THE IMPORTANCE OF PROFESSIONAL CULTURE IN NEW TEACHERS' JOB SATISFACTION

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Susan M. Kardos
Mandel Center
Brandeis University
617.736.2072
skardos@brandeis.edu

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INTRODUCTION

Attracting and retaining new teachers remains a formidable challenge for school leaders and policymakers. The *No Child Left Behind Act* of 2001 presents the ambitious goal of requiring a "highly qualified" teacher in every classroom by 2005-2006. While states scramble to collect data and account for the qualifications of their teacher workforce, they, along with individual districts and schools, are clambering to accrue resources and develop programs to recruit new teachers, and in the best cases, support them as they enter teaching. Within the first decade of this new century, 2.2 million new teachers will be needed to fill positions created by teacher attrition and teacher migration (Ingersoll, 2001b), and by increased enrollments (Gerald & Hussar, 1998), class-size reductions, and retirements. The need for new teachers will be greatest in urban and rural schools, and in math, science, technology, foreign language, bilingual and special education. A recent analysis of national data found that in 1999-2000, 27 percent of first-year public school teachers left their schools: 11 percent left teaching altogether, and 16 percent moved to other schools (Smith & Ingersoll, 2004).[1]

Thus, the national focus on teacher quality comes in the context of high levels of teacher turnover and attrition. While aggressive recruitment strategies may attract new teachers, such incentives will not keep or support them. In order to meet the challenges of supporting new teachers in the context of shortage and turnover, we face a need to better understand new teachers' experiences at their school-sites, since it is in classrooms

and in schools—with their students and their colleagues—where new teachers succeed or fail with their students and decide whether or not to stay in teaching (Johnson & The Project on the Next Generation of Teachers, 2004).

In a continued effort to develop targeted solutions for the teacher retention problem and to better support new teachers early in their careers, this study explores new teachers' experiences of the professional culture of their schools, the presence of an official mentor in their first year, and their job satisfaction. Specifically, it examines the relationship between a certain type of workplace culture (integrated professional culture) and job satisfaction. It also examines whether new teachers who have official mentors during their first year (a typical formal structure intended to support new teachers) in the presence of integrated professional culture are more satisfied with their jobs than those who do not.

ANALYTIC FRAMEWORK

Supporting and Retaining New Teachers

Supporting and retaining new teachers who are effective is critical to achieving school improvement and success (Haycock, 1998; National Commission on Teaching and America's Future, 1996). In addition to the 27 percent of new public school teachers who change schools or leave after their first year (Smith & Ingersoll, 2004), approximately 30 percent of new teachers leave within three years, and 40 percent to 50 percent leave within five years (Huling-Austin, 1990; Ingersoll, 2002; Ingersoll & Smith, 2003; Murnane, Singer, Willett, Kemple, & Olsen, 1991). In his recent analysis of the National Center for Education Statistics Schools and Staffing Survey data from 1990-1991 and the

subsequent Teacher Follow-up Survey from 1991-1992, Richard Ingersoll (2001b) challenged the conventional wisdom that school staffing problems are primarily due to teacher shortages resulting from large scale, demographic trends. Instead, his analyses revealed that certain organizational phenomena—particularly low salaries, inadequate administrative support, poor student discipline, and low levels of faculty participation in school decision-making—contribute to high rates of teacher turnover and thus, contribute to school staffing problems. In 2003, the National Commission on Teaching and America's Future (NCTAF) affirmed this position with its sharp focus on teacher retention: "The ability to create and maintain a quality teaching and learning environment in a school is limited not by teacher supply, but by high turnover among the teachers who are already there" (National Commission on Teaching and America's Future, 2003, p.6). High rates of attrition among new teachers impose high costs on schools and their students both financially (Texas Center for Educational Research, 2000) and organizationally (Ingersoll, 2001a). Therefore, while teacher retirements and changing student demographics may exacerbate the problem of teacher shortage, teacher turnover is most prominently the result of organizational factors. According to national estimates, 42 percent of teachers who leave classroom teaching report that their primary reason was either dissatisfaction with the job or the desire to pursue another job or career (Ingersoll, 2001a).

Teacher Job Satisfaction. Teacher dissatisfaction may stem from a variety of factors (Herzberg, Mausner, & Snyderman, 1959; Scott & Dinham, 2003), and some may be as simple as low pay or a long commute (Johnson & The Project on the Next Generation of Teachers, 2004). Dissatisfaction might also be attributed to factors as

complex and interrelated as personal inter-role conflict between private and professional life (Hom & Kinicki, 2001); relationships with their colleagues (Little, 1982) or their success with their students (Johnson & Birkeland, 2003); or organizational decision-making or leadership (Bogler, 2001). Despite the range of possible causes, job dissatisfaction accounts for a large proportion of teacher turnover (Ingersoll, 2001a).

It is also important to understand teacher job satisfaction for reasons beyond gaining insight into the dilemma of teacher turnover and attrition. Teacher job dissatisfaction has implications for job performance; like employee turnover, it also has implications for organizational effectiveness (Reyes & Shin, 1995). Employees who are dissatisfied may exhibit job avoidance behaviors, as a *precursor* to exit behavior (Hom & Kinicki, 2001), or they may exhibit "psychological quit" behavior (March & Simon, 1958) as a *substitute* for exit behavior. In terms of student, collegial, and organizational needs, teacher dissatisfaction could be a critical problem for schools. Thus, it is important to better understand teacher job dissatisfaction, whether it leads to actual teacher attrition or simply to dissatisfied or unhappy classroom teachers.

New Teachers. Decades of research documents the difficulties new teachers encounter at the start of their careers (Gold, 1996; Johnson & The Project on the Next Generation of Teachers, 2004; Kauffman, Johnson, Kardos, Liu, & Peske, 2002; Lortie, 1975; McDonald & Elias, 1983; Ryan, 1970; Ryan et al., 1980; Veenman, 1984; Wideen, Mayer-Smith, & Moon, 1998). They are challenged by the minute-to-minute decisions and actions they must make which determine whether they will be able to effectively manage their classrooms and maintain order among their students. They are torn by tensions about what to teach and which resources to use; how fast or slowly to pace their

lessons; how to decide which topics will engage students with varied abilities and interests; and how to balance standardized test preparation with their own notion of appropriate curricula. They are confronted by either confusing and conflicting methods about how best to teach their students, or they are faced with a void: "How on earth," they wonder, "will I teach this tomorrow?" Yet, as we know, most new teachers face these struggles alone, with little organized aid or assistance from their colleagues (Goodlad, 1984; Johnson, 1990; Johnson & The Project on the Next Generation of Teachers, 2004; Kardos, 2002, 2003; Little, 1990b; Lortie, 1975; McLaughlin, 1993; Powell, Farrar, & Cohen, 1985; Sizer, 1984; Troen & Boles, 2003).

Mentoring. Formal mentoring has been one strategy that schools, districts, and states have used to try to remedy new teachers' isolation, frustration, and, often times, failure. Mentoring formally links novice teachers with veteran colleagues, recognizing that there is much to be gained from this pairing. In general, mentoring programs are highly variable in their design, and they can be statewide, district-wide, school-based, or informal (Feiman-Nemser, 2001). Unfortunately, formal programs are often short-sighted and ill-conceived, difficult to implement and monitor, and nearly impossible to evaluate (Fideler & Haselkorn, 1999; Feiman-Nemser & Schwille, 2004). Still, research has shown that mentoring can be good for new teachers (Berry, Hopkins-Thompson, & Hoke, 2002; Darling-Hammond, 1999; Evertson & Smithey, 2000; Norman & Feiman-Nemser, in press; Feiman-Nemser, 1996; Gold, 1996; Humphrey et al., 2000; Ingersoll & Kralik, 2004; Little, 1990a; Smith & Ingersoll, 2003), and policymakers, teacher associations, school leaders, and new teachers, themselves, tend to support the programs. In practice, however, new teachers—especially those in under-resourced schools—often

do not get the type of mentoring that is most likely to support them (Johnson, Kardos, Kauffman, Liu, & Donaldson, 2004).

This observation begs the question: is the mere presence of an official mentor related to new teachers' job satisfaction? Given the primacy of the school-site in new teachers' experiences of teaching (Johnson & The Project on the Next Generation of Teachers, 2004), might having a mentor experience, which is embedded in a supportive workplace culture, further augment new teachers' job satisfaction?

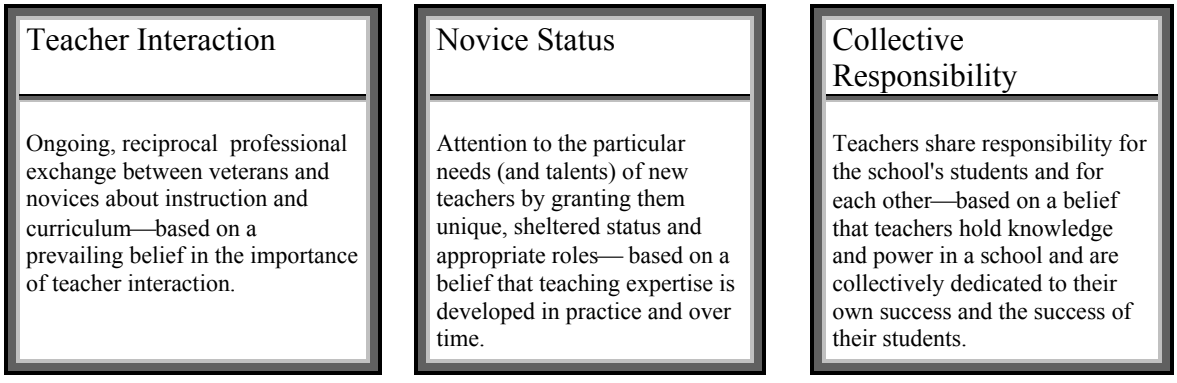
Professional Culture. In prior qualitative work, we at the *Project on the Next Generation of Teachers*, examined new teachers' experiences of the professional culture of their schools, and we found that new teachers describe their experiences of their school's professional culture in three different ways (Kardos, Johnson, Peske, Kauffman, & Liu, 2001). By professional culture, I mean the norms, values, and modes of professional practice, both formal and informal, that new teachers find at their schools. Some new teachers described what we called *veteran-oriented professional culture*, in which the modes of professional practice are determined by the predominant veteran faculty. Veteran teachers may be warm and welcoming, but they generally operate independently, leaving new teachers feeling alone and unsupported. New teachers struggle on their own, day to day, or band together with a small group of new teachers, and operate on the margins of the predominant professional culture. As a result, new teachers lack school-based professional guidance about what or how to teach.

Some new teachers described what we called *novice-oriented professional culture*, in which a large group of novice teachers—usually in charter schools or reconstituted urban public schools—dominate the professional culture. The majority

novice teachers may be creative and committed, but they generally operate without the benefit of access to any professional wisdom or expertise. Though their experiences are quite different from those of new teachers in veteran-oriented professional cultures, the result is the same: new teachers lack school-based professional guidance about what or how to teach.

In contrast, some new teachers described what we called *integrated professional cultures*, depicted graphically in Figure 1. These new teachers experienced an environment where there was ongoing interaction between novices and veterans about teaching and learning. New teachers were granted special status as novices: they were given assistance, encouraged to seek help, and expected to be learning and improving their teaching practice. In addition, new teachers and their colleagues shared responsibility for the school, its students, and each other.

FIGURE 1. THREE MAIN ASPECTS OF INTEGRATED PROFESSIONAL CULTURE.



Integrated professional cultures enabled both novice and veteran teachers to succeed in their work, and new teachers felt sustained and supported by their experienced

colleagues. Notably, our respondents whose accounts suggested that they worked in integrated professional cultures did not describe participating in isolated mentor meetings or support sessions attended exclusively by new teachers. Nor did they describe relying on a single teacher in their school who served as sole confidante, savior, or friend. Instead, they described a mode of professional practice that included teachers of various levels of experience and permeated their workplace.

Within integrated professional cultures, formal support structures were more than *pro forma*. Teachers reported that mentoring relationships were meaningful and supportive; classroom observations and feedback were frequent and helpful; and teacher meetings focused on important issues of teaching and learning. The importance seemed to rest not only in the fact that these structures were in place, but that they functioned within the context of an integrated culture (see also Norman & Feiman-Nemser, in press). Through participating in these structures, new teachers learned what was expected of them and how to meet those expectations. Furthermore, they engaged in reciprocal exchange with experienced colleagues about curriculum and instruction, and they received the crucial support they needed as new teachers. The findings are consistent with those of Linda Darling-Hammond (1999), who reported that "beginning teachers who have access to intensive mentoring by expert colleagues … become more competent more quickly" (p.20), and are more likely to stay in teaching. Our data from the Massachusetts new teacher study suggested that mentoring and other structures for support were most useful to new teachers when they are embedded in a professional culture that is integrated across experience levels; where new teachers are afforded a type of professional status that recognizes both their particular needs and potential

contributions; and where teachers share responsibility for the school, its students, and each other.

In addition to finding that new teachers in integrated professional cultures felt more supported in their work, our data suggested that new teachers who experience integrated professional cultures may be more likely to continue to teach in public schools and to remain in their particular school. In our sample of fifty new Massachusetts teachers interviewed during the 1999-2000 school year, 88 percent of the new teachers working in integrated professional cultures remained in public school teaching the following year (compared to 76 percent of those working in veteran-oriented cultures and 83 percent in novice-oriented cultures), and 82 percent remained in their original schools (compared to 57 percent of those working in veteran-oriented cultures and 67 percent in novice oriented cultures). Our sample in the qualitative study was not randomly selected and, therefore, the findings are not able to be broadly generalized. However, these data led to the desire to further explore new teachers' experiences with their colleagues at their school sites and new teachers' job satisfaction. It also led to the desire further develop the concept of integrated professional culture quantitatively, with a representative random sample of new teachers.

Building directly on the conceptualization of professional culture and the relationship between professional culture and new teacher support, satisfaction, and retention suggested by the qualitative study, I was interested in further examining the relationship between integrated professional culture and job satisfaction. I was also interested in whether new teachers who experience mentoring in the presence of an integrated professional culture are more satisfied with their jobs than those who do not.

Thus, I conducted a survey study of a representative random sample of new teachers drawn from four states to better understand new teachers' experiences at their schools.

RESEARCH DESIGN[2]

Sites—The Four States

We conducted this research in four states: California, Florida, Massachusetts, and Michigan. We chose these states because they share key policy features and because they are diverse in terms of size, population, and geographic location. All four states are experiencing some degree of teacher shortage; all have alternative routes to certification; all have charter school legislation; all have adopted standards in core subjects; all use criterion-referenced assessments aligned to standards; and all are collective bargaining states.

However, these four states differ in a number of noteworthy ways, as summarized in Table 1. First, the student populations in California and Florida are considerably more diverse than those in Massachusetts and Michigan. Sixty-three percent of students in California and 47 percent of students in Florida are members of ethnic minority groups, whereas only approximately one-quarter of the students in Massachusetts and Michigan are members of ethnic minority groups. In addition, 25 percent of California students and 10 percent of Florida students are English language learners, as compared to less than 5 percent of the students in Massachusetts and Michigan (Quality Counts, 2003).

TABLE 1: STATE-LEVEL AGGREGATE SUMMARY OF SELECTED CHARACTERISTICS OF THE EDUCATION SYSTEMS IN CALIFORNIA, FLORIDA, MASSACHUSETTS, AND MICHIGAN.
Source: *Education Week*'s "Quality Counts 2003: The Teacher Gap" (2003).

	CA	FL	MA	MI
Number of Public Schools	8,757	3,231	1,898	3,743
Number of Public School Teachers	305,000	136,000	69,000	97,000
Number of Public School Students (pK-12)	6,248,000	2,500,000	980,000	1,734,000
Percent Minority Students	62.6%	46.5%	24.2%	25.3%
Percent Children in Poverty	22.8%	21.9%	14.3%	16.8%
Percent Students with Disabilities	10.7%	15.0%	16.3%	13.4%
Percent English-language Learners	24.9%	9.9%	4.6%	2.6%
Percent of Students in Elementary Schools with 350 or Fewer Students (2001)	6%	3%	27%	28%
Percent of Students in High Schools with 900 or Fewer Students (2001)	11%	6%	33%	37%
Percent of 8th Graders Scoring at or above proficient on NAEP math 2000	18%—TOTAL 27%—White 4%—Black 7%—Hispanic	N/A	32%—TOTAL 37%—White 8%—Black 14%—Hispanic	28%—TOTAL 35%—White 2%—Black 9%—Hispanic
Statewide Graduation Rates	66%	55%	73%	N/A
State Average Education Spending per Student (adjusted for regional cost differences)	$8,479	$8,429	$6,161	$6,512
Average Teacher *Starting* Salaries, Adjusted for the Cost of Living (2001)	$27,177	$27,387	$27,198	$30,188
Average Teacher Salaries, Adjusted for Cost of Living (2001)	$43,061	$40,604	$41,773	$51,868
Number of Charter Schools	452	232	47	186
Number of Participants in State Alternative Route Programs	7,098	180	200	N/A
Percent of Graduates from NCATE-accredited Teacher Education Programs (2001)	58%	79%	76%	69%

Second, the size and type of schools in the four states differ. A greater percentage of students in Massachusetts and Michigan attend small schools: over one-quarter of the elementary school students in those states are in schools with fewer than 350 students, while only 3 percent of Florida elementary school students and 6 percent of California elementary school students are in small schools. Approximately one-third of Massachusetts and Michigan high school students attend high schools with fewer than 900 students, while only 6 percent in Florida and 11 percent in California do. While all

four states have charter schools, Florida has a higher percentage of charter schools than the other three states. Approximately 7 percent of Florida schools are charter schools, as compared to 5 percent in California and Michigan, and only 2.5 percent in Massachusetts.

Third, California has approximately 35 times as many teachers participating in alternate certification programs as Florida and Massachusetts. California also has the lowest percentage of teachers who graduated from NCATE-accredited teacher education programs at 58 percent, and Florida has the highest, at 79 percent. In addition, teachers in California and Florida are somewhat more likely to teach out of their subject area. More than a quarter of secondary classes in California and Florida are taught by teachers without a major or minor in the field, whereas one in five secondary classes in Massachusetts and Michigan are taught by such teachers (Education Trust, 2003).

Fourth, adjusted for cost of living, average *starting* salaries for teachers are approximately the same across all four states, with Michigan salaries tending to be slightly higher. However, average *overall* teacher salaries are approximately $10,000 higher in Michigan than in the other three states.

Finally, California has the lowest proportion of eighth graders attaining proficient scores on the NAEP math test (18 percent), and Michigan has the largest gap between the proportion of white students attaining proficient scores (35 percent) and Black students (2 percent).

Mentoring in the Four States. At the time this survey was administered, both Massachusetts and California had funded statewide induction programs (with a mentoring component) for new teachers. Michigan required induction for new teachers, but did not fund it. All three states also had required mentoring: Massachusetts required one year of

new teacher mentoring, California required two, and Michigan required three (Quality Counts, 2003). Florida did not have a mandated induction or mentoring program for new teachers, although it has had such funded programs in the past (Education Commission of the States, 1999). Therefore, remnants of such programs exist in Florida and mentoring and induction programs still operate in many districts across the state.

The Sample

The sample consists of 486 first-year and second-year full-time, K-12 public school teachers (including foreign language and special education, excluding arts and physical education) from the four states (California, Florida, Massachusetts, and Michigan). To draw the sample we used two-stage stratified cluster sampling (Levy & Lemeshow, 1999; Light, Singer, & Willett, 1990; Rea & Parker, 1997), which we had pilot tested in New Jersey (Kardos, 2001; Liu & Kardos, 2002). In Stage 1 of our sampling process, we stratified the sample by state, school level (elementary, middle, high)[3], and school type (charter, non-charter), in order to ensure adequate representation along each stratum. We drew a total of 258 schools: 59 in California, 58 in Florida, 62 in Massachusetts, and 79 in Michigan. We over-sampled in the smaller states and under-sampled in the larger ones to enable us to conduct supplementary analyses within each state. In addition, we drew more schools in Michigan, because Michigan was experiencing a teacher shortage to a lesser extent than the other 3 states; 60 Michigan schools would not have yielded enough new teachers for our sample. We also over-sampled charter schools to facilitate future subgroup analysis. In our data analyses, we incorporated sampling weights to correct for the over- and under-sampling. In order to improve the ultimate precision of parameter estimates in our analyses, we drew the

sample of schools in proportion to the number of students in each school, which served as a proxy for the number of teachers, an unknown quantity (Levy & Lemeshow, 1999). In Stage 2 of our sampling process, we included all teachers from the 186 responding schools.[4]

Measures and Data Analysis

The instrument used in this analysis is a mail survey containing 225 items, including 18 general information questions, 18 items on teacher satisfaction, 8 items on teacher career decision-making, and 92 items about professional culture. The instrument also contains a section on teacher hiring, not used in this analysis. These questions are based on a review of the literature and a prior qualitative study (Kardos et al., 2001). The instrument was pilot tested in a study of 110 New Jersey teachers (Kardos, 2001; Liu & Kardos, 2002) and tested on three focus groups.[5]

The survey instrument was administered in the Spring of 2002. Data from questions about new teachers' job satisfaction, new teachers' experiences of the professional culture of their school, new teachers' experiences of official mentoring during their first year, and several families of subsidiary predictor measures are presented and interpreted here, and summarized in Table 2. New teacher job satisfaction (SATJOB) is a composite measure constructed using traditional item analysis and principal components analysis (composed of 7 dichotomous items, Cronbach's alpha reliability=0.73) that captures the dimension of job satisfaction that has to do with *do-ability of the job* and *strong feelings of contentment*.[6] Integrated professional culture (INTCULT) is a composite measure constructed using traditional item analysis and principal components analysis (composed of 14 continuous items measured on a 6-point

Likert-scale, Cronbach's alpha reliability=0.88) that captures new teachers' experiences of the professional culture of their school measured on a 6-point continuum from low integration to high integration. It includes items in the three main aspects of integrated professional culture: teacher interaction, novice status, and collective responsibility explained in more detail below (see Appendix 1).[7] In addition, a series of subsidiary predictors, all dichotomies, were also included in the regression models fit in this analysis. Table 3 presents teacher and school level subsidiary predictors and state level controls. It is important to note that the findings presented in this study are based on self-reported, cross-sectional data and must be interpreted with those limitations in mind.

TABLE 2. OUTCOME VARIABLE AND KEY QUESTION PREDICTORS USED IN THE ANALYSIS (n=486).

Variable	Description	Mean (standard error)
Outcome Variable		
SATJOB	Composite measure, composed of 7 items, capturing new teachers' job satisfaction. Measured on a scale from 0 (low) to 7 (high). α=.88	4.19 (0.23) min=1 max=7 sd=1.96
Key Question Predictors		
INTCULT	Composite measure, composed of 14 items, capturing new teachers' perception of their experience of the professional culture of the school, measured on a continuum from 1 (low integration) to 6 (high integration). Integrated professional culture is composed of items measuring 3 main facets: teacher interaction; novice status; and collective responsibility. α=.73	3.92 (0.10) min=1.21 max=5.93 sd=.910
OFFMENT	Dichotomous variable measuring whether the new teacher had an official mentor during the first year (1=yes, 0=no).	.70 (.061)

All statistics take into account the complex nature of the survey sample (except the standard deviations).

TABLE 3. SUMMARY OF SUBSIDIARY PREDICTORS AND STATE CONTROLS (n=486).

Variable Name	DESCRIPTION OF MEASURE	ESTIMATED PROPORTION (standard error)
Teacher Level Measures		
YOUNGER	New teacher's age below 25 years old, (1=yes; 0=no).	.17 (.040)
MALE	New teacher's gender, (1=male; 0=female).	.13 (.032)
MINORITY	New teacher's race, (1=minority; 0=white).	.44 (.059)
BAPLUS	New teacher's educational attainment, (1=degree beyond bachelors; 0=bachelors degree only).	.14 (.044)
MIDCAR	New teacher's career stage, (1=mid-career; 0=1st career).	.46 (.064)
NOTRAD	New teacher did not complete a regular teacher preparation program (undergraduate or graduate) of at least one school year in length, (1=non-degree credential, alternative preparation, or no preparation; 0=traditional prep).	.20 (.047)
PSUBMST	New teacher's primary teaching assignment is math, science or technology, (1=yes; 0=no).	.068 (.014)
SPED	New teacher currently teaches special education (not solely as the primary subject), (1=yes; 0=no).	.069 (.022)
School Level Measures		
SMALLSCH	The following schools were included in our "small schools" category: elementary schools with 350 or fewer students; middle schools with 800 or fewer students; high schools with 900 or fewer students,* (1=small school, 0=non-small school).	.05 (.014)
HS	New teacher teaches in a school that is a high school, (1=high school, 0=middle or elementary school).	.14 (.026)
P15	New teacher teaches in a school where fewer than 15% of the students are on free or reduced price lunch,** (1=fewer than 15% on free or reduced-price lunch, 0=15% or greater on free or reduced-price lunch).	.09 (.046)
P50	New teacher teaches in a school where greater than 50% of the students are on free or reduced price lunch,** (1=greater than 50% on free or reduced-price lunch, 0=50% or fewer on free or reduced price-lunch).	.67 (.084)
CHART	New teacher teaches in a school that is a charter school, (1=charter school, 0=non-charter school).	.15 (.010)
State Controls		
CA	New teacher teaches in California. (1=yes, 0=no). A design control.	.88 (.013)
FL	New teacher teaches in Florida. (1=yes, 0=no). A design control.	.06 (.008)
MA	New teacher teaches in Massachusetts. (1=yes, 0=no). A design control.	.02 (.002)
MI	New teacher teaches in Michigan. (1=yes, 0=no). A design control. Omitted.	.05 (.007)

All statistics take into account the complex nature of the survey sample.
*Small school designation based on *Education Week's* "Quality Counts 2003". Data was obtained from the National Center for Education Statistics' Common Core of Data, 2002.
**SES breakdowns follow those in the "Education Watch State Summaries" by the Education Trust (Education Trust, 2003). Data obtained from the National Center for Education Statistics' Common Core of Data, 2002.

DATA ANALYSIS

In all of my data analyses, I use methods of estimation in STATA Version 8 that are appropriate for the complex design of my survey sample, with suitable cluster, strata, and sample weight designations incorporated into the analyses. These methods allow me to avoid biased point estimates and incorrectly estimated standard errors that might occur as a result of ignoring clustering and stratification effects. Treating schools as the principal sampling unit (PSU) in my analyses permits the residuals for teachers within a school to have a general error covariance structure, including the possibility that teachers within a school are not independent.[8] As a result, the standard errors used in my hypothesis tests are conservative.

Research Question:

Does the presence of official mentoring during the first year affect new teachers' job satisfaction, and does the effect differ depending on the level of integrated professional culture the new teacher is experiencing?

To address the main research question, I regressed outcome variable SATJOB on question predictors INTCULT and OFFMENT, controlling for teacher demographics, school level differences, and state.

$$SATJOB_i = \beta_0 + \beta_1 INTCULT_i + \beta_2 OFFMENT_i + \beta_3 (INTCULT_i * OFFMEN\ T_i) + \gamma Z_i + \in_i$$

In this regression model, *i* represents the individual teacher; β_1 and β_2 are parameters representing the main effects of question predictors integrated professional culture and the presence of official mentoring during the first year; and β_3 is a parameter representing

the effect of a two-way interaction between these two measures. Finally, γ is a vector of parameters associated with $Z_{i,}$ a vector of control predictors; and $\in_i$ is a residual.

FINDINGS: THE EFFECTS OF INTEGRATED PROFESSIONAL CULTURE AND MENTORING

I set out to determine whether new teachers who had official mentors during their first year of teaching were more satisfied with their jobs than those who did not, and whether the effect differed depending on the extent to which new teachers were experiencing official mentoring in the context of integrated professional cultures.

My analysis yielded two important findings, with implications for policy, practice, and for further research. First, I found that the mere presence of mentoring measured as a simple dichotomy ("yes, I had an official mentor assigned to me by my school or district during my first year," "no, I did not"), even in the context of an integrated professional culture, does not predict new teacher job satisfaction. That is, when we do not specify any details about the mentor or the new teacher's experiences with the mentor, there is no measurable effect on new teacher job satisfaction. Second, I found a strong, positive, and statistically significant relationship between integrated professional culture and new teachers' job satisfaction ($\hat{\beta}$ = 1.172, p<0.001). New teachers' reports of low levels of integration in the professional culture of their schools is associated with low levels of job satisfaction and new teachers' reports of high levels of integration in the professional culture of their schools are associated with higher levels of job satisfaction.

A taxonomy of fitted regression models representing the relationship between new teachers' job satisfaction and integrated professional culture is presented in the columns of Table 4.

TABLE 4: TAXONOMY OF FITTED REGRESSION MODELS REPRESENTING THE RELATIONSHIP BETWEEN NEW TEACHER JOB SATISFACTION (SATJOB) AND INTEGRATED PROFESSIONAL CULTURE (INTCULT), CONTROLLING FOR RELEVANT SUBSIDIARY PREDICTORS.

		Model 0	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Intercept		4.794 (.420)	-.379 (1.070)	-.383 (1.350)	-.130 (1.438)	.224 (1.449)	.269 (1.271)	-.533 (1.024)
CA, FL[1], MA controlled but not statistically significant		✓	✓	✓	✓	✓	✓	✓
Key Question Predictors								
OFFMENT	Has/had an official, first-year mentor	-.309 (.409)	-.385 (1.439)	-.734 (1.551)	-.944 (1.55)	-1.192 (1.559)	-1.236 (1.553)	
INTCULT	The degree of integrated professional culture the new teacher experiences		1.326*** (.239)	1.272*** (.275)	1.185*** (.290)	1.142*** (.288)	1.068*** (.269)	1.172*** (.230)
OFFxIPC	Having a mentor in the presence of an integrated professional culture		-.035 (.359)	.062 (.390)	.129 (.386)	.199 (.385)	.191 (.377)	
School Characteristics								
HS				.361 (.490)	.404 (.474)	.822* (.417)	1.042*** (.287)	1.046** (.327)
P15				.601 (.379)	.608 (.393)	.493 (.381)	.880*** (.256)	.900** (.294)
P50				-.074 (.506)	-.028 (.503)	-.189 (.488)	.327 (.235)	.324 (.249)
CHART				-.574~ (.343)	-.730~ (.421)	-.943~ (.570)	-.911 (.599)	-.965 (.671)
SMALLSCH controlled but not statistically significant				✓	✓	✓	✓	✓
Career Entry State and Preparation								
NOTRAD					-.615 (.412)	-.612 (.410)	-.694~ (.359)	-.717* (.364)
MIDCAR controlled but not statistically significant					✓	✓	✓	✓
Teaching Assignment								
PSUBMST						-1.352*** (.254)	-1.343*** (.288)	-1.372*** (.274)
SPED						-.833~ (.432)	-.623 (.407)	-.655~ (.383)
Individual Characteristics								
MINORITY							-.503~ (.276)	-.510~ (.269)
YOUNGER, MALE, BAPLUS controlled but not statistically significant							✓	✓
SUMMARY STATISTICS	R^2	.90%	34.54%	36.00%	37.52%	40.78%	42.70%	41.15%
	F(df)	1.05 (4,126)	14.00 (6,124)	17.19 (11,119)	13.04 (13,117)	12.81 (15,115)	16.80 (19,110)	9.13 (17,112)
	P of F	.3864	0.000	0.000	0.000	0.000	0.000	0.000
	N	N=483	N=481	N=481	N=481	N=481	N=477	N=479

~p<0.10; *p<0.05; **p<0.01; ***p<0.001. The parameter estimate on the design control FL is statistically significant in Model 0 only (β= -.751*). In all other Models, the state controls are not statistically significant.

In this table, fitted Model 0 demonstrates that there is no statistically significant total effect of official mentoring (uncontrolled for professional culture or anything other than state) on new teacher job satisfaction. I include the state design controls in this, and all, fitted models to account for the main effects of all time-invariant state level differences in new teacher job satisfaction. In subsequent models, I regress outcome variable SATJOB (self-reports of the new teachers' job satisfaction) on key question predictors, OFFMENT (the presence of an official mentor), INTCULT (a continuum measure of the integratedness of the professional culture), and their two-way interaction (OFFxIPC), adding families of school level and individual predictors. Notably, as I fit the models, I retained subsidiary predictors that were not statistically significant but that are substantively important. Model 5 directly addresses the research question I posed.[9]

In addition, I present Model 6 as a final fitted model, which contains INTCULT as the only key question predictor, since the other key question predictor (OFFMENT) and the two-way interaction (OFFxIPC) were not statistically significant in Model 5.[10] OFFMENT and OFFxIPC are removed from the model because they had no effect in any of the fitted models and in order to achieve parsimony. This fitted model shows that, on average, a new teacher's experience of the professional culture as integrated has a strong, positive, and statistically significant relationship with job satisfaction ($\hat{\beta}$ =1.172, $p<0.001$).[11] In Model 6, the predictors explain 41 percent of the variation in new teachers' job satisfaction.[12]

The Importance of Professional Culture

Integrated professional culture is a strong predictor of new teachers' job satisfaction. That is, new teachers in professional cultures where (1) new and experienced teachers interact, (2) new teachers have novice status that recognizes their needs as beginners, and (3) teachers share collective responsibility for students' learning and the school's effectiveness, *are more likely to perceive their jobs as doable and themselves as generally content with those jobs*. While the phenomenon of professional culture may be hard to measure, and the relationship between it and job satisfaction may be hard to model, conceptually, the finding builds soundly on the research on teaching and schools that precedes it.

We know that teachers learn on the job when there is ongoing teacher interaction among them and their colleagues (Little, 1982, 1990b; McLaughlin, 1993). We know that new teachers have particular needs and require special assistance as they are learning to teach (Feiman-Nemser, 1983; Feiman-Nemser, 2001; Johnson & The Project on the Next Generation of Teachers, 2004; McDonald & Elias, 1983). And we know that schools where teachers have a sense of collective responsibility are more fulfilling for teachers and more effective for students (Lee & Smith, 1996; Louis, Kruse, & Marks, 1996; McLaughlin & Talbert, 2001). Furthermore, earlier work on professional culture—as it is conceptualized here—suggested that new teachers feel most supported in schools where the professional culture is integrated, and they may, in fact, be more likely to stay at those schools and in teaching (Kardos et al., 2001). This analysis provides strong evidence that new teachers who experience their school's professional culture as more integrated have higher predicted levels of job satisfaction.

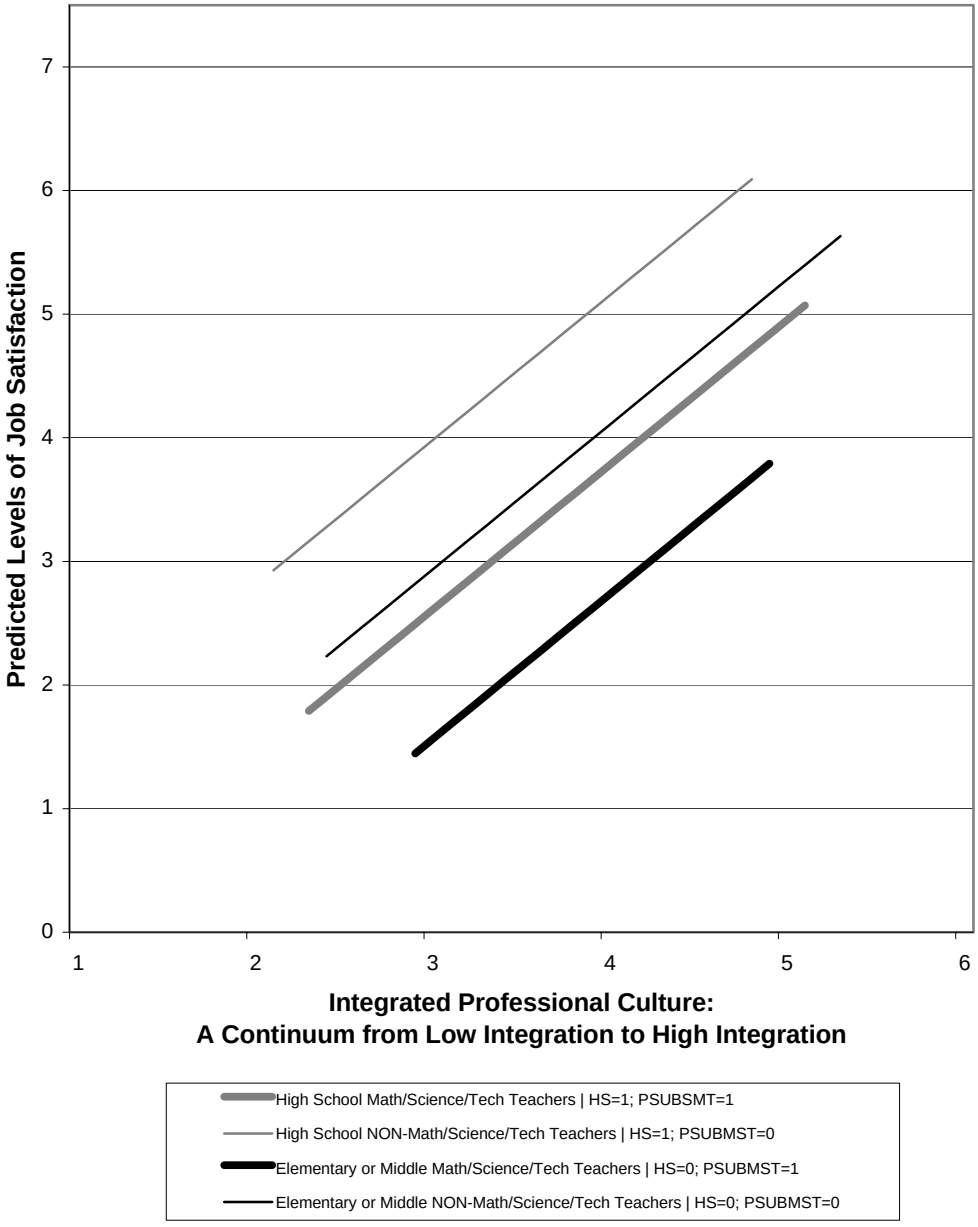
In order to represent the relationship between integrated professional culture and new teacher job satisfaction (Model 6 in Table 4) graphically and to highlight the differences between two important subgroups, I created fitted plots for prototypical teachers for whom all predictors are set to their sample mean values, with the exception of teaching assignment (whether the teacher's primary teaching assignment is math, science or technology or whether the primary teaching assignment is some subject other than these three) and school level (whether the teacher teaches in a high school or in an elementary or middle school).[13] Visual inspection of the upward sloping direction of the all of the fitted plots presented in Figure 2 reveals the strong, positive relationship between integrated professional culture and self-reports of new teacher jobs' satisfaction, regardless of teachers' primary teaching assignment.

In the plot, the thick black line (the lowest in the set of lines) represents elementary and middle school new teachers whose primary teaching assignment is math, science, or technology.[14] The thick grey line above it represents high school teachers whose primary teaching assignment is math, science, or technology.[15] The thin black line represents elementary and middle school teachers who teach subjects other than math, science, or technology primarily.[16] The thin grey line represents high school teachers who teach subjects other than math, science, or technology primarily.[17] In all cases, fitted lines range from each group's respective 5^{th} to 95^{th} percentiles of integrated professional culture.

In addition to the strong, positive relationship between job satisfaction and integrated professional culture, the vertical placement of the fitted lines indicates that, controlling for state, school, and individual characteristics, teachers who *do not* primarily

teach math, science, or technology are more satisfied, on average, than their colleagues who do. Controlling for state, school, and individual characteristics, high school teachers are, on average, more satisfied with their jobs than elementary and middle school teachers. The lower placement of math, science, and technology teachers in both the elementary/middle and high school groups—indicating lower levels of job satisfaction—is important, given that math, science, and technology teachers are often hard to come by. However, in all cases, higher levels of integrated professional culture lead to higher levels of new teacher job satisfaction.

Figure 2. Plot Showing the Fitted Relationship between Job Satisfaction and Integrated Professional Culture for Prototypical Math, Science, Technology Teachers and non-Math, Science, Technology Teachers Who Teach in either Elementary or Middle Schools or in High Schools. All Plots Use Means to Control for Other Selected Individual, School, and State Characteristics (n=479).



The Mere Presence of Mentoring—No Effect on Job Satisfaction

This analysis found that the mere presence of an official mentor assigned by the school or district during the first year has no effect on new teachers' job satisfaction.[18] Given the challenges faced by new teachers as they begin their work in schools, one might expect that the presence of a mentor—an experienced guide—might moderate the "trauma" and "anxiety" (McDonald & Elias, 1983) often experienced by beginning teachers and lead to higher levels of job satisfaction, especially when the aspect of job satisfaction being measured has to do with do-ability of the job and general contentment.

We know that for new teachers, mentoring experiences are mixed; some relationships between mentors and new teachers are substantive and useful and others are perfunctory and vacuous (Feiman-Nemser, 2001; Johnson & The Project on the Next Generation of Teachers, 2004; Kardos et al., 2001; Little, 1990a). Therefore, the 70 percent of the new teachers in the four states who have official mentors may experience them quite differently. Given previous research (cited above) asserting the potential benefits of mentoring, this finding compels us to recognize this variability when assessing the value of mentoring for new teachers. That is, simply "doing mentoring" is not related to new teachers' job satisfaction.

As Table 5 shows, state mentoring and induction policies and financing vary among the four states in the study. When a state "requires" an induction or mentoring program, it often means that it requires individual districts to create and administer programs that meet state guidelines. However, even given specific knowledge about state-level mentoring mandates and provisions, it is not safe to assume that teachers in any given state, district, or school have a standard mentoring experience, or any

mentoring experience at all. We might expect that in states where induction and mentoring are required and funded (California and Massachusetts), larger proportions of new teachers would report having official first-year mentors assigned to them by their school or district. Surprisingly, as Table 5 shows, Michigan and Florida have the highest proportions of teachers with official mentors, at 84 percent and 75 percent respectively. At all levels, mentoring programs are hard to implement and assess; the incentive and reward structures vary as much as the guidelines; and there is little accountability for new teachers and their mentors, or for the schools and districts where the mentoring is supposed to happen (Feiman-Nemser, 2001; Feiman-Nemser & Schwille, 2004; Fideler & Haselkorn, 1999). Therefore, just "doing mentoring," without attending to what is actually being done, does not ensure that much useful will be done at all.

TABLE 5. PROPORTION OF NEW TEACHERS WHO REPORTED HAVING OFFICIAL MENTORS ASSIGNED BY THEIR SCHOOL OR DISTRICT DURING THEIR FIRST YEAR, BY STATE (n=484).

STATE	STATE MENTORING POLICY IN 2002 Source: Education Week's Quality Counts 2003, "The Teacher Gap."	PERCENT OF NEW TEACHERS WHO HAD OFFICIAL MENTORS (standard error)
CALIFORNIA	Has, requires, and funds statewide induction program. Requires 2 years of mentoring for new teachers.	69% (6.9)
FLORIDA	Had statewide program in the past.	75% (9.3)
MASSACHUSETTS	Has, requires, and funds statewide induction program; requires 1 year of new teacher mentoring.	68% (8.1)
MICHIGAN	Has a statewide induction program, but does not fund it; requires 3 years of new teacher mentoring.	84% (5.4)
TOTAL—4 STATES		70% (6.1)

All statistics take into account the complex nature of the survey sample.

DISCUSSION

A key finding of the work of the *Project on the Next Generation of Teachers* is that it is the school-site that is of primary importance to the new teacher (Johnson & The Project on the Next Generation of Teachers, 2004). By examining, in greater depth, the organizational phenomenon "professional culture," analysis of these data from this 4-state survey study further illustrates this importance. This study suggests that new teachers' experiences of the professional culture of their schools influence their job satisfaction. A new teacher who experiences the professional culture of her or his school as more integrated will be more satisfied.

Two problems now come into focus. The first is that for many new teachers, the school-site experience is not characterized by key features of integrated professional culture. The second is that certain important sub-groups of new teachers are less likely than others, on average, to experience their workplace culture as integrated.

In an earlier analysis, I examined the three facets of integrated professional culture (teacher interaction, novice status, and collective responsibility) as separate aspects and asked multiple questions within each aspect in order to get a complete picture of new teachers' perceptions of the professional culture of their schools. Analysis of the data revealed that many new teachers are not likely to experience their workplace cultures as integrated (Kardos, 2004).

Despite recent attention to the induction of new teachers by many school districts, I found that, on average, new teachers' work is solitary. This is important, given the fact that these novices have little or no teaching experience and are hoping to do an extremely complex job with a sense of success (Johnson & Birkeland, 2003). In addition to these

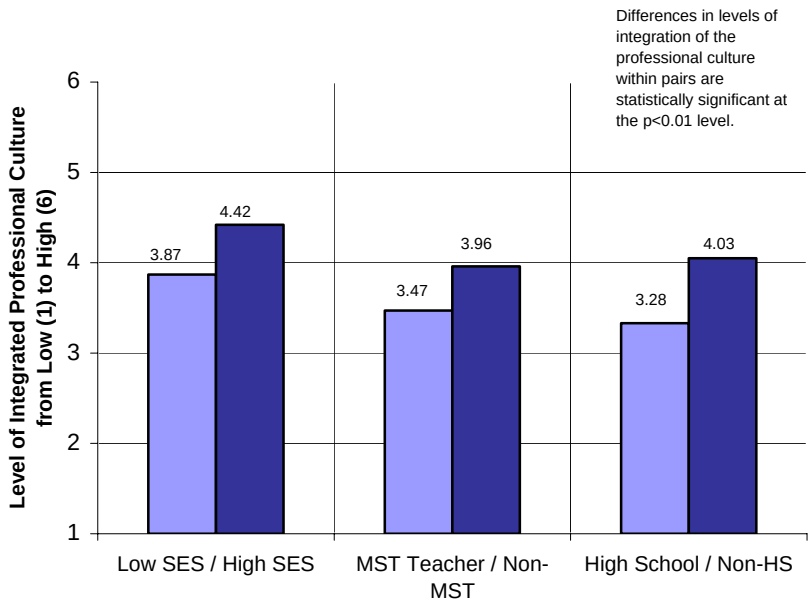
reports of solitude, many new teachers report that they do not receive special assistance to help them learn on the job nor are they encouraged to seek help, implying that they are not granted special, sheltered "novice status" in their schools. Finally, many new teachers report that their colleagues do not share a sense of collective responsibility for the school and its students.[19]

When I composite all of these individual items (see Appendix I for the 14 items used in the composite) and look at integrated professional culture as a single construct measured on a continuum from low integration (score of 1) to high integration (score of 6), differences between important subgroups emerge. For example, as Figure 3 shows, new teachers in high-income schools (where less than 15% of the students qualify for free or reduced-price lunch—labeled in the Figure "low-SES") experience more highly-integrated professional cultures than new teachers in low-income schools (where more than 50% of the students qualify for free or reduced-price lunch—labeled in the Figure "high-SES"). Teachers who teach math, science, or technology (labeled in the Figure as "MST teachers") perceive their professional cultures as less integrated than those who teach subjects other than math, science or technology (labeled in the Figure as "non-MST"). High school teachers (labeled as "High School") perceive their professional cultures as less integrated than those who teach in elementary or middle schools (labeled "Non-HS").

It is important to note that professional culture can be experienced schoolwide or within sub-units of schools. Therefore, it is likely that high school teachers who report on the professional culture they experience may well be reporting on the professional

culture of their departments. Nevertheless, these comparisons (all differences within pairs are statistically significant) are important because they reveal the types of professional cultures different sub-groups of teachers experience. These subgroups are of particular interest when considering ways to attract and support new teachers in positions that are traditionally hard to fill and schools that are traditionally hard to staff (or keep staffed).

FIGURE 3. COMPARISON OF NEW TEACHERS' EXPERIENCES OF THE PROFESSIONAL CULTURES OF THE SCHOOLS ON A CONTINUUM FROM LOW INTEGRATION TO HIGH INTEGRATION.



This is a critical set of findings about new teachers and professional culture, given that the kind and quality of new teachers' experiences with their colleagues have serious implications for the usefulness of the support they receive, their job satisfaction, and possibly, their engagement with their work or their retention. Previous research by Richard Ingersoll in 1997 and 2001 has shown a positive relationship between teacher reports of effective assistance for new teachers and job satisfaction, and teacher reports of effective assistance and teacher retention (as cited in Ingersoll & Kralik, 2004).

Does mentoring provide effective assistance? While this study does not address that question specifically, it shows that the mere presence of mentoring is not related to new teachers' job satisfaction. This is consistent with other research which found, for example, that the mere presence of mentoring, absent actual knowledge and skill in mentoring, does not influence teacher practice (Evertson & Smithey, 2000). The influence of mentoring depends not simply on whether or not new teachers are assigned mentors, but rather on the characteristic of the match (Smith & Ingersoll, 2004; Kardos, 2004), the nature of the interactions between the mentor and the new teachers (Norman & Feiman-Nemser, in press; Kardos, 2004), and the professional culture in which the mentoring is embedded (Kardos et al., 2001; Norman & Feiman-Nemser, in press).

In assessing such formal support structures as mentoring, observation, and other "structured collaboratives," Little (1990b) writes, "The prospects for their influence on individuals and organizations rest in part on their congruence with established norms of interactions and interpretations among colleagues, and with the degree to which they fit or conflict with the meaningful reference groups with which teachers align themselves" (p.530). Norman and Feiman-Nemser (in press) have found that new teachers can learn

from serious mentoring, but the professional culture of the school has an influence on how effective that learning can be. According to the researchers, "…what [the new teacher's] school was like as a setting for teaching and learning to teach affected the character and quality of mentoring that [the mentor] was able to provide" (p.21).

An integrated professional culture is a good setting for teaching and learning-to-teach (Kardos, et al., 2001). However, this analysis shows that embedding (the mere existence of) mentoring in integrated professional culture has no measurable effect on new teachers' job satisfaction. We clearly need to know more about the characteristics of the matches and the nature of the interactions between new teachers and their mentors.

Mentoring programs have been the primary structure of formal new teacher support over the past two decades (Fideler & Haselkorn, 1999), and the proportion of new teachers who reported that they participated in some sort of formal mentoring or induction program increased from 40 percent to 80 percent between 1990 and 2000 (Smith & Ingersoll, 2004). Thus, many schools are "doing mentoring," but just doing it does not ensure that mentoring will be useful and effective. In an analysis of 1990-1991 Schools and Staffing Survey data, Ingersoll found (1997 and 2000 studies cited in Ingersoll & Kralik, 2004) that 60 percent of principals said they offered a formal mentoring program, but the teaching staffs in only about 20 percent of the schools reported that the assistance offered to new teachers was effective. The mere presence of formal mentoring, therefore, has little do with teachers' reports that their schools provided useful assistance to novices.

Finally, not only is there a discrepancy between teachers' experiences of professional culture in low-income versus high-income schools and among

math/science/technology teachers and teachers of other subjects, there are also discrepancies between these sub-groups in their experiences of mentoring. For example, teachers in low-income schools and teachers of math/science/technology are less likely than their counterparts to have appropriate mentor matches and to interact with their mentors about substantive issues related to teaching and learning, such as classroom instruction and curriculum and lesson planning (Johnson et al., 2004; Kardos, 2004). Therefore, if effective assistance for new teachers depends not on the mere existence of a mentor, but on the characteristic of the match, the nature of the interaction, and the professional culture in which the mentor experience is embedded, then new teachers in low-income schools and new teachers of math, science, and technology are under a triple threat.

CONCLUSION

Summary of Findings

This study focused on a particular aspect of new teacher job satisfaction: *do-ability and general contentment*. This aspect of job satisfaction is important to understand, because new teachers' job satisfaction has implications for new teachers' decisions about whether or not to stay in teaching or remain at their schools. This aspect of job satisfaction also has implications for new teachers' attitudes and engagement if they do choose to stay in teaching or at their schools.

This study found a strong and positive effect of integrated professional culture on new teachers' job satisfaction. That is, new teachers in less integrated professional cultures are less satisfied with their jobs than new teachers in highly-integrated

professional cultures. This study also found that the mere presence of an official mentor has no measurable relationship to new teachers' job satisfaction, even in the presence of an integrated professional culture.

Implications for Policy and Practice

These findings have important implications for those in both the policy arena and in schools who are interested in new teacher support, teacher quality, teacher retention, and ultimately, in the sustainability of our public schools through an effective and stable teacher workforce. These findings deal directly with a formal structure for support of new teachers—mentoring—which is often required by state statutes or district policies. These findings also deal directly with another school-based mechanism to support new teachers—the professional culture of the school—which is determined by the principals and teachers and influenced both by prevailing norms and beliefs and organizational structures. These findings bring into sharper focus the joint responsibility that policymakers and school leaders share.

Developing Integrated Professional Cultures. This study highlights the critical importance of integrated professional cultures for new teachers' job satisfaction. Given the findings presented here, the development of a highly-integrated professional culture is a leadership challenge that principals and other school leaders ought to strive to meet. Integrated professional culture is characterized by ongoing professional exchange among new and experienced teachers; special, sheltered status for novice teachers to seek and attain extra assistance; and a shared sense of responsibility among faculty for the school, its students, and each other. Building a workplace culture that is suffused with these characteristics is a weighty task indeed. However, given the relationship between

integrated professional culture and new teachers' job satisfaction suggested first by qualitative work and confirmed by this quantitative study, promoting such workplace cultures ought to be prioritized by school leaders.

It seems that school leaders, especially principals, are best able to promote integrated professional cultures if they *believe* that teacher interaction is better for teachers and students than teacher isolation. They are best able to promote integrated professional cultures if they believe that new teachers have much to gain from the knowledge of their experienced colleagues; that new teachers are indeed novices and need opportunities to learn to teach; and that schools where there is a sense of collective responsibility are better places for teachers to teach and students to learn. If they hold these beliefs, which are aligned with the key features of integrated professional culture, then they are best able to *lead toward it*—to support those who share those beliefs and to inspire and convince others of the benefits of an integrated professional culture.

School leaders, it seems, can best promote integrated professional cultures if they *value* the promotion of this type of workplace environment enough to *visibly take part in it*. School leaders can participate in some appropriate way with teachers, both experienced and novice, in addressing key issues of teaching and learning. There are ways in which they can be present and responsive to teachers' teaching needs without being strictly evaluative. School leaders can know and understand new teachers' needs and talents so that efforts can be made both to meet their particular needs and to capitalize on their special skills. School leaders can also assume their role in the shared responsibility for all students and teachers in the school.

Finally, school leaders can *sponsor and support—and if need be create—structures to promote integrated professional cultures,* and make collegial exchange and joint work likely to happen. Teachers need assignments that allow new teachers to work with colleagues with shared interest across experience levels. Teachers need space and coordinated time if they are to have ongoing exchange about teaching and learning. They need structured time for collaborative curricular planning and peer observations, so that interaction about the real work of teaching is not left to chance. Schools need structures through which to provide extra assistance to new teachers and mechanisms by which requesting this assistance is a natural part of a new teacher's workday. Principals, administrators, or department chairs can convene small groups of new and veteran teachers to aide in the new teacher's development. They can recognize and reward experienced teachers who assume leadership roles in supporting new teachers. They can also support a schoolwide vision for student learning or teacher professional growth or, at least, a consistent school-wide discipline policy. However, it is not enough to simply put support structures in place. Principals also need to breathe life into those structures by creating cultures of ongoing learning and interaction across experience levels. That is, they must broker the connection between the workplace culture and the organizational structures.

It is important to emphasize here that an integrated professional culture depends not only on the leadership of a principal or other school leader, but also on the participation of experienced teachers, and new teachers as well. Much can be gained by giving serious attention to the leadership opportunities integrated professional cultures

provide for experienced teachers and the important role that they play not only in inducting new teachers, but also in creating the kinds of workplaces that are vibrant and sustaining (or deadly) for new teachers.

But schools are not islands, and districts and states have roles to play in helping to create schools that support new teachers and professional cultures that are integrated. Time and space for new and experienced teachers to meet cost money. Schools may need funds so that teachers can be released from administrative tasks or be paid for extra work and time. With additional time, money, and space, teachers can work closely enough with colleagues and participate in a worthwhile, substantive, and ongoing exchange that can benefit new and experienced teachers in their ongoing efforts to teach their students better. Since it is very difficult for schools that are understaffed to sustain all elements of an integrated professional culture, schools may need help from districts or states to fully staff their faculties. Given the findings presented here, it seems particularly important to pay special attention to low-income schools and to teachers who teach math, science or technology. Finally, states, districts, and schools can work together to provide induction programs for new teachers that are school-based and focused on teaching and learning. What schools do not need, however, are poorly funded, haphazardly conceived and implemented mentoring programs which ensure nothing more than that the schools are "doing mentoring."

Mentoring that Matters. A clear finding here is that the mere presence of an official mentor has no effect on new teachers' job satisfaction. Given that, it does not make sense to pursue any policy initiatives that rely simply on the assignment of mentors to new teachers or to evaluate the success of such programs based on the fulfillment of

the assignment itself. And since some studies have shown that the effectiveness of mentoring depends on the workplace context, it would be hard to pose sweeping recommendations for particular mentoring policies.

There seems to be promise in districts developing a high-quality cadre of trained mentors, and working hard to make appropriate matches with new teachers. When schools can reach beyond their own hallways for mentors for their new teachers, they may find greater capacity in a larger pool of district mentors, and they may find these outside mentors more focused on instruction and student learning. Surely new teachers need assistance from experienced colleagues, but perhaps the one-to-one mentor model can be replaced by highly skilled, well-trained, district-based mentors and staff developers who know their mentees' challenges, subject, and schools well. This may be more advantageous for new teachers in low-income schools and new teachers who teach math, science, or technology.

We do know that simply assigning a mentor is not sufficient. As Norman and Feiman-Nemser have concluded, "If we want to realize the benefits of mentoring as a vehicle for improving teaching and learning," we need to be sure that support structures for new teachers are based on "dependable ideas about new teachers as learners, the nature of educative mentoring, and the role of schools..." (p. 34).

Implications for Further Research

This inquiry addressed the effect of mentoring and professional culture on new teacher job satisfaction. While job satisfaction is, in fact, an important outcome with consequences for classroom practice and retention, this study does not tell us anything specifically about new teacher practice or effectiveness, new teacher learning, or new

teacher retention. Studies which help explain the relationship between these outcomes and new teacher mentoring and experiences of professional culture would be useful in further guiding practitioners and policy makers toward useful mentoring and induction policies and programs.

The next logical step to the inquiry summarized here is to examine the relationship between both the characteristics of the mentor match and the nature of the interactions between the mentor and the new teacher and new teacher job satisfaction. This data is available in the 4-state survey dataset. However, there are other pertinent details of new teachers' experiences with their official (and unofficial) mentors which I do not know. I do not know how the mentors were selected and trained, how they are compensated, and how they are held accountable. These data, analyzed by important sub-groups, might help us clarify and categorize the range of mentoring experiences. Studies that utilize such data could help us answer important questions about how new teachers experience official mentoring, whether they find it useful, and whether it predicts satisfaction, efficacy, or retention. They may also help us discover what aspects of mentoring contribute most to which outcomes.

Likewise, those interested in support for new teachers might further benefit from studies that examine mentoring from the state-level downward. What are the state policies? To what extent are they implemented? Who benefits from state funding for new teacher induction and mentoring? Are the programs effective? Are districts and schools accountable for fulfilling mentoring mandates?

Finally, ethnographic case studies, where the unit of analysis is shifted from the teacher (as in these previous studies) to the school, could enrich our understanding of the

complicated phenomenon of professional culture. Professional culture is really about the complex interplay between individuals, formal structures, the content of the work, social organizations, prevailing beliefs and norms, and the context of the schools. Better understanding of the relationships between professional cultures and other important outcomes (job satisfaction, efficacy, decisions to stay in teaching) requires a research approach that includes both quantitative and qualitative methods. A more complex approach would deepen our understanding of what new teachers experience at their schools, how best to assist them so that they will teach well, and how to support their ongoing development so that the most effective and inspired teachers will remain in our nation's classrooms.

APPENDIX 1

VARIABLE NAME, QUESTION, AND DESCRIPTIVE STATISTICS FOR INDICATORS INCLUDED IN COMPOSITE VARIABLE REPRESENTING INTEGRATED PROFESSIONAL CULTURE (INTCULT).

Variable Name	Question Measured on a 6-point Likert Scale (1=Strongly Disagree / 6=Strongly Agree)	Mean (se)	Standard Deviation
NOVHELP	As a new teacher, extra assistance is available to me	3.9 (.17)	1.49
NOVSEEK	I am expected and encouraged to seek help from other teachers	4.5 (.11)	1.22
WKPLAN	I usually plan for classes with another teacher or teachers	3.09 (.20)	1.66
WKT	I usually discuss teaching strategies with another teacher or teachers	4.22 (.14)	1.39
WKCO	I frequently co-teach or partner with another teacher	2.9 (.25)	1.73
WKALONE3 (reversed)	I usually plan and teach alone	2.74 (.16)	1.59
WKVET3 (reversed)	I have very few professional interactions with experienced teachers	4.55 (.13)	1.41
WKINT	The new teachers and the experienced teachers work together	4.09 (.16)	1.56
WKIND3 (reversed)	Most teachers in this school work independently	3.31 (.19)	1.47
WKTEAM	The teachers I work with most think of ourselves as a "team"	4.21 (.18)	1.64
CRACT	My colleagues participate in school activities outside the primary responsibilities of their classes	4.38 (.12)	1.15
CRSTUD	Teachers act as if they are responsible for students' learning, even for those who are not in their classes	4.06 (.14)	1.21
CRRULE	Rules for student behavior are enforced by teachers, even for students who are not in their classes	4.50 (.15)	1.30
CRTCOL	My colleagues think it is important for teachers to work together	4.54 (.12)	1.26

All estimates take into account the complex nature of the survey sample, except the standard deviations.

REFERENCES

Berry, B., Hopkins-Thompson, T., & Hoke, M. (2002). *Assessing and supporting new teachers: Lessons from the southeast*. North Carolina: The Southeast Center for Teaching Quality at the University of North Carolina.

Bogler, R. (2001). The influence of leadership style in teacher job satisfaction. *Educational Administration Quarterly*, *37*(5), 662-683.

Darling-Hammond, L. (1999). *Solving the dilemmas of teacher supply, demand, and standards: How we can ensure a competent, caring, and qualified teacher for every child?* Washington, D.C.: National Commission on Teaching and America's Future.

Education Trust. (2003). *Education Watch State Summaries*. Washington, DC: Education Trust.

Educator Licensure and Preparation Program Approval, Massachusetts Department of Education, 603 CMR 7.12 (2001).

Education Commission of the States ECS StateNotes. (May, 1999). *Beginning Teacher Mentoring Programs*. Denver, CO: Education Commission of the States.

Evertson, C. M. & Smithey, M. W., (2000). Mentoring effects on proteges' classroom practice: An experimental field study. *Journal of Educational Research, 93*(5).

Feiman-Nemser, S. (1983). Learning to teach. In L. S. Shulman & G. Sykes (Eds.), *Handbook of teaching and policy* (pp. 150-170). New York: Longman.

Feiman-Nemser, S. (1996). *Mentoring: A critical review*. Washington, D.C.: ERIC Clearinghouse on Teaching and Teacher Education.

Feiman-Nemser, S. (2001). From preparation to practice: Designing a continuum to strengthen and sustain teaching. *Teachers College Record*, *103*(6), 1013-1055.

Feiman-Nemser, S., & Schwille, S. (2004, April). *Tracing paths of influence in new teacher induction*. Paper presented at the American Educational Research Association, San Diego, CA.

Fideler, E. F., & Haselkorn, D. (1999). *Learning the ropes: Urban teacher induction programs and practices in the United States*. Belmont, MA: Recruiting New Teachers, Inc.

Gerald, D. E., & Hussar, W. J. (1998). Projections of education statistics to 2008. Washington, D.C.: National Center for Educational Statistics, U.S. Department of Education, Office of Educational Research and Improvement.

Gold, Y. (1996). Beginning teacher support: Attrition, mentoring, and induction. In J. Sikula, T. J. Buttery & E. Guyton (Eds.), *Handbook of research on teacher education* (2nd ed., pp. 548-594). New York: Simon & Schuster Macmillan.

Goodlad, J. (1984). *A place called school: Prospects for the future*. New York: McGraw-Hill.

Hargreaves, A., & Dawe, R. (1990). Paths of professional development: Contrived collegiality, collaborative culture, and the case of peer coaching. *Teaching and Teacher Education*, 6, 227-241.

Haycock, K. (1998). Good teaching matters: How well-qualified teachers can close the gap. *Thinking K-16*, *3*(2), 3-14.

Herzberg, G., Mausner, B., & Snyderman, B. (1959). *The motivation to work*. New York: John Wiley.

Hom, P. W., & Kinicki, A. J. (2001). Toward a greater understanding of how dissatisfaction drives employee turnover. *Academy of Management Journal*, *44*(5), 975-987.

Huling-Austin, L. (1990). Teacher induction programs and internships. In W. R. Houston (Ed.), *Handbook of research on teacher education* (pp. 535-548). New York: Macmillan Publishing Company.

Humphrey, D. C., Adelman, N., Esch, C. E., Riehl, L. M., Shields, P. M., & Tiffany, J. (2000). *Preparing and supporting new teachers: A literature review*. Menlo Park, CA: SRI International.

Ingersoll, R. M. (2002). *The teacher shortage: A case of wrong diagnosis and wrong prescription*. NASSP Bulletin, 86, 16-31.

Ingersoll, R. M., & Kralik, J. M. (2004). *The Impact of Mentoring on Teacher Retention: What the Research Says*. Denver, CO: ECS Research Review.

Ingersoll, R. M., & Smith, T. (2003). The Wrong Solution to the Teacher Shortage. *Educational Leadership*, *60*(8), 30-33.

Ingersoll, R. M. (2001a). Teacher turnover and teacher shortages: An organizational analysis. *American Educational Research Journal*, *38*(3), 499-534.

Ingersoll, R. M. (2001b). *Teacher turnover, teacher shortages, and the organization of schools*. Seattle: Center for the Study of Teaching and Policy.

Ironson, G. H., Smith, P. C., Brannick, M. T., Gibson, W. M., & Paul, K. B. (1989). Construction of a job in general scale: A comparison of global, composite, and specific measures. *Journal of Applied Psychology*, *74*(2), 193-200.

Johnson, S. M. (1990). *Teachers at work: Achieving success in our schools*. New York: BasicBooks.

Johnson, S. M., & Birkeland, S. E. (2003). Pursuing a "sense of success": New teachers explain their career decisions. *American Educational Research Journal*, *40*(3), 581-617.

Johnson, S. M., Kardos, S. M., Kauffman, D., Liu, E., & Donaldson, M. L. (2004, October 29). The support gap: New teachers' early experiences in high-income

and low-income schools. *Education Policy Analysis Archives*, *12*(61). Retrieved 25 March 2005 from http: //epaa.asu.edu/epaa/v12n61/.

Johnson, S. M., & The Project on the Next Generation of Teachers. (2004). *Finders and keepers: Helping new teachers survive and thrive in our schools*. San Francisco: Jossey-Bass.

Kardos, S. M. (2001). *New teachers in New Jersey schools and the professional cultures they experience: A pilot study*. Unpublished Special Qualifying Paper, Harvard University Graduate School of Education, Cambridge, MA.

Kardos, S. M. (2002). *New teachers' experiences of mentoring, classroom observations, and teacher meetings: Toward an understanding of professional culture*. Paper presented at the American Educational Research Association, New Orleans, LA.

Kardos, S. M. (2003). *Integrated professional culture: Exploring new teachers' experiences in four states*. Paper presented at the American Educational Research Association, Chicago, IL.

Kardos, S. M. (2004). *Supporting and sustaining new teachers in schools: The importance of professional culture and mentoring*. Unpublished dissertation. Harvard University, Cambridge, MA.

Kardos, S. M., Johnson, S. M., Peske, H. G., Kauffman, D., & Liu, E. (2001). Counting on colleagues: New teachers encounter the professional cultures of their schools. *Educational Administration Quarterly*, *37*(2), 250-290.

Kauffman, D., Johnson, S. M., Kardos, S. M., Liu, E., & Peske, H. G. (2002). "Lost at sea": New teachers' experiences with curriculum and assessment. *Teachers College Record*, *104*(2), 273-300.

Lee, V. E., & Smith, J. (1996). Collective responsibility for learning and its effects on gains in achievement for early secondary school students. American Journal of Education, *104*(2), 103-147.

Levy, P. S., & Lemeshow, S. (1999). *Sampling of populations: methods and applications* (3rd ed.). New York: John Wiley & Sons, Inc.

Light, R. J., Singer, J. D., & Willett, J. B. (1990). By design: Planning research on higher education. Cambridge, MA: Harvard University Press.

Little, J. W. (1982). Norms of collegiality and experimentation: Workplace conditions of school success. *American Educational Research Journal*, *19*(3), 325-340.

Little, J. W. (1990a). The mentor phenomenon and the social organization of teaching. In C. Cazden (Ed.), *Review of Research in Education* (Vol. 16, pp. 297-351). Washington, D.C.: American Educational Research Association.

Little, J. W. (1990b). The persistence of privacy: Autonomy and initiative in teachers' professional relations. *Teachers College Record*, *91*(4), 509-536.

Liu, E., & Kardos, S. M. (2002). Hiring and professional culture in New Jersey schools. Cambridge: Project on the Next Generation of Teachers at the Harvard Graduate School of Education.

Lortie, D. C. (1975). *Schoolteacher: A sociological study*. Chicago: University of Chicago Press.

Louis, K. S., Kruse, S. D., & Marks, H. M. (1996). Schoolwide professional community. In F. M. Newmann & Associates (Eds.), *Authentic achievement: Restructuring schools for intellectual quality* (pp. 179-203). San Francisco: Jossey-Bass.

March, J., & Simon, H. (1958). *Organizations*. New York: Wiley.

McDonald, F. J., & Elias, P. (1983). *The transition into teaching: The problems of beginning teachers and programs to solve them*. Summary Report. Princeton, NJ: Educational Testing Services.

McLaughlin, M. W. (1993). What matters most in teachers' workplace context? In J. W. Little & M. W. McLaughlin (Eds.), *Teachers' work: Individuals, colleagues, and contexts*. New York: Teachers College Press.

McLaughlin, M. W., & Talbert, J. E. (2001). *Professional communities and the work of high school teaching*. Chicago: The University of Chicago Press.

Murnane, R. J., Singer, J. D., Willett, J. B., Kemple, J. J., & Olsen, R. J. (1991). *Who will teach?: Policies that matter*. Cambridge, MA: Harvard University Press.

National Commission on Teaching and America's Future. (1996). *What matters most: Teaching for America's future*. New York: National Commission on Teaching and America's Future.

National Commission on Teaching and America's Future. (2003). *No dream denied: A pledge to America's children summary report*. Washington, D.C.: National Commission on Teaching and America's Future.

Norman, P. J., & Feiman-Nemser, S. Mind Activity in Teaching and Mentoring. *Journal of Teaching and Teacher Education*, (in press).

No Child Left Behind, (2002).

Powell, A. G., Farrar, E., & Cohen, D. K. (1985). *The shopping mall high school: Winners and losers in the educational marketplace*. Boston: Houghton-Mifflin.

Quality Counts. (2003). *The Teacher Gap*. Bethesda, MD.

Rea, L. M., & Parker, R. A. (1997). *Designing and conducting survey research* (2nd ed.). San Francisco: Jossey-Bass.

Reyes, P., & Shin, H. S. (1995). Teacher commitment and job satisfaction: a causal analysis. *Journal of school leadership*, *5*(1), 22-39.

Rowan, B. (1990). *Commitment and control: Alternative strategies for the organizational design of schools*. In C. Cazden (Ed.), Review of Research in Education (Vol. 16). Washington, D.C.: American Educational Research Association.

Rubin, D., & Schenker, N. (1986). Multiple imputation for interval estimation from simple random samples with ignorable nonresponses. *Journal of the American Statistical Association*, 81, 366-374.

Ryan, K. (Ed.). (1970). *Don't smile until Christmas: Accounts of the first year of teaching*. Chicago: The University of Chicago Press.

Ryan, K., Newman, K. K., Mager, G., Applegate, J., Lasley, T., Flora, R., et al. (1980). *Biting the apple: Accounts of first year teachers*. New York: Longman Inc.

Scott, C., & Dinham, S. (2003). The development of scales to measure teacher and school executive occupational satisfaction. *Journal of Educational Administration*, *41*(1), 74-86.

Sizer, T. R. (1984). *Horace's compromise: The dilemma of the American high school*. Boston: Houghton-Mifflin.

Smith, T. M., & Ingersoll, R. M. (2004). What are the Effects of Induction and Mentoring on Beginning Teacher Turnover? American Educational Research Journal, *41*(3).

Stevens, J. J., & Parkes, J. (2001). *A multilevel analysis of teacher satisfaction and retention*. Paper presented at the American Educational Research Association, Seattle, WA.

Texas Center for Educational Research. (2000). *The Cost of Teacher Turnover*. Austin: Texas State Board for Educator Certification.

Troen, V., & Boles, K. C. (2003). *Who's teaching your children? Why the teacher crisis is worse than you think and what can be done about it*. New Haven, CT: Yale University Press.

Veenman, S. (1984). Perceived problems of beginning teachers. *Review of Educational Research, 54*(2), 143-178.

Wideen, M., Mayer-Smith, J., & Moon, B. (1998). A critical analysis of the research on learning to teach: Making the case for an ecological perspective on inquiry. *Review of Educational Research, 68*(2), 130-178.

ENDNOTES

[1] Smith and Ingersoll (2004) also found that 37 percent of charter school teachers left their schools: 24 percent left teaching altogether, and 13 percent moved to other schools.

[2] I worked with my colleague, Ed Liu, to collaboratively design this 4-state study and the 1-state New Jersey study on which it is based (Kardos, 2001; Liu & Kardos, 2002).

[3] Elementary, middle, and high schools differ in ways likely to impact professional culture such as organizational structure (Rowan, 1990). It is, therefore, important to ensure that the sample does not contain a disproportionate number of high schools, which might result from just sampling proportional to size.

[4] Analysis of patterns of response and non-response suggests that the sample is reasonably representative. To explore possible sources of non-response bias, we used data from our survey and public sources to compare the group of responding schools to the group of non-responding schools, and the group of responding teachers to the group of non-responding teachers.

There are no statistically significant differences between responding and non-responding schools in terms of the following measures: average faculty size, average size of student population, percentage of students eligible for free or reduced price lunch, eligibility for Title I funds, and percentage of Black and Hispanic students. This is true for both the full 4-state sample and the individual state samples. One possible source of bias in Stage 1, however, is school level. In California, the group of responding schools included a much lower proportion of middle schools than the group of non-responding schools. In Florida, the responding schools included a higher proportion of elementary schools and a lower proportion of middle schools than the non-responding schools. However, in Massachusetts and Michigan, there appear to be no significant group differences in school level.

In Stage 2 of our sampling process, at the level of the individual teacher, there are no (or very minor) differences between responding teachers and non-responding teachers in terms of the following measures: gender, teaching experience (first year or second year), school type (charter school or conventional), grade level, primary teaching assignment, and school locale (urbanicity). One notable exception is that in Michigan, non-respondents were more likely than respondents to teach in urban schools and in schools with higher proportions of Black and Hispanic students. More detailed information on sampling and response is available from the author.

[5] Additional information on the instrument development is available from the author.

[6] Supplementary materials documenting the creation of the outcome measure SATJOB are available from the author.

[7] Supplementary materials documenting the creation of the question predictor INTCULT are available from the author.

[8] The variance estimators used in the *svy* commands in the STATA software package make minimal assumptions about the nature of the sample. They allow any amount of correlation to exist among teachers within the primary sampling units (in our case, schools). Thus, teacher residuals within a school are not assumed to be independent.

[9] I conducted sensitivity analyses in order to detect if any observations were highly influential on the fitted model. I displayed the residuals in a stem-and-leaf plot in order to identify which residuals lay more than three standard deviations from 0. After identifying these observations, I removed them and refit the model. The removal of the extreme observations had little influence on the size of the estimates and on the statistical significance of the key question predictors. Thus, I concluded that all observations should remain.

[10] It is important to note that all of the analyses presented in this article are subject to issues of endogeneity that are inherent in these types of studies that rely on self-reported data such that teachers who indicate the presence of integrated professional culture may also be more likely to report high levels of job satisfaction. However, given the magnitude of the effect, it is unlikely that the results observed are entirely explained by problems of endogeneity alone.

[11] I conducted sensitivity analyses in order to detect if any observations were highly influential on this fitted model. For further details, see Footnote 9.

[12] Note that the total number of observations used to fit the models is not constant from Model 0 to Model 6 (for example, in Model 5, n=477 and in Model 6, n=479). Where values for key question predictors were missing, I did not impute them, thus the observation number varies slightly from Model to Model. I retained all usable cases in each individual Model, and I have not made any direct Model to Model comparisons.

[13] In creating this plot of prototypical teachers, I set the states to their average values in the sample so that the plots represent the average teacher in the 4 states without regard to the state in which the teacher teaches. Similarly, I set the remaining predictors to their respective sample average values: new teacher under 25 years old=0.174; male=0.131; minority=0.442; education degree beyond a Bachelor's degree=0.140; mid-career entrant to teaching=0.457; had regular teacher preparation (undergraduate or graduate) of at least one year=0.198; teaches special education=0.069; teaches in a small school=0.046; teaches in a school where more than 50% of the students are on free or reduced-price lunch=0.671; teaches in a school where less than 15% of the students are on free or reduced-price lunch=0.094; teaches in a charter school=0.015; teaches in CA=0.882; teaches in FL=0.056; teaches in MA=0.016. Finally, to create the different fitted lines, I set teaching in a high school (HS) to 0 or to 1 (1=High School Teacher, 0=Elementary or Middle School Teacher) and having a primary teaching assignment of math, science, or technology (PSUBMST) to 0 or to 1 (1=having a primary teaching assignment of math, science, or technology, 0=having a primary teaching assignment other than math, science, or technology).

[14] The line ranges on integrated professional culture from 2.9 units of integrated professional culture (5th percentile) to 4.9 (95th percentile).

[15] The line ranges on integrated professional culture from 2.3 units of integrated professional culture (5th percentile) to 5.1 (95th percentile).

[16] The line ranges on professional culture from 2.4 units of integrated professional culture (5th percentile) to 5.1 (95th percentile).

[17] The line ranges on integrated professional culture from 2.1 (5th percentile) to 4.8 (95th percentile).

[18] I did find other factors that had an effect on new teacher job satisfaction. Controlling for all other factors, new teachers in high schools ($\hat{\beta}$ =1.046, p<0.01) and new teachers in schools where fewer than 15% of the students are on free or reduced price lunch ($\hat{\beta}$ =0.900, p<0.01) had higher predicted levels of job satisfaction than those who did not. By contrast, new teachers who did not have traditional teacher preparation (undergraduate or graduate) of at least one year in length ($\hat{\beta}$ = -0.717, p<0.05); teachers whose primary teaching assignment was math, science, or technology ($\hat{\beta}$ = -1.372, p<0.001); teachers who taught special education ($\hat{\beta}$ = -0.655, p<0.1); and non-white teachers (β= -0.510, p<0.1) had lower predicted levels of job satisfaction, on average, than those who did not.

[19] For more details about these findings, see Kardos, 2004, pages 92-129.