More importantly, there is no way to analyze the relationship of teachers hired and retained with their ability to improve student learning through value-added data.

Leadership priorities drive what gets done

Districts can improve their hiring practices.

One high-poverty district moved hires from September to earlier in the year by:

- creatively working with transfer rules
- analyzing past patterns of hires and resignations to support a staffing plan
- getting the school board’s permission to hire early
- actively maintaining a large hiring pool.

The result was a reduction in unfilled positions from 20 in 2004 to four in 2005.

The processes used to recruit, hire, and support new teachers varied greatly among and often within districts. The average number of district interviews reported by new hires ranged from 1.2 to 3. Some districts required the use of interview committees with parent representatives, while in other districts the process was at the sole discretion of the principal. This variation in processes among districts often reflected the importance placed on these activities by superintendents. Districts that spent more time and effort on recruitment, hiring, and support are those whose leaders have made those activities a priority. However, many of the districts visited for this study had recent changes in leadership -- most hired a new superintendent within the last three years -- so leadership emphasis was missing or unstable.

State policies have had both intended and unintended effects

Over the last several years, Connecticut has responded to concerns about teacher shortages by changes in regulations and incentives to increase the production of new teachers. The number of newly certified teachers graduated by Connecticut colleges and universities increased by 10 percent from 2000 to 2004.

The state’s regulations have created some consistency in practice across districts. Connecticut regulates who can be hired (people must be certified) and has mandated a rigorous supervision and evaluation system that teachers reported to be helpful. Connecticut’s statewide Beginning Educator Support and Training (BEST) program provides newly credentialed teachers with mentors. It requires new teachers to demonstrate their teaching competencies via portfolios (videotapes, written reflections, examples of student work) before becoming eligible for the next tier of teacher certification. Newly certified teachers generally found their BEST mentors to be helpful. However, some new teachers in high-poverty districts reported that they did not receive mentors and some districts reported that they experienced shortages of experienced

teachers willing to be mentors. There was also an overall dread of the portfolio process. **Furthermore, in many districts the required support processes did not appear to be well-integrated into school or district efforts to improve instruction and learning.** Often the required activities were add-ons to other efforts within districts.

Study Recommendations

Improving student achievement is the top goal of the State Board of Education (<http://www.state.ct.us/sde/board/index.htm>). The state’s largest achievement challenge is the performance of its low-income students. This study has clearly shown that students in high-poverty districts do not have equal access to qualified teachers and that the process by which teachers are recruited, hired, and supported affects who works in which schools. **Teachers are the most important resource in improving student learning. This study affirms the notion that districts can leverage that resource by improving their recruitment, hiring, and support processes.** The question for Connecticut’s policymakers at the state and local level is how best to integrate the recruitment, hiring, and support of newly hired teachers into ongoing efforts to improve instruction and student learning

One way of looking at this challenge is to use a policy template designed by professors Lorraine McDonnell and Richard Elmore to frame the discussion (McDonnell and Elmore 1987). According to their framework a state has four main tools to affect education policy: regulation, funding and incentives, capacity building, and system change (Table 1). Regulations and incentives are the tools that have been most often used in education; however, the system changes required by new standards-based accountability models such as the federal No Child Left Behind law (NCLB) have been dominating current education policymaking.

Table 1 Education Policy Tools

Tool	Outcome	Example
Regulation	Compliance with minimum standards	Teacher certification
Funding/incentives	Activities where capacity exists but is not used without an inducement	Minority teacher incentives
Capacity building	Long-term changes with few immediate or tangible indicators of change	Training programs
System change	Change authority for an activity or outcome	NCLB

Sources: McDonnell and Elmore 1987; McDonnell 1989

While the current study is simply a first step in investigating how recruiting, hiring, and support affect the availability of quality teachers to all students, several recommendations have emerged and can be considered using this framework.

The recommendations focus primarily on system change and capacity building for two reasons. First, using regulations and incentives in a way that directly affects student

learning is a complex enterprise. Second, Connecticut already has certain research-based regulatory structures that, if well-implemented, could be very useful. Our study, for example, shows that compliance with the regulatory components of the BEST program was rarely integrated into district instructional improvement efforts. The best approach may be effectively using existing regulatory tools, rather than adding regulations or changing them.

Recommendations for State Action

Incentives

1. To enable school districts to activate recruitment efforts earlier, the state should offer systemwide incentives for teachers to give early notification of retirement, resignation, or return from maternity leave.

Capacity building

2. To build capacity at both the state and local level for evaluating the effectiveness of processes for recruiting, hiring, and supporting teachers, the State Department of Education should undertake the following:
 - a. Produce teacher value-added data based on state assessments.
 - b. Develop a statewide system for exit interviews or surveys of teachers who leave teaching and switch districts.
 - c. Train school district leadership (superintendents and school boards) on how to use data to evaluate and improve recruiting, hiring, and support processes.
3. To help districts reduce overlaps and delay at the local level, the state should work with districts to implement paperless processes for new teacher hiring.

System change

4. To assure that local districts can begin staff recruitment, especially for shortage areas, in a timely fashion, the General Assembly should act to shift some of the risk for early hires to the state.
5. The state should financially support the development of district standards for human resources practices to ensure continuity through leadership changes.

Recommendations for District Action

Capacity building

1. To assure that districts are using resources effectively, district leaders should systematically examine whether their own recruiting, hiring, and support processes are effective by answering the following questions:
 - a. What does the existing data say about recruiting and retaining high-quality teachers in their district?
 - b. How can we use value-added data about teacher effectiveness to evaluate internal programs and processes?

- c. What can principals learn from each other about recruiting, hiring, and supporting high-quality teachers?
 - d. What can human resources professionals across districts learn from each other about effective processes?
2. To reduce costly internal duplication, each district should use active staffing plans that:
 - a. Forecast the number of new hires needed each year
 - b. Present weekly updates about teacher departures and returns from leave
 - c. Signal to principals when they should hire for each position.
3. To leverage current information gathering processes for increased accuracy and efficiency, school district administrative leaders must work together with the state to develop and use a paperless hiring process.

Unanswered Questions

While this research regarding teacher recruiting, hiring, and support has generated some initial findings and recommendations, it also has prompted as many questions as it has proposed answers. Two of the most pressing research questions arising from this initial investigation are:

1. What are the best (and worst) practices that Connecticut districts use to improve the quality of teachers who are recruited and hired in districts?
2. What are the best (and worst) practices that Connecticut districts use to create working conditions that attract and retain teachers?

Further study on these two queries is necessary because the teacher shortage situation in Connecticut will persist.

Conclusion

The Connecticut education system has much to be proud of. Average student achievement rates are among the highest in the nation. The state has been a national leader in creating standards that describe what teachers and students should know and be able to do. That said, overall student achievement is generally flat, and gaps between poor and non-poor students (as well as between white and minority students) are among the largest in the nation. **In order to raise student learning and close achievement gaps, Connecticut educators and policymakers must pay attention to the processes and practices that identify, hire, and support the most important component in student achievement: quality teachers.**

This study is a first step in the process. It has shown that teacher recruitment, hiring, and support practices differ across districts and these differences do not serve all of the state's children well.

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1. Overview

Connecticut, like other states, faces the challenge of ensuring that all of its public school students have high-quality teachers. Data indicate that today there are fewer teachers available for teaching positions in Connecticut. The number of experienced candidates over the past 15 years appears to have declined, suggesting that the labor market is getting tighter. While the state is taking action to increase the supply of teachers through incentives and changes in teacher preparation, it is not clear how well Connecticut's districts are prepared to hire and keep the teachers who are available.

This study is an initial examination of the role that recruitment, hiring, and support play in meeting teacher demand. It examines the overall market for teachers and the flow of teachers into Connecticut schools and districts, and then examines the processes used by districts to recruit, hire, and support teachers. It describes the amount of resources used in these processes and the systemic perspectives (or lack thereof) brought by state and district leaders to these processes. The goal of this work is to provide state and local practitioners and policymakers with information and recommendations to assist them in improving teacher quality and student learning.

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Data and Methods

Data for this report were drawn from four primary sources:

- existing state data regarding teachers and district recruitment and hiring activities
- interviews with state leaders concerning state-level policies and practices affecting teacher recruitment, hiring, and support
- interviews with local leaders and practitioners on recruitment, hiring, and support processes in 11 case study districts
- surveys of newly hired teachers in 11 case study districts.

State data include the state staffing file, which contains information on all teachers working in Connecticut public schools, their work assignments, education levels, and experience levels as of October of each school year. The data used for this report are for school years 2001 through 2005, and allowed tracking of teachers as they moved between districts and left Connecticut public schools.¹ The state also conducts a hiring survey every fall that provides information on the number of vacancies, the positions that are open, when the search for candidates began in each district, and the size and quality of

¹ Note that in this report all school years will be identified by the calendar year in which the school year began, e.g., school year 2005-06 is identified as "2005".

the applicant pool. Information from these surveys for the school years 2002 through 2004 was used for this study.

Information was gathered from 11 case study districts. Connecticut has divided its districts into “district reference groups,” or DRGs, grouping districts that serve similar populations of students in terms of socioeconomic status (SES) in order to allow comparisons between districts. The DRG groupings run from the very affluent, low-need suburban districts of DRG A to the seven high-need, low-SES urban areas of DRG I.² CSDE created the DRG to replace the “education reference group” or ERG, in June 2006. When referring to analysis conducted by CSDE prior to June 2006, the older, ERG designations will be used. The difference between the ERGs and DRGs is related to census data. The data used for the ERGs were from the 1990 census, while the DRG assignments were made using data from the 2000 census. The formula for the assignments is the same for the ERGs and DRGs.³ The districts in this study were selected by the Connecticut Center for School Change as representative of districts across Connecticut. The districts are spread across the state, vary in size, and represent most DRGs. Newly hired teachers in this sample of districts are very similar to newly hired teachers across the state.

The case studies involved one-day site visits to each district. Interviews were conducted with the superintendent, human resources director, induction coordinator, principal focus groups, mentor focus groups, and other administrators as appropriate relative to the size of the district. The participants in the focus groups were selected by district personnel.

All newly hired teachers in case study districts were surveyed. For purposes of this study, newly hired teachers were identified as teachers new to the district, whether or not they were in their first year of teaching. In other words, newly hired teachers are both those with no teaching experience (first-year teachers) and those with experience who had just moved into the district or returned to teaching. The survey addressed their experiences with the district in being recruited, hired, and supported, and also asked about their future plans.

The survey of newly hired teachers was offered online and as a hard copy in selected districts based on the recommendations of district leaders. All participants received two e-mail notices as well as a postcard reminder about the survey. Those who completed the survey received a \$10 Amazon.com gift certificate. Two hundred and two responses were received, representing a response rate of approximately 38 percent. The grade level distribution of respondents was a close approximation of the overall grade distribution of newly hired teachers in the 11 school districts. Some pupil services staff members (librarians, school psychologists, etc.) were included in lists of newly hired teachers provided by districts; however, their responses were not included in the final survey data.

² Assignment of districts to district reference groups was determined in June 2006. See CSDE Research Bulletin, School Year 2005-06, Number 1, June 2006,

http://www.csde.state.ct.us/public/cedar/databulletins/db_drg_06_2006.pdf.

³ For more information on the change from ERG to DRG see Connecticut Voices for Children at

http://www.ctkidslink.org/pub_detail_303.html, or CSDE at

http://www.csde.state.ct.us/public/cedar/databulletins/db_drg_06_2006.pdf.

Table 1.1 shows the wide variation in response rates for each district. The names of districts have been changed to pseudonyms. The first letter in each name represents the DRG for that district. In general, there were more responses and lower response rates in the larger DRG H and I districts. In order to protect the privacy of survey respondents, those from districts with fewer than 10 responses (Dolphin, Ensign, and Inlet) were pooled together when reported.

Table 1.1 Case Study Districts and Their Survey Response Rates

District	Response Rate %
Bay	38
Beach	62
Deck	55
Dock	55
Dolphin	71
Ensign	50
Harbor	64
Iceberg	27
Inboard	22
Inlet	40
Island	32
Total	38

Study Limitations

This study describes the methods and processes used by districts to recruit, hire, and support teachers across a sample of Connecticut districts, and the context in which these activities occurred. The measurement of those processes through one-day visits and surveys of teachers should be considered a snapshot rather than a comprehensive picture of district activities. The data provide very few links between those processes and teacher quality. This study used state data on the quality of applicant pools, as rated by districts; teacher qualifications; and teacher retention as proxy measures for teacher quality. A key finding of this study is the lack of good data on teacher quality and the need to create such data to allow policymakers and practitioners to evaluate the programs within their span of control.

2. The Research Context

Teachers and Student Achievement

As American public education has evolved into a standards-based system that aims for universal proficiency for all students, the importance of teachers has been rediscovered. Teacher effectiveness is the single most important school-based factor affecting student achievement (Rice 2003).

Several studies measuring student learning over time in different classrooms have found that an effective teacher can be more important to student achievement than a child's race, poverty level, parent's education, or any other external factor once thought to dominate achievement outcomes. For example, in Tennessee, researchers using value-added data discovered that students with the most effective teachers for three years in a row outperformed students with the least effective teachers by 50 percentage points on a 100-point scale (Sanders and Rivers 1996). Similarly, in Texas, researchers measuring the mathematics performance of individual students over time in order to assess the effectiveness of individual teachers concluded that "...having a high-quality teacher throughout elementary school can substantially offset or even eliminate the disadvantage of low socio-economic background" (Hanushek et al. 1998).

As educators know, teaching is both an art and a science, and there are multiple dimensions of teacher quality. As a result, researchers have found it difficult to tease out the precise attributes that separate a highly effective teacher from a less effective teacher. However, according to recent reviews of the literature (Rice 2003; Allen 2003; Reichardt 2001), researchers have reached the following conclusions:

- Experience matters. First-year teachers are less likely to be effective than teachers with several years of experience.
- Cognitive abilities are important. Higher scores on tests of literacy and verbal ability and admission to more selective teacher preparation programs are correlated with student achievement.
- Knowledge of the subject makes a difference. This knowledge is particularly important at the secondary level. For example, an advanced degree in the subject taught by the teacher or certification in the subject area is correlated with student achievement.
- Pedagogical training contributes to teacher effectiveness. This is particularly true when pedagogical training is coupled with content knowledge.

Despite the evidence regarding the relationship between teacher quality and student achievement, research also shows that the students with the greatest needs often have the least effective teachers. For example, studies from the Dallas School District showed that students with the lowest prior achievement rates were more likely, and in some cases far more likely, to be assigned to the least effective teachers (Babu and Mendro 2003; National Partnership for Teaching in At-Risk Schools 2005).

The research on the connection between student achievement and teacher effectiveness and the large percentage of education spending (approximately 80 percent) allocated to teacher salaries and benefits have motivated many national, state, and local policymakers to experiment with a variety of policies designed to increase teacher quality. To place the current study in context, this section will review measures of student achievement in Connecticut and provide a general review of policies seeking to affect teacher quality in Connecticut that have been implemented to date.

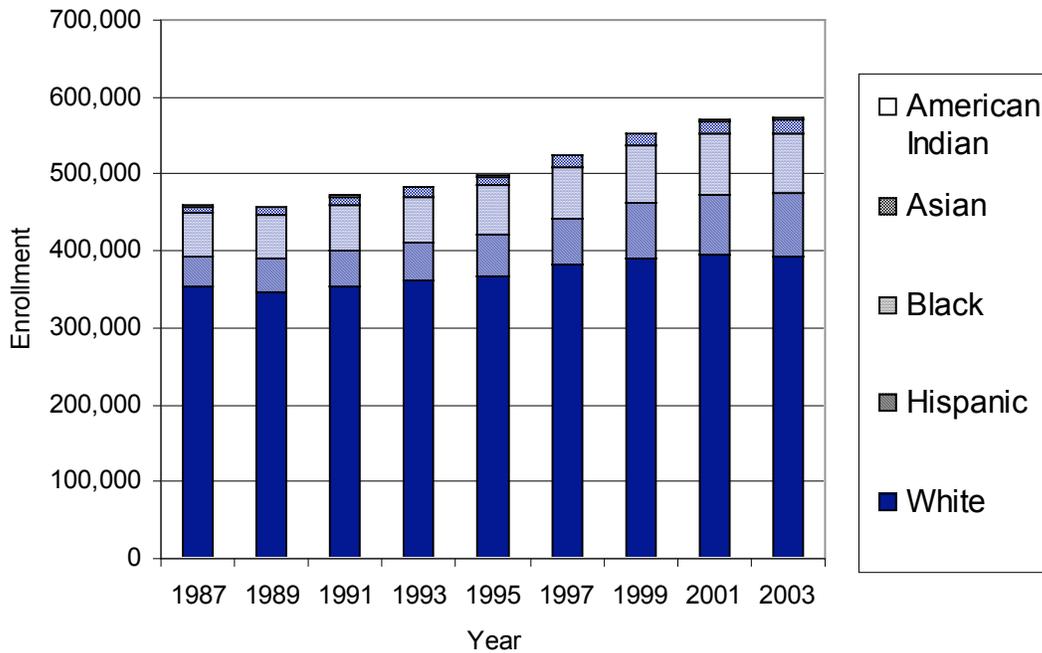
Connecticut's Student Population

In looking at any state education issue, it is important to understand the demographics of the student population. The size of the student population, along with the incidence of student characteristics that can cause students to be at risk for academic failure, provides the context for understanding both the issue itself and potential interventions. These demographics also help illuminate the variety of challenges faced by different districts within the state.

In 2004, 576,474 students were enrolled in Connecticut public schools, representing an increase of 12.6 percent during the previous 10 years. The public school population is expected to peak in 2006 at 580,630 students. For the next 10 years, Connecticut projects a 2 percent overall decline in public school enrollment (Prowda 2005). A map detailing growth in enrollment by district is located in Appendix B.

A student's ethnic or racial background can be strongly correlated with achievement level, and African-American and Latino students tend to be more at risk for lower academic achievement. Statewide, nearly one-third of Connecticut students are members of minority groups, almost evenly divided between students of African-American heritage (13.6 percent) and Latino heritage (14.6 percent). Students of Asian descent make up 3 percent of the population (Fig. 2.1 on next page). Minority children tend to be clustered in geographic areas. In contrast to state averages, 84 percent of students in DRG I districts are minority children even though race was not taken into direct consideration when the DRGs were created (CSDE 2005a). Notably, Connecticut, like many other states, will likely experience growth in its minority populations, a factor that may portend future academic challenges (U.S. Census Bureau 1999).

Figure 2.1 Connecticut K-12 Student Population Trends, 1987-2003



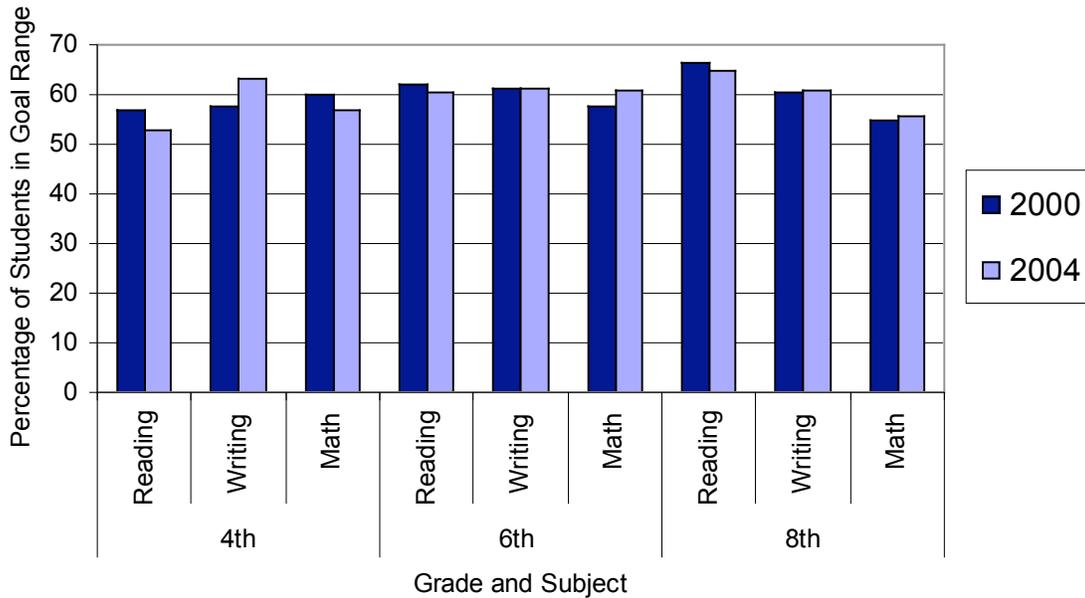
Source: U.S. Department of Education Common Core of Data

Another student background factor commonly associated with risk of academic failure is poverty. Connecticut is a prosperous state overall and has a relatively low level of child poverty. Nationwide, 18 percent of all children were living in poverty in 2004, while in Connecticut the figure was 10 percent. Twenty-one percent of all American children under the age of five live in poverty, while just 11 percent in Connecticut do (Annie E. Casey Foundation 2006). These percentages have not changed substantially for Connecticut in the last five years. As noted earlier, the DRG classifications take into account the proportion of children living in poverty. Districts in DRG A have the fewest children eligible for free and reduced-price lunch, while districts in DRG I have the most children eligible for free and reduced-price lunch.

Student Achievement in Connecticut

Connecticut has regularly assessed its students on their proficiency in meeting state-identified learning standards since the 1990s. The 1998 *Common Core of Learning* and the *Connecticut Framework: K-12 Curricular Goals and Standards* represent what students in Connecticut are expected to know and be able to do. The Connecticut Mastery Tests assesses students on how well they are meeting state standards, using five levels: Advanced, Goal, Proficient, Basic, and Below Basic. Figure 2.2 shows CMT performance in 2000 and 2004 in reading, writing, and mathematics for grades 4, 6, and 8. The data make clear that performance has remained relatively steady.

Figure 2.2 Percentage of Students in Goal Range, Connecticut Mastery Test, 2000 and 2004



Source: CSDE

The federal No Child Left Behind (NCLB) education legislation requires states to show adequate yearly progress towards the goal of academic proficiency for all students by the 2013 school year. To ensure that states do not set their standards too low, NCLB also requires states to administer the National Assessment of Educational Progress (NAEP) for comparison. Thus, in evaluating the academic achievement of Connecticut students, it is important to look at both CMT and NAEP scores. Overall, Connecticut tends to score favorably on NAEP compared to other states (Table 2.1).

Table 2.1 2005 NAEP Scores in Connecticut and Nationwide

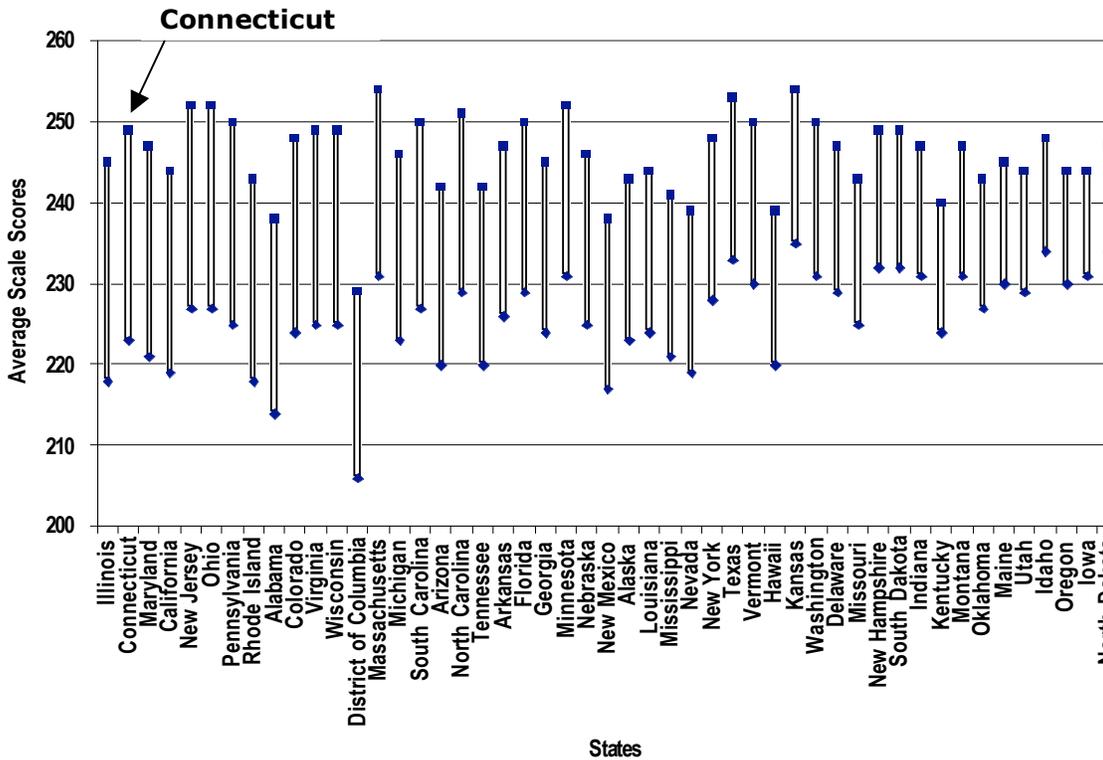
	CT Students Scoring Proficient or Above (%)	Students Nationally Scoring Proficient or Above (%)
Grade 4 reading	38	30
Grade 4 math	42	35
Grade 4 science	35	28
Grade 4 writing	49	27
Grade 8 reading	34	29
Grade 8 math	35	28
Grade 8 science	35	30
Grade 8 writing	45	30

Source: National Center for Education Statistics

However, a significant issue for Connecticut is the achievement gap in test scores between poor and non-poor students, as well as that between white students and students

from other ethnic and racial backgrounds (Fig. 2.3). Connecticut has one of the largest achievement gaps in the country, according to the Education Trust, a national education reform group that tracks achievement gap issues (2004). Because one-third of Connecticut's students are from racial and ethnic minority backgrounds, the state's achievement gap is an issue that cannot be ignored.

Figure 2.3 NAEP Grade 8 Math: Performance Distance Between Poor and Non-Poor Students by State in Order of Largest to Smallest Gap



Source: National Center for Education Statistics

However, Connecticut is making some progress in closing its achievement gaps. The longitudinal data from NAEP scores from 1998 through 2003 are, for the most part, encouraging, reflecting significant gains by Latino and African-American students during this time. For example, the reading scores of Latino fourth-graders increased nine percentage points. In eighth-grade mathematics, African-American scores increased by 11 percentage points, while Latino scores increased by eight percentage points (NCES n.d.). According to the Connecticut State Department of Education, from 2000 through 2004, achievement of students in DRG I (excluding special education students and English language learners) increased at a much faster rate than the achievement of students in DRGs A through H, and achievement of black and Latino students statewide increased at much higher rates than that of white students, especially in grades 6 through 8 (CSDE 2005c).

In sum, student achievement in Connecticut is high compared to many states. However, there are areas of concern tied to the state's achievement gaps and the concentration of at-risk students in certain school districts. As noted earlier, teachers are the largest single influence on student achievement. The next section will describe the state policies regarding becoming a teacher and identifying and addressing teacher shortages.

Teacher Quality – The State-Level Policy Environment

Connecticut is generally regarded as a leader in promoting state policies that support high-quality teaching. Connecticut's Beginning Educator Support and Training Program has been identified as one of the nation's pre-eminent support systems (Wilson et al. 2001; Alliance for Excellent Education 2005). The 2006 edition of "Quality Counts," *Education Week's* annual ranking of the states in a variety of areas, gives Connecticut an A minus for its efforts to improve teacher quality. Only two states ranked higher.

The fact that recent overall test scores have shown little improvement has raised concerns that Connecticut's efforts to invest in teacher quality may not be paying off in student learning (*Connecticut Post* 2006). This section will discuss state policies intended to have an impact on quality teaching in Connecticut, including issues relating to teacher shortages.

Becoming a teacher – preparation and induction

Connecticut's Common Core of Teaching (CCT) sets standards for what teachers should know and be able to do. The Foundational Skills and Competencies section of the CCT consists of 19 standards, divided into three parts. First, teachers should have foundational knowledge related to student learning, content, and pedagogy. Second, teachers apply this knowledge through standards related to planning, instruction, and assessment and adjustment. Finally, teachers demonstrate professional responsibility through standards related to professional and ethical practice, reflection and continuous learning, and leadership and collaboration. The CCT also contains discipline-based standards specific to teachers working in specified disciplines, such as mathematics and music. The CCT is intended to guide teacher preparation, performance, and evaluation over the course of a teacher's career (Connecticut State Board of Education 1999).

Connecticut has three tiers of teacher certification. There are two routes to eligibility for the first tier, the Initial Educator Certificate. A candidate may go through the "traditional route," completing a planned program of teacher preparation at a regionally accredited institution. By state regulation, teacher preparation programs are required to demonstrate that their students are knowledgeable about the CCT, as well as the various standards and assessments for student learning, and students must demonstrate individual competencies that align with the CCT and content standards. Connecticut also offers an Alternative Route to Certification (ARC) for persons with bachelor's degrees and work experience. Under either an ARC I or ARC II program, the candidate takes intensive coursework while working under supervision for two years in a Connecticut public school. Teachers prepared out-of-state who have 20 months of successful teaching experience at the same school are also eligible for an Initial Educator Certificate.

The Initial Educator Certificate is effective for three years. During this first three years, Connecticut requires first-time teachers to participate in a state-mandated induction program, the Beginning Educator Support and Training (BEST) program. Established in 1989, BEST provides beginning teachers with school-based mentor support and state-sponsored professional development in a number of subject areas. In May of their second year, teachers submit a portfolio to the state demonstrating their competencies as defined by both the foundational and discipline-specific standards found in Connecticut's CCT. The portfolio is structured around the four dimensions of planning, instructing, assessing, and reflecting, with teachers required to present evidence in specified formats of their proficiencies in each dimension. For example, BEST portfolios contain lesson plans, videotapes of teaching, student work samples, and teacher commentary on various aspects of practice, among other things. A successful submission entitles the teacher to apply for a Provisional Educator Certificate. Teachers who do not meet the standards submit an additional portfolio in February of their third year (CSDE 2005b). According to CSDE, 88 percent of second-year submissions are successful, and 99 percent of teachers meet standards by the end of the third year (Natale and Lomask 2005).

Originally, BEST was designed to build local capacity through one-on-one mentoring and to develop teacher leaders, and state funding included stipends for mentors and for release time. In the 1990s, funding for BEST was cut (or, in the words of one interviewee, "decimated"). According to interviews with staff, current BEST funding is directed equally to professional development, assessment, and administration. CSDE staff describe the program as evolving from an assessment program for new teachers into a method for supporting good teaching and building professional learning communities. To date, BEST has not been evaluated for its effect on important outcomes, such as teacher retention.

Upon successful completion of the BEST program (for newly licensed teachers) or proof of 30 months of successful experience (for out-of-state teachers wishing to become certified in Connecticut), teachers are eligible for the second tier of certification, the Provisional Educator Certificate.⁴ This certificate is valid for eight years. To receive the third tier of certification, the Professional Educator Certificate, the teacher must demonstrate 30 months of successful teaching plus completion of required professional development coursework. As noted above, Connecticut's Common Core of Teaching is intended to form the basis for ongoing professional development and evaluation.

Teacher compensation

Connecticut teachers are well-paid relative to teachers in other states. In 2004, the average teacher salary was \$56,516, representing the second-highest pay in the country, behind only the District of Columbia. In comparison, the average teacher salary nationally was \$46,597. Connecticut's teacher salaries are comparable, however, to those in other states in the Northeast, such as New York (\$55,181), Massachusetts (\$53,274), and New Jersey (\$53,663) (Education Week 2006).

⁴ In general, teachers certified out-of-state with fewer than three years of teaching experience are certified under the Initial Educator Certificate and required to complete the BEST program.

Beginning teachers in Connecticut are paid \$34,462, the 10th-highest starting salary in the country. Again, this salary is competitive with those in neighboring states. While New Jersey pays its starting teachers \$37,061 and New York pays its starting teachers \$36,400, beginning teachers in Massachusetts and Pennsylvania make just over \$34,000.

Teacher Shortage Areas

CSDE staff identified hiring and retaining teachers -- in urban districts and in shortage subject areas -- as two of the biggest issues facing Connecticut. They did not identify an overall teacher shortage as an issue facing the state.

In 2005, Connecticut school districts had 5,538 teaching positions to fill, and filled 93 percent of those positions. The notable story behind this statistic is the different abilities of districts to fill vacancies. On average, districts in DRGs A through H were unable to fill between 0.7 percent and 4.3 percent of their vacancies. However, districts in DRG I, serving the poorest children in the state, were unable to fill 15.3 percent of their vacancies with qualified applicants (Prowda and Ellsworth 2006).

The state designates shortage areas based on reported unfilled vacancies. Ten shortage areas have been designated for the 2006 school year (CSDE 2006):

- Bilingual education (PK-12)
- Comprehensive special education (1-12)
- English (7-12)
- Intermediate administrator
- Mathematics (7-12)
- Music (PK-12)
- Remedial reading (1-12)
- Science (7-12)
- Speech and language pathology
- World languages (7-12).

Several state policies address teacher shortages. For example, a district unable to find certified teachers may request the issuance of a Durational Shortage Area Permit, good for one year and renewable for up to three years, based on its stated inability to find teachers in a given area. Other state policies are more directly focused on increasing the supply of qualified teachers. The state's Alternative Route to Certification (ARC I and ARC II) was established in part to relieve shortages by providing a more streamlined entry into the profession. The Connecticut Housing Finance Authority offers a low-interest-rate mortgage to teachers in priority or transitional school districts or who teach in a state-identified subject matter shortage area. The Connecticut Minority Teacher Incentive Program provides funds for up to 50 minority college students per year to pursue teaching careers (CGSA §10-186a). Retired teachers may return to teaching in a subject shortage area for up to two full years without being subject to the earnings limit (Sternberg 2006). Overall these policies appear to have had an effect: between 2000 and 2004, the number of people with teacher preparation credentials from Connecticut colleges and universities increased by 10 percent (Prowda and Ellsworth 2006).

3. Teachers in Connecticut

Currently, Connecticut school districts hire between 4,000 and 5,000 teachers per year. This demand, which may continue at this rate for the next five to 10 years, is increasingly being met by first-year teachers. Meeting the demand for teachers raises two important issues for those interested in education in Connecticut:

- How can Connecticut ensure that its first-year teachers are of the highest possible quality?
- How can Connecticut ensure that high-quality teachers are distributed equitably to schools across the state?

There is reason to believe that addressing each of these issues will be a challenge. The next sections will describe the data behind these issues.

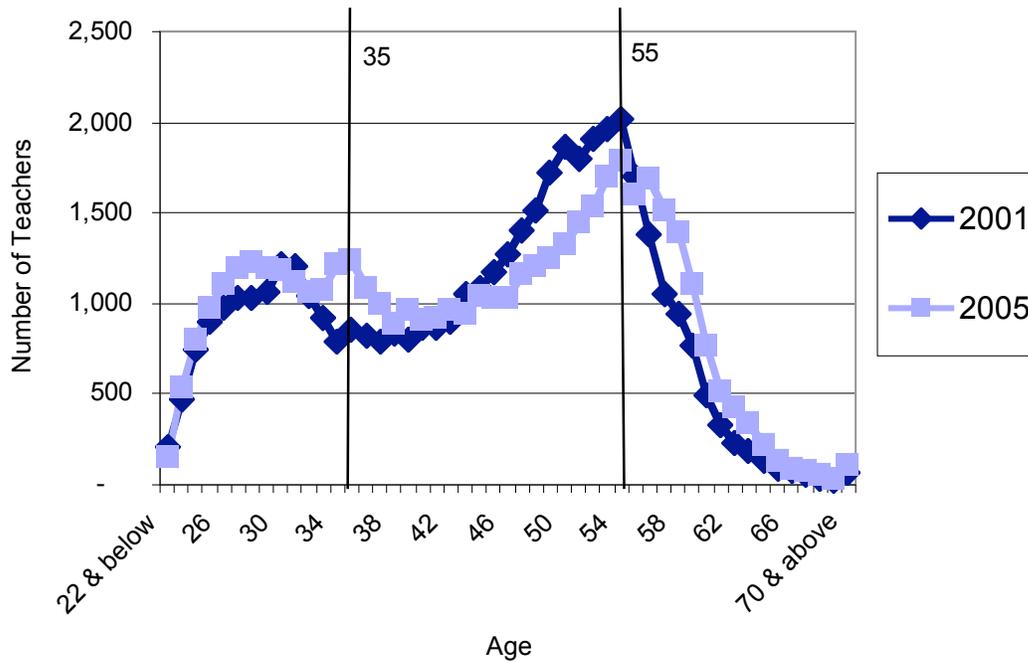
The Challenge

Demand for teachers is a function of teacher attrition, student enrollment, and program decisions that impact staffing needs (e.g., class size reduction, increased course offerings). The number of teachers working in Connecticut schools has increased from 44,684 in 2000 to 46,377 in 2005. As described earlier, the number of students in Connecticut schools has increased over this same period from about 558,000 to 576,000 and the student-teacher ratio has declined slightly, from 12.5 to 12.4. Enrollment is expected to decline between 2005 and 2014 to about 564,000, suggesting that enrollment is not expected to increase demand for teachers over the next 10 years (Prowda 2005). Maps detailing enrollment growth and growth in the number of teachers by district are located in Appendix B.

The profile of teachers working in Connecticut schools has changed slightly over the last five years. The proportion of minority teachers has increased slightly, from 6.6 percent to 7.1 percent, between 2001 and 2005, mostly due to an increase in the number of Hispanic teachers. Over the same period, the number of male teachers has declined slightly, from 25.7 percent to 25.0 percent.

One change in the teacher workforce has been in age distribution. While the average age of teachers has changed very little (from 43.7 to 43.6), the number of teachers who are either younger or near retirement age has increased. Figure 3.1 shows the age distribution of teachers in 2001 and 2005. The proportion of teachers who are 35 and younger has increased from 28 percent to 30 percent, and the proportion over 55 has increased from 38 percent to 39 percent of the workforce.

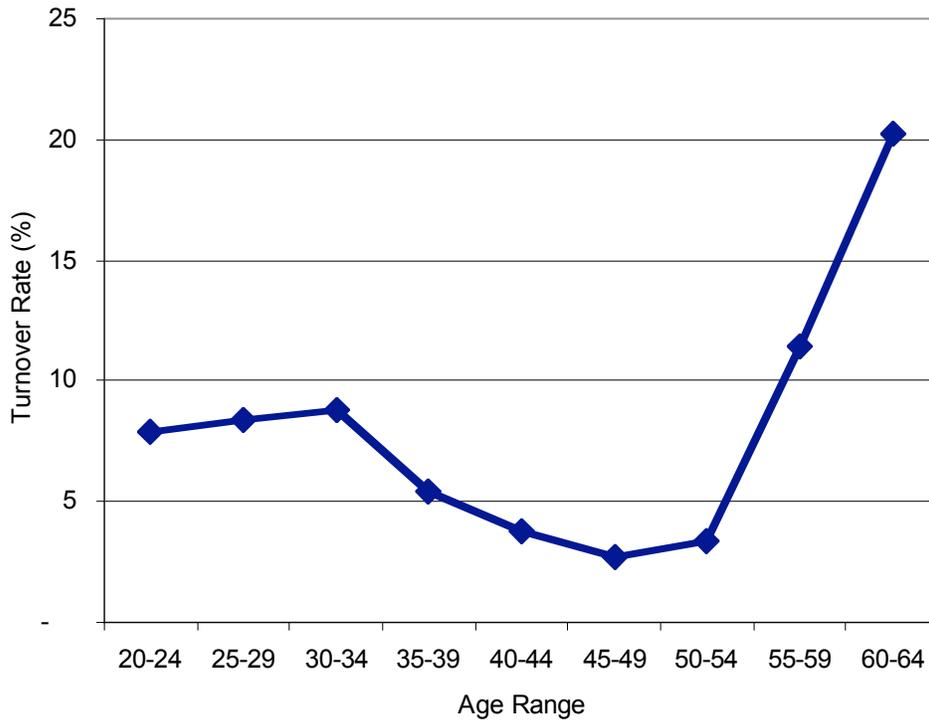
Figure 3.1 Age Distribution of Teachers in 2001 and 2005



Source: CSDE staff data

Changes in the age distribution are important to questions about teacher demand because teacher attrition is related to age. Attrition from the state teacher workforce has increased over the past 10 years, from 4.6 percent in 1994 to 7.2 percent in 2004. Younger teachers and those near retirement age are more likely to leave teaching and increase teacher demand. Figure 3.2 illustrates that point, using data from CSDE on certified staff turnover (Prowda and Ellsworth 2006). It shows the turnover rate of certified staff by age group. The turnover rate shows a classic *U* distribution, higher for young teachers' and those near retirement and low in the middle (Kirby et al. 1991).

Figure 3.2 Connecticut Teacher Attrition by Age



Source: Prowda and Ellsworth 2006

This suggests that increases in the number of teachers at the beginning and end of their careers can be expected to keep demand for teachers at the current levels of over 4,000 teachers hired per year for the next five or more years.

Sources of Teachers

In 1994, about 38 percent of newly hired teachers had been certified within the previous year. This percentage increased to about 56 percent in 2004.⁵ At the same time, the number of teachers with their first Connecticut certification has increased from about 3,000 in the early 1990s to over 4,000 over the past few years. Of course, not all newly certified teachers are hired, but the odds of being hired have greatly increased, from one in three in the early 1990s to closer to one in two in recent years (Prowda and Ellsworth 2006). The increase in reliance on new graduates suggests that competition for teachers has become fiercer. As districts and schools compete for teachers, a crucial issue raised by this trend is whether that competition leads to an unequal distribution of quality teachers.

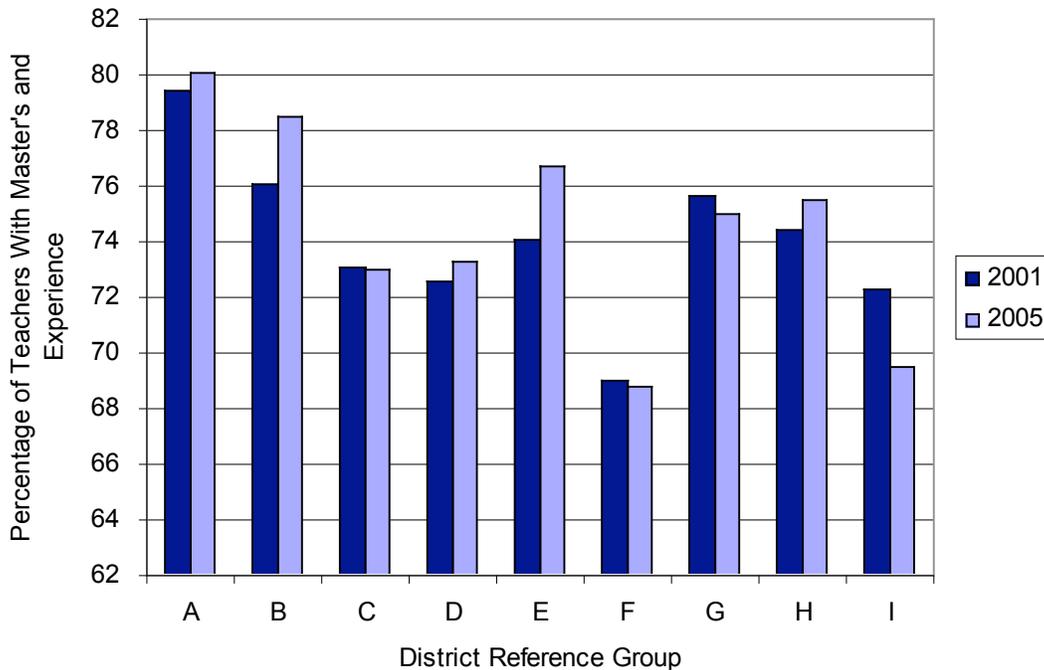
As discussed in the previous section, teacher quality is a complex concept. Good teachers employ a combination of subject knowledge and pedagogical skills to improve student achievement, while also instructing students on social skills, citizenship, workplace

⁵ At the same time there were declines in the percentage of newly hired teachers who had been certified more than one year prior to being hired or who had previously taught and taken a break from teaching of a year or more.

competencies, and developing relationships with individual students that enable students to feel safe and motivated. The current Connecticut state data do not permit a direct measure of any of these quality factors. Instead, Connecticut has measures of teacher *qualifications*: education level and experience. Of these measures, experience is most closely related to a teacher's ability to improve student learning, with the largest increase in ability to improve student achievement occurring with one year of teaching experience (Hanushek et al. 2005). At the same time, whether a teacher has a bachelor's degree or education beyond a bachelor's degree seems to have little or no relationship to a teacher's ability to improve student learning, with some exceptions for some subject areas, such as mathematics (Rice 2003; Reichardt 2001). Without other kinds of data on teacher quality such as value-added performance, experience and education are often used as proxies for teacher quality. It should be noted that the qualification measures described here should not be confused with the NCLB definition of "highly qualified" teachers, which is based on certification status and content-related coursework.

For this analysis, teacher qualifications are measured using education and experience. Figure 3.3 shows the number of teachers with a master's or higher degree and at least one year of experience ("master's plus experience") by DRG. The declining height of the bars from left to right shows a general decline in the level of teacher qualifications in Connecticut schools as student poverty increases. The pattern shown here of lower qualifications in high-poverty schools is repeated for all measures of teacher qualifications in the data used for this analysis. Equally important, the difference in teacher qualifications between schools with fewer poor students (i.e., DRG A) and schools with more poor students (i.e., DRG I) has increased between 2001 and 2005. The proportion of teachers with a master's degree or higher and at least one year of experience in DRG A increased between 2001 and 2005 from 79 percent to 80 percent, while the proportion of similarly qualified teachers in DRG I decreased, from 72 percent to 69 percent over the same period. This evidence suggests that over the past five years the competition for teachers has increased the unequal distribution of teacher qualifications in Connecticut. This imbalanced distribution of teacher qualifications is sometimes known as the "teacher gap."

Figure 3.3 Teacher Qualifications by DRG



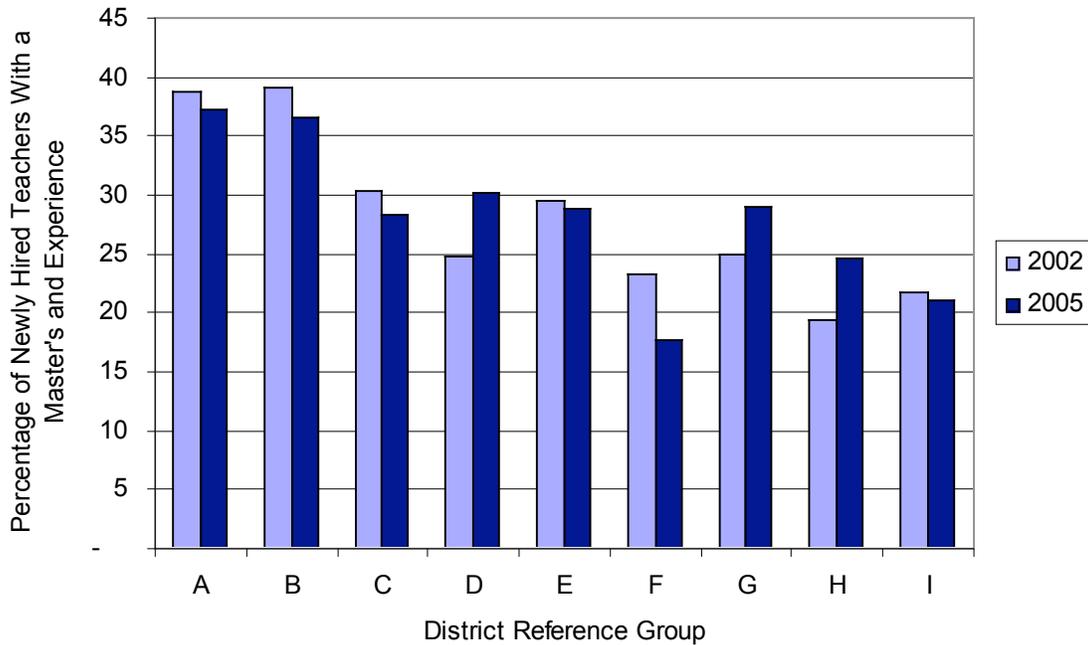
Source: CSDE staff data

Increasing Teacher Gap?

A central factor in the teacher gap is the qualifications of newly hired teachers. Lankford and his colleagues argue that the initial placement of first-year teachers is the key factor in the unequal distribution of qualified teachers in New York (Lankford et al. 2002).

Figure 3.4 shows the proportion of newly hired teachers with both a master’s degree and experience by DRG. As we saw in the prior discussion on qualifications of all teachers, there is a decline in qualifications of newly hired teachers from low- to high-poverty districts. In 2005, 37 percent of newly hired teachers in DRG A districts had a master’s degree and experience, compared to 21 percent of newly hired teachers in DRG I districts. Overall, the proportion of newly hired teachers with a master’s degree and experience increased across all DRGs from 27 percent to 28 percent between 2002 and 2005.

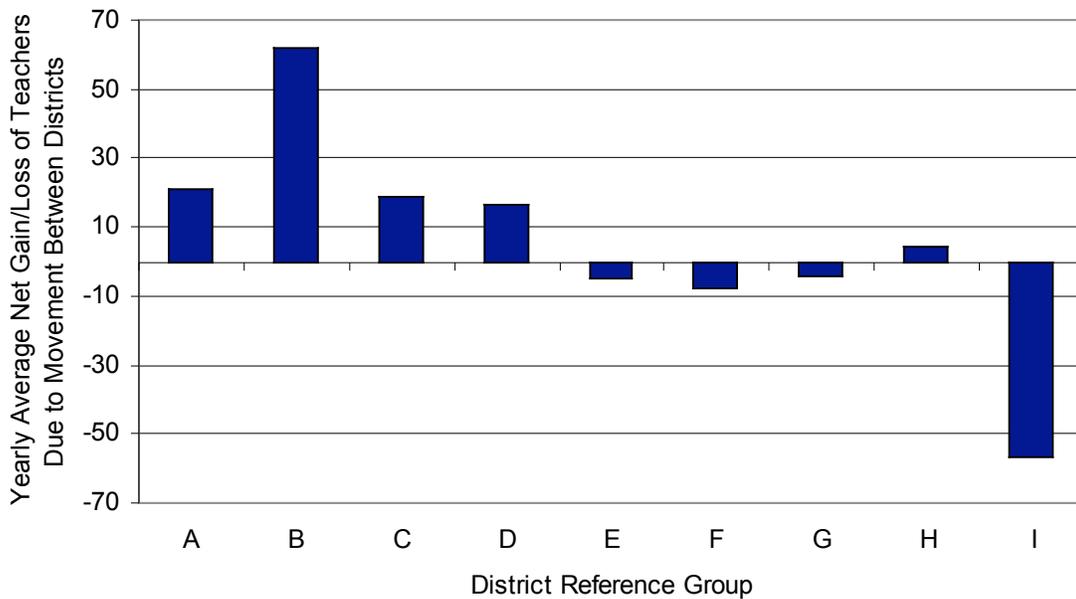
Figure 3.4 Newly Hired Teachers With Both a Master’s Degree and Experience



Source: CSDE staff data

Movement of teachers between districts also plays a role in the teacher gap, representing about 25 percent of teachers hired by districts. By definition, a teacher moving between districts is an experienced teacher, and therefore fits one of our qualification indicators. Figure 3.5 contains the yearly average flow of teachers between districts for 2001 to 2005. The positive bars for DRGs A through D show that those districts generally have more teachers move into them from other DRG districts than they lose each year. At the same time, districts in DRGs E through I generally lose more teachers than they gain due to movement (DRG H is an exception). DRG I loses about 57 teachers a year to districts in other DRGs, representing about 2 percent of the teacher workforce in DRG I. A map detailing which districts gain or lose teachers due to movement between districts is located in Appendix B (Fig. B.4).

Figure 3.5 Flow of Teachers Between DRGs Due to Movement Between Districts, 2001-2005



Source: CSDE staff data

During the case study visits in 2006, many district administrators and leaders argued that salary played a role in the movement of teachers between districts. Research indicates that while salary does play a role in this movement, school-level conditions play a larger role (Hanushek et al. 1999; Ingersoll 2001). An initial examination of the relationship between salaries and teacher movements is shown in Table 3.1. This table shows the average salary increase of teachers in 2003 and 2004 in three categories: teachers who stayed in the same school, teachers who changed schools but stayed in the same district, and teachers who changed districts. Those teachers who changed districts increased their salaries by about \$1,100 over those teachers who stayed in the same school.

Table 3.1 Change in Salary for Teachers Between 2003 and 2004

Teacher Movement	Average Increase in Salary
Stay in same school	\$ 2,876
Move between schools in same district	\$ 2,618
Leave district	\$ 3,975

Source: CSDE staff data

Conclusions About the Connecticut Teacher Labor Market

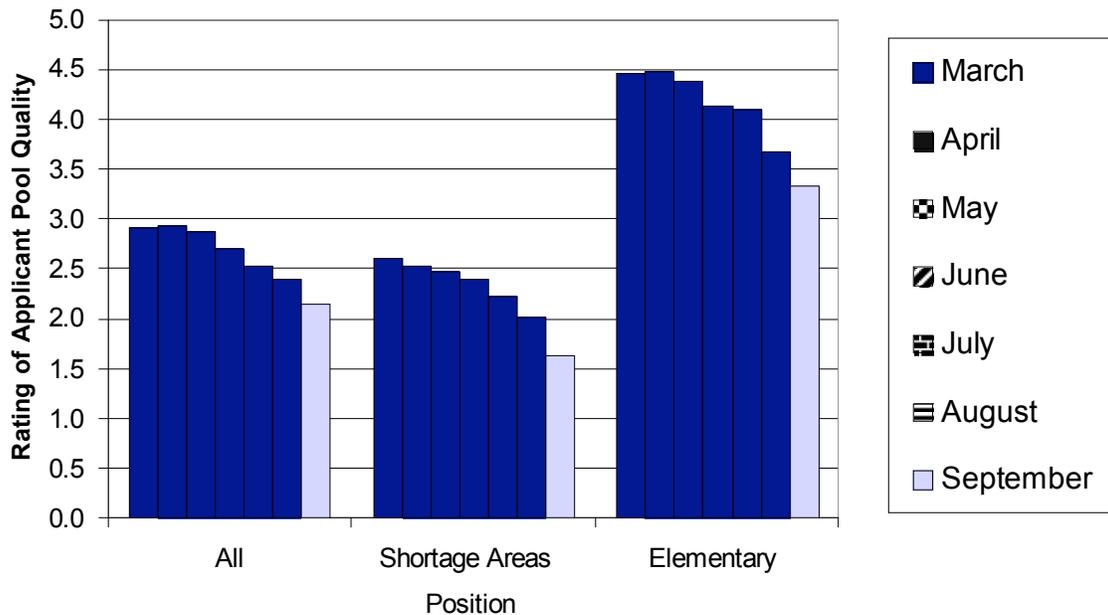
The distribution of teacher qualifications between high- and low-poverty districts, as identified by DRG, is unequal and may be growing increasingly unequal. While the very general teacher qualifications used here are not particularly satisfying proxies for teacher ability, the data still need to be attended to given the importance of teacher quality to student achievement. State data show that the movement of teachers between districts serves to drain teachers from high-poverty districts toward low-poverty districts. As noted here, changes in salary serve as an incentive for teachers to change districts; however, other research shows that school-level conditions are a larger factor in transfers than salary (Hanushek et al. 2001). While salary is clearly an incentive, the next few sections of this report will show how district processes for recruiting, hiring, and supporting teachers can also affect teachers' decisions about where to seek, accept, and continue their employment.

4. Recruiting Teachers

Recruitment is the process school districts use to solicit applications for vacant teaching positions. It begins with the task of identifying vacancies and continues until applications are closed. Some districts approach recruiting as a year-round process, with administrators always on the lookout for talented teachers. Administrators in those districts also make a conscious effort to present a positive image of their district to potential applicants and to people in positions to advise teachers about the desirability of working in their district.

Districts generally benefit from recruiting for teacher vacancies as soon as possible. The quality of the applicant pool steadily declines from April through September. Figure 4.1 shows district ratings of the quality of the applicant pool, as provided by districts to CSDE in the annual Hiring Survey. The trend is similar for all positions, whether in shortage areas or in abundance areas such as elementary teachers. As a result, districts that enter the hiring process later in the year have a lower-quality applicant pool from which to select. Conversely, districts that begin recruiting earlier can choose from a larger pool of qualified teachers.

Figure 4.1 Quality of Applicant Pool by Month of Vacancy Announcement



Rating System: 1= few or no qualified applicants, 5 = many qualified applicants

Note: The ratings are statistically different at the .05 level for All and Shortage Area positions and at the .10 level for Elementary positions between any two months that are more than two months apart.

Source: CSDE Hiring Survey

Early Recruiting Obstacles

School administrators face a number of obstacles that hinder the ability to recruit early. A large obstacle is uncertainty about what positions they will need to fill for the coming year. The number of open positions is driven by teacher decisions to accept a job outside of the district, retire, or begin or end maternity leave. Vacancies are also driven to varying degrees by enrollment fluctuations, budget modifications, program changes, and terminations.

Incentives for early notification of retirement, resignation, or changes in maternity leave are tools for speeding up the information available about vacancies. Early-retirement incentives were used in many of the case study districts as a tool to cut budgets. However, these incentives also served to increase the information available about open positions. One principal reported using the informal incentive of letters of recommendation for those who provided early notifications of resignations.

Staffing plans can serve as valuable tools for managing and communicating the information necessary for identifying and filling positions. A staffing plan is a single document or linked set of documents that:

- estimates future changes in number of staff due to changes in enrollment and programs,
- maintains updated information on which teachers are leaving,
- identifies high-priority vacancies to fill, and
- links staffing and its budget implications.

Staffing plans serve two functions. First, they organize the information administrators need to make staffing and resource allocation decisions. Second, staffing plans provide a way of communicating to building principals that they can begin the recruitment and hiring processes. Although all districts have a planning process for identifying staffing needs, districts that are more active in recruiting constantly monitor the staffing situation in order to keep their staffing plans current.

Leaders in most districts reported having a fairly firm idea at some point in April or May as to the number of vacancies they would face in the next school year. However, the budgeting process can present obstacles to beginning the recruitment process early. Connecticut's system of combining district and town budgets and having multiple venues for approval or rejection of the district budget creates more uncertainty for school and district administrators. Additional uncertainty is added by the passage of the state budget. Although most districts begin their recruiting process prior to final budgetary approval for "safe" positions (vacancies in core subject areas replacing a departing teacher), some are reluctant to advertise positions until their budgets have passed. As noted previously, delays in the recruiting process can put a district at a disadvantage in the competition for qualified teachers, particularly for candidates who are in high demand.

One solution to this problem is to get the final budget approved earlier in the year. For example, administrators and school board members from the Iceberg School District

recognized this problem and worked with their town council to begin the budget process earlier in order to begin the recruiting and hiring process sooner.

Finally, it should be noted that in the districts studied, barriers from union contracts and transfer rules generally did not serve as impediments to early recruitment (Levin et al. 2005). In several instances, interviewees related how those barriers had been overcome in recent negotiations.

Recruiting Methods

Table 4.1 below shows how newly hired teachers in the 11 case study districts learned of the availability of their positions. The most common method used by teachers was visiting a website. Use of the Web was followed by an essentially three-way tie among newspaper advertisement, personal contact from someone in the district, and information from friends or colleagues who knew about the position. In other words, both mass communication tools and personal contact are important to recruiting teachers.

In the eight case study districts with 10 or more responses, there was a wide diversity of recruiting methods used. Job fairs were a main method of recruiting teachers in two of the eight districts, and student teaching in a district was the main method in another. It is not clear how effective newspaper ads were in soliciting applications to these districts. One administrator interviewed for this study expressed doubts about the usefulness of placing ads in local and regional newspapers. On the other hand, newspapers ads were the fourth leading way in which teachers learned of the opening for their jobs.

Table 4.1 How Teachers Learned of Vacancies for Their Positions

Information Source	Percentage
Website	21
Friends or colleagues who knew about the opening	15
Personal contact by someone from the district	14
Newspaper	13
Student teaching or internship in district	11
Job fair	10
Contacted a person at the district to learn about open positions	9
Other	5
Agency	3
Posting at your university or teacher training program	2

Source: Survey of newly hired teachers

All of the case study districts posted their teaching vacancies on their own websites and often on other sites, such as those maintained by the Connecticut Regional Education Alliance Program (CTREAP) and the Connecticut Education Association. Among all newly hired teachers surveyed, 21 percent learned about their jobs through a website. Some districts make it easy to find vacancy announcements on their website, while others actually make it hard by burying the information on their website or not keeping the employment section up-to-date. Well into April 2006, one district still had vacancy announcements on its site for the previous school year but very little information on teaching jobs for the coming school year.

There is substantial variation among districts in their participation in teacher recruitment fairs. At one end of the spectrum are districts like the Dock School District, exerting little, if any, effort toward attending recruitment fairs. At the other end is Beach School District, which puts considerable emphasis on participating in recruitment fairs.

Recruitment fairs provide an opportunity for districts to make a favorable impression on prospective teachers. They can, however, have the opposite effect if people staffing the event do not present a positive and professional image. Newly hired teachers from the Beach School District mentioned that they had unfavorable impressions of another district because the people staffing the booth at a recruiting fair were unfriendly and didn't bother to stand up when they spoke with them. In contrast, administrators from Beach were welcoming and gave candidates the impression that they were interested in them as people.

School and district officials should note that some job candidates were quite creative about collecting additional information about schools and districts they were considering. A recent college graduate in a shortage area described visiting the parking lot of a high school where she was interviewing in order to learn from students about the school environment. Candidates may also visit community businesses to get a sense of the community support for the school and the unvarnished truth about the school and administration. Active recruiting districts recognize that school employees and community members are potential recruiters and work to create a positive perception among them.

Application Process

While districts were making use of technology for advertising teaching positions, application procedures were still paper-intensive. Teacher candidates could download an application from the websites of most of the districts participating in the study, but still had to print out a hard copy and mail it. Some districts allowed teachers to e-mail their applications to the central office, but the applications were then printed out and put in a file folder. For large districts, the complexity of handling large amounts of paper could be streamlined using technology. Beach School District is trying to improve its use of technology by giving teachers the ability to apply using an online form on the district's website. Beach initially planned a transition year of using both paper and electronic applications. However, after finding the electronic applications very helpful in the hiring process, the district dropped the use of paper applications.

Conclusions About Recruitment

Districts vary widely in the amount of energy they put into recruiting teachers. Some districts in attractive locations don't have to put much energy into recruiting because they receive plenty of qualified applications by simply advertising. The majority of districts, however, do not receive an overabundance of applicants. These districts can improve their recruiting prospects by approaching recruitment as a year-round process. They can also use staffing plans to help allocate resources and to signal administrators that the recruiting process can begin. Effectively using technology to advertise vacancies and to collect applications will lessen the burden on applicants and central office staff. Finally, creating a positive impression of the district in a number of arenas is important to attracting the best candidates.

5. Hiring Teachers

Hiring is the process of deciding who should fill a vacancy and convincing that person to take the job. It begins with the screening of applications and concludes with the acceptance of a job offer by a teacher. Included in the process are the activities of identifying candidates, checking references, interviewing candidates, and making job offers. In the case study districts, hiring is fairly decentralized, with schools doing the initial screening before recommending one or two candidates to the central office. Special education is an exception, with hiring done mostly by central office personnel in consultation with principals.

Hiring practices differ widely among districts. For example, some districts mandate that schools establish a selection committee that includes teacher and parent representation. In other districts, the selection process is up to the discretion of the principal. In rare cases, the selection “committee” may be composed solely of the building principal. Most districts ask applicants to conduct a sample lesson as part of the interview process. In at least one district, applicants weren’t required to do so because there were no students available during the summer for them to teach. Other districts deal with that problem by having candidates conduct a lesson for the selection committee.

Number of Interviews

Another indicator of differences among districts is the number of interviews conducted with applicants before hiring. Table 5.1 shows that newly hired teachers reported a wide variation in the number of job interviews they were asked to attend, from an average low of 1.2 applicant interviews to an average high of 3.0. The Beach School District and the Deck School District had statistically higher-than-average numbers of interviews, while the number of interviews in the Harbor and Island School Districts were significantly lower. Some of the variation in the reported number of interviews may have been a result of newly hired teachers not realizing that their meeting with the superintendent or other central office staff was part of the interview process, reflecting an administrator’s skill in making a candidate feel comfortable.

Table 5.1 Number of Job Interviews by District

District	Mean	Number of Responses	Standard Deviation
Beach	3.0*	21	0.89
Deck	2.2*	17	0.83
Bay	1.8	10	0.42
Dock	1.6	16	0.50
Inboard	1.6	40	0.64
Iceberg	1.5	11	0.69
Island	1.3*	24	0.53
Harbor	1.2*	47	0.41
Lower-response districts	2.0	13	0.82
Average	1.7		0.82

* Statistically different from the average at the .05 level.

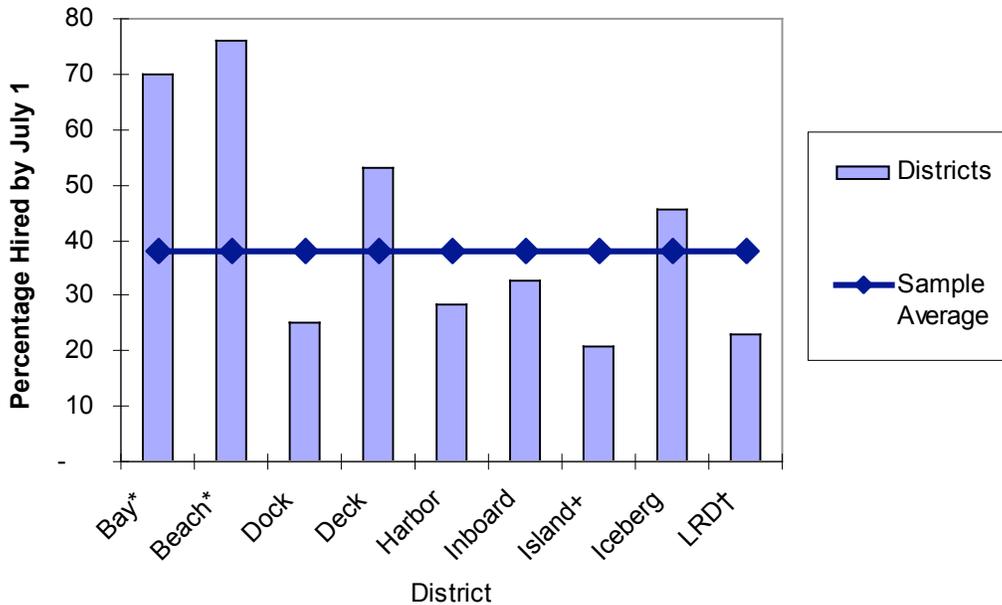
Source: Survey of newly hired teachers

When Districts Hire

Another way in which districts vary in their hiring practices is *when* they hire. As shown in Figure 5.1, 70 percent or more of newly hired teachers from the Beach and Bay school districts reported being hired before July 1, while the average case study district had hired less than 40 percent of its teachers by that date. It is worth noting that the Bay School District reported that the average date for announcing teaching vacancies was May, compared to March for the Beach School District. How was Bay able to hire prior to July 1 when other districts claiming to announce vacancies earlier had lower percentages of teachers hired earlier? Part of the answer may lie in the district's preference to hire teachers who had interned, student-taught, or substitute-taught in the district.

As noted previously, delays in the budget approval process can put a district at a disadvantage in the competition for qualified teachers, particularly for candidates who are in high demand. Some districts are reluctant to hire until their budgets have passed, though some will do so for "safe" positions (vacancies in core subject areas replacing a departing teacher). Figure 5.1 shows that the Iceberg School District was above average among participating districts in the number of teachers hired before July 1 (and better than the other DRG I case study districts). Leaders in that district worked with the city council to move the budget process up earlier in the year.

Figure 5.1 When Teachers Were Hired



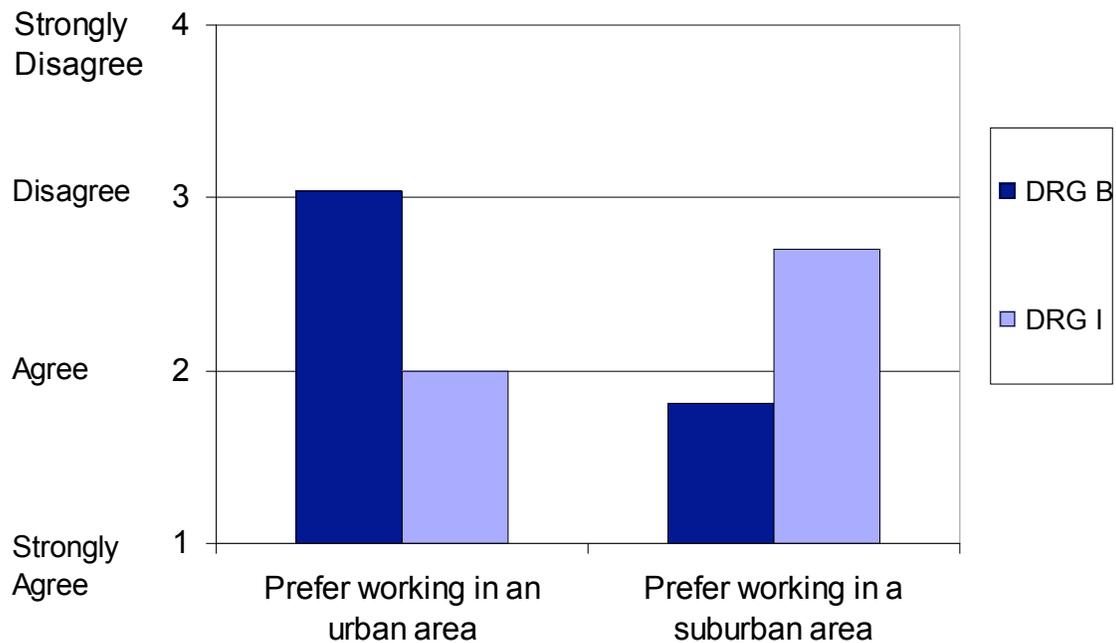
* Indicates statistical difference from the sample average at the .05 level.
 + Indicates statistical difference from the sample average at the .10 level.
 † LRD, lower-response district

Source: Survey of newly hired teachers

Work Preferences

Some research suggests that there are teachers who prefer working in urban areas (McCarthy and Guiney 2004; Levin and Quinn 2003). Responses from the survey of newly hired teachers shown in Figure 5.2 indicate that there is a population of teachers who want to work in urban areas and often end up doing so. Responses from newly hired teachers in the two DRG B districts (the low-poverty districts in the sample) suggest that the respondents were not interested in working in urban areas, while teachers who are working in DRG I districts (the high-poverty districts in Connecticut) were interested in working in urban areas. Additionally, DRG B teachers said they preferred working in suburban areas, while their DRG I counterparts were less interested in working in suburban areas. In short, teachers seemed to be working in the locations where they wanted to work.

Figure 5.2 Teacher Locale Preferences



Note: All values are statistically different from average for all districts at the .05 level.

Source: Survey of newly hired teachers

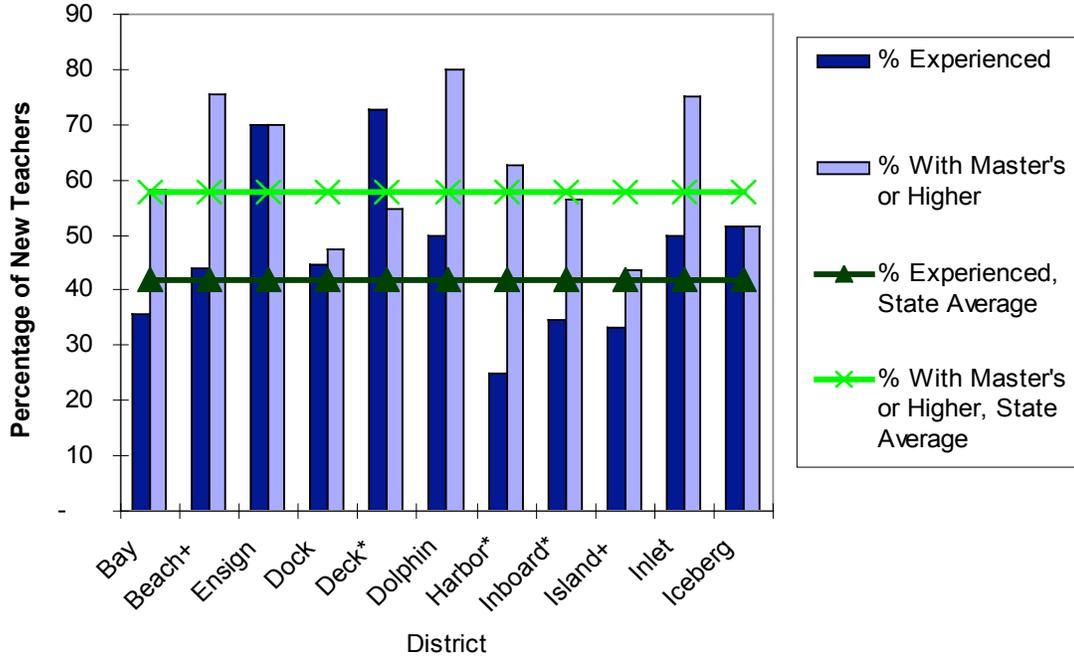
Qualifications of Newly Hired Teachers

Interviews in the districts visited made clear that hiring officials were looking to hire the best candidates available. However, it was also clear that many different factors were used to define the best candidates. The qualification measures available in the current data are experience and education levels. As noted earlier, experience levels have been tied to increased ability to improve student achievement, while the link between education levels and student achievement is supported in the literature only in certain circumstances.

Among the 11 districts participating in this study, only the Deck School District hired more teachers with experience (see Figure 5.3). Conversely, the group hired by the Harbor and Inboard districts had fewer experienced teachers. One district, Beach, generally hired teachers with higher education levels than the other districts. The cohort hired by the Island School District had fewer teachers with a master’s degree or higher than the other districts. What is not apparent in the data is a direct correlation between active recruiting by a district and the qualifications of new hires. Instead, the active-recruiting districts appeared to select for different qualifications. The teachers hired in Beach generally had higher education levels, while teachers hired in the Deck School District were generally more experienced. This lack of a clear link may simply reflect

how poorly experience or education levels represent what districts are looking for in their hires.

Figure 5.3 Qualifications of Newly Hired Teachers in 2005



* Indicates statistically different from state average of experienced teachers at .05 level.

+ Indicates statistically different from state average of percentage of teachers with master's degree or higher at .05 level.

Source: CSDE staff data

Experience Credits for Salary and Hiring Experienced Teachers

One barrier to district recruitment of experienced teachers can be limits on the amount of credit on the salary schedule given to experienced teachers when they enter a new district. Limiting the salary credits helps districts minimize the impact of new hires on the budget. At the same time, these limits on credits can serve as a disincentive for teachers to transfer between districts after they have accrued several years of experience. A limit essentially means that teachers with many years of experience must take a pay cut to change districts. These limits were not an issue in the case study districts. None described having limits on salary credits for experience. When asked, several school board chairs stressed that they did not take into consideration the budget implications of hiring an experienced teacher when making hiring decisions. Instead, they stressed seeking the best candidate regardless of the budget implications.

Conclusions About Hiring

Clearly, districts vary in when they hire and in the processes used to decide on who is hired. Some districts are able to complete the large majority of their hires by July, while others have many positions to fill at that time. Given the data indicating that the quality of the applicant pool declines over time, early hires may give districts access to better candidates. That said, our data do not provide definitive evidence of the value of early recruitment and hiring in terms of qualifications of newly hired teachers. This lack of evidence may indicate how poorly the proxy qualification measures actually reflect quality.

The financial risk districts face when making early hires (before the budget process is concluded) is a key issue. It would help for CSDE to clarify the legal exposure school districts have in rescinding job offers to teachers due to budget or program changes. Case study interviews revealed a considerable difference of opinion on this topic. Some administrators believe that a contract offered is unenforceable if budget changes force a district to withdraw it. Others believe that a district is liable for the teacher's contract under these circumstances. Providing this guidance can ensure that all districts are operating from the same understanding of their exposure to financial risk from early hires.

6. Supporting Teachers

Support for newly hired teachers includes activities that assist teachers in becoming comfortable in their positions and in growing professionally. Support activities include orientation to the district and school, mentoring, new-teacher meetings, and new-teacher trainings. High-quality support has been linked with higher teacher retention (Ingersoll and Smith 2004) and improved instruction (Kelly 2004; Wong 2004). Among districts and schools participating in this study, there is wide variation in the amount of support given to newly hired teachers. Districts rating high in support measures allocate substantial time and resources to providing support.

Sources of Support

As shown in Table 6.1, the primary source of support for teachers was colleagues: team members, mentors, and other teachers. This informal collegial support was rated as most helpful and was provided most often. Building administrators were also an important source of both direct and indirect support, in that principals usually supervise teachers and assign mentors. Newly hired teachers reported that the least common sources of support were parents and the teachers' union.

Mentoring is a broad term that essentially means support for new teachers by a colleague. In this report it includes both support by trained mentors in the BEST program and informal support for experienced teachers who are new to a district. The Connecticut BEST program requires first-year teachers to be assigned a trained mentor but does not require mentoring for experienced teachers that are new to a district.⁶ The data shown in Table 6.1 show that of all newly hired teachers (both first-year and experienced), 67 percent received mentors. Of newly hired teachers receiving mentors, 70 percent received a mentor within a month of starting school. The vast majority of first-year teachers (92 percent) reported being assigned a mentor. All of the teachers who did not report having a mentor worked in the DRG H or I districts. It is not clear why these first-year teachers did not have mentors. In one of our focus groups a first-year teacher reported that she did not learn that she had a mentor until long after the mentor was assigned because no one had informed her. Although mentors are only required for newly hired teachers who are going through the BEST process, many districts also assign a mentor or “buddy” to experienced newly hired teachers. The mentors assigned to experienced teachers may or may not be trained.

⁶ The survey of newly hired teachers was given to all teachers who were new to a district, both experienced teachers and those in their first year. Teachers with initial teaching certificates must participate in BEST, which entails mentoring, support, and completion of a portfolio in a teacher's second year.

Table 6.1 Rating of Sources of Support for Newly Hired Teachers

Rank	Source	Helpfulness (Mean)	Percentage Who Received This Type of Support
1	Team members	1.6*	91
2	Other teachers	1.9*	92
3	Mentor	2.0	67
4	Principal	2.1	92
4	Vice principal	2.1	78
4	Department chair	2.1	66
7	Instructional coach	2.3	32
8	Central office	2.3*	57
9	Parents	2.6*	57
10	Teachers' union	2.7*	62

Rating System: 1 = Very Helpful, 4 = Not at All Helpful

* Indicates statistically different from the average rating at the 0.5 level.

Source: Survey of newly hired teachers

Helpfulness of Support

The amount of support newly hired teachers received varied by district, as did the helpfulness of that support. Table 6.2 shows the helpfulness of support activities as rated by newly hired teachers. Once again, the importance of support from colleagues is evident. Informal mentoring was rated as the most helpful type of support received by newly hired teachers, though only three in four reported having this kind of support. The most commonly received type of support, and one of the most helpful, was regular supportive communication with an administrator or department chair. High percentages of newly hired teachers received school and district orientation, rated as being of about average usefulness. Less helpful were seminars and classes for newly hired teachers and training sessions offered by Regional Educational Service Centers (RESCs). The least useful (and relatively little-used) support was reduced teaching load. The fact that reduced teaching load is not rated as particularly helpful is echoed in other research. Reduced teaching load combined with reduced number of preparations and extra classroom assistance was found to be very weakly related to first-year retention (Ingersoll and Smith 2004).

Table 6.2 Helpfulness of Support Activities

Support Activity	Helpfulness (Mean)	Percentage of Teachers Receiving
Informal mentoring by a colleague	1.7*	77
Regular supportive communication with principal, other administrators, or department chair	1.9*	90
Mentoring by BEST mentor ⁺	2.0	61
Observing colleague teaching	2.0	54
School orientation	2.1	86
Common planning time with other teachers	2.1	69
Extra classroom assistance (e.g., teacher aides)	2.1	51
District orientation	2.2	88
Meetings of all new teachers with administrator(s)	2.3	81
Informal observations by school administrators or colleagues	2.3	81
Training sessions at a RESC	2.4	11
Seminars or classes for beginning teachers	2.5*	69
Reduced teaching load	2.6*	25

Rating System: 1 = Very Helpful, 4 = Not at All Helpful

* Indicates statistically different from the overall mean at the .05 level.

+ Fewer than half of the teachers had no experience and thus were required to receive BEST mentoring.

Source: Survey of newly hired teachers

Support Activities

Informal mentoring by colleagues was a primary support activity for both first-year and experienced new hires across the case study districts. Having regular interactions with their mentors is important for newly hired teachers. A substantial majority of teachers (92 percent) had mentors who worked at the same school, but it is not always possible for mentors to be in the same school or in close proximity to their mentees. The time for interaction between mentors and newly hired teachers varied among districts, with estimates ranging anywhere from 28 to 101 minutes a month. The amount of time

mentors spent with newly hired teachers may have been related to the other support activities offered by a district. For example, the district in which mentors spent the least amount of time with newly hired teachers also offered many other support activities.

Both BEST mentors and newly hired teachers talked about the value of being able to have short conversations throughout the day about how things are going. When looking specifically at BEST mentors, the amount of time newly hired teachers reported spending with BEST mentors is positively correlated with how helpful the newly hired teachers rated BEST mentors. In other words, the more time a newly hired teacher spent with a trained BEST mentor, the more helpful the teacher tended to find their mentor.

BEST Mentor Supply

There is some variation among districts in the supply of trained BEST mentors. Some mentors and administrators attributed a shortage of mentors to the hard work and little or no compensation associated with being a mentor. When the BEST program began, all mentors were paid through state funds. When funding for mentor salaries was cut by the state, many districts discontinued or reduced mentor pay. The extent to which compensation played a role in the shortages reported in some districts is unclear. The large majority of the mentors who were interviewed were mentors because of their dedication to the profession. However, there were clearly differences in the overall culture of support for mentoring in a district. The Bay School District reported having plenty of mentors even though they were uncompensated. One possible reason for this culture of support for mentoring is that the district provided its own BEST mentor training.

The Role of the Principal

Principals play a critical role in supporting newly hired teachers. They are responsible for ensuring that newly hired teachers have access to the resources they need in their classrooms and for ensuring that support systems are in place. As reported in Table 6.2, communication with administrators is one of the most widely received and most helpful sources of support for newly hired teachers. Yet principals received very little training in or support for how to make sure that this communication happens and how to integrate this into their instructional improvement efforts. For example, one of the principals interviewed for this study only realized during the course of the interview that meeting with his mentors would be a good idea.

Assigning mentors to newly hired teachers is an important task that principals should not take lightly. Although official policy in one district was that principals matched newly hired teachers with mentors, one principal allowed newly hired teachers to select their own mentors. The rationale for this practice at first seems sound – allowing teachers to find someone with whom they are personally comfortable. In practice, however, letting newly hired teachers find their own mentors may not be wise. One mentor we interviewed, responsible for two newly hired teachers, was quite frank about disliking both the district and the community. One wonders what kind of experience a teacher would have with this mentor.

State Influence on Support

A key theme in this section is the variation between districts in their support activities. However, there are some common aspects to district support that appear to be tied to state regulations. First, in compliance with the BEST program, most if not all mentors for first-year teachers had completed the BEST training, and most first-year teachers received their mentors rather quickly. Of those with mentors, 85 percent reported receiving mentors within the first month of school. Another source of consistency was the effort principals reported putting into teacher evaluations. Almost all reported increased observations of newly hired teachers and multi-hour efforts to observe and give feedback from those observations to teachers. Newly hired teachers reported receiving, on average, just over two formal observations by mid-February, and 85 percent reported that those observations were helpful to them. However, there was also a consistent dread of the workload and of the ramifications of failing the portfolio review required by BEST for second-year teachers.

Conclusions About Support

Emerging research supports the idea that energy and resources devoted to supporting newly hired teachers can have a tangible effect on school district performance. Districts should pay attention to the teacher support they provide and ensure that such support aligns with school improvement efforts. In most districts studied those people with much of the official responsibility for support – mentors and principals – received very little guidance or supervision for their support activities. State regulations around BEST provided some consistency to the support process, in that almost all first-year teachers received trained mentors soon after being hired. However, how most districts integrated that support into instructional improvement efforts was not clear. That said, the most commonly received support for newly hired teachers was from colleagues, pointing to the need for all administrators and teachers in a building to have mentoring skills.

7. Teacher Attrition

Teacher attrition is usually a bad thing for schools. When a teacher leaves a school or a district, it represents a loss in resources. This loss can be described both in terms of the resources used to recruit, hire, support, and train those teachers (described in the next section), and as a loss of skills and knowledge gained through on-the-job training. It is clear that the loss of teachers after their first year of experience represents the loss of a substantial amount of newly learned skills and knowledge. That said, there are times when teacher attrition is good. Not all teachers should stay in the classroom; clearly some people who are teaching should not stay on the job.

There are many reasons why teachers leave their schools, including moving to other schools, changing occupations, or for personal reasons. As previously discussed, experience is a key factor in attrition, with high attrition rates at the beginning and end of teachers' careers (Kirby et al. 1991; Luekens et al. 2004). National studies have found that the top reason teachers leave the profession is retirement. Among teachers who are under the age of 40, the top reason for leaving the profession is pregnancy/childrearing, followed closely by pursuit of another career. The top reasons for teachers moving to other schools are better teaching assignments and dissatisfaction with the level of support from administrators (Luekens et al. 2004).

Table 7.1 shows teacher attrition rates for Connecticut compared to those for the nation and for school districts in other states. "Leavers" are those who leave teaching altogether; that is, they do not teach in public education in the next year. Those who change schools within public education ("movers") include those who move between districts and those who move to schools within the same district. Connecticut's teacher attrition rates are about the same as the national average and lower than those for the few states for which specific data are available. Unfortunately, teacher attrition information is not available for other states in New England. Further information on attrition rates in Connecticut districts is located in Appendix B.

Table 7.1 Teacher Attrition and Retention in Connecticut and Selected Comparisons

		CT 2001-2004	Nation 2000	Indiana 2001-2004	Colorado 2000
Leavers		7-8%	7.4%	10-11%	11%
Movers	Move between districts	3%	7.7%	2%	4%
	Move within district	3-5%			7%
Stayers		84-87%	84.9%		78%

Sources: National data from Luekens et al. 2004; Indiana data from unpublished analysis by Reichardt; Colorado data from Reichardt 2003; Connecticut information from CSDE staff data

Many of those who leave Connecticut schools return after one or more years (“returnees”). Table 7.2 shows the average percentage of teachers who return to Connecticut public schools after taking at least one year off. About 15 percent of all leavers returned to Connecticut public schools after taking a one-year leave. Many of those who took one to three years off were women. On average, about 73 percent of leavers were women, while between 78 percent and 85 percent of returnees were women. This suggests that an important reason for teachers leaving for a short time is parenting and other family responsibilities.

Table 7.2 Proportion of Leavers Who Returned to Connecticut Public Education, 2001-05, and Their Gender

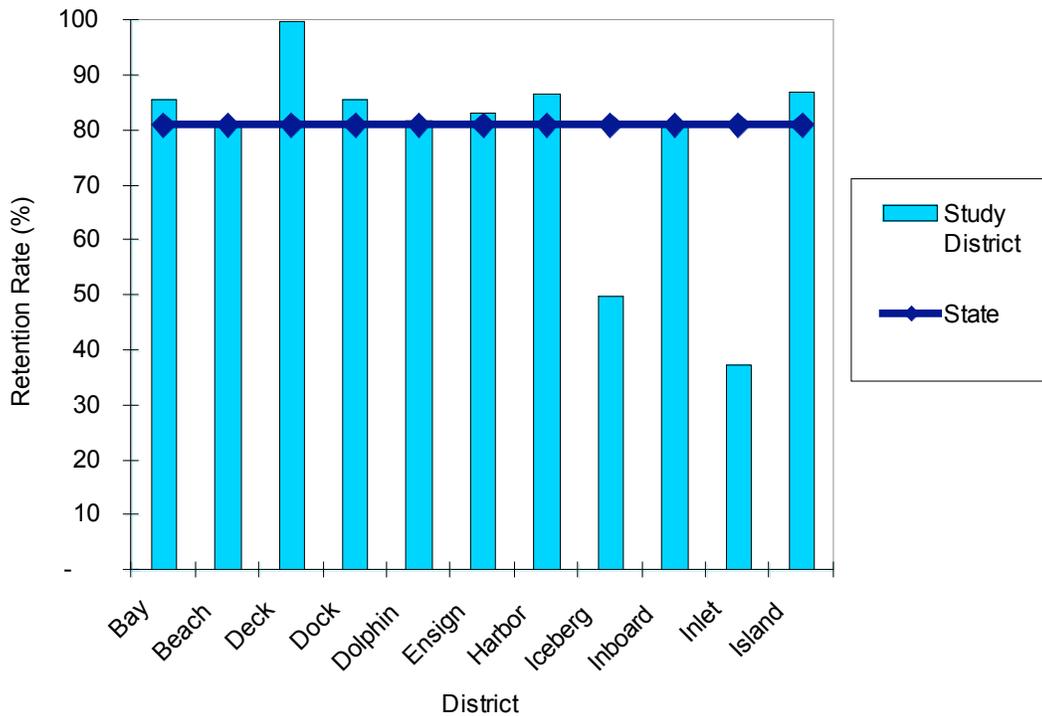
	Percentage of Teachers Who Left (Average)	Percentage of Returnees Who Are Women (73% of Leavers Were Women)
Return after one-year absence	15	85
Return after two-year absence	4	83
Return after a three-year absence	2	78

Source: CSDE staff data

Retention of First-Year Teachers

Support for newly hired teachers has been found to be an important factor in teacher retention (Kelly 2004; Ingersoll and Smith 2004). Ingersoll and Smith argue that the attrition rate of first-year teachers who receive a full induction experience shows that they are less than half as likely to leave their school as those teachers who receive no induction at all. Figure 7.1 shows the retention of first-year teachers hired in 2004 by our case study districts as well as the state retention rate for first-year teachers. As can be seen, most districts in our sample had retention rates that are very similar to that of the state. The district with the highest retention rate, Deck, was one of the two districts in our sample that provided extensive support to newly hired teachers. The district with the lowest retention rate, Inlet, was one of the districts with very few support activities. However, Inlet also faced great budget uncertainty between 2004 and 2005 that could have made some of the district’s first-year teachers fear that their positions would not be funded in 2005. There is no obvious reason for the low retention rate in the Iceberg School District.

Figure 7.1 First-Year Teacher Retention in Study Districts (2004 Hires)



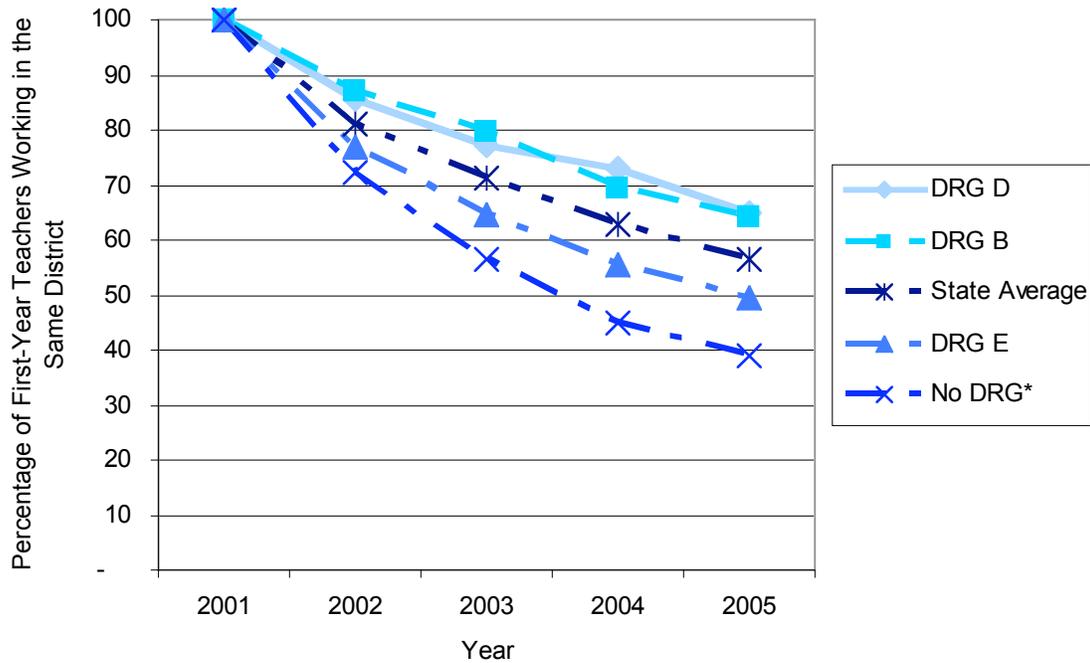
Source: CSDE staff data

It is commonly reported that 40 to 50 percent of first-year teachers leave within the first five years of teaching (Ingersoll 2003). While the data used for this study do not allow a calculation of teacher attrition after five years, we can calculate the attrition rate over four years for teachers hired in 2001. Figure 7.2 shows the percentage of first-year teachers hired in 2001 who continued to teach in the same district from 2002 through 2005, by selected DRGs in which they were hired and the state as a whole. The DRGs shown are those with the highest and lowest retention rates. It is important to note that the chart reflects retention of teachers within a district, not retention within a given school.

The attrition rate is highest after the first year and declines after each subsequent year. The state average retention rate for first-year teachers is 81 percent after one year, 71 percent after two years, 63 percent after three years, and 57 percent after four years. In other words, 57 percent of teachers hired in 2001 were still working in the same district four years later. Interestingly, while retention was correlated with DRG, it was not perfectly correlated. The DRG with the highest four-year retention rate was DRG D at 65 percent, while DRG E had the lowest four-year retention rate, 50 percent. Schools that are not assigned to DRGs (e.g. charters and RESCs) had an even lower retention rate, 39

percent, suggesting that these non-traditional schools and districts face the most significant problems within the state in retaining teachers.⁷

Figure 7.2 Highest and Lowest Within-District Retention of First-Year Teachers by Hiring DRG



* No DRG, schools that were not assigned to a DRG, such as charter schools and RESCs.

Source: CSDE staff data

Teachers Who Say They Want to Leave Their Schools

The survey of newly hired teachers asked about future plans. Only 1 percent of the teachers surveyed said they planned to completely leave teaching after the current year. However, about 35 percent said they planned to leave when a better opportunity came along, or to leave the school/district as soon as they could. When asked why they would leave, with 18 possible responses, one-third of the newly hired teachers cited “family or other non-teaching issues” as the reason, while one-quarter responded that “the students are too difficult.” Large class sizes or high-stakes testing were not cited as the reason for leaving by many of those teachers who said they planned to leave their school or districts.

⁷ Those schools that are not in DRGs are all in non-traditional districts and include RESCs; private special education facilities; schools within the Department of Corrections, the Department of Children and Families, and the Department of Mental Retardation; and technical high schools. These schools hired 262 teachers in 2001, which was about average for all DRGs.

Within the survey there were many important statistical differences between teachers who planned to leave and those who planned to stay. These differences are reflected in almost every dimension of the survey, including why they took the job, how well-informed they felt in their interviews, how well-supported they felt, and who provided them with support. In other words, teachers' experiences in being hired and supported as well as problems they faced in the school environment are highly correlated with their intentions to leave.

However, it is important to note that teachers who planned to stay and teachers who planned to leave shared many similar demographic and personal characteristics. There were no significant differences between these groups in terms of the DRG in which they were working, how much experience they had, whether they preferred working in urban or suburban districts, their race, or their gender. Those who wanted to leave were slightly younger and less likely to have more than one job offer.

In the dimension of support, there were a few important areas where there is no difference between those who planned to leave and those who planned to stay. Most importantly, members of both groups had similar impressions of the support they received from their BEST mentor and the amount of time they spent with their BEST mentor. They also had similar numbers of job interviews, spent similar amounts of time preparing their classrooms, and had similar impressions of the time the hiring process took. Both groups also had similar experiences being formally and informally observed by administrators. They were in agreement as to having a clear understanding of their role in working with special education, not feeling overwhelmed by central office requirements, feeling that they could get help if there was a problem in their classroom, and feeling satisfied with their preparation. Both groups also felt equally unhappy with their materials and textbooks.

However, other measures of the hiring and support processes reveal significant differences between those that planned to leave and those that planned to stay. Their responses suggest that those that wanted to leave were not interested in working where they were hired. Those who planned to leave are less likely to say they wanted to work with the students in that school or in that place and more likely to say they took the job because "you were offered the job." Those who planned on leaving felt they were not well-informed during the hiring process, and were more likely to feel that they did not get an accurate impression of school collegiality, the administration's expectations and support, student academic preparation, and student social and behavioral issues. In other words, the intention to leave may have indicated hiring processes that did not effectively screen out candidates who were not committed to or informed about a particular school or student population. Another possible interpretation is that the schools simply had few choices about whom to hire and took the best candidate regardless of his or her commitment to the school. It is also possible that the school conditions (collegiality, student academic preparation, etc.) were at a level that would not meet the teacher's expectations regardless of what information was provided in the interview.

Those teachers who intended to leave found almost all sources of support less helpful, including orientations, new teacher meetings, communication with administrators, and informal collegial support. On almost all measures of helpfulness of school and district personnel, those who were leaving found people less helpful. When asked about problems facing them in the school, the teachers who intended to leave felt they were:

- less able to get the curricular and instructional support they needed;
- less likely to have the learning opportunities they needed to succeed;
- facing more issues with challenging students, workload, and classroom space; and
- more isolated and less supported by administrators.

In sum, those leaving and those staying differed little in their background, their feelings of being prepared for their jobs, or the DRGs in which they work. They were significantly different in their fit with their jobs; their perceptions of the accuracy of the information they received during the hiring process; their ability to get support with instruction and curriculum; their challenges with students, workload and classroom space; and their sense of isolation. Taken together, teachers who intended to leave generally did not feel well-served by the hiring process, the support they received, and their work assignments. These findings have important implications for next steps in improving district ability to retain high-quality teachers. The findings suggest that there is work to be done by districts in fashioning recruiting, hiring, and support processes that provide optimal outcomes for teachers, schools, and ultimately students.

Attrition of First-Year Teachers and Student Learning

The loss of teachers can have effects on student learning. Research has consistently found that first-year teachers are less effective with students (Rice 2003; Reichardt 2001; Wayne and Youngs 2003). Information on the effects of teacher experience, education, and other characteristics on student learning is increasingly available as more states are testing students at regular intervals and maintaining these data in ways that allow evaluation of the value added by individual teachers.

In a recently published study, Hanushek and his colleagues (2005) argue that the negative effect of first-year teachers on student achievement is the largest negative outcome of teacher turnover. His calculations were made using teacher value-added units, making direct conversion to Connecticut state test scores (such as the Connecticut Mastery Test) impossible without performing a similar value-added analysis. One way to visualize Hanushek's results concerning the effect of lack of experience on teacher quality is to imagine that all teachers are ranked by percentile from 1 to 100 in terms of the value each adds to student learning. A teacher who will be at the 50th percentile when s/he is experienced will be, on average, ranked at the 31st percentile in his/her first year. If that teacher quits after his/her first year the system loses the knowledge and skills s/he gained.

8. Costs of Recruiting, Hiring, and Supporting Teachers

In order to understand the annual cost of teacher turnover in Connecticut districts, an estimate was made of the resources used to recruit, hire, and support newly hired teachers.

Resource Use Estimate Methodology

This estimate is based on the ingredients model of cost estimates. The ingredient activities and resources used for recruiting, hiring, and supporting teachers were identified through semi-structured interviews with district and school personnel and surveys of newly hired teachers (Chambers 1999; Levin and McEwan 2002; Odden et al. 2002). The identified activities are listed in Table 8.1 below.

Table 8.1 Cost Ingredients

Recruitment	Hiring	Support
<ul style="list-style-type: none"> • Advertising • Participating in recruitment fairs • General recruitment activities by superintendents, human resources personnel, and principals 	<ul style="list-style-type: none"> • Screening applications • Interviews • Administrative tasks associated with processing new employees 	<ul style="list-style-type: none"> • District orientation • School orientation • New-teacher meetings • Mentoring • Formal principal observations • Observing peers • New-teacher professional development

The primary resource used for each of these activities is the time spent by school district personnel on the activity. Time for district employees was measured for each component based on time reported through focus groups of principals and mentors or individual interviews.⁸ Time spent by teachers is based on information provided in the surveys of newly hired teachers. For activities occurring in human resources offices, the office director provided information on time used by employees of that office. Efforts by teachers prior to being hired (e.g., time putting together applications and attending interviews) were not included in the cost estimates. Professional development activities that were not specifically aimed at newly hired teachers were also not included.

Informal activities are not captured in these cost estimates, particularly those performed by other teachers, such as informal coaching, mentoring, and orientation to the school or district. As was noted in Section 6/Supporting Teachers, it is this informal support by

⁸ Individual interviews were conducted in each district with superintendents, human resources directors, and BEST coordinators. In many districts interviews were also conducted with professional development directors and special education directors. Focus groups or individual interviews were conducted with principals and mentors. Districts were asked to provide time with principals and mentors from a range of grade levels. The actual grade levels represented in each district's focus groups varied by availability.

colleagues that newly hired teachers found most helpful. Thus, these estimates should be considered a lower limit or minimum estimate of the total resource use.

These resource use estimates are driven by the amount of time people spend on each of these activities. Time for each activity was measured in hours and then multiplied by a state average hourly pay rate. Information on hourly rates is contained in Appendix A. The time captured in these estimates includes both time paid for by districts as part of the normal activities of a work day and time outside the paid work day. This volunteered time includes the time teachers spend preparing their rooms during the summer and meeting with colleagues and mentors after school, as well as the time community members spend at events to welcome new hires. The estimates do not differentiate between varying levels of costs for volunteer time, nor do the data collected allow for complete differentiation between contracted and volunteer time. Because of this mixing of paid and unpaid time, the final cost estimate reflects resources used, rather than money expended.

Finally, it must be noted that these figures are very rough estimates of these activities, reflecting a very limited amount of data about these activities. It is also clear from our interviews that there was wide variation within districts, particularly concerning activities at the school level, and that only a slice of that variation in activities was captured in the data collection efforts.

Resource Use Estimate

Table 8.2 shows the results of the resource use estimate. The average amount of resources used for recruiting, hiring, and supporting a new hire across the 11 districts was about \$9,997. Individual district estimates ranged from a low of \$5,800 to more than twice as much (\$13,874). Most districts' resource use estimates were within \$2,000 of the average, with another cluster of estimates within \$2,000 of the high range of resource use. Only one district's estimate was considerably lower than those of the other districts. This district faced considerable uncertainty over whether it could actually hire any teachers, hired few teachers, and dedicated few formal resources to support of newly hired teachers.

The range in resource use for each of the three activities is much larger than the overall range. With respect to recruitment, the average use of resources was \$1,305, ranging from a low of \$357 per teacher to a high that is more than 10 times that amount (\$3,927). The high-expenditure district allocated considerable resources to allowing personnel to attend recruitment fairs and other recruitment activities. The low-expenditure district spent a minimal amount on advertisements and did not participate in recruitment fairs.

The average resource use for hiring a teacher was \$1,695, ranging from a low of \$809 to a high that is nearly four times that amount (\$2,999). The districts that used more resources in hiring had longer interview processes, with more rounds of interviews and more people participating in each interview. Those districts that used fewer resources in hiring had shorter interviews, with one round of interviews per position and fewer participants in the interviews.

The resource use for support was the largest of the three activities and showed the least variation. The average resource use for support was \$6,993, ranging from a low of \$3,248 to a high of nearly three times that amount (\$9,788). Important components of the support expenditures are the time teachers spent preparing their rooms for the year and the time new hires spent with mentors. Data on these uses of time were taken from the survey of newly hired teachers. Districts that used more resources on support had more planned activities for new hires. The district that used the fewest resources had fewer planned activities for newly hired teachers and fewer teachers who reported having mentors.

Table 8.2 Annual Cost Estimate for Recruiting, Hiring, and Supporting a Teacher

District	Recruitment	Hiring	Support	Total *
Beach	\$ 3,927	\$ 1,704	\$ 8,244	\$ 13,874
Deck	\$ 2,142	\$ 2,072	\$ 9,037	\$ 13,251
Dolphin	\$ 571	\$ 2,509	\$ 9,788	\$ 12,869
Bay	\$ 838	\$ 2,999	\$ 7,438	\$ 11,275
Iceberg	\$ 1,236	\$ 1,608	\$ 6,988	\$ 9,832
Harbor	\$ 1,150	\$ 1,798	\$ 6,054	\$ 9,001
Inboard	\$ 943	\$ 1,592	\$ 6,334	\$ 8,870
Ensign	\$ 357	\$ 809	\$ 7,493	\$ 8,660
Dock	\$ 1,152	\$ 947	\$ 6,297	\$ 8,396
Island	\$ 1,139	\$ 991	\$ 6,007	\$ 8,137
Inlet	\$ 940	\$ 1,612	\$ 3,248	\$ 5,800
Average	\$ 1,305	\$ 1,695	\$ 6,993	\$ 9,997

* Totals are not exactly equal to sums of the components due to rounding.

Additional Support Costs

Two other areas of resource use in supporting newly hired teachers were not captured in these estimates but may be appropriately added to these cost estimates. First, some of the state funding of the BEST program is targeted to first-year teachers. Catherine Fisk Natale, Education Manager at CSDE, estimated that the state spent \$786 for two years of support per new teacher through the BEST program (Alliance for Excellent Education 2005). To convert this figure to fit with the estimates above, it must be adjusted to a single year of support, to reflect the mix of first-year and experienced teachers in our sample, and for inflation (Miles et al. 2004).⁹ These adjustments result in an annual per-teacher expenditure of \$216.

Another cost to be considered is that of the professional development provided to all teachers. Professional development resources are used to improve the skills of all

⁹ The figure in the report is \$760, and in an interview Dr. Natale reported that that figure is for 2004. This was then adjusted to 2005 dollars using the CPI inflation calculator at <http://www.bls.gov/bls/inflation.htm>. The adjustment to a one-year amount was made by halving the total. It was then adjusted to the mix of first-year and experienced teachers based on 45 percent of the teachers in our sample being first-year teachers.

teachers working within a school district. Capturing the costs of this professional support is a complex matter, since it involves expenditures for both materials and outside technical expertise, as well as the time spent by those arranging for and delivering the training and those attending the training. A recent effort by the Consortium for Policy Research in Education to capture the total cost of professional development in five large urban districts concluded that the average cost was \$4,649 per teacher per year, with a range of estimates between \$2,229 and \$8,385.¹⁰

When taken together, we estimate the total amount of resources used for recruiting, hiring, and supporting a newly hired teacher were \$14,862, as shown in Table 8.3. It must be noted that there is wide variation around this estimate, from \$8,245 to \$22,475. The large majority of this resource use occurred at the district level.

Table 8.3 Total Annual Resource Use for Teacher Recruiting, Hiring, and Support

Activity	Cost Estimate
Recruiting, hiring, and support	\$ 9,997
BEST program	\$ 216
Professional development	\$ 4,649
Total	\$ 14,862

Connecticut school districts hire approximately 4,000 teachers per year. Thus, the resource use statewide for recruiting, hiring, and supporting new hires is estimated to be between \$40 million and \$60 million. The higher figure includes expenditures for professional development. Total annual expenditure for public education in Connecticut is about \$4 billion.¹¹ In other words, the resources used to recruit, hire, and support teachers represent, at a minimum, 1 percent of the state’s total annual expenditure for public education.

Conclusions About the Resources Used for Recruiting, Hiring, and Supporting Teachers

The rough resource use estimate for recruiting, hiring, and supporting teachers of \$10,000 per teacher is essentially a minimum estimate. Some important activities that are not captured in this estimate include networking both to advertise jobs and learn about candidates, and the support of colleagues while working. That said, the estimated amount of resources used is considerable—\$40 million to \$60 million a year if professional development costs are included. This resource use is driven by time that is used to advertise, interview candidates, prepare new classrooms, and provide mentoring. Supporting newly hired teachers in general and mentoring in particular is the largest single resource use, yet supervision, oversight, or direction from principals and districts is not the norm. As noted in the previous section (Teacher Attrition), the retention or lack of

¹⁰ Reported estimates were \$4,380 per teacher per year, with a range of \$2,100 to \$7,900. The average shown is adjusted from 2003 dollars to 2005 dollars using the CPI inflation calculator at <http://www.bls.gov/bls/inflation.htm>.

¹¹ According to the National Center for Education Statistics, Connecticut’s total expenditure for public education in 2002-03 was \$4,019,659,000.

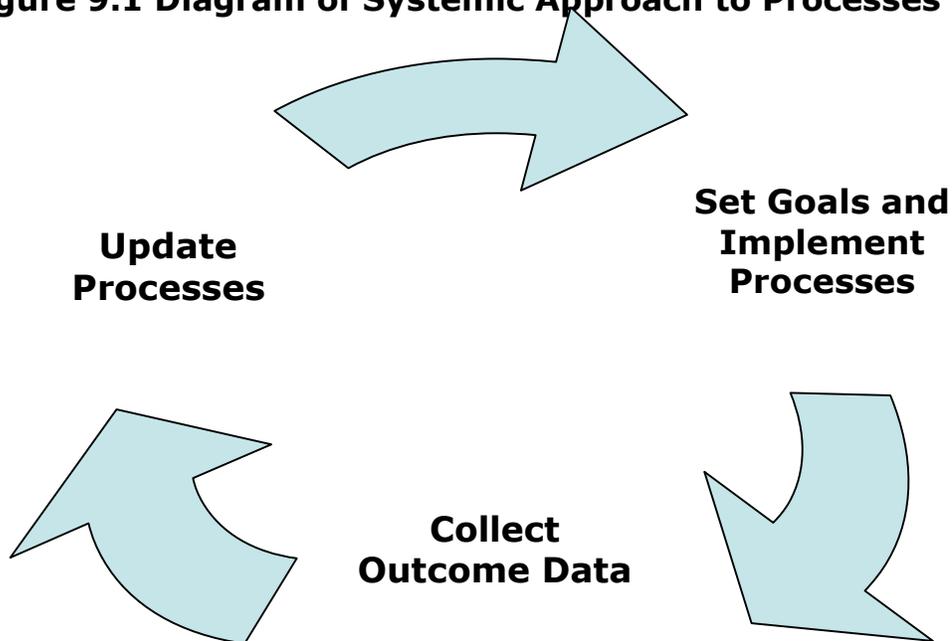
retention of first-year teachers is important because huge costs are incurred in terms of student learning when teachers learn their job during their first year and then leave a school or the profession. Ineffective support that results in teachers leaving after the first year is thus costly both in terms of expenditures and in terms of student learning.

9. Systemic Improvement

The recruitment, hiring, and support of teachers can be seen as subsystems in the larger personnel system operating in our education system. A significant goal of the case study portion of this research was to identify whether and how districts are bringing a systemic approach to recruiting, hiring, and supporting teachers.

Figure 9.1 shows what we mean by a systemic approach to processes. This systemic approach is a feedback loop consisting of three steps. First, goals are set for a process and the process is implemented. Second, data are collected on actual performance. The data need not be quantitative, but they do need to be thoughtfully reviewed and compared to the goals. Finally, the information and lessons from the data are used to make changes to the process to make it more likely that goals will be reached during the next cycle.

Figure 9.1 Diagram of Systemic Approach to Processes



Goals

Leaders within the case study districts, including school board chairs, superintendents, and principals, were asked about their outcome goals for recruiting, hiring, and supporting teachers. Leaders tended to articulate their goals in a vague way, saying that they wanted to find teachers who are a good fit, teachers who are lifelong learners, or someone who “gets it.” The most specific goals mentioned in some of the interviews related to teacher retention. In only a few of the interviews did the leaders relate teacher recruitment, hiring, and support to a goal of student achievement or student learning. In addition to the lack of specificity around goals, we found little monitoring of outcomes by leaders at the superintendent and board level.

Decentralized Processes

The systemic approach described above does not specifically require processes to be either centralized or decentralized. But it does provide a method for identifying circumstances under which the use of either centralized or decentralized processes might better support system goals. Centralized systems work well when there are common needs throughout the district. Centralized systems are also good for exploiting economies of scale. Decentralized systems work best when there are diverse needs across the district. Decentralized systems also provide opportunities to learn from variation in practices across units.

The large majority of districts in this study used decentralized systems for the recruitment, hiring, and support processes. In many districts, each school appeared to have its own approach to these processes. The appropriateness of decentralized processes for these districts was not investigated in this research. However, with no information collected and analyzed concerning the differences in goal attainment among these different school processes, it will be very challenging for leaders or practitioners to learn from school successes and failures within a district or across districts.

Poor Outcome Data

Of the hoped-for outcomes mentioned by school and district leaders, we found very poor information on whether those outcomes had been met and little analysis of the information that did exist. There were few efforts to gather the information from principals or teachers necessary to learn about processes or outcomes.

Only two of the 11 districts conducted teacher surveys and only two conducted exit interviews. Principals had the clearest information on how well a teacher was doing in his or her classroom. Evidence is emerging that principals can be good judges of teacher effectiveness when they work closely with teachers (Jacob and Lefgren 2005). But principals who were engaged in their schools had little opportunity to see how the system for recruiting, hiring, and supporting teachers operates throughout a district. Nor did they have many opportunities to compare the performance of their teachers with the performance of teachers in other schools. While principals did evaluate the teachers, there was little or no clear evidence that these evaluations were synthesized to assess the effectiveness of the recruiting, hiring, or support processes.

As has been discussed above, teacher retention is important both for student success and for efficient use of state, district, and school resources. Retention is easily measured and can be used for comparisons between schools and between districts as well as to view trends over time. Currently, little information is available to support comparisons in teacher retention between schools and between districts.

It is also clear that 100 percent retention is not a desirable outcome, given that some people are not effective teachers. While some districts did report actively working to weed out weak teachers through non-renewal or other accountability systems, it was not a process that was regularly mentioned in the majority of the districts we visited. In one district, a leader was critical of the district's high retention rate, attributing it to high

teacher salaries without much teacher accountability. In other words, while retention is a positive goal, it may need to be articulated and measured in terms that make it clear that the goal is to retain quality teachers.

Clearly, student achievement is an important outcome for all of the processes within the education system. Some leaders we interviewed used results from state assessments to compare how their schools and district were performing over time and in comparison with other schools and districts. However, Connecticut education leaders face two challenges in using these data. First, they have little good information on the specific contributions that their schools and districts are making to student learning. It is hard to separate out the advantages (and disadvantages) that their students bring to school from the direct results of the work that occurs in the schools. Second, they have no information on the contributions that new hires make to the achievement outcomes of their schools. This lack of data leaves no way to directly measure whether their recruitment, hiring, and support processes have affected learning outcomes. In sum, even if achievement is the explicit goal of leaders, they lack the value-added data that will allow them to determine whether their processes have been effective in meeting their goals.

State Role for Data

Comparisons are essential for making sense of outcome data. Data must be placed in a context to have meaning. This context may include changes over time, comparisons with similar groups or units, or comparisons with standards (Reichardt 2000). District and school leaders generally lack context data, so it is difficult for them to learn about the outcomes of their processes in general and of their recruitment, hiring, and support processes in particular.

The best data would provide information on the value added by teachers and schools to student achievement (McCaffrey et al. 2004). This information is crucial for pinpointing the effects of processes on student learning within a school or district. Creation of such data across districts requires a state-level effort to collect and analyze annual student assessment scores linked with specific teachers and schools. The state has a role in creating a common value-added measure that allows comparisons across districts and over time. In order to produce value-added measurements there must be unique student identifiers, unique teacher identifiers, and a system for linking teachers with the students in their classes. CSDE is currently implementing a unique student identifier system. Interviews with CSDE officials indicate that efforts are under way to lay the groundwork necessary to create unique teacher identifiers and a system to link students to teachers no sooner than four years from now. At this rate it will take CSDE at least five years to be in a position to begin piloting value-added measurements of student learning that can be used to evaluate systems or processes.

In the meantime, the state may be able to provide districts with proxy measures of teacher quality used in this report. These measures include teacher qualifications, attrition, and mobility. While not optimal measures, this information can help districts understand some of the intermediate outcomes of their policies and practices.

10. Conclusions and Recommendations

Connecticut is facing an increasingly tight teacher labor market that contributes to an increasing gap in teacher qualifications between high- and low-poverty districts. The state has responded by increasing the supply of teachers and offering incentives for people to work in shortage areas. At the same time, differences in salaries clearly serve as an incentive for teachers to move between districts. However, research from New York has made it clear that where well-qualified teachers take their first jobs is more important to the qualifications of a teacher workforce than transfers of well-qualified teachers between districts (Lankford et. al. 2002). What has not been examined in Connecticut, until this report, is the role of Connecticut districts in attracting, hiring, and supporting high-quality teachers.

The bottom line for the state, districts, and schools is whether recruiting, hiring, and support systems serve the needs of students. If equity is a primary concern, then meeting those needs means that every school in the district must have an equal chance of hiring high-quality teachers. If adequacy is a primary concern for education, then districts that are serving the most challenging students may need extra support in recruiting, supporting, and hiring teachers.

Case Study Themes

Several themes emerge from the case studies of district practices: risk; information and communication; the decentralized nature of recruiting, hiring, and support; lack of leadership stability; and the importance of community support for all of these processes.

Risk

Risk is an important issue for teachers in the job market and for districts working to hire teachers. Risk creates incentives around the timing of hires that works to the advantage of those districts best able to manage and tolerate risk. Newly certified teachers face risks associated with finding jobs, and this risk serves as an incentive for teachers to accept early job offers.

If districts hire before the completion of the budget process, they risk having obligations for which they cannot pay. This risk is heightened in districts where budgets historically are not easily approved. Risk may also be harder to manage in smaller districts and in districts facing budget shortfalls. This risk pushes some districts to postpone hiring until after the budget passes. Districts that are better able to manage or tolerate that risk can move the hiring process, at least for some vacancies, ahead of the budget passage. A key element in managing that risk is information and communication within the district.

Information and Communication

Managing information and communication is central to the recruitment and hiring processes. Communication is central to internal processes, and includes:

- learning how many vacancies a district will have,
- collecting information about applicants,
- distributing that information to principals, and
- letting principals know they can hire for a given position.

Information is also central to external processes, particularly:

- notifying potential applicants that a position exists, and
- persuading an applicant that a district or school is a good place to work.

The larger the district, the more complex these processes become, with implications for the management of information and communication.

The case studies showed that a regularly updated staffing plan can be used as a tool for internal communication. A staffing plan is a single document or linked set of documents that outlines the expected number of staff for the current year and the next year by school, estimates future changes in number of staff due to changes in enrollment and programs, maintains updated information on teacher attrition, and shows the relationship between staffing and the budget. The staffing plan serves as a tool for identifying potential and actual vacancies and for notifying principals and others when they should begin to hire for those positions. Thus, staffing plans serve as the instrument for all members of an administrative team to collect information on the planned retirements, resignations, and maternity leaves that drive most vacancies. At the same time these plans can serve as a tool for district leadership to prioritize which vacancies should be filled early, balancing the financial risk of early hires with the risk of waiting too long and losing good people to other districts.

As districts become larger, it can be easier to manage the risk of over-hiring but harder to manage the flow of applications through the district. In larger districts, budgets are large enough so that an extra position can be absorbed without causing significant financial difficulties. At the same time, larger districts must manage a significant amount of information as they move applications through the central office and into schools (Boston Plan for Excellence 2005). One leader in a large district stated that the district should not be expected to hire early, and the complexity of the process might be the reason for this opinion.

A paper hiring process can be particularly burdensome. There are essentially two operational models for a paper hiring process. Either the central office serves as a central clearinghouse for applications, sending copies to all schools with relevant vacancies, or schools collect their own applications. If the central office is the clearinghouse, then there is either a considerable amount of duplicating, mailing, and potentially lost applications, or administrators must come to the central office to review applications. This process is

easier for applicants, but may advantage the schools that can send people to the central office to regularly check on applicant files.

If schools collect their own applications, they then have an incentive to compete with each other for quality applicants. This competition may not serve the needs of the district and definitely increases the burden on applicants, who must contact each school separately. Competition may give advantages to schools with the fewest challenging students. Similar challenges were identified by McCarthy and her colleagues in Boston (McCarthy and Guiney 2004). A solution to these information challenges may be paperless application processes. Some districts in Connecticut are using these processes and may be able to share important lessons learned.

Through our survey and focus groups with teachers, the value of both “high-tech” and “high-touch” communication for recruiting became very evident. High-tech communication, through use of the Web, serves as a primary tool for potential applicants to learn about vacancies in a district. On the other hand, high-touch personal communication, through interviews, job fair interactions, and personal networks, serves to inform potential applicants about what it is like to work in a district or school. Districts that are purposeful in each of these communication mechanisms can create advantages for themselves in the competition for teaching talent.

Decentralized Processes

Individual schools play a very important role in moving these processes ahead. First, principals often, but not always, are the first to learn of impending retirements, resignations, and maternity leaves. Schools must communicate that information to the central office to begin the recruitment process. Once the recruitment process is completed, schools must do their part to complete a hire. Even in districts where the central office or the school board makes the final decision about who is hired, schools are responsible for screening a pool of applicants. Thus, the point in time when schools begin screening applicants sets the timeline for how early a new person can be brought on board. It appears that the budget passage serves as a signal to schools that they can begin hiring. For shortage areas or highly competitive positions, it may be in a district’s interest to communicate to schools that they should begin the hiring process prior to the passing of the budget. In these instances, the staffing plan can serve as a tool to strategically identify and communicate within the system those positions that are prioritized for early hire.

Lack of Leadership Stability

In Sections 4, 5, and 6, the general processes for recruiting, hiring, and supporting teachers have been described. These descriptions are snapshots of systems that are continuously evolving and changing. New personnel, leadership, and priorities mean that district processes are constantly in flux. Even the district that had focused the most on recruiting, hiring, and support over the past 10 years was still modifying and changing its processes. A large number of the districts we studied experienced changes in leadership, which often brought priorities other than recruiting, hiring, and supporting teachers to the forefront. As a result, the processes examined in this study generally did not receive the

strategic leadership needed to optimize their effectiveness. Such leadership turnover increases the need for highly professional human resources staff in these districts.

Districts are also facing constant uncertainty around enrollment and funding. This is a particular challenge in districts with shrinking enrollment or those faced with possible layoffs. This uncertainty can increase the complexity of coordinating the activities of schools in their recruiting and hiring roles. In instances where it is clear that new personnel will be needed, but not clear in which schools they will work, it may be best to centralize the hiring process. This will allow schools and districts to hire early even if the final allocation of teachers is not yet known.

Community Support

Community support is essential to a vibrant public education system. In Connecticut, this is highlighted by the extremely participatory process involved in passage of the district budget. The passing of the budget lends either a sense of stability to district processes that allows risk-taking in hiring, or a sense of instability that increases the risk of early hiring and a sense of risk for those working or considering working within a district. The amount of financial support that communities provide is crucial to making districts attractive places to work, both in terms of salary and working conditions.

That said, the role that communities can play in recruiting, hiring, and supporting teachers can go beyond money. In our case study districts, community leadership played a role in communicating the importance of teachers to the community through actions such as luncheons welcoming new hires and dinners honoring teachers. As was mentioned earlier, teacher focus groups made it clear that at least some teachers spend time and energy learning about whether schools and districts are good places to work. It is reasonable to conclude that community support, as expressed in the intangibles of welcoming and honoring teachers, is also important to the ability of schools and districts to attract and keep high-quality teachers.

Conclusions

Several key points have become clear during this study. Districts can affect the quality of their applicant pool by beginning their searches for applicants early in the year. Beginning these searches early requires districts to manage the risk of early hires, information about enrollment and teacher departures, and information about applicants and when they should be hired. Applicants rely on both “high-tech” (the Web) and “high-touch” (personal contacts) sources to learn about positions. The data suggest that applicants pay close attention to all of the sources of information they have about districts when making decisions about where to work, from websites to the social skills of the people they meet at job fairs. The data also make clear that there are teachers who prefer working in urban and high-poverty schools.

There is wide variation within and among districts in the processes they use for screening and interviewing applicants, and little information is available about which processes are actually effective for Connecticut schools. It appears that the screening and information functions of the interview process are correlated with teacher intentions to continue

working in a particular school or district. However, it is difficult to see a clear connection between a district's active approach to recruiting and hiring and the qualifications of its teachers. This lack of a connection may be due to the poor proxy measures of teacher quality available for this research.

There is also wide variation in the support that newly hired teachers receive and in the intensity of effort that districts make in providing support. The state's BEST program has brought consistency to the process and has set a floor to the amount of support teachers receive, in that the large majority of inexperienced teachers receive trained mentors within their first month of working. That said, there is a consistent dread of the second-year portfolio process. Unfortunately, most, but not all, mentors and principals receive little or no guidance in their roles in working with newly hired teachers. Newly hired teachers relied most on the informal support of their colleagues and principals. A feeling of support and ability to get help with curriculum and instruction, as well as a feeling of not being overwhelmed and isolated, are correlated with a teacher's intention to continue working in a school or district.

Taken together, the recruitment, hiring, and support of newly hired teachers account for a minimum of between \$40 million and \$60 million per year of resource use in Connecticut public schools, without counting the informal support teachers receive. Much of this resource use consists of the time spent by teachers in preparing their rooms, working with their mentors, and attending classes and seminars. The cost estimate does not include the very important costs associated with the reduced ability of inexperienced teachers to support student learning. Taken together, the costs for recruiting, hiring, and supporting teachers ultimately affect what goes on in schools and classrooms, from the time teachers spend supporting each other to the effects of inexperienced teachers on student learning.

Finally, leaders and participants in these processes lack the tools, and often the perspective, to systemically improve these processes. Very few define clear outcome goals for recruiting, hiring, and supporting teachers, and even fewer measure the attainment of those goals. It must be noted that the outcome data that best measure the outcomes of these processes in terms of student achievement – information on the value added to student achievement by individual teachers and schools – have not been made available or created by districts and schools. This lack of data means that districts and schools have little good information with which to evaluate their effectiveness.

Study Recommendations

Improving student achievement is the top goal of the State Board of Education (<http://www.state.ct.us/sde/board/index.htm>). The state's largest achievement challenge is that of its minority and low-income students. Teachers are the most important resource in improving student learning. This study has clearly shown that students in high-poverty districts do not have equal access to qualified teachers and that the ways in which teachers are recruited, hired, and supported affect who works in which schools. The study supports the notion that districts can improve their recruitment, hiring, and support processes. The challenge for state education leaders is how to use available policy tools

to increase the utilization and integration of teacher recruitment, hiring, and support into ongoing efforts to improve instruction and student learning.

Speaking generally, the state has four main policy tools to affect education policy: regulation, funding and incentives, capacity building, and system change (Table 10.1). Regulations and incentives are the tools that have been most often used in education; however, the system changes required by new standards-based accountability systems such as the federal No Child Left Behind law (NCLB) have been dominating current education policymaking.

Table 10.1 Education Policy Tools

Tool	Outcome	Example
Regulation	Compliance with minimum standards	Teacher certification
Funding/incentives	Activities where capacity exists but is not used without an inducement	Minority-teacher incentives
Capacity building	Long-term changes with few immediate or tangible indicators of change	Training programs
System change	Change authority for an activity or outcome	NCLB

Sources: McDonnell and Elmore 1987; McDonnell 1989

The question for Connecticut’s policymakers at the state and local level is how to best use these tools to meet the policy challenges before them. While the current study is in many ways simply a first step in investigating how recruiting, hiring, and support affect the availability of quality teachers to all students, several recommendations have emerged. These recommendations focus primarily on system change and capacity building, for several reasons. First, using regulation and incentives in a way that directly affects student learning can be extremely complex. Second, a key observation from the case studies was that compliance with the regulatory components of the BEST program was rarely integrated into district instructional improvement efforts. Thus, increasing the capacity to effectively use existing regulatory tools, rather than changing those regulatory tools, may be the best approach.

Recommendations for State Action

Incentives

1. The state should offer systemwide incentives for teachers to provide early notification of retirement, resignation, or return from maternity leave.

Capacity building

2. The state should build its own capacity and assist in building district capacity for evaluating the effectiveness of processes for recruiting, hiring, and supporting teachers by:
 - a. producing and providing teacher value-added data based on state assessments;
 - b. developing a statewide system for exit interviews or surveys of teachers who leave teaching or switch districts;
 - c. training school district leadership (superintendents and school boards) on how to use data to evaluate and improve recruiting, hiring, and support processes; and
 - d. publishing district retention rates for teachers by age group.
3. The state should work with districts to assist them in implementing paperless processes for teacher hiring.

System change

4. The state legislature should act to shift some of the risk for early hires to the state so all districts can recruit and hire shortage area teachers.
5. The state should financially support the development of standards for human resources practices in districts to ensure continuity through leadership changes.

Recommendations for District Action

Capacity building

1. Districts should examine, and if needed reform, their own recruiting, hiring, and support processes by answering the following questions:
 - a. What do the existing data say about recruiting and retaining high-quality teachers in their district?
 - b. How can they use value-added data about teacher effectiveness to evaluate internal programs and processes?
 - c. What can principals learn from each other about recruiting, hiring, and supporting high-quality teachers?
 - d. What can human resources professionals across districts learn from each other about effective processes?
2. Each district should have active staffing plans that:
 - a. forecast the number of new hires needed each year,
 - b. are updated weekly with new information about teacher departures and returns from maternity leave, and
 - c. signal to principals when they should hire for each position.

Unanswered Questions

While this research is a first step in learning about the role of the state and districts in meeting the demand for teachers through recruiting, hiring, and support processes, there are many important questions that remain unanswered.

First, it is clear that teachers are transferring in and out of schools in ways that are correlated with student achievement and student characteristics. This is despite the fact that there are some teachers who say they want to work in urban or high-poverty schools. It would be very valuable to understand more precisely which school and district characteristics are related to teacher retention and transfer. Also, it is important to understand if and why some high-poverty schools are able to retain qualified and quality teachers.

Second, this study has made it clear that there is wide district variation in processes for recruiting, hiring, and supporting teachers. We do not yet know which processes work well in actually getting high-quality teachers into the classroom.

Third, while we now know more about how teachers' perceptions about certain issues relate to their intentions to continue working, there is much more to be learned about the relationship between teacher perceptions of the recruitment, hiring, and support processes; teacher retention; and student achievement. The Center for Teaching Quality (www.teachingquality.org) has recently conducted research on working conditions, teacher retention, and student learning that has been very informative to leaders throughout the education systems in several states. Further information obtained from this type of research in Connecticut could be very valuable to leaders at the school, district, and state levels.

Finally, while the information from this study is crucial to the process of improving teacher quality through recruitment, hiring, and support, the key task moving forward will be supporting the capacity of school and district leaders to use this information to support teachers and student learning (Rallis et al. 2006). Given the instability in district leadership, improvement strategies for recruiting, hiring, and supporting teachers must focus on building the capacity of those regularly doing that work. That requires a focus on principals and human resources professionals within the education system. These administrators need the tools to understand the effects of what they do, as well as the professional support necessary to improve their work.

Appendix A. Hourly Rates for the Cost Estimate

For each cost estimate, the assumptions around work year and time that teacher support was received are shown in Table A.1.

Table A.1 Assumptions About Amount of Time Worked

Days per month	21
Hours in a day	7
Days per week	5
Weeks per month	4
Months of support	8

Salary data were taken from a state data set on all professionals working in Connecticut schools in 2005. Salaries were adjusted to reflect the amount paid for working one full-time equivalent. Those with salaries of \$0 were not included. Salary data for community members who participate in recruiting, hiring, and support activities are based on census data for average 2004 Connecticut earnings and are adjusted to 2005 levels using the Bureau of Labor Statistics' annual cost of living increase.

For each job type, assumptions were made about how many days a year each person worked on the basis of information provided in interviews for the calculation of hourly rates. Essentially, central office personnel were assumed to work 250 days a year, school-level administrators were assumed to work 240 days a year, and teachers were assumed to work 185 days per year. Each was assumed to work seven-hour days (Table A.2).

Table A.2 Hourly Rate Estimates

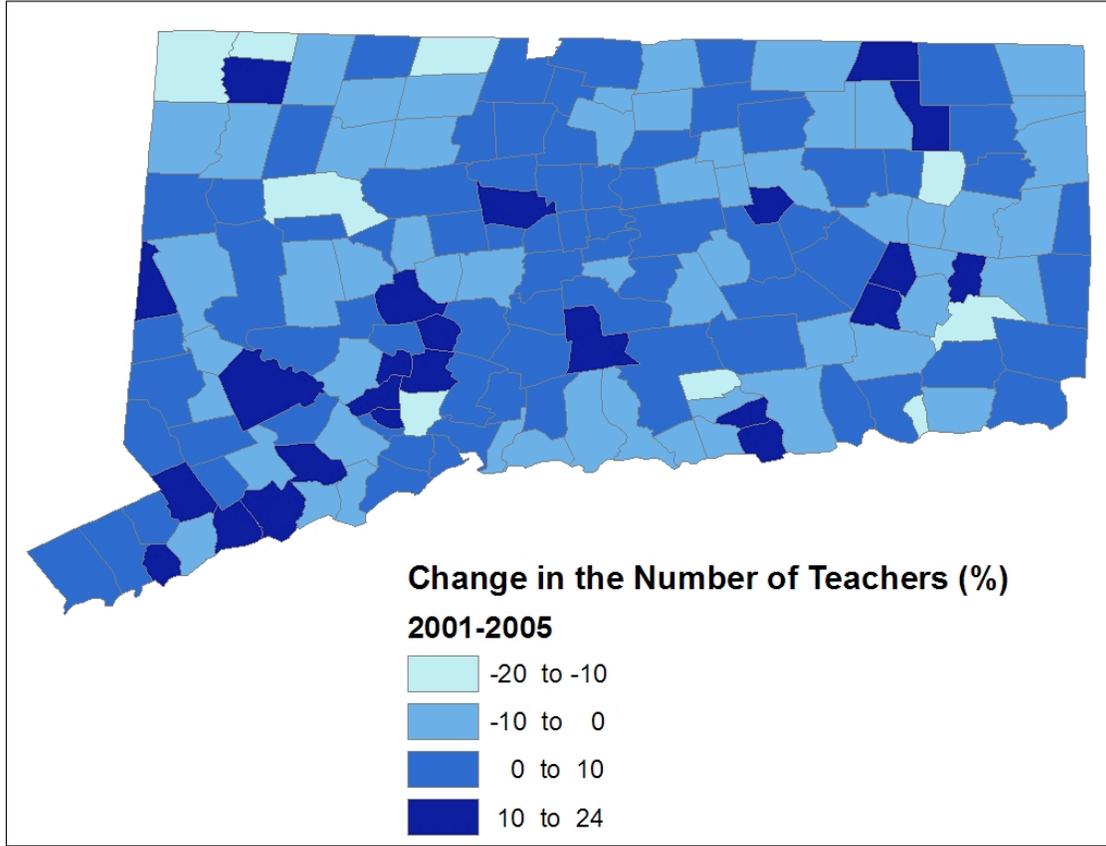
Position	Mean Salary	With Benefits	250 days per year		Notes
			Hours per Year	Hourly Rate	
930 Superintendent	\$ 149,384	\$162,884	1,750	\$ 93.08	
925 Ass't, Deputy or Assoc. Superintendent	\$ 124,059	\$137,559	1,750	\$ 78.60	
922 Pgm. Director/Curriculum Coordinator	\$ 94,562	\$108,062	1,750	\$ 61.75	Used for HR Director
923 Subject Area Supervisor (district level)	\$ 101,232	\$114,732	1,750	\$ 65.56	
924 Director of Pupil Personnel Services	\$ 103,221	\$116,721	1,750	\$ 66.70	
929 School Business Administrator	\$ 94,714	\$108,214	1,750	\$ 61.84	Used for Business Managers
Assignment	Mean Salary	With Benefits	240 days per year		Notes
			Hours per Year	Hourly Rate	
920 Principal	\$ 107,290	\$120,790	1,680	\$ 71.90	
921 Ass't or Vice Principal	\$ 98,700	\$112,200	1,680	\$ 66.79	
926 Dept. Chair w/ Evaluation	\$ 91,775	\$105,275	1,680	\$ 62.66	Assumed for All Department Chairs
933 Dean of Students/Housemaster	\$ 90,345	\$103,845	1,680	\$ 61.81	
Clerical	\$ 35,000	\$ 48,500	1,680	\$ 28.87	
HR professional	\$ 57,000	\$ 70,500	1,680	\$ 41.96	
General Pop (2004 CT average earning with BLS inflation adjuster to 2005 dollars ¹²)	\$ 48,560	\$ 62,060	1,680	\$ 36.94	
	Mean Salary	With Benefits	185 days per year		Notes
			Hours per year	Hourly Rate	
Experienced Teacher	\$ 61,951	\$ 75,451	1,295	\$ 58.26	Used for Other Teacher, BEST Mentor, Teacher on Special Assignment
Newly Hired Teacher	\$ 43,860	\$ 57,360	1,295	\$ 44.29	
291 Content Coach: Numeracy	\$ 67,284	\$ 80,784	1,295	\$ 62.38	Applied to Master Mentor

Source: CSDE staff data

¹² Adjusted from 2004 to 2005 dollars using the CPI inflation calculator at <http://www.bls.gov/bls/inflation.htm> on April 15, 2005.

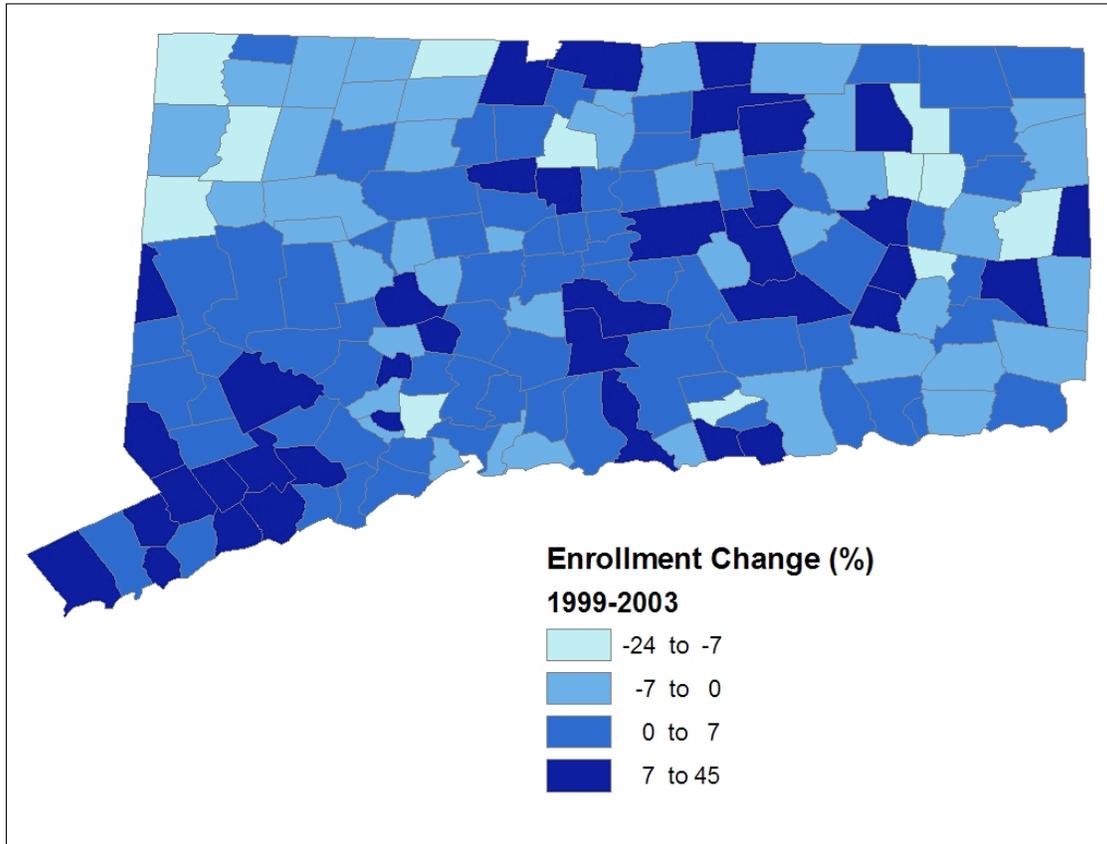
Appendix B. *Maps Showing Teacher Movement in Connecticut*

Figure B.1 Map of Growth in Number of Teachers, 2001-2005



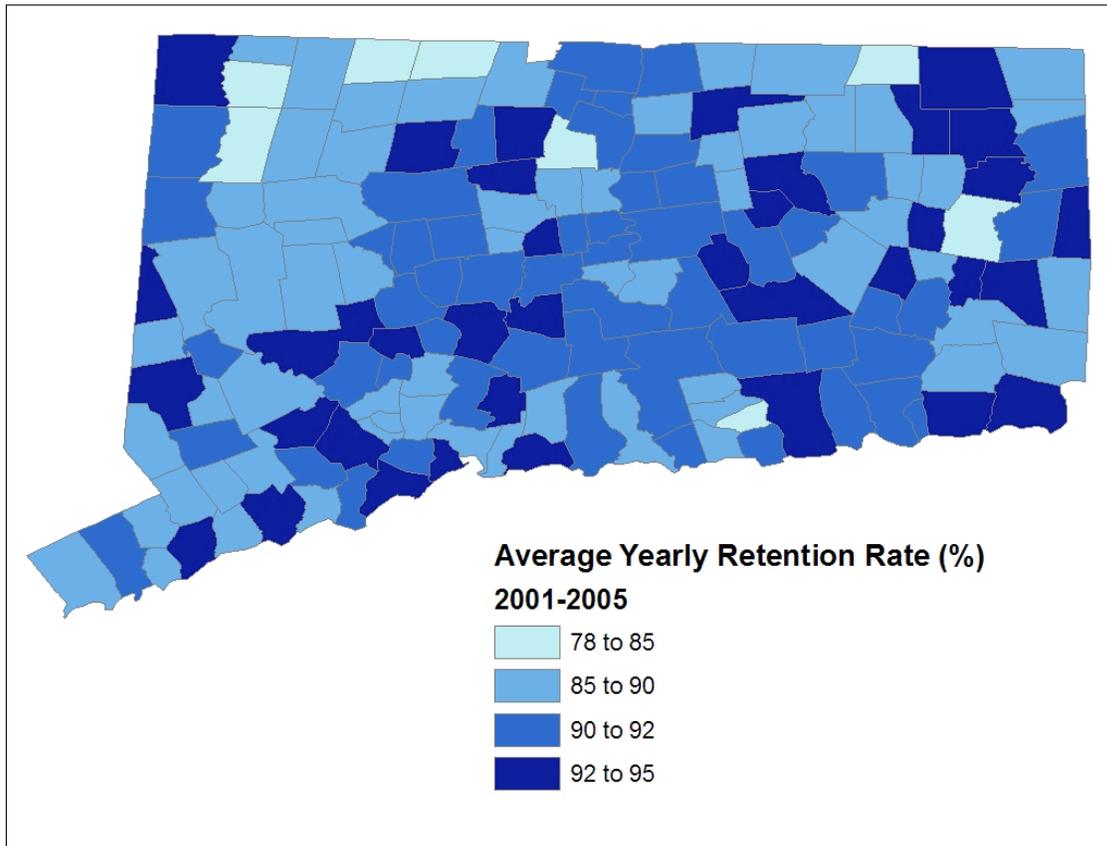
Source: CSDE staff data

Figure B.2 Map of Growth in Student Enrollment by District, 1999-2003



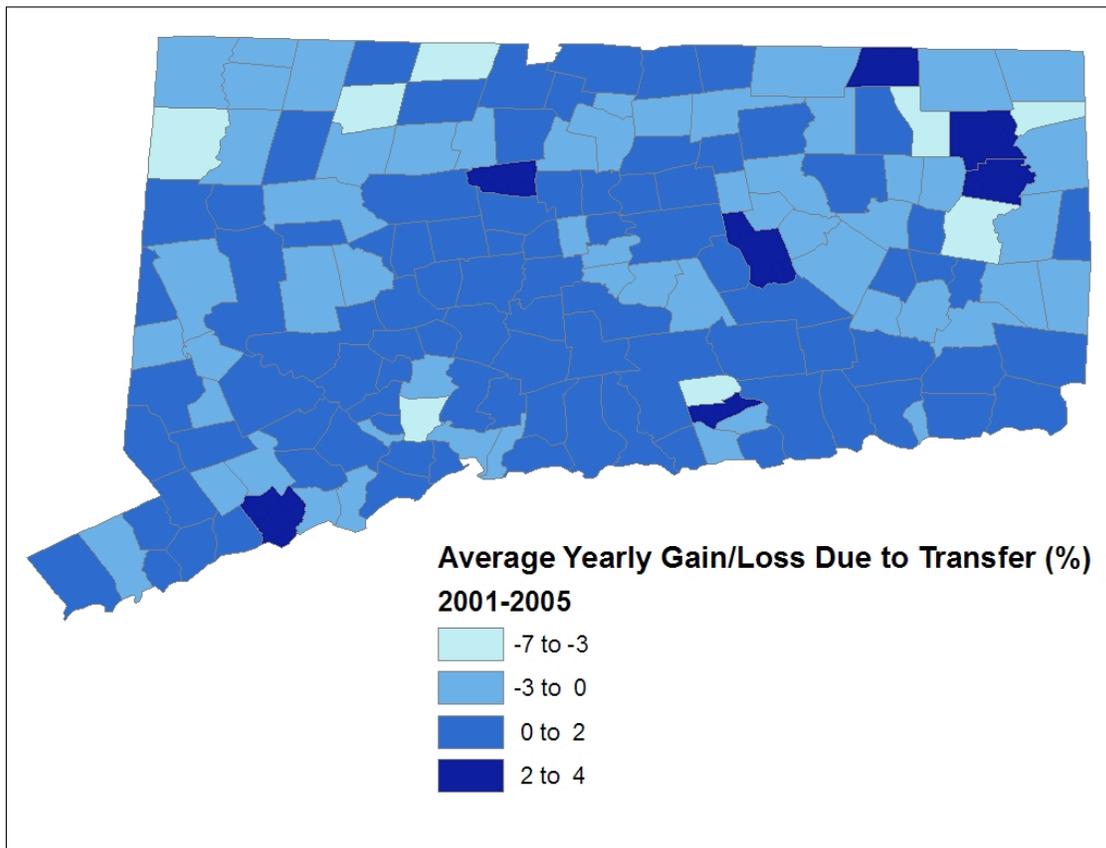
Source: U.S. Department of Education Common Core of Data

Figure B.3 Map of Average Teacher Retention by District, 2001-2005



Source: CSDE staff data

Figure B.4 Map of Gain and Loss of Teachers by Districts Due to Transfer to Other Districts, 2001-2005



Source: CSDE staff data

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