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Data from two panel studies, the 1993 to 1995 nationwide Schools and Staffing Survey and the Teacher Follow-Up Survey, as well as a 1998-1999 survey of teachers in one western state are used to examine the influence of variables related to demographic characteristics, work assignment, effectiveness, social support, and school management on the satisfaction and retention decisions of 1st-year public school teachers. Minor differences appear between the results for the statewide and national samples, but both sets of results indicate that the most important influences on satisfaction involve variables related to social support and school management, and that the most important influence on retention decisions is job satisfaction. Implications for future research and for practitioners are discussed, including the central role of effective and supportive school management in promoting the satisfaction and retention of 1st-year teachers.

Keywords: *beginning teachers; retention; satisfaction; management*

Projections developed by the National Center for Education Statistics (2000) indicate that the number of school-age children will steadily and significantly increase during the 21st century, and schools will face a major challenge in both attracting and retaining quality teachers. Although teacher turnover can provide some positive outcomes, such as the loss of those with fewer skills, extensive turnover can also contribute to low morale, increased costs, and lower levels of effectiveness (Mobley, 1982; Perie & Baker, 1997; Price, 1989; Rosenholtz, 1989). Given that attrition rates among teachers are highest among those in their earliest years within the profession (Darling-Hammond & Sclan, 1996; Heyns, 1988; Murnane, 1987; Murnane, Singer, & Willett, 1988; Schlechty & Vance, 1981; Singer, 1992, 1993), it is especially

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important to understand factors that contribute to both the satisfaction and retention of 1st-year teachers. This article explores this issue by examining the influence of a wide range of factors on the satisfaction and retention of 1st-year teachers using data from both a national and a statewide sample.

RELATED LITERATURE

Some authors have noted the difficulties involved in developing a theoretically strong conceptual definition of *worker satisfaction* (e.g. Mitchell, Ortiz, & Mitchell, 1987, p. 30). Yet theoretical models of worker turnover, as well as empirical data, suggest that workers' satisfaction, however it might be defined, influences their intentions to stay in or leave their jobs, which in turn influences their actual behavior (e.g., Bacharach & Baumberger, 1990; Bluedorn, 1982; Chapman, 1983; Heyns, 1988; Mueller & Price, 1990). Although the exact grouping of variables differs slightly from one analyst to another, researchers who have examined influences on teacher satisfaction and retention suggest that important factors to consider include (a) demographic and background variables, (b) variables related to the teaching assignment, (c) the teachers' effectiveness and self-efficacy, (d) the support they receive from colleagues and parents, and (e) administrative practices and policies within their schools (e.g., Billingsley, 1993; Chapman, 1983, 1984; Chapman & Lowther, 1982; Shen, 1997c).

Empirical analyses have examined the influence of demographic variables, including gender, race, educational background, age, and prior experience and training. Some results suggest that women tend to be somewhat more satisfied with their teaching career (e.g. Chapman & Lowther, 1982; Heck & Wolcott, 1997; Ma & MacMillan, 1999), whereas men tend to be more likely than women to stay in teaching (Adams, 1996; Murnane et al., 1988; Singer, 1992; Stinebrickner, 1998; but for a finding of no difference in retention, see Shen, 1997b, 1997c).[1] The majority of studies report no differences in retention rates between race/ethnic groups or those with different levels of education (Billingsley, 1993; Chapman, 1983; Shen, 1997b, 1997c). Relatively consistent results have been found regarding the influence of age and prior experience with older teachers (Adams, 1996; Billingsley, 1993; Heck & Wolcott, 1997; Singer, 1992; Whitener et al., 1997), and those with prior experience within education or who rate their teacher training as more helpful being less likely to leave (Billingsley, 1993).

Relatively consistent results have also appeared in examinations of the influence of variables related to a teacher's assignment. Most studies find that

teachers at the secondary level are less satisfied (Heyns, 1988) and more likely to leave teaching (Bacharach & Bamberger, 1990; Billingsley, 1993; Singer, 1992; Theobald, 1990; but for a contrary result, see Shen, 1997c). Teachers with lower salaries, as well as those who have fewer resources and are in more "difficult" assignments, are more likely to express dissatisfaction or leave teaching (Billingsley, 1993; Boe, Bobbitt, & Cook, 1997; Conley, Bas-Isaac, & Brandon, 1998; Heck & Wolcott, 1997; Heyns, 1988; Murnane, Singer, Willett, Kemple, & Olsen, 1991; Perie & Baker, 1997; Rumberger, 1987; Shen, 1997c; Stinebrickner, 1998; Theobald, 1990; Whitener et al., 1997). Somewhat less consistent results appear when the influence of the geographic region of teachers' assignments and the extent to which assignments match their areas of expertise are studied, although the number of studies involved is very small. Some authors have found that teacher attrition is more problematic in urban areas (e.g., Billingsley, 1993), some have suggested that the problem is more acute in suburban areas (Heyns, 1988), and others have noted special problems in retaining teachers in rural areas (Bull & Hyle, 1989). In contrast, Shen (1997c), in the most extensive national analysis, found no differences in retention across various locations.[2] Finally, although Ingersoll (1999) suggested that teachers without proper credentials are more likely to leave teaching (see also Boe, Cook, Bobbitt, & Terbanian, 1998; Shen, 1997a), Adams (1996), in a study of only one school district, found that those with traditional rather than alternative certifications are more likely to leave the field, and Shen (1997c) found no relationship between teachers' decisions to leave the field and the extent to which their teaching assignment matches their area of expertise.

We found surprisingly few studies that examine the role of teachers' competence and effectiveness in promoting their satisfaction and retention. All of the studies that we found, however, confirm that teachers who see themselves as more competent (Ma & MacMillan, 1999), who believe that they are using complex or high-level skills (Conley et al., 1998), or who have higher levels of organizational or student management skills (Chapman & Hutcheson, 1982; Rosenholtz, 1989) are more satisfied with and committed to their work (see also Cohen, 1987; Gold, 1996). Research that examines the role of social support has also produced consistent results, with teachers who report receiving more support from their colleagues and from parents also reporting greater satisfaction and being more likely to stay in their jobs (Billingsley, 1993; Bryk, Lee, & Smith, 1990; Chapman, 1983; Colbert & Wolff, 1992; Newmann, Rutter, & Smith, 1989; Perie & Baker, 1997; Rosenholtz, 1989). Finally, existing research tends to suggest that school management policies influence teacher satisfaction and retention, with teachers who are employed

in settings where they have greater influence over school policy, greater control over their own classroom, more effective administrators, and a mentoring system that provides support in their initial years of teaching being both more satisfied and more likely to stay in the field (Billingsley, 1993; Bryk et al., 1990; Colbert & Wolff, 1992; Darling-Hammond & Sclan, 1996; Ingersoll, 2001; Ma & MacMillan, 1999; Newmann et al., 1989; Perie & Baker, 1997; Rosenholtz, 1989; Shen, 1997c; Whitener et al., 1997).

Relatively few studies regarding teacher satisfaction and retention appear to use a national sample (e.g., Boe et al., 1997; Boe et al., 1998; Heyns, 1988; Rumberger, 1987; Shen, 1997c; Stinebrickner, 1998). Of these studies, only Shen (1997c) and Stinebrickner (1998), who examined teacher retention, and Perie and Baker (1997), who looked at teacher satisfaction, explored the influence of a wide range of variables.[3] Most studies focus on teachers from a limited geographic area, such as one district (e.g., Adams, 1993, 1996; Conley et al., 1998), one state or province (Bacharach & Bamberger, 1990; Ma & MacMillan, 1999; Murnane, 1987; Murnane et al., 1988; Rosenholtz, 1989; Theobald, 1990), or those who have attended one university (Chapman, 1984; Chapman & Green, 1986; Chapman & Lowther, 1982) or only a few colleges and universities (Chapman & Hutcheson, 1982). We found no studies that specifically focus on the satisfaction and retention of 1st-year, beginning teachers, a surprising gap given the crucial nature of this 1st year in the career process.

Our study, thus, adds to the literature on teacher satisfaction and retention in several ways. First, we limited our analysis to 1st-year teachers, a group whose experiences have apparently not been thoroughly explored but who are most likely to leave the field. Second, we examined both teacher satisfaction and retention and included a broad range of explanatory variables in our analysis. Finally, we used both a national data set and a state-level data set. We examined the extent to which teachers' satisfaction and retention are related to their demographic backgrounds, their teaching assignments, their perceived effectiveness, the support they receive from others, and administrative practices and policies within their schools. Based on the literature reviewed above, the following can be hypothesized:

Hypothesis 1: Demographic variables will have the least impact on teachers' satisfaction and retention, whereas variables related to effectiveness, social support, and school management will have the most effect.

Hypothesis 2: Measures of teachers' satisfaction will independently influence both their intentions to stay in or leave their jobs as well as their actual retention behavior.

METHOD

Data to test our hypotheses come from two surveys of 1st-year teachers. Both data sets are panel designs, with data from two time points. The first uses a national sample and was collected as part of the Schools and Staffing Survey sponsored by the National Center for Education Statistics. Teachers included in the national study were selected through a large-scale multistage, stratified sampling strategy and were first contacted during the 1993-1994 school year. A subsample of this group was contacted again in the 1994-1995 year to determine their rate of attrition from teaching. The data were gathered by the U.S. Bureau of the Census through standard mail-out/mail-back techniques with telephone follow-up questionnaires used for sample members who did not respond to the mailed inquiries (Inter-University Consortium for Political and Social Research, 2000). Data used in our study were obtained through the Inter-University Consortium for Political and Social Research (2000) at the University of Michigan (Study No. 2763). Our analysis focuses on the 379 public school teachers in Grades 1 through 12 who responded to both surveys, identified themselves as regular full-time teachers, and were identified on the data file as beginning teachers.

The second data set also comes from a mail-out/mail-back survey, but it involves teachers from only one western state. Human resource directors in the state's 25 largest districts and a randomly selected sample of 15 smaller districts were contacted in the summer of 1998 regarding participation in the study. Directors in 12 of the larger districts and 6 of the smaller districts agreed to participate in the study and were sent surveys to distribute to their 1st-year teachers along with a coupon for a national coffee shop chain as a small incentive.[4] One hundred seventeen teachers who had no prior full-time paid experience as public school teachers responded to a survey distributed in the fall before they began school and a second survey sent in April 1999, toward the end of their 1st year in teaching. These teachers compose the statewide sample.[5]

The two data sets are similar in that they both involve 1st-year teachers, data gathered in a mail-out/mail-back format, and a panel design. They differ, however, in the scope of the samples and in a number of the questions that were asked. The national survey includes respondents from a much wider variety of settings, more general questions regarding the teachers' careers, and data from 2 different years. The statewide survey has respondents from a more limited geographical area but includes measures that are often more specifically related to the literature reviewed above and data collected prior to the teachers' 1st year of full-time employment in the field. Thus, the use of two data sets allows us to examine a wide variety of indicators of key

variables in our hypotheses and provides complementary approaches to the issue of 1st-year teacher satisfaction and retention.

Measures

We have two indicators of our dependent variable in both of the data sets. In the national data set, one measure, derived from the work of Perie and Baker (1997), taps the respondents' general satisfaction with their choice of teaching as a career (see the Appendix for details on all composite measures used in the analysis). The second measure indicates the teachers' actual work status in the follow-up year—whether they remained in the same school, moved to a different school, or left education entirely. The first measure of the dependent variable for the statewide sample is a composite measure of responses to items regarding the teachers' general satisfaction with their jobs and was adapted from work by Bacharach and Bamberger (1990, p. 340) and Irving and Meyer (1995, p. 1167). The second measure comes from a question that asked the teachers, in both the fall and the spring administrations, "How long do you plan to teach?" Responses were grouped into a dichotomy, with one value indicating that they would stay either 6 or more years or 3 to 5 years if that was what they had chosen the first time, and the other value indicating that they would stay for only 1 to 2 years or for less time than they had originally thought.[6]

With respect to demographic and background variables, both data sets include measures of gender, race/ethnicity, level of education, age, and previous work experience. In addition, the national survey includes information on participation in continuing education activities, and the statewide survey includes the participants' ratings of the quality of their college field experience.

Both surveys provide data on the teachers' assignments, including the level at which the teachers work, their class size, and their certification or preferred grade level. In addition, the national data set includes information on both the size of the city and region of the country in which the teachers worked, whereas the statewide data set includes the respondents' perceptions of how similar their present school was to the one in which they had their field experience. Two measures were used to tap the difficulty of an assignment for the national sample: a scale constructed from a series of questions designed to measure the extent to which the school was safe and orderly and responses to a question regarding whether "a student from this school ever threatened to injure you." With the state sample, indicators of difficulty included the number of students with disabilities, the students' level of

achievement, school size, the socioeconomic status of the community, and available teaching resources.

There are two broadly based indicators from the statewide data set related to perceptions of effectiveness with items that tap widely accepted standards of effective teaching, including issues related to student learning, professional relations, and curricular competence. In the fall, the teachers were asked to describe the degree of effectiveness they expected to have in each of the areas; and in the spring, they were asked to describe "the degree of effectiveness you have had." We, unfortunately, could find only one question in the national set that appeared to relate to the teachers' effectiveness—a question that asked the teachers, "During your most recent full week of teaching, how many times did you have to interrupt your class(es) to deal with student misbehavior or disruption?" We assumed that those who believed that they had a higher level of classroom control saw themselves as more effective.

Our measure of social support for the national sample was an additive scale regarding support and agreement from parents and fellow teachers. For the statewide sample, the measure of social support was an additive scale, gathered in the spring administration, regarding the respondents' relationships with fellow teachers.

For the national sample, we used three composite measures of the teachers' perceptions of school management: (a) influence over school policy, (b) perceived control over classroom planning and teaching, and (c) perceived effectiveness of the principal. For the statewide sample, we used two composite measures of school management: (a) the teachers' perceptions of their administrator and (b) their assessment of mentoring in their school.

Analysis

We explored hypothesized influences on the measures of satisfaction using multiple regression and techniques of path analysis, which allowed us to examine both the direct and indirect patterns of influence of the independent variables. We first examined the zero-order correlations between satisfaction and each of the independent variables and then regressed the measures of satisfaction on the independent variables, adding each set of variables outlined above as a block. Based on the results of the zero-order and multivariate analyses, we developed a reduced model that contained all variables that were related to the dependent variables at $p < .10$ or beyond in either the bivariate or multivariate analyses. Finally, we examined the patterns of indirect and direct influence of our hypothesized independent variables on teacher satisfaction using the basic theorem of path analysis (Duncan, 1966):

$$r_{s1} = B_{s1} + B_{s2}r_{12} + B_{s3}r_{13} + \ldots + B_{sq}r_{1q},$$

where s = satisfaction (the dependent variable); variables 1, . . . , q are the independent variables; and B_{sq} are standardized regression coefficients. The coefficient B_{s1} is said to represent the hypothesized direct effects of variable 1 on the dependent variable. Each of the remaining elements of the right-hand side of the equation represents indirect effects. For instance, the product $B_{s2}r_{12}$ represents the effect of variable 1 on satisfaction that occurs through its relationship with variable 2.

Following Shen (1997c) and Chapman and colleagues (Chapman 1984; Chapman & Green, 1986; Chapman & Hutcheson, 1982), we used discriminant analysis to examine teachers' retention intentions (the statewide sample) and decisions (the national sample). We first used one-way analysis of variance to explore the relationship between the measures of retention and our set of independent variables, as well as the measure of satisfaction. Based on the results of these univariate analyses, we developed discriminant functions that best differentiated the various groups.

As noted above, we hypothesized that demographic variables would have the least impact on teachers' satisfaction and retention, whereas variables related to effectiveness, social support, and administrative practices and policies would have the greatest effect. We also expected that the influence of these job-related measures on retention could be indirect and largely captured by the measure of job satisfaction.

RESULTS

We first describe the characteristics of the samples, then explore the results with the measures of satisfaction and finally, the results with the measures of retention intentions and decisions.

Characteristics of the Samples

Table 1 provides descriptive data on the variables used in the analysis. The data indicate that a majority of the 1st-year teachers were satisfied with their work. Responses to the individual elements of the scale used with the national sample indicate that more than 50% would definitely become a teacher again, a slightly larger proportion planned to remain in teaching as long as they were able or until retirement, and less than 10% strongly agreed that they sometimes felt it was a waste of time to do their best. Despite this

TABLE 1
Descriptive Statistics, National and State Samples

National Sample	*Mean*	*Standard Deviation*	*State Sample*	*Mean*	*Standard Deviation*
Dependent Variable			Dependent Variable		
Satisfaction	10.61	2.38	Satisfaction	3.99	0.69
Retention			Retention		
% move	45		% intending to stay	88	
% leave	17				
% stay	38				
Background Variable			Background Variable		
Gender (% female)	70		Gender (% female)	72	
Non-Hispanic White (%)	81		Non-Hispanic White (%)[a]	94	
Highest degree (0-3)[b]	1.14	0.45	Degree (% masters)	56	
Experience (% in ed. previous year)	21		Experience in education (0-4)	1.66	0.89
In-service activities (0-5)	2.31	1.23	Age (years)	30.13	8.43
Age (years)	30.90	7.56	Undergraduate grade point average	3.34	0.35
			Field experience valuable (2-3)	2.78	0.41
Assignment			Assignment		
No student threats (%)	80		School level[c]		
Orderly school	2.76	0.58	Elementary (%)	43	
Secondary level (%)	59		Middle school (%)	25	
Class size	20.67	9.99	High school (%)	32	
Certified in area (%)	60		Class size	25.89	4.52
Salary (1993 dollars)	22,375	4,017	Certified in area (%)	91	
Place of residence[c]			Field experience similar (1-3)	1.55	0.73
Fringe city (%)	23		In preferred grade assignment (% yes)	85	
Small town (%)	56		Students with disabilities	5.72	2.79
Central city (%)	21				

Area of residence[c]			Students low achievers (%)	17	
Midwest (%)	19		Hours of assistance	5.54	7.94
South (%)	48		Have own room (0-3)	2.48	0.77
West (%)	26		Sufficient supplies (0-3)	1.85	1.04
Northeast (%)	7		Community socioeconomic status[c]		
			% low	38	
			% average	45	
			% high	17	
Teaching Effectiveness			Teaching Effectiveness		
Interrupt for discipline (number of times/week)	19.79	30.54	Expected effectiveness (fall)	34.85	4.26
			Rated effectiveness (spring)	32.64	4.42
Social Support			Social Support		
From teachers and parents	2.79	0.60	Support from teachers	–0.10	4.45
School Management			School Management		
Control over work	3.98	0.78	Effective principal	0.12	9.10
Influence over work	1.98	0.94	Mentoring provided	3.78	1.98
Effective principal	3.16	0.59			

NOTE: Values in parentheses give the range of responses for items that are not dichotomies or are not composite scales described in the appendix.
a. Due to the lack of variability, this variable was not included in the multivariate analyses.
b. 0 = no degree, 1 = bachelor's, 2 = master's, 3 = doctorate.
c. These variables were converted to dummy variables for the multivariate analyses. For place of residence, central city was the omitted variable; for area, the northeast was the omitted variable; for level of schooling, elementary was the omitted variable; and for community socioeconomic status, low was the omitted variable.

reported satisfaction, a substantial proportion of respondents either moved to a different school (45%) or left education (17%) by the follow-up year.

The respondents to the national survey were predominantly young, non-Hispanic White women. Most had bachelor's degrees, although a few (13%) had master's degrees, and some had no college degree at all. They taught in districts in all areas of the country and in cities of varying sizes. Almost two thirds taught at the secondary level, and a similar proportion had at least a regular or standard certificate for their main teaching field. Their classes averaged about 21 students, and they saw their schools, on average, as moderately problematic. There was, however, substantial variation in the indicators of difficulty, and 20% reported that they had been threatened with injury by a student from their school. There was also substantial variation in our measure of effectiveness. The teachers reported a wide range of times that they had to interrupt their class to deal with misbehavior or disruption in the past week (0 to 240), with an average of about 4 times a day. The majority of the teachers reported feeling that their colleagues and students' parents supported them in their work, and relatively few indicated a substantial lack of support. On average, they reported that they had a fair amount of influence over school policy and a substantial amount of control over classroom planning and teaching. They, however, tended to rate their principals, on average, as slightly ineffective in various areas of school management.

Respondents to the state survey were also, on average, relatively satisfied with their jobs, and the vast majority remained committed to teaching at the end of their 1st year. As with the national sample, the teachers were primarily young women. The state sample differed somewhat from the national sample, however, in level of educational preparation and previous experience, with the state sample tending to have higher levels of education and somewhat more previous experience in educational settings. Respondents to the state sample also had very favorable attitudes regarding their college field experience, with more than three quarters rating it as very valuable.

Like the national sample, teachers in the statewide data set worked in a variety of settings, in communities with different reported socioeconomic status and at different grade levels. Their classes were substantially larger than those for the national sample, and they had relatively few hours, on average, of assistance and some shortage of teaching supplies. On the other hand, they were much more likely than teachers in the national sample to be certified for the areas in which they were teaching, and a large proportion reported that they were in their preferred grade assignment. They reported widely varying numbers of students with disabilities (e.g., those for whom individual education plans and/or 504 plans have been prepared, those with attention deficit disorder or attention deficit/hyperactivity disorder), yet less than one

fifth (17%) described the achievement level of their students as "low." The teachers reported moderate feelings of effectiveness in their own work, although their scores declined from fall to spring ($t = 5.352$, $df = 108$, $p < .001$). They also reported, on average, feeling supported by their colleagues and that their principals were at least moderately effective, but they were about evenly divided in their reports of effective mentoring.

Modeling Influences on Satisfaction

National sample. As hypothesized, the weakest relationships with satisfaction in the national sample occurred with demographic and background variables, whereas the strongest occurred with the measures of social support and school management. The first column of Table 2 gives zero-order correlations with satisfaction that were significant at $p < .10$. In path-analytic terms, these represent the "total effects" of the independent variables. The results indicate that more satisfied teachers tended to be older, to work in more orderly schools where they were less often threatened by students, to teach at a level below secondary and outside the southern area of the country, to have higher salaries, to receive more support from colleagues and parents, to have more control and influence over their work, and to perceive their principal as more effective. None of the other background, demographic, or assignment variables or the measure of effectiveness were significantly associated with satisfaction.

The second column of Table 2 gives the standardized regression coefficients that were obtained when the measure of satisfaction was regressed on the independent variables included in the first column. In the path-analytic framework, these coefficients are considered to be "direct effects" because they represent the hypothesized influence of an independent variable once other variables are controlled.[7] Of the variation in teachers' satisfaction, 19% was explained by the variables in this model (adjusted $R^2 = .17$). The most significant independent influences on satisfaction were an assignment to a safe and orderly school ($p = .01$), teaching in regions other than the South ($p = .01$), and having more control over one's work environment ($p = .07$) and a more effective principal ($p = .07$).

Much of the influence of other hypothesized independent variables in the model was indirect, as shown by the data in the remaining columns of Table 2, and results from the patterns of intercorrelation between the measures of safe and orderly schools, supportive colleagues and parents, more effective school management, and location outside the southern region. Inspection of the correlation matrix indicates that teachers who believed their schools were

TABLE 2
Patterns of Direct and Indirect Effects on Teacher Satisfaction, Reduced Models, National Sample

		Indirect Through					
	Total Effect	*Direct Effect*	*Orderly School*	*South Region*	*Sense of Control*	*Principal Effectiveness*	*All Other Variables*
Age	0.092*	0.069	0.009	0.001	–0.003	0.009	0.007
No student threats	0.186****	0.052	0.052	0.027	0.011	0.013	0.030
Orderly school	0.309****	0.151***		0.013	0.018	0.036	–0.059
Secondary level	–0.162***	–0.078	–0.056	0.004	0.000	–0.013	–0.019
Salary	0.103**	0.066	–0.003	0.026	–0.002	0.002	0.015
South	–0.200****	–0.135***	–0.014		–0.021	0.006	0.099
Social support	0.283****	0.077	0.066	0.008	0.019	0.066	0.046
Control over work	0.215****	0.095*	0.028	0.030		0.026	–0.060
Influence over work	0.219****	0.042	0.031	0.031	0.037	0.036	0.043
Effective principal	0.257****	0.111*	0.049	–0.007	0.023		–0.029

*$p < .10$. **$p < .05$. ***$p < .01$. ****$p < .001$.

safe and orderly were also more likely to be in schools below the secondary level ($r = -.37$), to not have been threatened by a student ($r = .35$), to report more support from colleagues and parents ($r = .44$), to perceive that they had more influence over their work ($r = .20$), and to rate their principal as more effective ($r = .33$). Teachers in the southern region of the country were more likely to have lower salaries ($r = -.19$),[8] to report that students had threatened them ($r = -.20$), and to believe that they had less control and influence over their work environment ($r = -.22$ and $-.23$, respectively). All of the measures of social support and school management were correlated with each other (r's range from .20 between the measure of social support and control over the work environment to .60 between social support and the principal's effectiveness). In addition, teachers at the elementary level were more likely to report that colleagues and parents were supportive. In short, these results appear to suggest that within the national sample, 1st-year teachers were more satisfied when they were in safe and orderly schools, with supportive colleagues and parents, and a school management style that promoted effective teaching and collaboration. A number of these characteristics were more common below the secondary level and in regions outside the southern United States.

State sample. Table 3 presents results from the analysis of the satisfaction of teachers in the statewide sample. The zero-order correlations in the first column indicate that none of the background variables, but all of the measures of social support and school management, were associated with the teachers' reported satisfaction. In contrast to the results with the national sample, a number of variables related to the teachers' assignments and one of the measures of self-perceptions of effectiveness were also significantly related to satisfaction. As with the national sample, the results indicate that more satisfied 1st-year teachers tended to have less difficult assignments. For instance, they tended to teach at levels other than middle school, had smaller classes, worked in areas for which they were certified and at grade levels that they preferred, had fewer students with disabilities, fewer low achievers, sufficient supplies, and worked in a community of average socioeconomic status. Although both the measure of expected teaching effectiveness collected before the school year began and the measure of effectiveness given in the spring were positively related to satisfaction, only the correlation with the spring rating was significant. Finally, as hypothesized, teachers who reported receiving more support from their colleagues, perceived their principal as a more effective administrator, and had been provided mentoring during their 1st year were more satisfied.

TABLE 3
Patterns of Direct and Indirect Effects on Teacher Satisfaction, Reduced Models, State Sample

		Indirect Through					
	Total Effect	*Direct Effect*	*Preferred Grade*	*Average Community Socioeconomic Status*	*Teaching Effectiveness*	*Supportive Colleagues*	*Other Variables*
Field experience valuable	0.103[a]	0.128	–0.006	–0.025	0.005	0.023	–0.022
Middle school level	–0.240***	–0.051	–0.055	0.006	–0.019	–0.067	–0.054
Class size	–0.175*	–0.088	–0.020	0.009	–0.002	–0.072	–0.002
Certified in area	0.264***	0.125	0.045	0.016	0.011	0.024	0.044
Preferred grade	0.322****	0.170**		0.004	0.020	0.035	–0.077
Students with disabilities	–0.227**	–0.069	–0.013	–0.023	–0.034	–0.046	–0.042
Students low achievers	–0.225**	–0.081	–0.047	–0.030	–0.020	–0.045	–0.002
Sufficient supplies	0.191**	0.006	0.003	0.011	0.008	0.126	0.038
Community average socioeconomic status	0.180*	0.143*	0.005		0.018	0.000	–0.129
Teaching effectiveness (spring)	0.365****	0.140*	0.024	0.019		0.117	–0.075
Support from colleagues	0.530****	0.396****	0.015	0.000	0.041		–0.318
Effective principal	0.461****	0.057	0.036	0.012	0.055	0.253	0.048
Mentoring provided	0.283****	–0.056	0.003	0.013	0.028	0.229	0.067

a. This variable was significantly related ($p < .10$) to satisfaction in the regression in which all hypothesized variables were included in the model and was, thus, included in the reduced model.
*$p < .10$. **$p < .05$. ***$p < .01$. ****$p < .001$.

The results of the regression of the measure of satisfaction on the independent variables are given in the second column of Table 3. This reduced model explains substantially more of the variation than occurred with the national sample (R^2 = .45, adjusted R^2 = .38). The results indicate that the most important influence on the teachers' reported satisfaction was the extent to which teachers received support from their colleagues, followed by whether they were teaching in their preferred grade level. Somewhat smaller influences (significant at $p < .10$) accrued from teaching in a community with an average socioeconomic status and seeing oneself as an effective teacher at the end of the school year.

As with the analysis of the national data, the influence of other variables in the model was indirect, funneled through the major influences of supportive colleagues and teaching at a preferred grade level. These indirect influences are summarized in the final columns of Table 3. For instance, the total effects of having an effective principal and a mentoring program were relatively high (r = .46 and .28, respectively), but the direct effects were substantially lower and near zero (B = .06 and –.06, respectively), with most of the influence of these variables funneled through the presence of supportive colleagues. In general, teachers who reported receiving more support from their colleagues were much more likely to report that their principal was an effective school manager (r = .639) and that they had a mentoring program in their schools (r = .578). They also more often reported having adequate supplies (r = .317) and perceiving themselves as effective teachers (r = .295). Teachers who were assigned to their preferred grade level were less often in middle schools or teaching low-achieving students (r = –.321 and –.275, respectively) and more often taught in an area in which they were certified (r = .262), believed they were effective teachers (r = .141), and believed that their principals were effective managers (r = .213). In short, these results appear to suggest that more satisfied 1st-year teachers worked in a collegial and supportive environment and at a preferred grade level, and that these characteristics were part of a more general environment of effective and supportive school management in which the teachers perceived that they were effective instructors.

Career Patterns

Our measure of career patterns for the statewide sample was the teachers' intention to remain in the field at the end of their 1st year in the field. The variable was highly skewed, with 88% planning to remain in teaching for the foreseeable future. A preliminary analysis of differences between those who wished to stay in teaching and those who wanted to leave indicated very few

TABLE 4
Comparison of Means on Selected Variables of Prospective Leavers and Stayers and Standardized Discriminant Function Coefficients, Statewide Sample

	Means					
	Leavers	*Stayers*	F	p	*Wilks's Lambda*	*Standard Discriminant Function Coefficient*
Background variable						
Age	27.4	30.4	3.221	0.076	0.97	0.559
Assignment						
Low achieving students	0.071	0.18	0.872	0.352	0.992	0.441
Own room	2.79	2.43	2.316	0.131	0.978	–0.455
Satisfaction						
Summary satisfaction	3.69	4.03	2.744	0.101	0.975	0.679
Wilks's Lambda						0.907
Chi-square						10.106
df						4
Significance						0.039
Group centroid for leavers						–0.856
Group centroid for stayers						0.117

NOTE: Leavers (n = 14); Stayers (n = 100).

differences between these groups. As shown in Table 4, those who indicated they were likely to remain in teaching were somewhat older and more satisfied with their job. Unexpectedly, those who wanted to remain had somewhat more difficult assignments than the other teachers in that they had more low-achieving students and less often had their own room rather than having to share with others. The standardized discriminant function coefficients shown in Table 3 support these conclusions and indicate that satisfaction and age were the most important variables in differentiating those who expected to leave from those who expected to remain in teaching.

Table 5 reports the results of the discriminant analysis of the actual career paths of the beginning teachers in the national sample. Results from a preliminary analysis of variance indicated that variables in all hypothesized areas, except effectiveness, differentiated stayers (those who were in the same position in the 2nd year as in their 1st year of teaching) from leavers (those who had left the profession entirely). As shown in Table 5, stayers were more likely than leavers to be female and non-White. They more often taught at the elementary level, received higher salaries, taught in an area fringing a large city rather than in a small town, less often lived in the West, and perceived that they received more support from other teachers and parents and that their principals were more effective school managers. In addition, teachers who

TABLE 5
Comparison of Means on Selected Variables of Stayers, Movers, and Leavers and Standardized Discriminant Function Coefficients, National Sample

	Means						*Standard Discriminant Function Coefficients*	
	Stayers	*Movers*	*Leavers*	F	p	*Wilks's Lambda*	*Function 1*	*Function 2*
Background variable								
Gender (female)	1.76	1.70	1.60	2.76	0.065	0.986	0.277	0.152
Majority race/ethnicity	0.76	0.83	0.89	2.90	0.056	0.985	–0.209	–0.002
Assignment								
Secondary level	1.51	1.62	1.71	4.16	0.016	0.978	–0.145	0.090
Salary	23,172	22,228	20,977	7.13	0.001	0.963	0.380	–0.064
Fringe city	0.30	0.22	0.11	4.70	0.01	0.976	0.170	0.140
Small town	0.44	0.59	0.72	8.26	<.001	0.958	–0.234	0.207
South	0.54	0.41	0.49	2.72	0.067	0.986	0.178	–0.213
West	0.18	0.31	0.29	3.95	0.02	0.979	–0.328	0.182
Social support								
From teachers and parents	2.87	2.74	2.73	2.34	0.098	0.988	–0.013	–0.349
School management								
Influence over work	1.96	2.07	1.76	2.59	0.076	0.986	0.111	0.668
Effective principal	3.25	3.1	3.15	2.53	0.081	0.987	–0.047	–0.489
Satisfaction	11.10	10.67	9.37	12.75	< .001	0.936	0.612	0.364
Wilks's Lambda							0.808	0.959
Chi-square							78.815	15.589
df							24	11
Significance							< .001	0.157
Group centroid for stayers							0.450	–0.148
Group centroid for movers							–0.087	0.226
Group centroid for leavers							–0.777	–0.258

NOTE: Stayers (n = 145); Movers (n = 169); Leavers (n = 65).

moved to another teaching position in their 2nd year, but had not left the profession, were less likely than other teachers to live in the South and were more likely to say that they had control over their work environment. The most important discriminating variable was the measure of job satisfaction, with leavers indicating far less satisfaction than movers or stayers.

The results of the discriminant function analysis, also shown in Table 5, indicated that two functions described the differences between movers, stayers, and leavers, although only the first function was significant. This function differentiated stayers and leavers, with movers falling midway along the hypothesized dimension. As shown in Table 5, the most important discriminating variable was satisfaction, with those who were less satisfied in their 1st year of teaching being much more likely to have left the field by the next school year. Among the other variables, the most important was salary, followed by living on the West Coast and gender. Other discriminating variables (with coefficients with an absolute value greater than or equal to .20) included race/ethnicity and the size of the town in which the teacher taught. All results replicated those found in the zero-order analysis, with teachers who left the profession more often White males, in low-paid positions, in the West, in small towns rather than suburbs, and highly dissatisfied with their jobs.

SUMMARY AND DISCUSSION

As expected, we found that demographic variables had relatively little influence on teachers' satisfaction. None of the measures of age, gender, race/ethnicity, education, or experience had a significant influence on satisfaction in the final models. In contrast, some demographic variables influenced the measures of retention in both the national and statewide samples. Even when levels of satisfaction with teaching were controlled, younger people in the statewide sample were more likely than older people to indicate that they planned to leave teaching, and men and non-Hispanic Whites in the national sample were more likely to leave the field. We suspect that the influence of demographic variables on retention, rather than satisfaction, reflects the role that alternative job opportunities play in the decision to stay in or leave a position. Men, non-Hispanic Whites, and younger people may have more employment opportunities as an alternative to teaching and, thus, may be more likely to leave the field, no matter how satisfied they are.[9]

As expected, the zero-order correlations indicated that a number of variables related to the difficulty of the teachers' assignments were significantly related to satisfaction, with teachers who were at the middle or secondary

level, with more challenging students, teaching outside their area of certification, and lacking adequate supplies being less satisfied. When, however, variables regarding teaching effectiveness, social support, and school management were added to the equations, the direct influence of most of these assignment-related variables declined markedly. There were, however, three major exceptions. In the statewide sample, teachers who reported teaching outside their preferred grade level were less satisfied, even when school management and support variables were controlled. In the national sample, teachers who taught in schools with a greater rate of problem behaviors—such as tardiness, absenteeism, vandalism, student apathy, poverty, racial tension, and poor student health—and teachers in the southern region of the nation were significantly less satisfied even after measures of support and management were controlled.

Although a few measures related to the difficulty of the teachers' assignment were related to retention (e.g., having one's own classroom for the statewide sample and teaching at the secondary level for the national sample), location and salary were more important variables, at least for the national sample. When other variables were controlled, teachers with lower salaries, in small towns, and in the West were more likely than others to have left teaching. Those in the West were also more likely to move to other positions. Again, we hypothesize that the importance of these factors may be related to the pursuit of better employment opportunities. Teachers with low salaries and in rural areas may more actively seek out other employment. A relatively high cost of living on the West coast may have prompted these teachers to seek other opportunities. In addition, teachers in the West may have been more likely to move to other positions in education as a rapidly growing population and teacher shortage produced more job opportunities.

Results with the specific measures of teaching effectiveness, social support, and school management differed somewhat from one sample to another. In both samples, the measures of social support and school management were all significantly related to satisfaction at the zero-order level. In the statewide sample, the spring measure of effectiveness also had a significant zero-order relationship with satisfaction.[10] In contrast, in the multivariate analyses, only teachers' perceptions of their influence over their work and the effectiveness of their principal (for the national sample) and teachers' ratings of the support they received from others (statewide sample) significantly influenced satisfaction. The influence of the other management and support variables was, as noted above, largely indirect. These indirect patterns of influence resulted from the strong patterns of intercorrelation among the measures of social support, school management, orderly and safe schools, and effective teaching.

Thus, although many of the variables are insignificant in the multivariate analysis, and although there are differences in the patterns of influence from one sample to another, it is important to stress that the global pattern of results that we obtained were very similar in both the national and statewide samples. The results from both samples indicate that 1st-year teachers were more satisfied in schools that were well managed—where the schools were orderly and safe, where teachers felt a sense of control and influence over their work environment, where mentoring and support in the day-to-day activities of teaching were common, and where teachers felt more efficacious and were teaching in areas for which they are prepared. Administrators seem to influence teachers' satisfaction indirectly—by promoting a safe and orderly school, by assigning teachers to positions for which they feel qualified, by providing teachers a sense of control and influence over their work and by providing a context in which teachers can feel supported by their colleagues and students' parents and where they can be more efficacious in their teaching (see also Ingersoll 2001, 2002).

Although the measures of teaching effectiveness, support, and school management were the most important influences on teachers' satisfaction, either directly or indirectly, they had surprisingly little direct influence on teachers' retention decisions. None of the variables in these areas differentiated those who intended to stay in or leave teaching in the statewide sample, and the support- and management-related variables discriminated at a significance of only $p < .10$ in the zero-order analysis of variance results for the national sample. In contrast, the measure of teachers' satisfaction was the most important influence on retention intentions and decisions, with 1st-year teachers who were highly satisfied with their work being much more likely to plan to stay in teaching (statewide sample) and to actually do so (national sample). These results support general models of worker turnover, which suggest that worker satisfaction is the primary influence on workers' retention (e.g., Bluedorn, 1982; Mueller & Price, 1990). They also may indicate that our measures of satisfaction tapped a large range of attitudes and emotions, which was only partly influenced by our indicators of effectiveness, support, and school management. This more global sense of satisfaction may be most important in influencing retention.[11,12]

Our results have several implications for future research on teacher satisfaction and retention. First, our results suggest that it is important to look at both satisfaction and retention. Satisfaction is strongly related to retention intentions and decisions and more important, different factors appear to influence each construct. Variables related to school management appear to be most strongly related to satisfaction, whereas the availability of alternative job opportunities is more strongly related to retention.

Second, the varying results from the statewide and national sample indicate the importance of carefully measuring concepts and providing as many indicators of such concepts as possible. In this sense, our use of two different samples provides an important counterbalance and replication of our results. For instance, our measures of satisfaction and teaching effectiveness were more elaborate for the statewide sample and produced stronger results; our measure of retention was more elaborate for the national sample and also produced stronger results. If we were to look at the results for one sample only, we could well have dismissed an important aspect of the entire model.

Third, our results illustrate the importance of including a wide variety of variables in explanatory models, for although some variables did not have statistically significant results in the final reduced multivariate models, they often had a strong indirect impact. Such an indirect impact no doubt reflects the way in which schools actually operate. In analyses such as those in this article, we try to statistically isolate one or more variables, such as social support, as influencing a characteristic such as satisfaction. In reality, however, each of the variables in our models is part of a larger organizational culture and dynamic that involves the cumulative and joint influence of a wide variety of variables. Thus, for example, safe and orderly schools do not appear by themselves but instead, are part of a larger gestalt that involves supportive colleagues and effective school management.

Finally, we suggest that our results have implications for policy makers and practitioners. In the coming years, schools throughout the nation will face the challenge of recruiting and retaining teachers for a growing number of students. This task will be made easier to the extent that 1st-year teachers choose to remain in the field. Our results suggest that promoting teachers' satisfaction will be a key element in the success of this endeavor. Our results also suggest that teachers' satisfaction is not influenced by their demographic characteristics and, to only a relatively minor extent, by the difficulty of their teaching assignment. Instead, 1st-year teachers' satisfaction is greatly influenced by the environments in which they work—the support they receive from others, the control they have over their work environment, the mentoring they receive, the extent to which they are successful in the classroom, and the extent to which these environments are safe and orderly. These are characteristics that are directly under the control of building administrators and can be encouraged by school district–level policies. Notably enough, many of these characteristics also are important in promoting student learning (e.g., Lee, Dedrick, & Smith, 1991). Schools and districts that heed these findings could, we hypothesize, expect enhanced student learning and greater satisfaction and retention of teachers.

APPENDIX
Composite Measures Used in the Analysis

Satisfaction

For the national sample, the measure of satisfaction combines responses to three questions asked in the 1st year of teaching. Higher scores indicate that teachers would choose a career in teaching if they were to start college again, that they planned to remain in teaching as long as possible, and that they did not feel that "it is a waste of time to try to do my best as a teacher" (alpha = .67). These items are those used by Perie and Baker (1997), although our coding of responses to the question, "How long do you plan to remain in teaching?" differs from theirs. In our analysis, we placed responses of "undecided" (25% of the respondents) between those who indicated that they would "leave as soon as possible" (4%) and those who would "continue unless something better comes along" (9%). Perie and Baker, who examined all teachers in the Schools and Staffing Survey study, omitted those who indicated undecided from their analysis but noted that including these responses did not dramatically alter their results. Given both that the "undecideds" are a substantial number of the 1st-year teachers and that such a response substantively indicates greater dissatisfaction, we chose to retain these participants in our analysis.

For the state sample, the measure of satisfaction is a summation of responses to six questions asked in the spring administration:

1. "How satisfied are you with your present job when you compare it to jobs in other organizations?"
2. "How satisfied are you with the progress you are making toward the goals you set for yourself in your present position?"
3. "How satisfied are you with the chance your job gives you to do what you are best at?"
4. "How satisfied are you with your present job in light of your career expectations?"
5. "All things considered, how satisfied are you with your job?"
6. "Considering all the jobs you might realistically have at this point in your career, how does your current job compare?"

Possible responses to Questions 1 through 5 involved a 5-point Likert-type scale with 1 = *not at all satisfied* and 5 = *very satisfied*; responses to Question 6 also involved a 5-point Likert-type scale with 1 = *worse than other jobs* and 5 = *better than other jobs* (alpha = .90).

Safe and Orderly Schools—National Sample

The measure of safe and orderly schools for the national sample was a composite measure of responses to the question, "To what extent is each of the following matters a problem in this school? Indicate whether it is a serious problem, a moderate problem, a minor problem, or not a problem in this school." Twenty-four different areas,

ranging from tardiness and absenteeism to vandalism, possession of weapons, student apathy, poverty, racial tension, poor student health, and problems with the English language were listed. Responses ranged on a 4-point Likert-type scale with 1 = *serious problem* and 4 = *not a problem in this school*. The summed scale was averaged to maintain the original scoring scheme (alpha = .94).

Teaching Effectiveness—State Sample

In both the fall and spring administration, the beginning teachers were asked a series of questions intended to tap widely accepted standards of effective teaching compiled from those identified by the Interstate New Teacher Assessment and Support Consortium, the National Council for the Accreditation of Teacher Education, and the National Board for Professional Teaching Standards. The standards involve issues related to student learning, professional relations, and curricular competence; correspond to Veenman's (1984) most commonly identified problems of beginning teachers; and reflect the performance indictors found in the checklist used by cooperating teachers in one of the state's teacher certification programs. There are nine items in the scales: (1) understanding and addressing differences in students' backgrounds, abilities, and disabilities; (2) managing classroom interactions and maintaining discipline; (3) motivating students; (4) involving parents in students' learning; (5) having well-planned and effective lessons; (6) using a variety of curriculum materials and resources; (7) using multiple and frequent measures of student performance; (8) maintaining good relations with other staff members; and (9) having a deep and broad knowledge of subject matter and general education. Responses on each item range from 1 to 5 with a higher score indicating greater effectiveness. The scores were combined into an additive scale for each time period (coefficient alpha = .76 in the fall and .77 in the spring).

Social Support

The measure of social support for the national sample included five items with responses to the question, "Do you agree or disagree with each of the following statements: (1) Teachers participate in making most of the important educational decisions in this school, (2) I receive a great deal of support from parents for the work I do, (3) Rules for student behavior are consistently enforced by teachers in this school, (4) Even for students who are not in their classes, most of my colleagues share my beliefs and values about what the central mission of the school should be, and (5) There is a great deal of cooperative effort among the staff members." Responses, on a 4-point scale with 1 = *strongly agree* and 4 = *strongly disagree*, were summed and averaged (alpha = .72).

For the state sample, items included were responses to "My colleagues assist me in acquiring the knowledge, skills, and strategies to be successful in the classroom" and "Experienced teachers are very concerned about my welfare," as well as ratings of four additional items regarding advice and direction; feedback regarding their perfor-

mance; emotional support, such as concern, empathy, and trust; and instrumental support, such as time and resources that they receive from their colleagues. Standardized scores (*z* scores) were used in creating the scale because the individual item responses had slightly different point ranges (alpha = .83).

School Management—National Sample

The measure of influence over school policy included six items, with responses to the questions, "At this school, how much actual influence do you think teachers have over school policy in each of the following areas? (a) setting discipline policy, (b) determining the content of in-service programs, (c) hiring new full-time teachers, (d) deciding how the school budget will be spent, (e) evaluating teachers, and (f) establishing curriculum." Responses, on a 6-point Likert-type scale with 0 = *no influence* and 5 = *a great deal of influence*, were summed and averaged (alpha = .77).

The measure of perceived control over classroom planning and teaching included 6 items, with responses to the question, "At this school, how much control do you feel you have in your classroom over each of the following areas of your planning and teaching? (a) selecting textbooks and other instructional materials, (b) selecting content, topics, and skills to be taught, (c) selecting teaching techniques, d) evaluating and grading students, e) disciplining students, and f) determining the amount of homework to be assigned." Responses, on a 6-point scale with 0 = *no control* and 5 = *complete control*, were summed and averaged (alpha = .76).

The measure of principal effectiveness was a composite score of 9 items composed of responses to the question, "Do you agree or disagree with each of the following statements? (a) Teachers in this school are evaluated fairly; (b) The principal lets staff members know what is expected of them; (c) The school administration's behavior toward the staff is supportive and encouraging; (d) The principal does a poor job of getting resources for this school (reversed); (e) My principal enforces school rules for student conduct and backs me up when I need it; (f) The principal talks with me frequently about my instructional practices; (g) The principal knows what kind of school he/she wants and has communicated it to the staff; (h) In this school, staff members are recognized for a job well done; and (i) Goals and priorities for this school are clear." Responses, on a 4-point scale with 1 = *strongly agree* and 4 = *strongly disagree*, were summed and averaged (alpha = .88).

School Management—State Sample

The measure of principal effectiveness is a composite of 14 items. The included items were "School administrator(s) take my best interests into account when making decisions that affect me," "School administrators enforce school rules for student conduct and back me up when I need it," "I know where I stand [and] how satisfied my supervisor (administrator) is with what I do in the classroom," "The administrator(s) let me know what is expected of me," "The administrator(s) and teachers collaborate in making the school run effectively," "Teachers share the responsibility for making

many of the important decisions that affect this school," "There are often opportunities to reflect on my teaching with experienced teachers," "Experienced teachers help new teachers with problems that arise," "There is good communication between staff members and administrators," "Teachers are evaluated fairly," and ratings of four additional items regarding how much informational support (advice, suggestions, directives and other information to help you do your job), appraisal support (feedback regarding your professional performance), emotional support (behaviors and actions that demonstrate concern for your welfare), and instrumental support (when others help you do your work) that they received from their administrator. Standardized scores (*z* scores) were used in creating the scale because the individual item responses had slightly different point ranges (alpha = .90).

The measure of effective mentoring included 4 items in which teachers rated the extent to which, within the school, "Beginning teachers are provided with a mentor teacher or support system of educators"; "Mentor teachers are trained to support beginning teachers"; "Beginning teachers are provided with an in-service program based on their individual needs"; and "Additional funding is specifically earmarked for the support of beginning teachers." Responses, on a 7-point scale with 1 = *strongly disagree* and 7 = *strongly agree*, were summed and averaged (alpha = .87).

NOTES

1. One possible reason for these different results may be the analytic techniques that were used. Shen (1997b, 1997c) employed discriminant analysis to differentiate movers, stayers, and leavers during a 2-year time span, whereas most of the other studies use proportional hazard models or survival analysis during a longer time range. In other words, using a short time span, there may be little difference between men and women in their likelihood to leave teaching; whereas during a longer period of time, women may be more likely to exit.

2. Again, differences in analytic strategies might account for these varying results. Billingsley (1993) described rates of attrition from school districts; Heyns (1988) examined decisions of individual teachers regarding leaving the field of teaching during a relatively long time span; and Shen (1997c) examined decisions within only a 2-year time period. It is surprising that little research, however, examines this issue.

3. Shen (1997c) used data from all teachers who responded to the 1990-1991 Schools and Staffing Survey and the 1991-1992 Teacher Follow-Up Survey conducted by the National Center for Educational Statistics. Stinebrickner (1998) examined the teaching careers and attrition patterns of certified teachers who were part of the National Longitudinal Study of the Class of 1972. Perie and Baker (1997) and Whitener et al. (1997), in reports prepared for the National Center for Education Statistics, examined the data for all teachers (all levels of experience and both private and public schools) in the national data set used for this study (1993-1994 Schools and Staffing Survey and 1994-1995 Teacher Follow-Up Survey, respectively).

4. Given the geographic nature of the state, none of the districts were "urban," and a number of the "larger" districts had less than 10,000 students enrolled. Teachers in the largest district in the state were not part of the sample. The inclusion, in the analysis of the national data set, of con-

trols for place and area of residence can help control for differences between the data sets in these characteristics.

5. One hundred forty-one teachers responded to the first survey and provided addresses for the spring follow-up; 127 (90%) returned the second survey. Of these 127, 10 were omitted from the analysis because they had prior full-time paid experience as a public school teacher.

6. It should be noted that only the national data set provides a direct measure of the teachers' actual retention in teaching, and only the statewide data set provides a broad-based measure of satisfaction. In addition, the measure of intent to leave used with the statewide sample includes some elements that are similar to those included in the measure of satisfaction used with the national sample.

7. The entire correlation matrix and the results of the regression equations when all hypothesized variables were included as predictor variables are available from the authors.

8. The only other variable in the model with a significant correlation with salary was age, with older 1st-year teachers having slightly higher salaries ($r = .13$, $p < .01$).

9. Murnane and his associates (Murnane, 1987; Murnane, Singer, & Willett, 1988; Murnane, Singer, Willett, Kemple, & Olsen, 1991) reported that teachers' areas of specialty are related to the extent of time that they remain in teaching and suggested that alternative job opportunities can explain these differences in retention (see also Darling-Hammond & Sclan, 1996; Singer 1993).

10. We suspect that the measure of efficacy for the national sample was not significant largely because it was composed of only one item that tapped only issues of classroom management. The measure used for the statewide sample was much more complete. The presence of this more complete measure of efficacy probably also contributes to the greater proportion of variation explained in the analysis of satisfaction in the statewide data.

11. As a reviewer of this article noted, both the measures of satisfaction and the measures of social support and teaching environment are self-reports by the beginning teachers. It is, thus, possible, as the reviewer put it, that

> teachers who have decided to remain in the occupation view their environments through "rose-colored glasses" and interpret those environments as more supportive. . . . Perhaps teaching still is a moral occupation in which dedication to professional ideals provides teachers with inner satisfaction and leads them to interpret their working environments as supportive even when they are no more commodious than those of the less professionally committed teachers who are unsatisfied with their working environments.

This is a fascinating argument and one that could be tested with measures of school environments from multiple sources.

12. This strong role of satisfaction could, to some extent, counter the concern voiced by scholars regarding the lack of a strong theoretical definition of the concept (e.g., Mitchell, Ortiz, & Mitchell, 1987). It is possible that *satisfaction* is a global term, much like *social capital* or *social class*, that incorporates a wide variety of elements and can be measured in a variety of ways. Even though the term may be hard to pin down conceptually, it is precisely this complexity that underlies its explanatory power.

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