

FACTORS THAT AFFECT RETENTION OF NOVICE TEACHERS IN  
HARD-TO-STAFF HIGH SCHOOLS IN VIRGINIA

by

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# **Factors That Affect Retention of Novice Teachers in Hard-to-Staff High Schools in Virginia**

Mechelle Savedge Blunt

## **Abstract**

The mobility rates within the Kindergarten–Grade 12 teacher workforce are distressing, and the teaching profession has a relatively high turnover rate compared to other occupations. The Commonwealth of Virginia encounters many challenges when attempting to retain highly qualified teachers in schools. Despite the state’s efforts to staff all schools, high teacher turnover rates persist. Novice teacher attrition is more prevalent in schools identified as hard-to-staff. Turnover affects not only the composition of faculties at individual schools and the stability of these schools, but the quality of the teacher workforce as well.

The factors that affect the retention of novice teachers in hard-to-staff high schools in Virginia were examined in this study. Similar to Giacometti’s (2005) study, compensation, preservice preparation, external forces, school culture, in-service training support, motivation to teach, and emotional factors were variables used in this investigation. Demographics, principal leadership actions, and economic conditions were added to Giacometti’s original theory of novice teacher retention, and some of Giacometti’s variables were refined to improve the theory and the quality of the measurements. Following descriptive and exploratory bivariate analyses, binary logistic regression was applied to predict teacher retention with two levels: planning to leave the school and planning to stay in the school. Results indicate that teachers who planned to leave were more likely to be minorities, to perceive less school cultural support, and to perceive less parental support than those who planned to stay. The results of the study have significant practical implications for school leaders, especially those who serve hard-to-staff high schools, in developing retention plans to keep their highly qualified novice teachers.

## **Dedication**

I dedicate this dissertation to my devoted husband, Larry Blunt, and our children, Larry Antonio (Tony) Blunt and LaChelle Antonece Blunt-Evans. Your unconditional love and encouragement inspired me to finish the race. I also dedicate this work to my mother, Cleopatra Clarke Savedge, and father, Russell R. Savedge, Sr. the angels of your guidance and essence of your wisdom remain in my heart and mind forever.

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and the late Russell R. Savedge, Sr., thank you for being role models. You always encouraged me to seek excellence in education. I would like to thank my children, Larry Antonio Blunt and LaChelle Antonece Blunt-Evans for their unwavering support. From across the miles and throughout this journey, they never stopped encouraging. Finally, I would like to thank my husband, Larry Blunt, for standing with me, believing in me, and giving me the love and support to persevere. Heaven sent me an angel when he sent you to me.

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## CHAPTER 1: THE PROBLEM

Recruiting, supporting, and retaining teachers are issues with implications for students, parents, experienced teachers, administrators, policymakers, taxpayers, and especially novice teachers. High teacher turnover rates lead to unstable and less effective learning environments for students, place high demands on other teachers and school staff members, and increase the amount of money and time that must be spent recruiting, hiring, and training replacements (DePaul, 2000).

The challenge to staff high-poverty, high-need schools with teachers who have the skills, training, and support needed to be effective in classrooms throughout the Commonwealth of Virginia is a huge undertaking. Failure to retain teachers in these schools contributes to a never-ending, long-term, replacement and training cycle. Typically, hard-to-staff schools serve as a training camp for new teachers. Consequently, teachers stay for a few years and then migrate to schools that have more resources and fewer challenges (American Federation of Teachers, 2007; Prince, Koppich, Azar, Bhatt, & Witham, n. d.). They also may choose to leave the profession entirely.

Researchers have significantly increased evidence-based knowledge on teacher retention and have found a number of factors that affect novice teacher retention (Boyd, Lankford, Loeb, & Wyckoff, 2005; Hanushek, Kain, & Rivkin, 2004; Ingersoll, 2001c, 2004; Ingersoll & Kralik, 2004; Ingersoll & Smith, 2003, 2004; Johnson and The Project on the Next Generation of Teachers, 2004; Loeb, Darling-Hammond, & Luczak, 2005). Examining factors that influence teachers to leave hard-to-staff schools can provide school officials and other stakeholders with valuable information for establishing remedies for the teacher-retention dilemma. Retention of novice teachers in hard-to-staff high schools in Virginia is the focus of this study.

This study is a modified replication of a 2005 study conducted by Giacometti (2005). Giacometti focused on satisfaction and retention of new teachers nationwide and included all grade levels. This study differs from Giacometti's study in several ways. It focuses on new teachers in hard-to-staff high schools in the Commonwealth of Virginia. Some of Giacometti's domains have been refined in an attempt to improve her theory and the quality of her measurements. In lieu of a United States Postal Service mail survey, an electronic questionnaire was employed to improve efficiency. After carefully analyzing Giacometti's study and conducting a thorough review of literature, it was determined that the inclusion of three additional domains—demographics, principal leadership actions, and economic conditions—would strengthen the study.

### **Context of the Study**

The Virginia Standards of Learning have caused educational leaders to take a closer look at whom they hire to teach and what it will take to retain highly qualified teachers in classrooms. However, the complexity of high schools and the heightened levels of responsibility placed on administrators and teachers since the inception of the No Child Left Behind Act (2002) have added burdens to the attraction and retention of highly qualified teachers for leaders in hard-to-staff schools.

Hard-to-staff schools tend to have higher concentrations of lower-performing and lower-income students, hire more inexperienced and beginning teachers, and suffer higher teacher attrition. Hard-to-staff schools generally serve a higher concentration of minorities, are located in inner-city or rural areas, and have lower graduation rates. Moreover, the students in these schools are in need of a high-quality education from experienced veteran teachers. Yet, this population is underserved by public education (Berry & Hirsch, 2005).

One reason for teacher turnover in hard-to-staff schools may be working conditions within the schools (Hanushek et al., 2004; Ingersoll, 2003; Kelly, 2004; Luekens, Lyter, & Fox, 2004; National Center for Education Statistics, 2003). Ingersoll (2001b) reported that teachers are more likely to leave high-poverty schools because of such working conditions as inadequate administrative support, poor student discipline policies and practices, and limited authority to make key decisions, rather than because of salaries. The consensus of these researchers is that teachers who work in a positive school environment tend to be more likely to consider teaching as a long-term career. Yet, high-minority and high-poverty schools continue to face greater challenges than others face in recruiting and retaining qualified teachers. Virginia's hard-to-staff high schools are no exception and cannot afford to lose highly qualified teachers to safer, wealthier, and less challenging environments or to other professions.

As large numbers of beginning teachers continue to leave the profession within the first several years of entering, educators must identify factors that cause teachers to remain in the profession. Although fluctuations in the availability of teachers have been persistent for decades, hard-to-staff school officials face even greater challenges because supply is very often tight, demand is high, and competition with other districts is severe. Moreover, the dilemmas associated with the supply of highly qualified teachers are critical because all schools must comply with the No Child Left Behind Act (2002).

Prevailing themes emerged from the review of literature on public school teacher supply. Several factors were commonly associated with hard-to-staff schools. According to Auguste, Kihn, and Miller (2010), nationally, approximately 240,000 teachers are prepared through traditional programs and another 45,000 are prepared through alternative preparation routes. Although these figures seem to indicate a copious supply of teachers, they are misleading because there is an uneven supply of teachers distributed across school districts and regions.

Whereas, one school might have an abundance of teachers, another in the same system may struggle to fill vacancies. Likewise, although some communities or regions experience shortages regularly, others function with relatively full staffing and without the distractions and increasing costs of persistent shortages. Clotfelter, Ladd, Vigdor, and Wheeler (2007) contended that some schools have long waiting lists of qualified teachers, while other areas have difficulty finding the applicants they need.

As many beginning teachers—especially those employed in poor, urban schools—opt out of teaching within the first few years, the need to replenish the supply of teachers becomes critical (Ingersoll, 2001a). Similar to the findings of Luekens et al. (2004) that early retirement incentives might play a role in large-scale departures, the Bureau of Labor Statistics (2010–2011) disclosed that many teaching positions would become available due to the retirement of teachers over the 2008–2018 period.

The support given to teachers affects supply and demand. Support includes such things as school leadership, organizational structures, workforce conditions that convey respect and value, and induction and mentoring programs (Ingersoll, 2001b; Johnson, Birkeland, Kardos, Kauffman, Liu, & Peske, 2001). Endurance adds to the dilemma of the supply of teachers. Johnson and The Project on the Next Generation of Teachers (2004) asserted that the new generation of teachers enters the profession with a very different outlook on the longevity and expectations that come along with their careers. Moreover, first-year teachers have admitted that teaching is not a commitment that they wish to pursue lifelong, but simply one career of many that they wish to experiment with during their lifetime. In contrast, when the retiring generation of teachers was the age of the prospective teachers of today, lifelong career commitments were a trend. There were fewer job opportunities available to some segments of the population. Hence, teaching was a beneficial option. These obvious shifts in attitude at the beginning of an

individual's career could eventually jeopardize the quality of the teaching force and the motivation that novice teachers have toward the teaching profession.

Data suggest that the roots of teacher shortages largely reside in working conditions within schools and districts (Ingersoll & Smith, 2003). The high attrition of teachers from schools serving lower-income or lower-achieving students appears to be influenced substantially by the poorer working conditions typically found in those schools (Darling-Hammond, 2003). In a study addressing why teachers moved or migrated, Johnson and Birkeland (2003b) reported that almost all of the teachers that left went to teach in schools with better achieving students and higher socioeconomic levels. Billingsley (2003) reported that special education teachers cited several reasons for leaving, including unsupportive school climates, minimal professional development opportunities, nonlicensure or certification status, administrative burdens associated with implementing the Individuals with Disabilities Education Act (IDEA), caseloads with multiple areas of disabilities, and role conflict or dissonance.

Ingersoll (2001c) contended that school-to-school differences in turnover are significant. High-poverty public schools that reported a poverty enrollment of 50% or more had a higher turnover rate than more affluent public schools that reported a poverty enrollment below 15%. Urban public schools had only slightly more turnover than did suburban and rural public schools. More significant were the differences in rates of turnover according to the sector and size of the school. Teacher attrition, especially in high-poverty urban and rural communities, and the number of teachers retiring have added significantly to the teacher shortage. The Committee to Enhance the Kindergarten K–12 Teaching Profession in Virginia (2002) reported that there were only 2,862 teacher graduates in 2000. Based on past trends, it was anticipated that less than half of them would remain in Virginia, and not all who remained would opt to teach. Moreover, in 2001, school divisions in Virginia reported 4,136 vacancies and teachers teaching outside their

areas of endorsement. This figure nearly tripled the number reported in 1999. According to the Virginia Department of Education (2000) from 2000 to 2015, the Commonwealth's supply of teachers is expected to show a 4% decline, while its student population is expected to grow by 4%.

The examination of factors that affect the retention of highly qualified novice teachers in Virginia's schools may help identify interventions that keep those teachers in the service of students. Given the proper resources, support, and attention, the state of Virginia can remedy the issues of teacher shortage and supply, especially those associated with hard-to-staff schools.

### **Statement of the Problem**

Lovett and Cameron (2011) contended that the strongest teachers are the teachers most likely to leave the profession during their early years in the profession. Although schools struggle to maintain standards for teacher quality, they continuously seek ways to retain their most effective existing teachers (Guarino, Santibanez, & Daley, 2006). In this study, factors affecting novice teacher retention in Virginia's hard-to-staff high schools were identified and assessed. The following overall question was established to guide the study: What factors differentiate novice leavers from novice stayers in hard-to-staff high schools in Virginia?

Specific research questions follow:

1. How does compensation affect novice teacher retention in hard-to-staff high schools in Virginia?
2. How does preservice preparation affect novice teacher retention in hard-to-staff high schools in Virginia?
3. How do external forces affect novice teacher retention in hard-to-staff high schools in Virginia?

4. How does school culture affect novice teacher retention in hard-to-staff high schools in Virginia?
5. How does support for in-service training affect novice teacher retention in hard-to-staff high schools in Virginia?
6. How does motivation to teach affect novice teacher retention in hard-to-staff high schools in Virginia?
7. How do emotional factors affect novice teacher retention in hard-to-staff high schools in Virginia?
8. How do demographics affect novice teacher retention in hard-to-staff high schools in Virginia?
9. How do principal leadership actions affect novice teacher retention in hard-to-staff high schools in Virginia?
10. How do economic conditions affect novice teacher retention in hard-to-staff high schools in Virginia?

These questions were addressed in the study. Giacometti's (2005) theory is used as a base for the expanded theory developed in this study. The refinement of her theory is explained later in this document.

### **The Need for the Study**

Understanding why teachers choose to work in a particular school and why they leave is the first step in developing best practices that will get them to stay (Vocational and Educational Services for Individuals with Disabilities, 2005). Unfortunately, several schools in Virginia continue to face challenges in attracting and retaining highly qualified teachers. The Committee to Enhance the K–12 Teaching Profession in Virginia (2002) reported that, from 2000 to 2015, the student population will increase by 4%, but teacher candidates (including novice teacher

candidates) will decrease. Moreover, the less-competent teachers are disproportionately found in high-poverty and high-minority schools. Updated research and data are needed to identify factors that enhance the retention of highly qualified teachers to ensure that students, especially those in schools considered hard-to-staff, receive an equitable, stable, and rigorous education.

According to data provided by Virginia's Annual Instructional Personnel Data Collection run on February 14, 2011, and forwarded to the researcher by e-mail, there were 999 teachers with less than 4 years of experience employed in designated hard-to-staff high schools in Virginia and 4,582 teachers with less than 4 years of experience in high schools not designated as hard-to-staff. Hard-to-staff high schools face distinctive challenges. Some are attendance, special needs, and language barriers. The leaver rate of novice teachers in these hard-to-staff schools is unknown; however, the percentage of newly hired, inexperienced teachers (0 years of teaching experience) in these schools might exceed 150% of the statewide average. These schools might have one or more inexperienced teachers (0 years of teaching experience) in a critical shortage area. The percentage of teachers with provisional licenses might exceed 150% of the statewide average. Moreover, the percentage of special education teachers with provisional special education licenses might exceed 150% of the statewide average (Virginia Department of Education, 2011).

Amrein-Beardsley (2007) asserted that we must increase the quality and number of expert teachers in hard-to-staff schools. An examination of the factors that affect the retention of novice teachers, particularly in hard-to-staff schools, might help policymakers' and school leaders' to provide the necessary support to employ highly qualified and effective novice (early career or as defined in this study, teachers within their first 4 years of experience) teachers and to foster their retention in these schools.

## **Purposes of the Study**

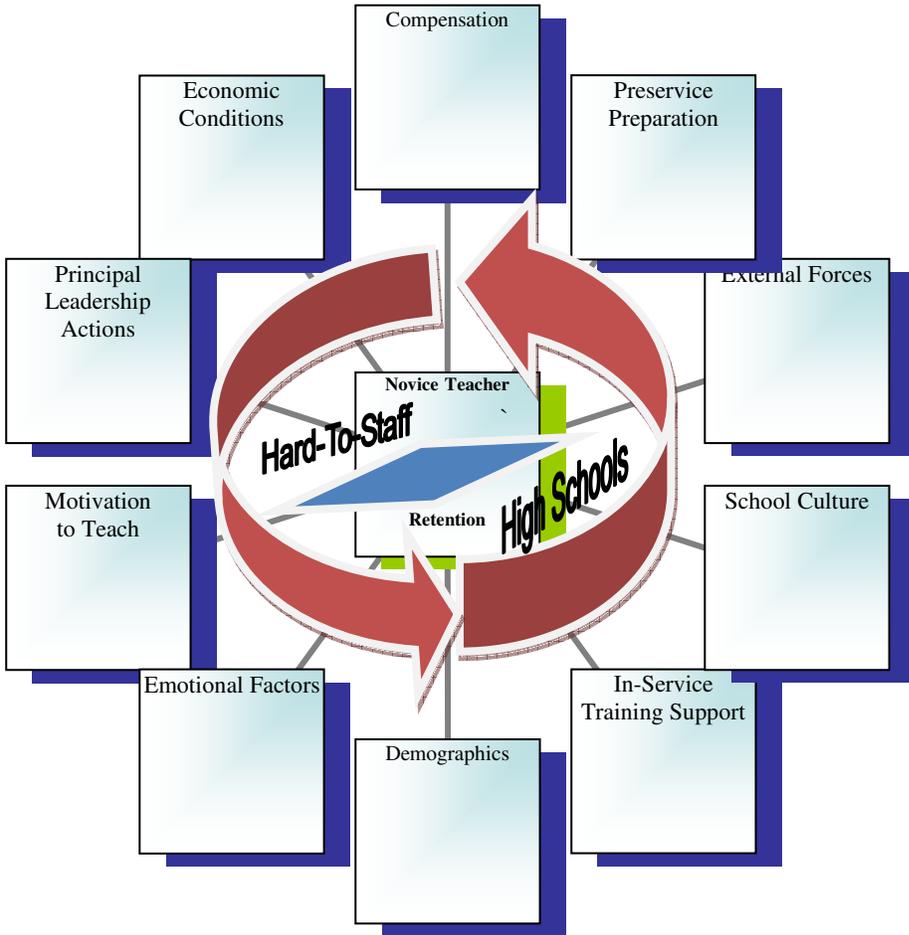
The purposes of this study are (a) to identify and verify a set of factors that have been identified by previous researchers to affect the retention of novice teachers in hard-to-staff high schools and (b) to propose recommendations for the retention of highly qualified teachers in these schools.

### **A Theory of Novice Teacher Retention in Hard-to-Staff Schools**

A theory of novice teacher retention in hard-to-staff schools has been created to guide the design and implementation of the research in this study. The theory is an explanation for why teachers in hard-to-staff schools stay or leave their schools in their early years.

Figure 1 is a representation of the theory that guides this research. It contains key concepts that have been arranged into categories that serve as domains. The domains are: (a) compensation, (b) preservice preparation, (c) external forces, (d) school culture, (e) in-service training support, (f) motivation to teach, (g) emotional factors, (h) demographics, (i) principal leadership actions, and (j) economic conditions. The theory was developed from the work of Giacometti (2005) and a review of other literature on teacher retention. A more comprehensive diagram of factors within domains is in Figure 2. Table 1 is a summary of studies related to each domain. Studies were reviewed beginning with the year 2000 and selected based on their relevance, historical value, and empirical quality.

In an effort to build upon Giacometti's (2005) work, the researcher was prompted to seek additional studies, including ones specific to hard-to-staff schools. The relationships in the theory are explained and supported with related literature in the following sections. The related literature includes research findings, theory, and commentary.



*Figure 1.* Variables that predict leaving or staying in hard-to-staff schools. The theory of this study encompasses variables used by Giacometti (2005). Used with permission of Dr. K. S. Giacometti. Demographics, principal leadership actions, and economic conditions were added to her theory for this study.

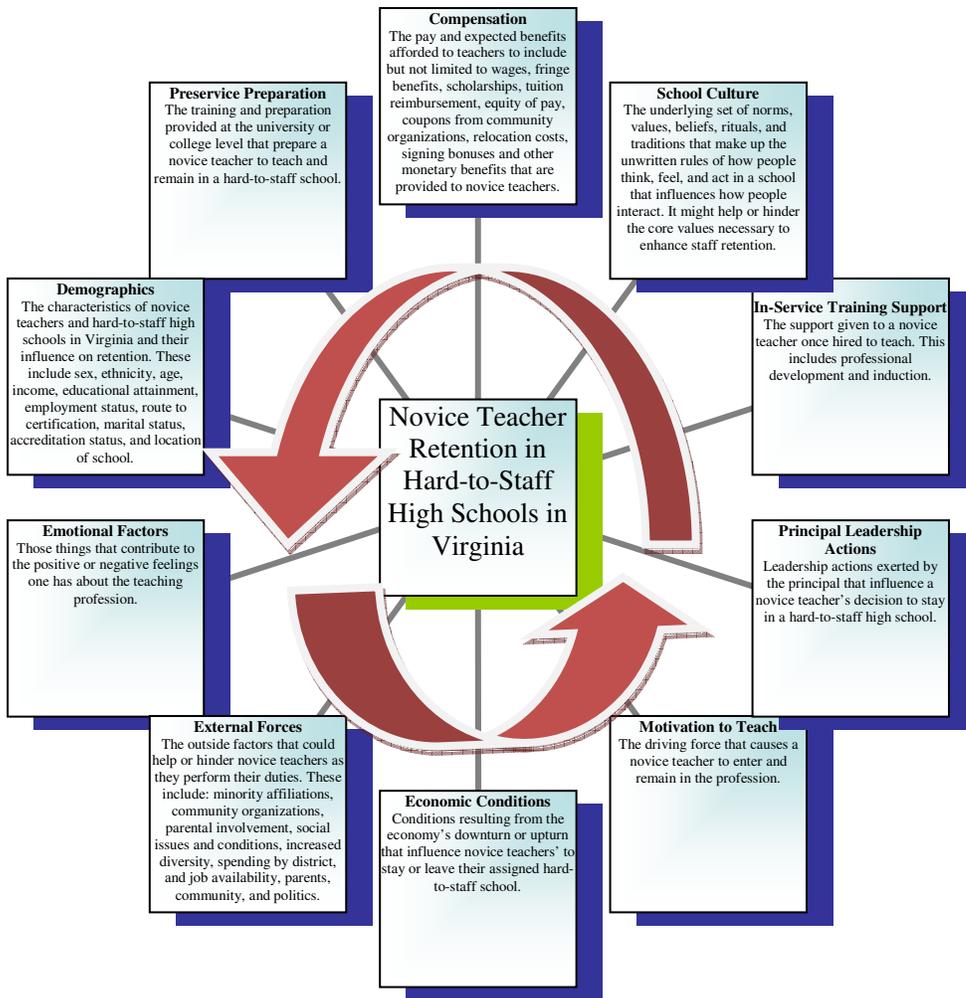


Figure 2. A summary of the factors affecting novice teacher retention in hard-to-staff high schools derived from a review of literature.

Table 1

*Literature on Teacher Retention by Domain, Author, and Date*

<b>Domain</b>	<b>Authors</b>
Compensation	Clotfelter, Glennie, Ladd, & Vigdor (2006); Garcia, Slate, & Delgado (2009); Giacometti (2005); Guarino et al. (2006); Hanushek, Kain, & Rivkin (2001); Johnson & Birkeland, 2003a; Kelly (2004); Lankford, Loeb, & Wyckoff (2002); McKinney, Berry, Dickerson, & Campbell-Whately (2007); MetLife, Inc. (2006); Podgursky, Monroe, & Watson (2004); Protheroe (2011); Rural School & Community Trust (2000); Schwartzbeck, Prince, Redfield, Morris, & Hammer (2003); Stronge, Gareis & Little (2006); Strunk & Zeehandelaar (2011); Virginia Department of Education (2004)
Preservice preparation	Anderson & Olsen (2006); Clewell & Villegas (2001); Davis, Higdon, Resta, & Latiolais (2001); Giacometti (2005); Gimbert, Cristol, & Sene (2007); Liu, Johnson, & Peske (2004); MetLife, Inc. (2006)
External forces	Carroll, Reichardt, & Guarino, assisted by Mejia (2000); Elfers, Plecki, & Knapp (2006); Giacometti (2005); Hanushek et al. (2004); Ingersoll (2001c); Ingersoll (2003); Monk (2007); Smith & Smith (2006); Vocational and Educational Services for Individuals with Disabilities (2005)
School culture	Cornella (2010); Deal & Peterson (2009);Giacometti (2005); Hanushek et al. (2001); Johnson & Birkeland (2003a, 2003b); Protheroe (2011)
In-service training support	Barnett, Hopkins-Thompson, & Hoke (2002); Camphire (2002); Darling-Hammond (2001); Giacometti (2005); Ingersoll & Smith (2003); Johnson and The Project on the Next Generation of Teachers (2004); MetLife, Inc. (2006); National Education Association (2003); Smith & Ingersoll (2004); Virginia Department of Education (2000)
Motivation to teach	Anderson & Olsen (2006); Demetriou, Wilson, & Winterbottom (2009); Giacometti (2005); Jurkiewicz (2000); Lim-Teo, Low, Wong, & Chong (2008); Locklear (2010); Luekens et al. (2004); Marcus (2007); Ryan & Deci (2000);Tamir (2010); Vegas (2007)
Emotional factors	Broussard (2003); Demetriou et al. (2009); Farkas, Johnson, & Foleno (2000); Giacometti (2005); Hargreaves (2000); Kruml & Geddes (2000); Labaree (2000); McKinney et al. (2007); Neubert & Binko (2007); Skaalvik & Skaalvik (2011)
Demographics	Achinstein, Ogawa, Sexton, & Freitas (2010); Broughman & Rollefson

Domain	Authors
	(2000); Demetriou et al. (2009); Follo, Hoerr, & Vorheis-Sargent (2002); Garcia & Slate (2010); Hammer, Hughes, McClure, Reeves, & Salgado (2005); Henke, Chen, & Geis (2000); Henke & Zahn (2001); Kearney (2008); Lankford et al. (2002); Locklear (2010); Marvel, Lyter, Peltola, Strizek, & Morton (2007); National Center for Education Statistics (2002); Podgursky et al. (2004); Protheroe (2011); Reeves (2003); Quartz, Thomas, Anderson, Masyn, Lyons, & Olsen (2008); Schwartzbeck et al. (2003); Virginia Department of Education (2004)
Principal leadership actions	Anderson (2004); Berry (2004); Colley (2002); Cornella (2010); Fullan (2002); Greenlee & Brown (2009); Hirsch & Emerick, with Church & Fuller (2007); Hirsch, Koppich, & Knapp (2001); Johnson & Birkeland (2003b); Locklear (2010); MetLife, Inc. (2000); MetLife, Inc. (2006); Protheroe (2011); Reavis (2008); Reborra (2004); Schulte & Kowal (2005); Sergiovanni (2006); Tomon (2009); Useem (2001); Wasicsko, Wirtz, Callahan, Erickson, Hyndman, & Sexton (2004); Wynn (2006)
Economic conditions	Alliance for Excellent Education (2005); Behrstock & Clifford (2009); DeAngelis, Presley, & White (2005); Goe (2002); Guarino et al. (2006); Hanushek et al. (2004); Ingersoll (2002); Lankford et al. (2002); Strunk & Zeehandelaar (2011); Useem & Farley (2004)

*Note.* Adapted from “Factors Affecting Job Satisfaction and Retention of Beginning Teachers” by K. M. Giacometti, 2005, unpublished doctoral dissertation, Virginia Tech, Blacksburg, Virginia.

### **Teacher Retention**

A major problem facing education is teacher retention. Although all children deserve the best possible education, the neediest students are often adversely affected by premature teacher turnover. In fact, high teacher attrition rates exist in school districts where students are of high poverty status (Ingersoll, 2004). To the disadvantage of students, according to Lankford et al. (2002), often the least skilled teachers teach low-achieving students, particularly those in urban areas. These students might be more likely to have inexperienced teachers who are less effective, on average (Hanushek et al., 2004; Kane, Rockoff, & Staiger, 2006; Rockoff, 2004).

Tamir (2010) asserted the need to increase the quality of teachers and number of expert teachers in hard-to-staff schools to offset the historically substandard levels of student

achievement in these schools. Hence, policymakers are challenged to promulgate policies that focus on improving teacher retention. Although substantial gaps in academic achievement persist among income groups and racial and ethnic groups of students, losing a talented teacher in a hard-to-staff school because of inadequate support and guidance during the early years is a tragic loss that can be avoided (Virginia Department of Education, 2004).

Teacher retention is an important factor in determining the learning environment at a school. If school administrators intend to continue with their advancement of positive school reform movements, to serve the needs of an increasingly diverse student population, and to meet the growing demand for quality educators, they must identify and implement effective ways to retain adept educators including those who are just beginning their careers. It is difficult for school administrators to implement new policies, effect necessary changes, or meet high standards when the teaching workforce is unstable.

Corbell, Osborne, and Reiman (2010) contended that high levels of teacher attrition have prompted research into the factors that contribute to new-teacher retention. Many causes, some more prevalent than others, have been cited that affect the retention of teachers. Researchers from diverse perspectives and for several decades have addressed these causes (see Table 2 above). Teacher retention in hard-to-staff schools, as it relates to teacher shortages, teacher supply, recruitment of teachers, and the attrition of novice teachers, was a prominent issue found in the literature. Without doubt, hard-to-staff schools are at a greater disadvantage because teacher retention in these schools tends to be lower than in more affluent and higher performing schools. Hard-to-staff schools are more likely to offer poor professional conditions, inadequate physical facilities and insufficient resources (Prince, Koppich, Azar, Bhatt, & Witham, n.d.). Teacher quality is one of the principles associated with the No Child Left Behind Act. Yet, research shows that teacher quality is unevenly distributed in schools. Characteristic of hard-to-

staff schools, teachers are more likely to leave schools and districts with higher concentrations of poor, minority and/or low-performing students, with lower salaries, and with worse working conditions (Guarino et al., 2006).

Novice teacher retention has attracted widespread attention as many federal, state, and local policies intended to improve student outcomes have focused on recruiting rather than retaining more qualified and effective teachers (Boyd et al., 2009). Despite concerted efforts to employ highly qualified teachers to fill every classroom, policymakers are often frustrated by the seemingly high rates of attrition (leaving the profession) and mobility (moving among schools or school districts) among teachers early in their careers. Many factors contribute to teacher retention. Thus, it might be necessary to delve deeper into the issue to determine which factors of teacher retention are the real problem. Ten factors are examined in this study.

**Teacher retention and compensation.** According to the Survey of American Teachers by MetLife, Inc. (2006), salary and benefits are reasons for leaving the profession. Local education associations often advocate for enhancing teacher compensation. Although increasing the salaries of teachers has been identified (Guarino et al., 2006) as one solution to the problems associated with teacher retention, other incentives (Barnet et al., 2002; Inman & Marlow, 2004; Ingersoll & Smith, 2003; Liu et al., 2004; Loeb & Miller, 2007; Patterson, 2005) have been applied to offset salary differences. Popular incentives include scholarships and education loan forgiveness, tuition assistance, appealing real estate loan offers, and relocation fees. Although there were several relevant findings in the literature (Buckley, Schneider, & Shang, 2005; Jimerson, 2003), it remains clear that policymakers must ensure that teacher compensation is equitable with the conditions under which they teach. This is especially true for teachers in hard-to-staff schools. Several researchers offered evidence that compensation was positively associated with teacher retention (Hanushek et al., 2004; Ingersoll, 2001c; Johnson & Birkeland,

2003a; Kelly, 2004; Lankford et al., 2002; Podgursky et al., 2004; Stockard & Lehman, 2004); others attempts to connect compensation were equivocal or had negative relationships.

Hanushek et al. (2001) found that a teacher's decision to switch schools had some correlation to salary, especially for male teachers. Using a regression analysis with 378,790 teachers between 1993 and 1996, the researchers reported that relative salary level between districts, rather than absolute salary, was a more important factor in a teacher's decision to leave their school.

Lankford et al. (2002) analyzed data on teachers that transferred within districts and between districts in New York between 1999–2000 and 2000–2005. Those who transferred within districts received 4%–15% increases. Teachers who transferred between districts reported increases of 12%–22%. The researchers concluded that salary differences within districts were not enough to act as incentives to teach in one school as opposed to another. However, salary differences between districts were more appealing and generated higher transfer rates. Since many hard-to-staff schools are high-poverty inner-city schools or rural schools, as a consequence of their location in economically depressed or isolated districts, salaries in these schools are lower on average.

Johnson and Birkeland (2003a) conducted a study on first-year and second-year teachers in Massachusetts public schools. The sample of participants varied in demographic and geographic composition. The study involved individuals who participated in a \$20,000 signing bonus program. Compensation was cited as a factor that influenced teachers to leave the profession or move to another district, but it was not a critical factor for most movers. In another study, Clotfelter, Glennie, Ladd, and Vigdor (2006) examined bonus incentives for teachers who worked in high-poverty, low-performing schools. Annual bonuses of \$1,800 were paid to those

certified and willing to teach mathematics, science, or special education. The bonus amount was sufficient to reduce teacher attrition in those subject areas by 12%.

McKinney et al. (2007) administered the Urban Teacher Retention Survey. The premise of their study was to develop a profile of high quality educators who remained in urban, high-poverty schools within a large metropolitan area. The findings revealed that older and more-experienced females were more likely to remain teaching in high-poverty schools beyond the first 3 years. Participants were between the ages of 32 and 49. Out of the 32 subjects, 57% were African American, 34% were Caucasian, and 9% were Hispanic.

Zembylas and Papanastasiou (2004) examined job satisfaction among schoolteachers in Cyprus using an adapted version of the questionnaire developed by the Teacher 2000 Project. The adapted version was translated into Greek and administered to a sample of 461 K–12 teachers and administrators. Salary was identified as one of the factors that influenced Cypriot teachers to choose a career in teaching.

According to the Rural School and Community Trust (2000), the difference between average rural-teacher salaries and other-teacher salaries varied from \$250.00 to \$10,400 by state. Similarly, the American Association of School Administrators and the Appalachia Educational Laboratory (Schwartzbeck et al., 2003) initiated a nationwide electronic survey during the spring of 2003. Out of 3,000 participants, 44% cited low salaries as the biggest challenge for rural areas and teacher retention. Moreover, 26% of the participants revealed that rural districts offered tuition assistance as a strategy to retain teachers (Schwartzbeck et al., 2003). Likewise, Edvantia, Inc., and the National Association of State Boards of Education conducted a study in 2004 to identify successful strategies to retain highly qualified teachers in rural schools (Hammer et al., 2005). A response rate of 38% was obtained from 597 superintendents who were from 1,565 randomly selected school districts. Slightly less than a fourth (24.8%) cited compensation as a

challenge in retaining teachers. Higher-paying districts imposed a threat to rural districts. In fact, 36.9% of the rural districts cited the compensation differential as a great challenge in keeping their teachers. Moreover, 24.4% cited proximity to higher paying districts was less of a challenge for rural and remote communities.

Podgursky et al. (2004), in a longitudinal study of new public school teacher cohorts in Missouri who began between 1990 and 1996 and were followed through the 2000–2001 school year, found that earnings were negatively associated with attrition. Hanushek et al. (2004) analyzed data on more than 300,000 Texas teachers from 1993–1996 and found that salary increases were positively related to teachers' decisions to switch schools, particularly for male teachers. In a study of teachers in the 1990–1991 Schools and Staffing Survey and the 1991–1992 Teacher Follow-up Survey, Kelly (2004) found that attrition was inversely related to salary. Stockard and Lehman (2004), in their study of novice teachers in the Schools and Staffing Survey, found that salary was positively associated with retention. Out of the 379 beginning public school teachers in the 1993–1994 Schools and Staffing Survey and the 1994–1995 Teacher Follow-up Survey, as well as a sample of 117 novice public school teachers, who responded to a 1999 survey, they found that teachers in schools in the West and in small towns had higher rates of attrition. Using data from teacher personnel files, Lankford et al. (2002) found that teachers transferring to other districts in New York State between 1993 and 1998 experienced increases in salary of 4%–15%. Further, they found that turnover was associated with the type of school. Urban schools in tended to have higher turnover rates than suburban schools. Boyd et al. (2002) reported that annually less than two percent of all teachers in large urban school districts switch to suburban districts.

A person's salary is often associated with status and a perception of success. Teachers are not excluded from this association. Giacometti (2005) collected data on why teachers leave the

profession in their first 3 years and found that teachers equate higher salaries with a greater sense of accomplishment. She hypothesized that raising salaries and increasing benefits would ultimately keep some teachers in the field. She concluded that compensation and benefits had a moderate effect on teachers when choosing to leave or stay. While there are some states and districts that associate performance directly to teacher compensation and their evaluation system, Stronge et al. (2006) concurred that school leaders should develop teacher compensation packages that demonstrate that teachers are valued.

In the Commonwealth of Virginia's Virginia Department of Education briefing, *Teacher Incentives in Hard-to-Staff School (2005)*, the researchers proposed offering incentives to attract and retain licensed, highly qualified, experienced teachers in hard-to-staff schools. Target sites were middle and high schools where critical shortages were likely to occur because of specific requirements to teach in certain content areas. In an effort to rectify the difficulty in recruiting and retaining teachers in hard-to-staff schools, the Virginia Department of Education instituted a 2-year pilot program in 2004.

The program was launched in Caroline County and Franklin City. These two public school divisions typically have difficulty hiring and retaining teachers. During the pilot stage, the Commonwealth provided a one-time hiring incentive of \$15,000 to teachers who met the prescribed eligibility requirements, were willing to move to a hard-to-staff school, and agreed to remain there for 3 years. A stipend of \$500.00 was made available for professional development during this pilot program. This was to ensure that training and professional development opportunities related to working in hard-to-staff schools were offered.

The preponderance of evidence suggests that there is an association between compensation and retention. Teachers are more likely to quit when they work in districts with lower wages and when their salaries are low relative to alternative wage opportunities.

Moreover, teachers in high-demand fields such as mathematics and science are especially vulnerable to salary differences when making a decision to remain in teaching. These disciplines have especially high opportunity costs for remaining in teaching, considering that much higher salaries in alternative occupations are usually available. Questionnaire Items 34, 38, 41, 43, and 45 in Appendix A measure satisfaction with compensation.

**Teacher retention and preservice preparation.** Hard-to-staff schools often are characterized as having large numbers of students with academic or behavioral difficulties. Students from disadvantaged backgrounds are likely to face an even greater disadvantage if preservice teachers are not adequately prepared to meet the needs of these students. Whether training is acquired through a traditional or nontraditional program, proper preservice preparation for the classroom by teacher education programs may contribute to the retention and longevity of novice teachers in hard-to-staff schools.

Nontraditional programs seem to attract individuals whose profiles are different from candidates in traditional programs. Sometimes their participants remain in teaching longer than traditional candidates remain. Clewell and Villegas (2001) assessed the Pathways to Teaching Careers Program. The premise of this program, funded by the DeWitt Wallace Reader's Digest Fund, which targeted minorities, paraprofessionals, and emergency-licensed teachers in urban schools, was to track retention using follow-up surveys. The retention rates for the program were higher than the rates commonly reported in national averages for alternative licensure programs. When compared to the national number of novice teachers, Pathways participants were 63% minority as opposed to 18% nationally. Of these teachers, 70% were females compared to 73% females nationally, and the mean age was 35 compared to the national mean age of 28. The results of the follow-up survey administered to Pathways graduates who had completed the

Program 3 years or more before showed 6% of all respondents had left teaching after 3 years and 80% continued to be employed in education at the time of the survey.

Similarly, Gimbert, Cristol, and Sene (2007) investigated the impact of teacher preparation on the achievement of students who were identified as at risk of educational failure and likely to have noncertified teachers. Through individual teacher-level analysis, the level of performance in Algebra I and the achievement growth of students taught by first-year alternatively prepared teachers was compared to that of first-year traditionally prepared teachers employed by the same high-need urban school division. Although the sample sizes for both the teacher and student participants were small, the empirical findings indicate that nontraditional teacher preparation programs are promising options for school districts to consider in the effort to provide effective teachers for students in mathematics classrooms at the middle school and high school levels. In relation to retention plans, participants were offered, and accepted, a renewed contract for the following school year and commenced teaching with the same school system in the following school year term.

Liu et al. (2004) interviewed 13 participants in the Massachusetts Signing Bonus program. The fast-track alternative training approach was more appealing than the monetary incentives offered to the participants. Although the study provided some data, the limitations to this study were the small sample size and no comparison group. MetLife, Inc. (2006) examined teacher expectations upon entering the profession and teacher preparation. Both quantitative and qualitative methods were used to obtain results. Telephone interviews were conducted during the spring of 2006 with a nationally representative sample of teachers, principals, and college deans of education. Electronic input was obtained from teachers and former teachers. Being ill prepared to work with children of varying abilities was cited as one of the reasons identified for leaving.

Davis et al. (2001) examined graduates of the Teacher Fellows Program in Texas using a longitudinal survey method to determine the retention rates of teachers and the influence of their preservice preparation. Three cohorts were established from a population of 215 graduates. The findings of the study revealed that 100% of the members of the 1998–1999 and 1999–2000 cohorts were recruited by Texas school districts to teach, and 83% of the 1997–1998 cohort members were still teaching 2 years later. This program paid the teacher’s salary, but teachers were contracted by the school district, and the schools selected master teachers to serve as mentors. A limitation of the study was the small sample size and potential bias as both researchers served as university faculty in the Teacher Fellows Program. The primary researcher had been involved with the program for 10 years; the coresearcher served as an exchange faculty mentor and taught program coursework for several years.

Anderson and Olsen (2006) examined the motivation of 52 preservice trainees to become teachers. One of the goals of the researchers was to explore the expectations of preservice teachers as they enter the teaching profession. The participants ranged from 18–50 years of age. Using a three-part questionnaire to collect data, results showed that the majority of the participants desired to work with and motivate children from disadvantaged backgrounds. Yet, many of the participants seemed unwilling to work with students who are inattentive, disruptive, or low achieving in hard-to-staff schools.

Although concern is growing regarding teacher preparation and its impact on teacher retention, researchers (Darling-Hammond, 2000; Darling-Hammond & MacDonald, 2000; Henke, Chen, & Geis, 2000; National Commission on Teaching and America’s Future, 2003) confirm that there are large differences in plans to stay in teaching among first-year teachers who feel well prepared and those who feel poorly prepared in the key areas of teaching when they enter the classroom. Additional research is needed on the relationship between preservice

preparation and teacher retention; however, the evidence associated with the relationship confirms that novice teachers stay in hard-to-staff schools at higher rates when they undergo preservice preparation programs that support learning about methods for teaching diverse student populations in those settings. Questionnaire Items 21, 29, 31, 49, and 57 in Appendix A measure satisfaction with preservice preparation.

**Teacher retention and external forces.** External forces are aspects affecting a teacher's retention that are beyond his or her power to control or predict. These forces are associated with the demographics connected with the population served. Examples of these forces are wealth, urban or rural status, minority status, parental support, dysfunctional family structure, appropriation of school funds, student behavior, partnerships, and social and civic community affiliations. In reviewing studies related to the external forces of schools that were successful in retaining novice teachers, it was apparent that school type, student composition, and school grade level (Ingersoll, 2001c, 2003); wealth and size (Elfers et al., 2006; Smith & Ingersoll, 2004); and location (Hanushek et al., 2004; Monk, 2007) played significant roles.

Ingersoll (2003) contended that teacher attrition rates are influenced by the demographics of the school. Higher rates were reported in school districts where students are of high-poverty status. Accordingly, teachers in high-poverty schools were more likely than were their counterparts in medium-poverty schools to leave (16% vs. 9%) and less likely to move (13% vs. 19%). Teacher turnover rates tended to be higher in urban schools, particularly those in large urban areas. Moreover, the relationships among schools and factors that affect teacher retention varied from study to study. For example, those serving low-achieving students (as measured by district test scores) and greater proportions of minority students had greater difficulty retaining teachers than high-achieving, low-minority schools (Hanushek et al., 2004). This was mainly due to the movement of White teachers (the majority), who appeared to gravitate toward schools with

nonminority, higher-income students. African American teachers, on the other hand, tended to move into schools with higher Black enrollments than the schools they left.

Elfers et al. (2006) examined the retention and mobility of novice teachers in 20 districts in Washington to identify where they moved, as well as the relative size of novice teacher mobility across districts. The districts represented a range of size, poverty level, and regions of the state. Novice teachers were identified as those with four or fewer years of teaching experience. School-by-school analysis was conducted to compare retention and mobility patterns among and within the districts. Retention and mobility patterns were also examined in relation to student demographics, measures of student learning in reading and mathematics, and other school and district characteristics. In addition to retention, their study addressed teachers of color. Analyses indicated whether teaching staff had stayed in their same school after 5 years, moved to another school within the same district, moved to a different district, or exited the system altogether. Using a stratified random survey design, the sample provided a reasonable representation of the state's teachers based on the level of experience and poverty level of the school in which they taught. In five of the six largest districts in the sample, novice teacher retention at the same school was 50% or lower after 5 years. About one fifth of those who moved from their original schools were retained within the district 5 years later, and among the 20-district sample, on average, districts retained 64% of their novice teachers in some capacity after 5 years.

Hanushek et al. (2004) analyzed data on more than 300,000 Texas teachers in the mid-nineties and found that school characteristics played a large role in influencing teacher movements across schools and exits from the system. Schools serving low-achieving students, based on district test score assessments, and with greater proportions of minority students had greater difficulty retaining teachers than high-achieving, low-minority schools. Similarly,

Ingersoll (2001b), using data from the Schools and Staffing Survey in the 1980s and 1990s, found that large schools had lower turnover rates than small schools. He also reported that wealthier schools and rural schools tended to experience less teacher turnover than poorer or urban schools.

Carroll et al. (2000) found higher attrition and vacancy rates in high-minority districts than in low-minority districts in California in the late 1990s. This pattern, along with mandates to reduce class size, produced teacher shortages. High-minority districts were less successful in recruiting credentialed teachers, resulting in a sorting of teachers such that schools with disproportionate shares of minority children employed teachers with lower qualifications than schools with fewer minority students.

Novice teachers' dissatisfaction with some of the daily aspects of their jobs influences their departure. Ingersoll's (2001b) examination of data from the Teacher Follow-Up Survey of a national sample of teachers conducted by the NCES (1999–2000) as part of the Schools and Staffing Survey disclosed that some of the primary reasons for leaving were associated with lack of student motivation, inadequate administrative support, student discipline problems, and inadequate preparation time. Other reasons for leaving included unsupportive school climates, minimal professional development opportunities, administrative burdens associated with IDEA, caseloads with multiple areas of disabilities, and role conflict (Billingsley, 2003).

Although daily aspects of the job seem to influence a novice teacher's departure, external forces seem to influence their departure or retention as well. Hence, some consideration must be given to such external forces as unique community causes that would force a teacher to leave one school division to teach in another. For example, the cost of living within the local community in comparison with the salary scale might reveal a discrepancy that is causing teachers to look towards another system that pays more or in which the cost of living is lower. Novice teachers

beginning their teaching career might also experience additional expenses such as student loan repayment, the cost of housing and transportation, and the expense of buying teaching materials. These additional costs may dispose the teacher to look elsewhere.

Monk (2007) examined rural communities and then surveyed the organizational structure of their schools and the demographics and educational needs of their students. Based on the examination, Monk reported that some rural schools succeed at attracting and retaining teachers whose qualifications are comparable to those of teachers at other kinds of schools. However, for many rural schools, the quality of life in the community is lacking, working conditions are problematic, student needs are great, support services are limited, and professional support networks are inadequate. Moreover, salaries are lower for teachers in rural schools for many interconnected reasons, and certain types of rural schools struggle to appoint qualified teachers, settle for teachers with fewer qualifications, and face higher turnover rates. Monk asserted that teacher experience is more limited in the smallest schools. Thus, there is reason to fear that inequalities in rural schools are becoming larger, particularly in light of the changing demographics of rural areas and the increasing numbers of bilingual students from impoverished backgrounds.

Conversely, Smith and Smith (2006) examined urban settings, conducting a study that included the stories of 12 former teachers who began their careers in urban districts but left within 5 years. Relationships between teachers' perceptions of violence and their distrust of the community in which their schools were located and their decisions to leave urban schools were explored. In-depth, semistructured interviews served as the main source of data. Ethnographic descriptions, document reviews, and general observations were used to substantiate the results. In general, the participants perceived inner-city schools as violent and chaotic places where anything can happen. The respondents were from middle-class backgrounds and viewed the poor

communities where the students came from as socially dysfunctional. Although the teachers had some structural insights regarding the population, their descriptions implied that the teachers did not fully respect the parents. Parents were often characterized as the enemy of the educational process. The participants reported mistreatment of students by their parents and the lack of involvement. Very similar to the descriptions of parents, the teachers reported being overwhelmed by the difficult relationships they developed with their students and were unable or unwilling to form partnerships with the parents.

Overall, there are opportunities for teachers to change the course of events for many children who come to school with such significant disadvantages as parental and societal neglect, intellectual and physical disabilities, and poverty (Vocational and Educational Services for Individuals with Disabilities, 2005). Yet, the preponderance of evidence associated with the relationship between external forces and retention of teachers revealed fairly consistent findings that schools with higher proportions of minority, low-income, and low-performing students tend to have lower novice-teacher retention. In general, urban school districts tended to have higher attrition rates than suburban and rural districts. Survey Items 40, 42, 44, 46, and 63 in Appendix A measure the external forces.

**Teacher retention and school culture.** School culture is the underlying set of norms, values, beliefs, rituals, and traditions that make up the unwritten rules of how people think, feel, and act in a school (Deal & Peterson, 2002). School culture is not prescribed. Yet, it influences how people behave and interact. A school's culture might help or hinder staff retention.

Teacher success is facilitated by principals who develop school cultures that are centered on productivity, performance, and improvement (Deal & Peterson, 2009). In schools with positive cultures, leaders focus on professional development, staff reflection, and shared professional practice. Teachers in schools with positive cultures focus on ways to improve their

teaching, and they engage in ongoing collaborative efforts. Teachers in schools with negative cultures share a sense of despair and disappointment. They lack a shared sense of purpose. Furthermore, the school's culture is fragmented, and negative norms infiltrate the school. Beliefs of personnel in such schools result in mediocre school improvement and levels of achievement, and no one takes ownership in the students' lack of success. Stakeholders tend to blame each other for failure and rarely celebrate success. Traditions that reinforce positive and supportive aspects of the school are limited. Unlike schools with cultures that are identified by their positive rituals, traditions, ceremonies, celebrations of student successes, teacher recognition, and pride, novice teacher retention in schools with negative cultures is problematic.

Teachers move from their schools or leave education for various reasons. Johnson and Birkeland (2003b) found that 22% of their participants left teaching altogether, 22% moved from one school to another, and 56% stayed in the same school. Those who left reported that they had not experienced success in the classroom and encountered frustration and failure or deemed their career as short-term and chose to pursue other careers. The movers cited safety and discipline, two elements of school culture, as reasons for leaving. Teachers who remained had high regard for their school.

Some novice teachers are placed in a culture that caters to veteran teachers, while others are more accommodating to beginning teachers (Feiman-Nemser, 2003). Other school cultures are inclined to integrate both. In veteran cultures, modes and norms of professional practice are determined by and aim to serve veteran faculty members. Usually, these schools have a high proportion of veteran teachers with well-established, independent patterns of work. Novice teachers may be collegially embraced, while other times, they may be neglected. Little or no induction into the professional life of the school may be afforded them. In contrast, novice-oriented cultures are primarily composed of young and inexperienced staff. Idealism may be

prevalent in these cultures. Integrated cultures encourage ongoing professional exchange across experience levels and sustained support and development for all teachers. These integrated cultures endorse teamwork and camaraderie.

The preponderance of evidence suggests that schools with positive, supportive cultures nurture adult growth and sustain the school as an attractive workplace for both novice and veteran teachers. A strong culture is crucial to making schools attractive workplaces. If novice teachers are connected to their schools and are part of their cultures, they might be more inclined to stay. Survey Items 20, 25, 32, 50, and 58 in Appendix A measure satisfaction with school culture.

**Teacher retention and in-service training support.** The extent to which novice teachers receive continuous and significant support affects their retention in the profession. Yet, Camphire (2002) asserted that a new teacher receives less than eight hours of professional support a year. In reviewing research that addressed in-service training support, mentoring and induction programs were major influences on novice teachers' decisions to quit or remain on the job. Yet, Smith and Ingersoll (2004) claimed that only 1% of new teachers received the training and support assistance necessary for comprehensive induction.

The American Association of School Administration and The Appalachia Educational Laboratory (2003) conducted a study during the spring of 2003. The purpose of the study was to seek information on the status of rural schoolteachers who were highly qualified according to the mandates of the No Child Left Behind Act (2002). Twenty-seven percent of the respondents revealed that their rural school districts employed mentoring and induction practices.

Ingersoll and Smith (2003) focused on the components of induction programs and the influence of induction programs on reducing teacher attrition. Data were obtained from the 1999–2000 Schools and Staffing Survey (SASS). Other data were from the 2000–2001 Teacher

Follow-Up Survey. First-year teachers with no prior experience in teaching were included in the 3,235 study participants. Three sets of questions were taken from the survey questionnaires. The results showed a 30% reduction of teachers being at risk of leaving after their first year on the job when assigned a mentor in the same discipline. Having common planning times assigned to mentors and mentees in the same discipline reduced the risk of leaving after the first year by 44%.

MetLife, Inc. (2006) examined teacher support. Harris Interactive employed a mix of qualitative and quantitative research methods. Survey questionnaires and telephone interviews involved national samples of teachers, school administrators, college professors, and department chairs. Former and prospective teachers participated in online focus-group discussions. The results revealed that the assignment of mentors to novice teachers was a positive factor in improving teacher retention.

The benefits of induction and mentoring as tools for teacher retention are apparent and essential. The Southeast Center for Teaching Quality reported that districts that develop induction and mentoring programs with well-designed assessment and support components produce positive retention trends for all teachers (Barnett et al., 2002). During the early, critical period in a new teacher's career, both novice teachers and their veteran peers develop an appreciation for the frequent and meaningful communication afforded to them. Novice teachers learn from their experienced colleagues, while veteran teachers are able to sharpen their skills by learning the latest approaches to teaching from new colleagues.

Well-designed induction programs are valuable in reducing attrition rates among new teachers. Johnson and The Project on the Next Generation of Teachers (2004) reported that conditions in schools affect teachers' decisions to stay or leave. Likewise, evidence revealed that beginning teachers who have access to intensive mentoring by expert colleagues were less likely

to leave teaching in the early years. A number of school districts have enhanced the retention of beginning teachers by more than two-thirds by providing expert mentors with release time to coach novice teachers in their first year on the job (Darling-Hammond, 2000). These young teachers have not only stayed in the profession at higher rates, but they have become competent more quickly than those who have had to learn by trial and error. Over a 5-year period, California's Beginning Teacher Support and Assessment Program (BTSA) successfully reduced teacher attrition rates among its participants by two-thirds (California Department of Education, 2008). The BTSA program encourages local school districts, county offices of education, and colleges and universities to collaborate in providing new teacher induction programs. These programs reported collective retention rates of 96% for first-year teachers. Over 5 years, the program reduced the attrition rate to 9% in contrast to 37% for new teachers who did not participate in such programs.

Darling-Hammond (2001) reported that legislation in 25 states requires school districts to develop a professional development plan for teachers. Virginia allocated 275 million dollars to support mentoring programs in 2000–2002 (Virginia Department of Education, 2000). In 2005, the Virginia Requirements of Quality and Effectiveness for Beginning Teacher Mentor Programs in Hard-to-Staff Schools initiative (Virginia Department of Education, 2004) incorporated a purposeful, logically sequenced structure of extended preparation and professional development that prepares beginning teachers to meet the academic learning needs of all K–12 students in designated hard-to-staff schools. The design focused on Virginia's *Guidelines for Uniform Performance Standards and Evaluation Criteria for Teachers, Administrators, and Superintendents* (Virginia Department of Education, 2000).

Giacometti (2005) suggested that teachers with similar weaknesses should be grouped together and offered support to overcome those weaknesses. Moreover, she recommended that

workshops be offered during work hours to avoid fatigue. With limited experience in observing and understanding how children grow, how they learn, and what to do to encourage student learning, poorly supported novice teachers might be less likely to understand the learning styles of students, anticipate instructional issues, or to plan effectively to help students. They might be less likely to take responsibility for teaching students, and they may be inclined to blame others because of their lack of training. In addition to knowledge, in-service training support enhances novice teachers as they employ a variety of techniques and strategies for shaping their pedagogy and professional management skills.

The preponderance of evidence supports in-service training as an aid in the retention of novice teachers. The benefits of this support are logical and the relationship between participation of beginning teachers in these training programs and the likelihood of novice teacher retention is evident. Investing in new teachers by providing the much-needed help up front pays off in the end (National Education Association, 2003). Questionnaire Items 18, 35, 37, 39, 51, and 59 in Appendix A measure perceptions of in-service training support.

**Teacher retention and motivation to teach.** Selke, Kennedy, and Mines (2006) contended that motivators are usually inherent features of work and are intrinsic in nature. Likewise, there are hygiene factors that are extrinsic in nature and encompass the context or environment in which work takes place. Hygiene factors rarely cause enough of an impact to make an employee leave a position, but might affect a person's motivation to teach. The intrinsic rewards associated with teaching—such as making an important contribution to society, working with young people, and job satisfaction—might influence a teacher's retention. Other researchers who studied what motivates teachers conveyed similar assertions. Vegas (2007) asserted that most teachers are motivated by a complex combination of internal and external factors. While some teachers are motivated by their love of children and of teaching, others are motivated by

more external factors such as a stable salary or the advantages of having more leave time. Tamir (2010) examined the challenge of retaining teachers in hard-to-staff schools in three context specific teacher education programs that prepare teachers to teach in urban public, urban Catholic, and Jewish Day Schools. Participants in the study expressed high motivation to serve as teachers or leaders in their particular schools and communities. Moreover, they were motivated to support the religious or civic missions promoted by their respective programs.

A teacher's willingness to help children and to make a difference in their lives motivate teachers to remain in education (Luekens et al., 2004). Low motivation might cause teachers to be less successful in teaching and leave the profession prematurely. Social-contextual events such as feedback, communications, and rewards that cause feelings of competence foster intrinsic motivation (Ryan & Deci, 2000). Thus, positive performance feedback might increase intrinsic motivation whereas negative performance feedback might decrease it. Intrinsic motivation can influence teachers to sacrifice high salaries and social recognition, which are less likely in hard-to-staff schools.

Lim-Teo et al. (2008) identified motivation to teach as a facet in an exploratory study that addressed the impact of initial teacher preparation programs on 94 student teachers. Participants in the study reported feeling better motivated due to their belief that they were better prepared or equipped to teach. The study results showed that their motivation was heightened by the acquisition of knowledge and skills, interaction with pupils, the needs of pupils, and the inspiration from tutors, peers, or senior teachers. Conversely, some participants perceived no change in motivation. Of them, 29 gave no reasons, three gave irrelevant reasons, and 33 reported that they were already motivated or passionate about teaching prior to entering the teacher education program and had no change.

The preponderance of evidence indicates that novice teachers who are intrinsically motivated and committed to make a positive difference in the lives of children are inclined to remain in education. Questionnaire Items 23, 24, 28, 52, 56, and 60 in Appendix A measure satisfaction with motivation to teach.

**Teacher retention and emotional factors.** Emotional factors can influence teachers' intent to leave or stay in their present school or school district. These factors are often associated with burnout, fatigue, and frustration, or simply with being unable to face another day on the job. Although Labaree (2000) asserted that teachers are required to manage an emotional relationship with students and parents along with effectively managing their own emotional state, Broussard (2003) acknowledged the influence of cultural differences, language barriers, and socioeconomic status on teachers. Whereas, teachers are sometimes required to manage and fake emotions that do not match their actual feelings, this sometimes leads to such undesirable outcomes as increased levels of stress, emotional exhaustion, burnout, and intent to leave.

Kruml and Geddes (2000) investigated how emotive dissonance, emotive effort, and communication symmetry influenced teachers' intent to leave. Seventy-eight teachers from two, low-performing, high-poverty, multicultural, Texas high schools completed measures of emotional exhaustion, emotive dissonance, emotive effort, communication symmetry, and intent to leave. They found that emotive dissonance and communication symmetry were significant predictors of teachers' intent to leave, even when controlling for emotional exhaustion and professional tenure. Employees who exhibited nonauthentic feelings experienced more emotional exhaustion than those who attempted to create internally the appropriate emotional display.

Public Agenda (Farkas et al., 2000) conducted a national attitude survey of 664 randomly selected public school teachers with five or fewer years of teaching experience. Eighty-three percent of the new teachers felt it was essential that you love the job you do, 81% felt that their

job should allow time for family, and 72% felt that their job must contribute to society to help others. In addition, 86% felt that only those called to teach should teach, and 52% reported that teaching was what they longed to do. Participants felt that their present teaching assignments offered those features and identified psychological and family-related factors that affected an individual's decision to enter and remain in the teaching profession.

A profile of high-quality educators was identified in the data in a study conducted by McKinney et al. (2007). The participants were educators who remained in urban, high-poverty schools within a large metropolitan school district in the southeastern part of the United States. A sample of 54 tenured teachers was selected by their administrators to engage in the Star Teacher Selection Interview Survey. The purposes of this study were to develop a profile of high-quality educators who remain in urban, high-poverty schools within a large metropolitan school district and to identify factors that influenced them to stay in their schools. Among the top influential factors identified was their view of themselves as winners when it came to working with students in poverty. These teachers were willing to undertake the considerable demands and challenges of many urban districts because they felt a sense of satisfaction in interacting with that urban population. Similarly, Neubert and Binko (2007) conducted a study at the university level to clarify issues associated with recruitment and retention. The participants were recognized as outstanding social studies student teachers between 1994 and 2004. They were asked if they entered teaching, and if so, did they remain. They were asked to identify characteristics they shared in common. A passion for teaching, positive attitude about students, and a commitment to remain in teaching were among the characteristics cited by the participants.

Giacometti (2005) reported that the best predictor in choosing to leave or stay in teaching was emotional. The preponderance of evidence associated with the relationship between emotional factors and teacher retention supports the hypothesis that novice teachers—who

identify, understand, experience, and express human emotional factors in a healthy and productive way—stay in hard-to-staff schools at higher rates than their counterparts stay.

Questionnaire Items 26, 30, 33, 53, and 61 in Appendix A measure emotional factors.

**Teacher retention and demographics.** Although highly qualified individuals make the decision to enter the teaching profession, many leave prematurely. Diez et al. (2010) contended that more than half of beginning teachers leave teaching before their fifth year. Geographic location, career progressions, family needs, personal reasons, district and school characteristics, and teacher qualifications are cited as some of the reasons for early departure. Other demographic factors identified as potential predictors of teacher retention are teacher age, gender, race, marital status, aptitude, and licensure.

**Teacher retention and geographic location.** Reeves (2003) asserted that schools located on the outskirts of suburban areas are challenged with teacher retention. Low-income and urban schools have greater teacher shortages (Follo et al., 2002; Lankford et al., 2002). Interestingly, although almost half of all the school districts across the nation are rural, information on effective rural retention is limited (Hammer et al., 2005). During the spring of 2003, the American Association of School Administrators and the Appalachia Educational Laboratory (Schwartzbeck et al., 2003) conducted a nationwide online survey to obtain data on rural school districts and adherence to the mandates of the No Child Left Behind Act (2002) concerning teacher quality requirements. A response rate of 27% was attained from more than 3,000 rural superintendents. Social and geographic isolation and lack of adequate housing were factors identified as the most challenging for teacher retention in rural localities (Schwartzbeck et al., 2003).

Edvantia, Inc. conducted a national study in 2004 to identify successful strategies for retaining highly qualified teachers in rural schools (Hammer et al., 2005). Superintendents from

1,565 randomly selected school districts completed the survey. A significantly high percentage of students in these districts received free or reduced-price lunches. Districts located near urban areas had more teaching vacancies, and the percentage of high school vacancies was larger than elementary and middle school levels. The findings were similar to the American Association of School Administrators and the Appalachia Educational Laboratory's 2003 national survey (Schwartzbeck et al., 2003). Superintendents reported that geographic isolation (32.1%), social isolation (26.8%), and low salaries (26.2%) posed the greatest retention challenges.

**Teacher retention and type of license.** Ng and Peter (2010) contended that alternatively licensed teachers are often viewed as well suited to work in urban areas because of their greater age, life and work experiences, and understanding of diverse communities. However, the retention of these teachers remains inconclusive, and Ng and Peter suggested that alternatively licensed teachers are as likely as are their traditionally prepared counterparts to quit teaching or migrate out of urban school settings.

Henke et al. (2000) analyzed data from the 1993 Baccalaureate and Beyond Longitudinal Study. Their analysis involved 9,300 individuals who earned a bachelor's degree between July 1992 and June 1993 and participants in follow-up interviews in 1994 and 1997. The participants in the study taught school, had become certified to teach and applied for a teaching job, or were considering teaching at the time of the 1994 or the 1997 interviews. Some of the participants were education majors. Others were not. The Teacher Follow-up Survey (Marvel, Lyter, Peltola, Strizek, & Morton, 2007) sampled elementary and secondary teachers who participated in the School and Staffing Survey the prior year. The results revealed that almost 23% of those teachers who held provisional or temporary licenses left teaching or moved to other school districts. The survey further disclosed that teachers who held regular or standard licenses move less to other schools or districts than those with probationary, waiver, or emergency licenses.

## **Minority Status and Teacher Retention**

Although minority student enrollments have increased in recent years, the recruitment of minority individuals into the teaching profession has been disproportionate. In 2000, 39% of public elementary and secondary school students were members of a minority group: 17% were classified as Hispanic, 17% were classified as Black, and 5% were members of other racial or ethnic groups (National Center for Education Statistics, 2002). Broughman and Rollefson (2000) examined 3 years of the Schools and Staffing Survey data. These data included (a) 184,000 novice teachers in 1987–1988, (b) 223,000 novice teachers in 1990–1991, and (c) 259,000 novice teachers in 1993–1994. The number of novice teachers hired from the late 1980s to the early 1990s increased. Although Whites formed greater proportions of new teachers than minorities, minority participation increased in the early 1990s. However, African American teachers left the teaching profession at a higher rate than other teachers. Nearly 20 years later, Achinstein et al. (2010) reported that the turnover rate for teachers of color continued to be higher than that of White teachers. However, teachers of color were more likely than were White teachers to work and remain in hard-to-staff urban schools. Moreover, they asserted that factors affecting the retention of teachers of color could contribute to staffing urban schools with quality teachers, including teachers' humanistic commitments, innovative approaches in the professional preparation of teachers of color, and the presence of multicultural capital in schools.

**Teacher retention and teacher aptitude.** Teacher aptitude was the focus of several studies. College graduates with the highest levels of measured ability tended not to go into teaching. Podgursky et al. (2004) compared the ACT scores of graduates from 4-year public higher education institutions in Missouri who became Missouri public school teachers in the year following graduation with those of graduates who did not enter teaching in the 1997–1998 and 1998–1999 school years. Those who entered teaching had significantly lower ACT scores than

those who chose not to teach. Women at all test-score levels were more likely than men to enter teaching, and high-scoring women were relatively more reluctant to enter teaching than high-scoring men were. Henke and Zahn (2001) found that graduates whose college entrance examination scores fell in the top quartile were less likely than were those in the bottom quartile to enter teaching, and 6% of graduates in the top quartile had prepared to teach and taught versus 12% in the bottom quartile.

**Teacher retention and gender.** Consistent findings in the research suggested that females formed greater proportions of new teachers than males. Henke et al. (2000) reported that women were more likely than men were to enter teaching. In concurrence, Demetriou et al. (2009), surveyed 305 novice teachers who were involved in a study related to the retention of secondary school science teachers. The participants ranged from relatively newly qualified to being in the profession for 8 years. A questionnaire was employed to obtain data on aspects of teaching. An analysis of the questionnaire revealed that some teachers found their early experiences of teaching to be difficult and challenging, to the point that some decided to leave the career completely. Within the group, 192 (63%) were female and 113 (37%) were male. Compared to those that left, significantly more teachers remained in teaching ( $N=134$ ). However, of the teachers who continued to teach, 76 of the 134 (57%) were female and 58 (43%) were male. Overall, a chi-square test showed that there is no relationship between gender and the likelihood of leaving the profession. However, a year-on-year chi-square analysis revealed that females were significantly more likely to continue teaching longer than were their male counterparts.

Quartz et al. (2008) found similar results. These researchers conducted a six-year longitudinal study that involved collecting survey data on teacher career movement, school experiences, and attitudes from 838 urban educators in their first-through-eighth career year. The

participants had completed masters' degrees in a teacher education program. Career patterns, including changing and leaving education, were documented. Men were less likely to leave education entirely than were women, but men were more likely to leave teaching for a role change in Career Years 3–8 (Quartz et al., 2008).

The preponderance of evidence associated with the relationship between demographics and retention indicates that, in general, public high schools with characteristics of hard-to-staff schools struggle with retaining highly qualified teachers in their classrooms. While it is difficult to change an individual's work preference, it may be possible to influence a novice teacher's decision to work and remain in a hard-to-staff school. Questionnaire Items 1–17 in Appendix A measure demographic variables. Unlike Giacometti's (2005) study, demographic variables were used in the analysis. These demographic variables are age, ethnicity, gender, experience in education, teaching assignment (primarily), marital status, salary, final grade point average on highest degree, route to certification to teach, geographic setting of the school (mostly), school accreditation status, school adequate yearly progress status, certification requirements met to be considered highly qualified (or not), offered continuing contract (or not), level of satisfaction with the school, amount of time spent preparing to teach daily, and parents place a high value on education (or not).

**Teacher retention and principal leadership actions.** Sergiovanni (2006) asserted that for decades the principal has occupied the position of the most influential person in the school. Yet, one of the most common reasons that novice teachers have cited for exiting the profession is the lack of administrative support (Hirsch et al., 2001; Hirsch et al., 2007). Although principals execute many leadership responsibilities, fulfilling these responsibilities in hard-to-staff schools is problematic. Although principals exert energy to recruit quality teachers, persistent, effective, and innovative leadership actions must be employed to promote the retention of highly qualified

teachers in schools. Reavis (2008) asserted that the principal's inclination to act in a certain way is usually guided by beliefs and values. Although principals' actions are influenced by their values, beliefs, and behaviors (Fullan, 2002; Schulte & Kowal, 2005; Wasicsko et al., 2004), principals should work cooperatively with staff, display actions that foster teamwork, and promote a learning environment that attracts and retains a solid team of highly qualified teachers. Despite the multiple adversities associated with hard-to-staff schools, the actions of their principals should motivate, support continuous learning, provide opportunities for teachers to engage in school decision making, encourage collaboration, and promote ownership in instructional planning.

In a study conducted by Johnson and Birkeland (2003b), teachers cited principal support as a factor that encouraged them to stay. MetLife, Inc. (2006) examined the expectations of teachers upon entering the profession, factors that drive career satisfaction, and the perspectives of principals on long-term support. More than half of the teachers were satisfied with their career and intended to remain in the profession. However, 27% of those surveyed indicated that they would depart within 5 years to pursue other careers. Lack of teacher input in decision making and lack of administrative support were cited as reasons for desiring to leave. Several other researchers (Anderson, 2004; Berry, 2004; MetLife, Inc., 2000; Reborá, 2004; Wynn, 2006) supported the assertion that the actions exerted through a principal's leadership influences the retention of teachers. Berry (2004) asserted that one action that principals can employ to retain teachers is to simply listen to staff concerns and respond to their needs.

Reborá (2004) reported that principals whose schools do a good job of holding onto teachers share some common traits and strategies. Some of the traits identified from the review of literature include trust and respect within the school, fairness in evaluations, open communication, and consistent support. Similar to the 2006 survey, MetLife, Inc. (2000)

disclosed that many secondary school teachers felt left out of events going on around them at their schools and believed that their thoughts did not count very much at their school. The teachers in those schools received little supervision except in the form of occasional directives that outlined rules and regulations in the standard operating procedure. The Philadelphia Education Fund (2001) found that schools that had a low turnover of teachers had principals who respected all in the school environment, who had strong communication and interpersonal skills, and who had effective organizational strategies. These principals' actions encouraged all teachers to feel supported and committed to the school and to their responsibilities.

Although the mandates of the No Child Left Behind Act (2002) have forced the actions of principals to be more comprehensive and competitive, the principal is largely responsible for creating distinct working environments within schools that are highly predictive of teacher satisfaction and commitment (Colley, 2002).

The preponderance of evidence suggests that principal leadership actions are significant in influencing the retention of novice teachers in hard-to-staff schools. Questionnaire Items 19, 22, 27, 36, 47, and 55 in Appendix A measure satisfaction with principals' leadership actions.

**Teacher retention and economic conditions.** The retention of teachers in hard-to-staff schools is a struggle because of insufficient or dwindling resources. These schools face even greater challenges because of economic conditions. Consequently, the students in these schools remain least likely to be taught by high-quality teachers (Behrstock & Clifford, 2009; DeAngelis et al., 2005; Garcia & Slate, 2010; Goe, 2002; Hanushek et al., 2004; Ingersoll, 2002; Lankford et al., 2002; Garcia et al., 2009; Strunk & Zeehandelaar, 2011; Useem & Farley, 2004).

Moreover, opportunities for a novice teacher's professional advancement and support are limited by the economy. Likewise, added financial burdens are caused by the costs associated with replacing teachers who leave prematurely. The Alliance for Excellent Education (2005) reported that the estimated cost to replace teachers who leave the profession or move to other districts is \$4.9 billion annually. Similarly, Brill and McCartney (2008) asserted that high attrition rates result in inexperienced teachers, high economic costs as teachers must be continually hired and trained, and a lack of continuity that makes institutional development and planning difficult. Cavanagh (2011) reported that across the country, some elected officials assert it is the best time to rethink how their states spend money on education. Although retaining novice teachers is a challenge for hard-to-staff schools, Kowal, Hassel, and Hassel (2008) contended that states and districts should experiment with efforts to stretch limited budgets to fill hard-to-staff slots by pursuing candidates who are naturally drawn in by the difficult aspects of the job.

In the midst of tough economic times, when deciding whether to continue or leave the profession, teachers assess the attractiveness of teaching relative to alternative occupations or activities that they might pursue (Behrstock & Clifford, 2009). Clearly, there are advantages and disadvantages associated with the current economic conditions and novice teacher retention. Although some individuals might have begun their teaching careers uncommitted to the profession or ill prepared for it, others might compare the salaries and job security of different professions and remain in teaching. Some individuals might even consider teaching as a "fallback career" that, in turn, might lead to high teacher turnover when the economy improves.

Although there were limited studies found on the economy and teacher retention, the evidence associated with the relationship between novice teacher retention and economic conditions suggests that hard-to-staff schools can benefit from the increased interest in the teaching profession due to the present economic downturn. Whereas some novice teachers might have mixed feelings about teaching, it remains a rewarding occupation despite the many demands of the profession. Undoubtedly, efforts to promote high school teaching careers should emphasize the advantages of teaching; however, they should also highlight the more challenging aspects of the profession, especially as they relate to hard-to-staff high schools. Questionnaire Items 48, 54, 62, 64, and 65 in Appendix A measure economic conditions.

### **Chapter Summary**

In summary, there are a number of reasons for school officials to pay attention to novice teacher retention, particularly in hard-to-staff high schools. These schools tend to have higher concentrations of lower-performing and lower-income students, hire more inexperienced and beginning teachers, suffer higher teacher attrition, generally serve higher concentrations of minorities, are located in inner city or rural areas, and have lower graduation rates than other schools. Determining the reasons teachers leave will provide valuable data to aid school officials in developing solutions to resolve the dilemma of novice teacher retention.

The focus of this study is novice secondary school teachers assigned to hard-to-staff high schools in Virginia. This study is a modified replication of a 2005 study conducted by Giacometti (2005), who suggested the revision of the instrument and theory developed as a part of her study by refining items in the instrument and adding domains to strengthen the theory. After obtaining data for her study from the administration of a nationwide questionnaire, Giacometti suggested that individual states and localities could use her theory to determine the factors that discriminate between leavers and stayers. Based on the review of literature and in

keeping with her suggestion, this researcher examined factors that affect the retention of novice teachers in hard-to-staff high schools in Virginia. The domains designated for this study are defined in Table 2. Giacometti (2005) used eight of these domains: (1) compensation, (2) preservice preparation, (3) external factors, (4) school culture, (5) in-service training support, (6) motivation to teach, (7) emotional factors, and (8) demographics. In this study, items were added to the demographics domain, and two domains were added: principal leadership actions and economic conditions.

Table 2

*Definitions for Domains Used to Categorize Factors that Contribute to Novice Teacher Retention*

<b>Domain</b>	<b>Definition</b>
Domain 1: Compensation	The pay and expected benefits afforded to teachers to include but not limited to wages, fringe benefits, scholarships, tuition reimbursement, equity of pay, coupons from community organizations, relocation costs, signing bonuses, and other monetary benefits that are provided to novice teachers.
Domain 2: Preservice preparation	The training and preparation provided at the university or college level that prepares a novice teacher to teach and remain in a hard-to-staff school.
Domain 3: External forces	The outside factors that could help or hinder novice teachers as they perform their duties in hard-to-staff schools. Partnerships, minority affiliations, community organizations, parental involvement, social issues and conditions, diversity, spending by the district, job availability, parents, community, and politics are examples of external forces.
Domain 4: School culture	The underlying set of norms, values, beliefs, rituals, and traditions that make up the unwritten rules of how people think, feel, and act in a school that influences how people interact. It might help or hinder the core values necessary to enhance staff retention.
Domain 5: In-service training support	The level of support given to a novice teacher once hired to teach. This includes professional development and induction support.
Domain 6: Motivation to	The internal driving force that causes a novice teacher to enter and remain in a hard-to-staff school.

<b>Domain</b>	<b>Definition</b>
teach	
Domain 7: Emotional factors	Those things that contribute to the positive or negative feelings one has about the teaching profession.
Domain 8: Demographics	The characteristics of novice teachers and hard-to-staff high schools in Virginia. These include age, ethnicity, gender, years of experience, teaching assignment, marital status, current salary, final grade point average on the highest degree, route to teacher certification, geographical location of the school, accreditation status of the school, adequate yearly progress status of the school, certification (highly qualified) status, continuing contract status, level of satisfaction, time spent preparing to teach daily, and parental value of education.
Domain 9: Principal leadership actions	Leadership actions that influence novice teachers' decisions to remain in a particular school or the profession in general. Brock and Grady (2000) found that beginning teachers enter the profession with expectations of both interaction with and affirmation from their principals, and when not provided, the quality of work and the decision to remain in the teaching profession are at-risk.
Domain 10: Economic conditions	Conditions resulting from the economy's status (up or down) that influence novice teachers' decisions to stay or leave their assigned hard-to-staff school.

## **CHAPTER 2: METHODOLOGY**

The methods used in the study are described in this chapter. The design of the study, the setting, the participants, and the instrument are described or explained. The validity and reliability of the questionnaire, the data collection methods, and the analytical procedures are reported. The plan for the analysis of data is presented.

### **Design of the Study**

This study was designed to differentiate leavers from stayers among novice teachers in hard-to-staff high schools in Virginia. Novice teachers were defined in the planning of this research as those with three or fewer years of teaching experience. However, due to the timing of data collection (spring and early summer of 2011), 82 of the 130 responding teachers had advanced one additional year to the “more than 3 years” of experience category. This occurred because the identification of novice teachers was based on a list provided by the Virginia Department of Education for 2009–2010, the latest list available at the time of data collection. Consequently, the definition of novice teacher was changed from a teacher in his or her first 3 years of teaching to a teacher in his or her first 4 years of teaching. The effect of this change is empirically unknown; however, the change would seem to have little effect on the results of the study. Practically, it matters little whether a teacher who leaves a hard-to-staff school is in his or her first three or first 4 years of teaching. The services of both are lost to the hard-to-staff school.

Logistic regression was applied to predict group membership (leavers and stayers). Logistic regression is often used to find the most appropriate and most practical model to describe the relationship between an outcome (dependent or response variable) and a set of independent (predictor or explanatory) variables. In this case, the response variable was teacher retention in hard-to-staff high schools, which had three levels: stayers, leavers of the profession, and leavers of the school but not the profession. Because of a very small return from those

leaving the profession ( $N=8$ ), the response variable was set as those staying in or leaving the hard-to-staff schools, regardless of whether they were leaving the profession. This combined group of stayers ( $N=111$ ) and leavers ( $N=18$ ) numbered 129 teachers who were within their first 4 years of experience.

The predictor variables were conditions affecting retention and demographic variables associated with the teachers and their schools. Following a principal components analysis of the items within the domains of the conditions affecting retention and the assessment of the reliability of scales created from the principal components analysis, logistic regression was applied to assess the relationships between the predictor and response variables for the 129 respondents.

The question answered through logistic regression was:

What factors differentiate novice leavers (both those planning to leave the profession and those planning to leave the school but not the profession, combined) from novice stayers in hard-to-staff high schools in Virginia?

A summary of the research design is in Table 3.

Table 3

*A Summary of the Research Design*

<b>Research question</b>	<b>Variables</b>	<b>Data analyses</b>	<b>Reported data</b>
What factors differentiate novice leavers (both those leaving the profession and those leaving the school but not the profession, combined) from novice stayers in hard-to-staff high schools in Virginia?	Response (criterion or outcome) variable: group membership (stayer or leaver)	Descriptive analyses for all variables	Descriptive statistics for all variables (Frequencies and percentages or <i>M</i> , <i>SD</i> , minimum, and maximum; see the Plan of Analysis in Table 12)
	Predictor variables: scores on scales developed from the results of the principal components analysis of the items in each of the following domains: compensation, preservice preparation, external forces, school culture, in-service training support, motivation to teach, emotional factors, principal leadership actions, and economic conditions	Descriptive analyses for all variables	Descriptive statistics for all variables (Frequencies and percentages or <i>M</i> , <i>SD</i> , minimum, and maximum; see the Plan of Analysis in Table 12)
	Demographic variables: age, ethnicity, gender, years of experience, teaching assignment, marital status, current salary, final undergraduate grade point average, route to teacher	Descriptive analyses for all variables	Descriptive statistics for all variables (Frequencies and percentages or <i>M</i> , <i>SD</i> , minimum, and maximum; see the Plan of Analysis in Table 12)



## Setting and Participants

This section contains a description of the setting for the study and details on the intended population and those responding to the questionnaire.

**Setting.** This statewide study encompassed public high schools in the Commonwealth of Virginia identified by the Virginia Department of Education in 2009–2010 as hard-to-staff schools (see letter and list of schools in Appendix B). If a school met any four of the eight criteria listed below, it was identified as a hard-to-staff school by the Virginia Department of Education (2005).

1. Accredited with warning,
2. Average daily attendance is 2.00 percentage points below the statewide average,
3. Percent[age] of special education students exceeds 150 percent of the statewide average,
4. Percent[age] of limited English proficient students exceeds 150% of the statewide average,
5. Percent[age] of the teachers with provisional licenses exceeds 150% of the statewide average,
6. Percent[age] of the special education teachers with conditional licenses exceeds 150% of the statewide average,
7. Percent[age] of inexperienced teachers hired to total teachers exceeds 150% of the statewide average, or
8. School has one or more inexperienced teachers in a critical shortage area. (p. 3)

**Population and participants.** All (100%) of the novice teachers in the hard-to-staff high schools were invited to participate in the study. A novice teacher was defined in planning this study as one who was in the first, second, or third year of teaching as of school year 2009–2010.

The Virginia Department of Education provided the names of novice teachers in these schools on October 5, 2010, about 2 months into the 2010–2011 school year. As of October 5, 2010, there were 999 novice teachers identified in these hard-to-staff schools (see Appendix B).

One hundred thirty teachers responded to the questionnaire. Of these, 47 (36.2%) reported that they had 3 years or less experience in education. The remaining 82 with valid responses (63.1%) reported they had more than 3 years of experience in education. The 82 teachers with more than 3 years of teaching experience had been in the defined group of novice teachers in 2009–2010; however, they had advanced 1 year of experience in 2010–2011, when the data were collected. The effect of this change on the results of the study is empirically unknown; however, there appears to be no practical effect on the results of the study. All respondents were included in the subsequent analyses. Thus, the responding group became teachers in hard-to-staff schools with 4 or fewer years of experience. These teachers reported the following about themselves:

1. Over three quarters (77.8%) were 45 years of age or less.
2. A majority (over 56%) was White; however, a large proportion (38.5%) was African American.
3. Most were women (71.5%).
4. About one-fifth (20.8%) taught English; another 15.4% taught history or social studies; and there were fewer in math and science (24%). A large proportion (39.2%) taught other subjects.
5. About one-third was single (33.8%).
6. A large proportion (45.4%) earned less than \$40,000 per year.
7. Over four-fifths (83.8%) earned above a 3.00 grade point average in college.
8. Two-fifths earned teaching certificates through alternative routes.

9. Over three-fourths (76.2%) taught in fully accredited schools.
10. Less than ten per cent (9.2%) classified themselves as **not** highly qualified per the No Child Left Behind Act (2002) criteria.
11. A small proportion (5.4%) was not offered a continuing contract for the following year.
12. A large majority (76.1%) was satisfied with their schools.
13. Over half (56.2%) spent less than 3 hours in preparing lessons each day.
14. Nearly two-thirds (63.1%) said that parents **do not** place a high value on education.
15. Although a large proportion of respondents (86.2%) believed that offering more money to teachers would keep them in hard-to-staff schools, few school districts (6.9%) were reported as doing so.
16. Although over half (53.1%) of the participants reported that their districts offered leave programs, tuition reimbursement, or scholarships, about two-thirds (66.2%) reported that their benefits were **not** extremely generous, and a small proportion (8.5%) reported that their districts paid for attending an induction program.
17. Most of the teachers (111 or 85.4%) planned to return to the same school in the following year, while 18 (13.8%) were not planning to return to the same school, and eight (6.2%) planned to leave the profession entirely.

In summary, the participants tended to be young, married, White (with a large proportion of Black teachers), female high-school teachers who planned to return to the same school in which they were teaching. They taught English, history or social studies, and other subjects, with small numbers teaching math or science. They were academically capable (earned over a 3.0 GPA) in college. Most earned their teaching certificates through traditional routes, and nearly all met the highly qualified criteria of the No Child Left Behind Act (2002). Nearly all were offered

continuing contracts for the following year, and most expressed satisfaction with their schools. Most spent less than three hours per day in preparing lessons. Their school districts offered few incentives for them to stay in hard-to-staff schools although they believed that more money would keep teachers in such schools. Most planned to continue in their same schools, with a small number saying they planned to move to other schools or out of the profession.

### **The Beginning Teacher Retention Questionnaire**

The Beginning Teacher Retention Questionnaire is a two-part, self-administered, Web-based questionnaire. It is based on an instrument developed by Giacometti (2005). It has two parts: (a) a demographic section and (b) a set of measures for the remaining predictor and response variables.

**Demographic variables.** The demographic variables used by Giacometti (2005) were age, ethnicity, gender, years of experience, teaching assignment, marital status, current salary, final undergraduate grade point average, route to teacher certification, and location of school. Variables added in this study were accreditation status of the school, adequate yearly progress status of the school, highly qualified teacher status, continuing-contract status, level of satisfaction with the school, time spent preparing to teach daily, and parental value of education.

**Response (criterion or outcome) variable.** The response variable in Giacometti's (2005) study was retention status; that is, whether a teacher planned to leave or stay within the profession of teaching. At first, Giacometti (2005) assumed that leaving the field meant that a teacher was dissatisfied. After considering the wide range of reasons for leaving the profession, she concluded that some teachers might be merely taking a break while pursuing other goals. In keeping with Giacometti's thinking, additional questions were added in this study to account for some of the unexplained variance in Giacometti's findings. The questions added and their corresponding item numbers follow:

- Do you plan to return to the same school in 2011–2012? (Item 66)
- If you answered “No” to Item 66, do you plan to continue in the education profession in 2011–2012? (Item 67)
- I have met all licensure requirements to be considered highly qualified. (Item 13)
- Were you offered a continuing contract for 2011–2012? (Item 14)

Because of the small number of responses ( $N=8$ ) from those planning to leave the profession, the researcher and her advisor decided to use as the response variable all teachers planning to leave their present high schools, regardless of whether they planned to leave the profession (leavers), and those who were planning to stay in their present high schools (stayers) at the time the data were collected in the spring and early summer of 2011.

**Predictor variables.** The predictor variables are scales created from a principal components analysis of the items within the domains associated with teacher retention and identified in the theory of novice teacher retention. The theory was created from a review of relevant literature and is depicted in Figures 1 and 2.

Giacometti (2005) concluded that some of her scales were not internally consistent in measuring her predictor variables and others could be improved. Cronbach’s alpha coefficients ranged from .15 to .84 in Giacometti’s study. To improve the internal consistency of the scales, new items were created, some items were revised, and others were taken directly from the pool of items created by Giacometti. Table 4 contains the numbers of the items either on Giacometti’s questionnaire or in her pool of items and those that were added by this researcher by domain.

Table 4

*Domains and Items in the Beginning Teacher Retention Questionnaire*

Domain	Number of items	Corresponding original item number from Giacometti (2005)	Corresponding number on the Blunt Beginning Teacher Retention Questionnaire	New items and their corresponding number on the Blunt Beginning Teacher Retention Questionnaire
1. Compensation	5	13, P, P <sup>a</sup>	34, 38, 41	43, 45
2. Preservice preparation	5	16, 19, 28, P	49, 29, 21, 57	31
3. External forces	5	12, P, P	42, 46, 63	40, 44,
4. School culture	5	0	0	20, 25, 32, 50, 58
5. In-service training support	6	P, 8	18, 39	35, 37, 51, 59
6. Motivation to teach	6	35, 18	23, 24	28, 52, 56, 60
7. Emotional factors	5	23, 21, P, P	26, 30, 33, 53	61
8. Principal leadership actions	6	P, P, P, P	19, 22, 27, 55	36, 47
9. Economic conditions	5	P, 1	54, 62	48, 64, 65
10. Demographics	17	38, 39, 39 <sup>b</sup> , 40, 42, 44, 45, 47	1, 2, 3, 4, 6, 8, 9, 10	5, 7, 11, 12, 13, 14, 15, 16, 17

*Note.* For the content of the items on the Beginning Teacher Retention Questionnaire, see Appendix A. For the content of the items from Giacometti, see Giacometti (2005, Appendices A and D). <sup>a</sup>P means that the exact item or a similar item was in Giacometti's original pool of items. <sup>b</sup>Two items were numbered 39 by Giacometti: Race and Gender.

**Validation of the domains.** Seven domains of teacher satisfaction (the primary predictors of teacher retention) that were initially used by Giacometti (2005) were used in this study. These domains were derived from the literature on teacher satisfaction by Giacometti. As Giacometti reviewed the literature, she identified and wrote on notecards variables associated with teacher satisfaction. She clustered the variables by content and named each cluster. These

cluster names became the domains of teacher satisfaction for Giacometti and represent seven of the predictor variables in this study. For this study, the researcher identified two additional domains: principal leadership actions and economic conditions. Both were embedded within the domains identified by Giacometti; however, after a review of related literature, the researcher decided that these variables deserved a closer look and selected items related to these domains from Giacometti's pool of items and either revised items in Giacometti's pool of items or created additional items to measure these domains (see Table 4).

**Validation of items within domains.** The items were placed into domains based on similar content; however, some of the items on Giacometti's (2005) original questionnaire were replaced or reworded to strengthen the instrument. The crosswalk between Giacometti's items and those on the Blunt Beginning Teacher Retention Questionnaire is in Table 4. A content validation was conducted. Items used for developing the content validation instrument are in Appendix C.

A preliminary review of the items was conducted by three people who had earned doctoral degrees in education and who had experience as public school administrators. These individuals were asked to review the items under each domain and to assess whether they thought the items were appropriately placed. No useful suggestions were received, and no changes were made following the preliminary review. Fifteen educators (one high school teacher, nine central office administrators, and five high school principals) were then asked to review the items, select the appropriate domain for each, and assess the clarity of each. Each validation panelist had a doctoral degree in education, was familiar with the instrument validation process, and had experience working in hard-to-staff schools in Virginia. The criteria for item validation were (a) 80% of the panelists correctly placing the item into the correct (expected) domain, and (b) a clarity score of at least 2.5. Written feedback was requested

whenever an item was considered less than clear. Panelists were asked to place their feedback directly on the page next to the item. After examining the validated items, the researcher selected items for the questionnaire by randomly drawing items from the pool of items meeting the criteria for each domain. A summary of the number of items validated by domain is in Table 5 (see Table C2, Appendix C, for the data). A postvalidation chart is in Table C3, Appendix C.

Table 5

*Number of Validated Items by Domain in the Beginning Teacher Retention Questionnaire*

<b>Domain</b>	<b>Number of items used in validation process</b>	<b>Number of items validated</b>	<b>Percentage validated</b>	<b>Number of validated items used on the scale</b>
1. Compensation	15	14	93.3	5
2. Preservice preparation	12	11	91.7	5
3. External forces	14	11	78.6	5
4. School culture	20	16	80.0	5
5. In-service training support	17	16	94.1	6
6. Motivation to teach	10	8	80.0	6
7. Emotional factors	25	22	88.0	5
8. Principal leadership actions	15	14	93.3	6
9. Economic conditions	7	5	71.4	5
10. Demographics	3	2	66.7	2 <sup>a</sup>
Total	138	119	86.2	50 <sup>b</sup>

<sup>a</sup>Additional items were included following the validation process. See Table C1, Appendix C. <sup>b</sup>The final Beginning Teacher Retention Questionnaire had 67 items, including additional demographic items and items used to measure the criterion variable—leavers v. stayers.

**Scoring and coding.** The conceptual and operational definitions of the variables are in Table 6. Table 7 contains the scoring template and the codes assigned to the variables.

Table 6

*Conceptual and Operational Definitions for the Demographic, Predictor, and Response Variables*

<b>Variable</b>	<b>Conceptual definition</b>	<b>Operational definition</b>
<b>Response variables</b>		
Stayer or leaver (same school)	A teacher who chooses to remain in (stayer) or leave (leaver—same school) his or her assigned hard-to-staff high school.	Respondent checked 1=“No, I do not plan to return to the same school in 2011–2012” or 2=“Yes, I plan to return to the same school in 2011–2012” on Item 66 of the Beginning Teacher Retention Questionnaire.
Stayer or leaver (profession)	A teacher who chooses to remain in (stayer) or leave (leaver—the profession) his or her hard-to-staff high school, and if he or she leaves the hard-to-staff high school he or she plans to leave the profession.	Following a <i>No</i> response to Item 66 (do not plan to return to the same school), respondent checked 1=“No, I do not plan to continue in the education profession in 2011–2012” or 2=“Yes, I plan to continue in the education profession in 2011–2012” on Item 67 on the Beginning Teacher Retention Questionnaire. (This item confused some respondents. Eight responded that they did not plan to continue in education, and 27 responded that they planned to continue in education, which is a total of 35 respondents. Only 18 respondents reported that they did not plan to return to the same school in 2011–2012 in Item 66. Because of this confusion and the small number leaving the profession, this variable was dropped from further analysis.)

<b>Variable</b>	<b>Conceptual definition</b>	<b>Operational definition</b>
Age	The numerical age category of the respondent.	Respondent checked his or her age category at last birthday for Item 1 on the Beginning Teacher Retention Questionnaire: 1="35 or younger," 2="36–45," 3="46–55," 4="Older than 55."
Ethnicity	The ethnic background of the respondent.	Respondent checked his or her ethnic category for Item 2 on the Beginning Teacher Retention Questionnaire: 1="American Indian or Alaskan Native," 2="Asian or Pacific Islander," 3="Hispanic," 4="Black, not of Hispanic origin," or 5="White, not of Hispanic origin."
Gender	The sex of the respondent.	Respondent checked his or her gender category for Item 3 on the Beginning Teacher Retention Questionnaire: 1="Male," 2="Female."
Years of experience in education (novice teacher)	The number of years the respondent had been in the teaching profession. (A teacher within the first 4 years of teaching experience.)	Respondent checked his or her experience category for Item 4 on the Beginning Teacher Retention Questionnaire: 1="One year," 2="Two years," 3="Three years," 4="More than 3 years." (This variable was included to check on whether respondents were within their first 3 years of teaching—the original definition of a "novice" teacher. Because the data were collected in 2010–2011, 1 year following the year for which email lists were available (2009–2010) for teachers within their first 3 years of experience in hard-to-staff schools, a large number of teachers had moved into the "more than 3 years" category (82 or 63% of the respondents). As a result, the operational definition of a "novice"

<b>Variable</b>	<b>Conceptual definition</b>	<b>Operational definition</b>
		teacher was changed to a teacher within the first 4 years of experience.)
Teaching assignment	The respondent's primary teaching assignment.	Respondent checked his or her primary teaching assignment for Item 5 on the Beginning Teacher Retention Questionnaire: 1="English," 2="Science," 3="Mathematics," 4="History/social studies," 5="Other."
Marital status	The marital status of the respondent.	Respondent checked his or her marital category for Item 6 on the Beginning Teacher Retention Questionnaire: 1="Single," 2= "Married."
Salary	The monetary compensation received by the respondent for performing job duties.	Respondent checked his or her salary category for Item 7 on the Beginning Teacher Retention Questionnaire: 1="Less than \$40,000," 2="\$40,000 – \$50,000," 3="Greater than \$50,000."
Final grade point average (GPA)	The final GPA for the respondent's highest degree.	Respondent checked his or her GPA category for Item 8 on the Beginning Teacher Retention Questionnaire: 1="Below 2.0," 2="2.00 to 2.50," 3="2.51 to 3.00," 4="3.01 to 3.50," 5="Over 3.50."
Certification route	The route the respondent took to become a certified teacher.	Respondent checked his or her certification-route category for Item 9 on the Beginning Teacher Retention Questionnaire: 1="Alternative certification program," 2="Traditional certification program."
School setting	The geographic setting (mostly) of the school in which the respondent taught.	Respondent checked the geographic setting of his or her school for Item 10 on the Beginning Teacher Retention Questionnaire: 1="Rural," 2="Suburban," 3="Urban."

<b>Variable</b>	<b>Conceptual definition</b>	<b>Operational definition</b>
School accreditation status	The accreditation status of the respondent's school based on Virginia standards.	Respondent checked the Virginia accreditation status for his or her school for Item 11 on the Beginning Teacher Retention Questionnaire: 1="Conditionally accredited," 2="Conditionally accredited (new school)," 3="Accreditation denied," 4="Accredited with warning," 5="Fully accredited," 6="Don't know."
Adequate yearly progress (AYP)	The status of the respondent's school according to the No Child Left Behind Act.	Respondent checked the AYP status of his or her school for Item 12 on the Beginning Teacher Retention Questionnaire: 1="No, did not make AYP," 2="Yes, made AYP."
Licensure	The Virginia licensure and qualifications (highly qualified or not highly qualified) of the respondent according to the No Child Left Behind Act.	Respondent checked his or her highly qualified status for Item 13 on the Beginning Teacher Retention Questionnaire: 1="No, have not met all requirements," 2="Yes, have met all requirements."
Tenure status (offer of continuing contract)	The offer of a continuing contract to the respondent for 2011–2012.	Respondent checked his or her continuing contract status for Item 14 on the Beginning Teacher Retention Questionnaire: 1="No, not offered a continuing contract for 2011–2012," 2= "Yes, offered a continuing contract for 2011–2012."
Satisfaction with the school	The respondent's level of satisfaction with his or her school.	Respondent checked his or her level of satisfaction for Item 15 on the Beginning Teacher Retention Questionnaire: 1="Very unsatisfied," 2="Unsatisfied," 3="Satisfied," 4="Very satisfied."
Time spent on class preparation	The amount of time the respondent spent preparing to teach daily.	Respondent checked the category for the amount of time spent on preparation for teaching for Item 16 on the Beginning Teacher Retention Questionnaire: 1="Less than three hours," 2="Three to seven hours,"

<b>Variable</b>	<b>Conceptual definition</b>	<b>Operational definition</b>
		3="Greater than seven hours."
Parent value on education	The respondent's perception of the value that parents place on education	Respondent checked the category reflecting his or her perception of the value parents in his or her school place on education for Item 17 on the Beginning Teacher Retention Questionnaire: 1= "No, parents do not place a high value on education," 2="Yes, parents place a high value on education."
Compensation (Domain 1)	The respondent's perception of the level of wages and benefits paid by the school division.	The mean of items 34, 38, 41, 43, and 45.
Preservice preparation (Domain 2)	The respondent's perception of the quality of the preparation at the college or university level he or she received to teach.	The mean of items 21, 29, 31, 49, and 57.
External forces (Domain 3)	The respondent's perception of the level of support he or she received from state, federal, and local agencies and from families.	The mean of items 40r <sup>a</sup> , 42, 44, 46, and 63.
School culture (Domain 4)	The respondent's perception of the quality of the relationships within his or her school and the morale resulting there from.	The mean of items 20, 25, 32, 50, and 58.
In-service training support (Domain 5)	The respondent's perception of the quality of supervisory and mentor support, including induction and professional development programs, he or she received while serving as a teacher.	The mean of items 18, 35, 37, 39, 51, and 59.
Motivation to teach (Domain 6)	The respondent's level of the drive to enter teaching and to remain in a hard-to-staff school.	The mean of items 23, 24, 28, 52, 56, and 60.

<b>Variable</b>	<b>Conceptual definition</b>	<b>Operational definition</b>
Emotional factors (Domain 7)	The respondent's level of stress experienced from teaching in a hard-to-staff school.	The mean of items 26r, 30, 33, 53r, and 61r.
Principal leadership actions (Domain 8)	The respondent's perception of the support received from leadership actions and behaviors exhibited by the building principal.	The mean of items 19, 22, 27, 36, 47, and 55.
Economic conditions (Domain 9)	The respondent's perception of the economic conditions affecting his or her financial status as a teacher.	The mean of items 48r, 54r, 62, 64r, and 65r.

*Note.* All items are on the Beginning Teacher Retention Questionnaire (Giacometti, 2005) in Appendix A and in Table 7. <sup>a</sup>r=recoded as follows: 1=4, 2=3, 3=2, and 4=1.

Table 7

*Coding of Items and Scoring of Variables for Entry into the Statistical Package for the Social Sciences (SPSS) for Initial Analyses*

<b>Items</b>	<b>Variable name</b>	<b>Response</b>	<b>Code</b>	<b>Scoring</b>
34. My school division pays an extra stipend for hard-to-fill positions.	Compensation (Domain 1)	No	1	Mean of the items (Single interval treated as interval data)
38. My school division provides extra incentives for its teachers in the way of leave, sabbatical, tuition reimbursement, or scholarships to further one's education.		Yes	2	
41. The fringe benefits (insurance and retirement plans) provided in my school division are extremely generous.				
43. Offering more money is likely to overcome some reluctance of teachers to remain in hard-to-staff schools.				
45. I am able to receive compensation for participation in an induction program provided by my school division.				
21. Classroom discipline was effectively addressed in my teacher-preparation classes.	Preservice preparation (Domain 2)	SD	1	Mean of the items
29. My courses in my preparation program prepared me to teach the		D	2	
		A	3	

Items	Variable name	Response	Code	Scoring
content of the courses that I have been assigned to teach.		SA	4	
31. Classroom management was emphasized in my teacher-preparation program.				
49. My coursework in my preparation program effectively taught me how to assess student learning.				
57. My coursework in my preparation program prepared me to employ effective strategies and methods to meet the diverse needs of the students I teach.				
40. Teaching the Virginia Standards of Learning objectives limits the use of my creativity. (R)	External forces (Domain 3)	SD	1	Mean of the items
42. The community has many resources available to deal with social problems of young people.		D	2	
44. The state and federal mandates for accountability have helped me to be a better teacher.		A	3	
46. My students' parents are very supportive when I have asked for their help.		SA	4	
63. The community has many resources available to deal with multicultural issues in my school.				
20. The school climate in my building creates a high level of staff morale.	School culture (Domain 4)	SD	1	Mean of the items
25. Everyone knows what they are supposed to be doing in my school.		D	2	
32. Teachers demand respect in my school.		A	3	
50. My school is student friendly.		SA	4	
58. I am able to develop close friendships with coworkers in my school.				
18. The feedback from my mentor's (or principal's) visits to my classroom has been very useful.	In-service training support (Domain 5)	SD	1	Mean of the items
35. My school division offers effective training to new teachers.		D	2	
37. In-service activities in my school division are tailored to meet specific needs of faculty.		A	3	
		SA	4	

Items	Variable name	Response	Code	Scoring
39. My school division has a staff development program that has enabled me to enhance my skills as a teacher.				
51. The induction program for new teachers is effective in helping new teachers learn how to survive in their new positions.				
59. The mentoring I received by administrators or other teachers helped me to become an effective teacher.				
23. I went into teaching because it is such a challenging profession.	Motivation to teach (Domain 6)	SD	1	Mean of the items
24. There is much growth potential for me in the education field.		D	2	
28. Having children learn from me motivates me to teach them more.		A	3	
52. I was able to share my talents with my students during this past school year.		SA	4	
56. My teaching position in my school met my expectations.				
60. My experience in my school increased my motivation to teach.				
26. I have anxiety attacks when I think of going to work. (R)	Emotional Factors (Domain 7)	SD	1	Mean of the items
30. My job has very few stressful days.		D	2	
33. My “upbeat and positive” approach with the students causes my job to be less stressful.		A	3	
53. My students’ poor behavior caused me to be stressed during the past year. (R)		SA	4	
61. I get stressed almost every day on my job. (R)				
19. My administrators support my work as a teacher.	Principal leadership Actions (Domain 8)	SD	1	Mean of the items
22. My principal is very supportive of the staff when new teaching methods are being implemented.		D	2	
27. My administrators support my decisions.		A	3	
36. My principal treats everyone professionally.		SA	4	
47. I need to hear my supervisor say, “Good job. Keep up the good work.”				
55. The evaluation process for teachers is implemented fairly.				
48. There is not enough funding to supply teachers with the resources	Economic	SD	1	Mean of the items

Items	Variable name	Response	Code	Scoring
needed to make instruction meaningful for students. (R)	conditions	D	2	
54. Noninstructional positions use monetary resources that could be used to purchase much needed supplies for the classroom. (R)	(Domain 9)	A	3	
		SA	4	
62. My salary from teaching adequately meets my needs.				
64. Financial support for education looks bleak in the near future. (R)				
65. Teaching has little economic potential in the near future. (R)				
66. Do you plan to return to the same school in 2011–2012?	Intent to return to the same school	No	1	Nominal measure
		Yes	2	
67. If you answered “No” to Item 66, do you plan to continue in the education profession in 2011–2012?	Plans to continue in education	No	1	Nominal measure
		Yes	2	
1. My age is	Age	35 or younger	1	Nominal measure
		36–45	2	
		46–55	3	
		Older than 55	4	
2. My ethnicity is	Ethnicity	American		Nominal measure
		Indian or Alaskan Native	1	
		Asian or Pacific Islander	2	
		Hispanic	3	
		Black, not of Hispanic Origin	4	
		White, not of Hispanic Origin	5	
3. My gender is	Gender	Male	1	Nominal measure

Items	Variable name	Response	Code	Scoring
4. My experience in education is	Experience in education	Female	2	Nominal measure
		One year	1	
		Two years	2	
		Three years	3	
5. My teaching assignment is primarily	Teaching assignment (primarily)	More than 3 years	4	Nominal measure
		English	1	
		Science	2	
		Mathematics	3	
		History/Social Studies	4	
6. My marital status is	Marital status	Other	5	Nominal measure
		Married	1	
7. My salary is	Salary	Single	2	Nominal measure
		Less than \$40,000	1	
		\$40,000–\$50,000	2	
		Greater than \$50,000	3	
8. My final grade point average on my highest degree was	Final grade point average on highest degree	Below 2.00	1	Nominal measure
		2.00–2.50	2	
		2.51–3.00	3	
		3.01–3.50	4	
		Over 3.50	5	
9. My route to certifying to teach was	Route to certification to teach	Alternative route	1	Nominal measure
		Traditional route	2	

<b>Items</b>	<b>Variable name</b>	<b>Response</b>	<b>Code</b>	<b>Scoring</b>
10. The geographic setting of my school is mostly	Geographic setting (mostly)	Rural Suburban Urban	1 2 3	Nominal measure
11. My school's accreditation status is	School accreditation status	Conditionally accredited Conditionally accredited (new school) Accreditation denied Accredited with warning Fully accredited Don't know	1 2 3 4 5 6	Nominal measure
12. My school made "adequate yearly progress" for the 2009–2010 school term.	School Adequate Yearly Progress status	No (not met) Yes (met)	1 2	Nominal measure
13. I have met all licensure requirements to be considered highly qualified.	Met full certification requirements to be considered highly qualified	No Yes	1 2	Nominal measure
14. Were you offered a continuing contract for 2011–2012?	Offered continuing contract	No Yes	1 2	Nominal measure

<b>Items</b>	<b>Variable name</b>	<b>Response</b>	<b>Code</b>	<b>Scoring</b>
15. My level of satisfaction with my school is	Level of satisfaction	Very unsatisfied Unsatisfied Satisfied Very satisfied	1 2 3 4	Continuous, at least ordinal; assume interval
16. How much time do you spend preparing to teach daily?	Amount of time spent preparing to teach daily	Less than three hours Three to seven hours Greater than seven hours	1 2 3	Nominal measure
17. Parents in my school place a high value on education.	Parents place a high value on education	No Yes	1 2	Nominal measure

*Note.* SD=Strongly disagree, D=Disagree, A=Agree, and SA=Strongly agree. R=recoded as follows: 1=4, 2=3, 3=2, and 4=1.

## **Administration of the Questionnaire**

The administration of the Beginning Teacher Retention Questionnaire had four steps: (1) the transfer of the questionnaire to survey.vt.edu for distribution, (2) an initial contact with each member of the population through a mailed letter, (3) an email thanking those who responded to the initial letter and providing information on accessing the questionnaire, and (4) a follow-up email encouraging the nonresponding members of the population to complete the questionnaire. Data were collected between June 29, 2011, and August 1, 2011. An incentive of a \$100 gas card was offered through a drawing from the pool of teachers completing the questionnaire. The drawing was held, and the gas card was awarded about one week following the close of data collection on August 1, 2011.

**Transfer of the questionnaire to survey.vt.edu.** The Beginning Teacher Retention Questionnaire was transferred to and distributed and returned through Virginia Tech's survey.vt.edu, a service provided by the University for creating surveys, publicizing surveys, and collecting data (see Appendix A for a copy of the questionnaire). Internet data collection decreased the expected response time for returning questionnaires, and no postage fees were necessary. Participants completed the questionnaires at their own pace at the time of login.

**Initial contact letter.** All 999 novice teachers in the hard-to-staff high schools in Virginia as of October 5, 2010, were sent a letter from the researcher via the United States Postal Service on June 29, 2011. The letter contained an overview of the study and a request to support the researcher's work (see Appendix D). The letters were mailed to the teachers' school addresses, which were taken from the Virginia Department of Education website: [http://www.doe.virginia.gov/directories/schools/school\\_info\\_by\\_regions.shtml](http://www.doe.virginia.gov/directories/schools/school_info_by_regions.shtml).

**Email with questionnaire access information.** Once interested members of the population returned their email addresses to the researcher, an e-mail with directions for linking to the questionnaire was sent to them (see Appendix D).

**E-mail to follow up nonrespondents.** Those who had agreed to participate and did not respond to the questionnaire received an additional e-mail (see Appendix D). They were reminded of the closing date and the gas-card incentive to participate.

### **Data Management Procedures**

The data from survey.vt.edu were downloaded as a text file and imported into SPSS. String data were recoded into numerical data for analysis. Frequencies, percentages, means, standard deviations, and minimums and maximums were run to check the data for unusual values. Needed corrections were made and negatively stated items were recoded before analyses were run. A principal components analysis was conducted to explore the underlying structure of the items and to reduce, as possible, the number of variables in the analyses. Data for the principal components analysis are in Appendix E.

#### **Principal components analysis of the Beginning Teacher Retention Questionnaire.**

The principal components analysis was conducted with 130 participants and pairwise deletion, which permitted the use of more of the participants than listwise deletion; varimax rotation; and Kaiser Normalization (see Appendix E). The items included in the principal components analysis are in Table 8, which contains only those loadings (correlations between the items and the components) of .40 or more, a generally acceptable level for retaining items for scale construction. Items with lowercase “r” were recoded so that responses are readable in the same direction (i.e., 1=a low level and 4=a high level). The full content of the items is in Appendix A, which is the Beginning Teacher Retention Questionnaire.

The first check to determine whether the principal components analysis would be worthwhile was an analysis of the communalities (the proportion of variance in each item accounted for by the 14 components). All items met the minimum communality of .50, the generally acceptable criterion (Bose, 2009), thus all were retained for further analysis. Another check was to assess the adequacy of the sample. Some rules of thumb apply here as well. One of these is that there should be a minimum of 10 respondents for each variable (minimum in this case would be  $48 \times 10$  or 480; Nunnally, 1978). Another source (Comfrey & Lee, 1992) rates a minimum of 300 respondents as “good” (p. 217). Osborne and Costello (2004) concluded, “The most valid conclusion regarding sample size is that more is always better” (Conclusions, par. 3). In this case, neither criterion was met. Another criterion often used to check the adequacy of the data for principal components analysis is the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy. The measure has a range of 0 to 1.00 and is an assessment of the correlation among the items. High scores are .50 or above and indicate that the items are sufficiently correlated for a principal components analysis. In this case, the Kaiser-Meyer-Olkin score was .781 (see Appendix E), indicating that a principal components analysis was appropriate. A final check on the adequacy of the data for a principal components analysis was the application of Bartlett’s test of sphericity. This is a test of whether the correlation coefficients among items are greater than zero. If the null hypothesis ( $H_0=0$ ) is rejected, then the items are related, and it is appropriate to proceed with a principal components analysis. In this case, the null hypothesis was rejected ( $X^2_{df=1128}=2771.41, p<.00$ ) indicating that the correlation coefficients among the variables were greater than zero (see Appendix E). Given this conflicting evidence between the number of respondents and the adequacy of the data, it was decided to complete the principal components analysis; however, the components and resulting scales must be considered a tentative solution, and further refinements must await research based on larger samples.

Forty-eight components were identified through the principal components analysis. Fourteen of these had eigenvalues (a measure of the strength of the component; the sum of squared loadings of the items on that component) equal to or greater than 1.00 and were interpretable. The components and items correlated with them are in Table 8 and Appendix E.

Four items loaded on two components—Items 28, 51, 56, and 62 (see Table 9). The content of these items was considered when scales were created, and each of the items was placed in the scale with which it was most closely related conceptually. Thus, Item 28 (Having children learn from me motivates me to teach them more.) was placed in Component 8, Social–emotional–financial support. Item 51 (The induction program for new teachers is effective in helping new teachers learn how to survive in their new positions.) was placed in Component 6, Induction program. Item 56 (My teaching position in my school met my expectations.) was placed in Component 1, School cultural support. Item 62 (My salary from teaching adequately meets my needs.) was placed in Component 8, Social–emotional–financial support.

**Reliability of the scales formed from the principal components analysis.** The 14 components were formed into scales, and those with more than one item were assessed for reliability using Cronbach’s alpha (see Table 10). Four of the scales (School culture support, Preservice preparation, Stress of the job, and Community resources) were sufficiently reliable ( $\text{Alpha} \geq .70$ ) to be used in further analyses. The remaining scales (Economic conditions, Fringe benefits, Induction program, Parental–financial support, Growth potential, and Retention incentives) were not sufficiently reliable (even after deleting items that would increase the alpha); however, to retain a measure of the concept behind each of the scales, one item was selected as a proxy for the scale and used in subsequent analyses. Table 11 contains the scales and items resulting from the principal components analysis that were retained for subsequent analyses.

Table 8

*Rotated Components Matrix for the Items in the Beginning Teacher Retention Questionnaire*

Item	Component													
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
i18	.663													
i19	.825													
i20	.610													
i21		.581												
i22	.783													
i23														
i24										.747				
i25	.591													
i27	.778													
i28						-.464		.477						
i29		.662												
i30			.500											
i31		.643												
i32														
i33			.626											
i34					.701									
i35	.532													
i36	.824													
i37	.546													
i38											-.592			
i39	.520													
i41					.625									
i42							.813							

Item	Component													
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
i43											.764			
i44														
i45						.760								
i46								.522						
i47													.845	
i49		.743												
i50	.651													
i51	.546					.449								
i52			.763											
i55	.561													
i56	.671		.408											
i57		.781												
i58														.804
i59	.560													
i60	.557													
i62				.466				.462						
i63							.716							
i26r										.421				
i40r				.518										
i48r								.758						
i53r									.809					
i54r												.834		
i61r			.438											
i64r				.751										
i65r				.685										

Note. Pairwise deletion with  $N=130$ . Extraction method: principal components analysis. Rotation method: Varimax with Kaiser normalization. Rotation converged in 19 iterations. Loadings less than .40 were suppressed. For the full matrix, see Table E7 in Appendix E. For content of the items, see Appendix A.

Table 9

*Items Within Components of the Beginning Teacher Retention Questionnaire*

<b>Component</b>	<b>Item</b>	<b>Loading</b>
1. School cultural support (23.1% of the variance)	18. The feedback from my mentor's (or principal's) visits to my classroom has been very useful.	.663
	19. My administrators support my work as a teacher.	.825
	20. The school climate in my building creates a high level of staff morale.	.610
	22. My principal is very supportive of the staff when new teaching methods are being implemented.	.783
	25. Everyone knows what they are supposed to be doing in my school.	.591
	27. My administrators support my decisions.	.778
	35. My school division offers effective training to new teachers.	.532
	36. My principal treats everyone professionally.	.824
	37. In-service activities in my school division are tailored to meet specific needs of faculty.	.546
39. My school division has a staff development program that has enabled me to enhance my skills as a teacher.	.520	

<b>Component</b>	<b>Item</b>	<b>Loading</b>
	50. My school is student friendly.	.651
	55. The evaluation process for teachers is implemented fairly.	.561
	56. My teaching position in my school met my expectations.	.671
	59. The mentoring I received by administrators or other teachers helped me to become an effective teacher.	.560
	60. My experience in my school increased my motivation to teach.	.557
2. Preservice preparation (6.1% of the variance)	21. Classroom discipline was effectively addressed in my teacher-preparation classes.	.581
	29. My courses in my preparation program prepared me to teach the content of the courses that I have been assigned to teach.	.662
	31. Classroom management was emphasized in my teacher preparation program.	.643
	49. My coursework in my preparation program effectively taught me how to assess student learning.	.743
	57. My coursework in my preparation program prepared me to employ effective strategies and methods to meet the diverse needs of the students I teach.	.781
3. Stress of the job (5.9% of the variance)	30. My job has very few stressful days.	.500

<b>Component</b>	<b>Item</b>	<b>Loading</b>
	33. My “upbeat and positive” approach with the students causes my job to be less stressful.	.626
	52. I was able to share my talents with my students during this past school year.	.763
	61r. I get stressed almost every day on my job.	.438
4. Economic conditions (5.0% of the variance)	40r. Teaching the Virginia Standards of Learning objectives limits the use of my creativity.	.518
	64r. Financial support for education looks bleak in the near future.	.751
	65r. Teaching has little economic potential in the near future.	.685
5. Fringe benefits (4.0% of the variance)	34. My school division pays an extra stipend for hard-to-fill positions.	.701
	41. The fringe benefits (insurance and retirement plans) provided in my school division are extremely generous.	.625
6. Induction program (3.6% of the variance)	45. I am able to receive compensation for participation in an induction program provided by my school division.	.760
	51. The induction program for new teachers is effective in helping new teachers learn how to survive in their new positions.	.449
7. Community resources (3.2% of	42. The community has many resources available to deal with social problems of	.813

<b>Component</b>	<b>Item</b>	<b>Loading</b>
the variance)	young people.	
	63. The community has many resources available to deal with multicultural issues in my school.	.716
8. Social–emotional–financial support (3.0% of the variance)	28. Having children learn from me motivates me to teach them more.	.477
	46. My students’ parents are very supportive when I have asked for their help.	.522
	62. My salary from teaching adequately meets my needs.	.462
	48r. There is not enough funding to supply teachers with the resources needed to make instruction meaningful for students.	.758
9. Student behavior (2.7% of the variance)	53r. My students’ poor behavior caused me to be stressed during the past year.	.809
10. Growth potential (2.6% of the variance)	24. There is much growth potential for me in the education field.	.747
	26r. I have anxiety attacks when I think of going to work.	.421
11. Retention incentives (2.4% of the variance)	38. My school division provides extra incentives for its teachers in the way of leave, sabbatical, tuition reimbursement, or scholarships to further one’s education.	–.592
	43. Offering more money is likely to overcome some reluctance of teachers to remain in hard-to-staff schools.	.764

Component	Item	Loading
12. Noninstructional detractions (2.4% of the variance)	54r. Noninstructional positions use monetary resources that could be used to purchase much needed supplies for the classroom.	.834
13. Supervisory praise (2.3% of the variance)	47. I need to hear my supervisor say, "Good job. Keep up the good work."	.845
14. School friendships (2.2% of the variance)	58. I am able to develop close friendships with coworkers in my school.	.804

*Note.* An item number followed by *r*=recoded as follows: 1=4, 2=3, 3=2, and 4=1. See Appendix E for the full matrix of coefficients resulting from the principal components analysis.

Table 10

*Cronbach's Alpha Coefficients for the Scales Created Following the Principal Components Analysis*

Scale	Number of items included	Items included by number	Items omitted by number	<i>N</i>	Item <i>M</i>	Item variance	Cronbach's alpha
1. School cultural support	15	i18, i19, i20, i22, i25, i27, i35, i36, i37, i39, i50, i55, i56, i59, i60		121	2.67	.056	.923
2. Preservice preparation	5	i21, i29, i31, i49, i57		127	2.79	.011	.772
3. Stress of the job	3	i30, i33, i61r	i52	130	2.67	.263	.741
4. Economic conditions	2	i64r, i65r	i40r	127	1.93	.087	.562

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5. Fringe benefits	2	i34, i41		127	1.20	.034	.362
6. Induction program	2	i45, i51		126	1.79	.728	.479
7. Community resources	2	i42, i63		130	2.12	.002	.735
8. Social–emotional–financial support (changed to parental–financial support)	3	i46, i62, i48r	i28	128	2.23	.096	.556
9. Student behavior	1	i53r				Not applicable	
10. Growth potential	2	i24, i26r		130	3.10	.025	.441
11. Retention incentives	2	i38, i43		130	1.70	.055	–.456 <sup>a</sup>
12. Noninstructional detractors	1	i54r				Not applicable	
13. Supervisory praise	1	i47				Not applicable	
14. School friendships	1	i58				Not applicable	

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Table 11

*Definitions for Scales and Items Resulting from the Principal Components Analysis Used in Succeeding Analyses*

<b>Scale or item</b>	<b>Conceptual definition</b>	<b>Operational definition</b>
1. School culture support	The perceived level of support received by the respondent from the principal, teachers, and school in general.	The respondent's mean score on items i18, i19, i20, i22, i25, i27, i35, i36, i37, i39, i50, i55, i56, i59, and i69.
2. Preservice preparation	The perceived quality of preservice preparation received by the respondent.	The respondent's mean score on items i21, i29, i31, i49, and i57.
3. Stress of the job	The perceived level of stress the respondent experienced from the job.	The respondent's mean score on items i30, i33, and i61r.
4. Economic conditions (Item i64r)	The perceived future financial support for education expressed by the respondent.	The respondent's score on Item i64r.
5. Fringe benefits (Item i34)	The granting of extra pay by a school division as an incentive to take a position in a hard-to-staff high school.	The respondent's score on Item i34. The score has two values (1=No, 2=Yes) and is treated as an interval measure.
6. Induction program (Item i51)	The perceived effectiveness of the school division's induction program in helping the respondent survive in his or her new position.	The respondent's score on Item i51.
7. Community resources	The perceived availability of resources in the community to deal with social problems of students and multicultural issues in the school.	The respondent's mean score on Items i42 and i63.

<b>Scale or item</b>	<b>Conceptual definition</b>	<b>Operational definition</b>
8. Parental support (financial support dropped) (Item i46)	The perceived parental support received by the respondent.	The respondent's score on Item i46.
9. Student behavior (Item i53r)	The perceived stress experienced by the respondent due to student misbehavior.	The respondent's score on Item i53r.
10. Growth potential (Item i24)	The perceived potential for growth for the respondent in the field of education.	The respondent's score on Item i24.
11. Retention incentives (Item i43)	The respondent's belief that offering more money to teachers in hard-to-staff schools will lead to their retention in those schools.	The respondent's score on Item i43. The score has two values (1=No, 2=Yes) and is treated as an interval measure.
12. Noninstructional detractions (Item i54r)	The respondent's belief that noninstructional positions take money from needed supplies in the classroom.	The respondent's score on Item i54r.
13. Supervisory praise (Item i47)	The respondent's need to hear praise from his or her supervisor.	The respondent's score on Item i47.
14. School friendships (Item i58)	The perceived ability of the respondent to make close friends with coworkers in his or her school.	The respondent's score on Item i58.

*Note.* An item number followed by *r* was recoded as follows: 1=4, 2=3, 3=2, and 4=1. Content of items is in Appendix A and Table 9.

## **Analytical Procedures**

The analysis had two parts. Part 1 was the univariate and bivariate descriptive analyses of the data. Univariate statistics (frequencies, percentages, means, standard deviations, minimums, and maximums) were calculated for the demographic, predictor, and response variables. Bivariate statistics were calculated for relationships between and among demographic, predictor, and response variables. Part 2 was the analysis of differences between leavers and stayers. Because of the small number of responses ( $N=8$ ) from those leaving the profession, the researcher and her advisor decided to use as the response variable all teachers leaving their present hard-to-staff high schools, regardless of whether they were leaving the profession (leavers,  $N=18$ ) and those who were staying in their present hard-to-staff high schools (stayers,  $N=111$ ) at the time the data were collected in the spring and early summer of 2011. Table 12 is a detailed outline of the plan of analysis for the data.

Table 12

*Descriptive and Inferential Plan of Analysis for the Data*

<b>Type of analysis</b>	<b>Variables</b>	<b>Type of data</b>	<b>Statistics</b>
Descriptive univariate	i1, i2, i3, i4, i5, i6, i7, i8, i9, i10, i11, i12, i13, i14, i15, i16, i17, i34, i38, i41, i43, i45, i66, i67	Nominal	Frequency, percentage
Descriptive univariate	i15, i18–i33, i35–i37, i39–i40, i42, i44, i46–i65	Continuous, at least ordinal	Mean, standard deviation, minimum, maximum
Descriptive univariate	Recoded variables: i26r, i40r, i48r, i53r, i54r, i61r, i64r, i65r	Continuous, at least ordinal	Mean, standard deviation, minimum, maximum
Data reduction, scale development	i18–i25, i26r, i27–i39, i40r, i41–i47, i48r, i49–i52, i53r, i54r, i55–i60, i61r, i62–i63, i64r, i65r	Continuous, at least ordinal	Principal components analysis
Reliability assessment of scales (internal consistency of items) <sup>a</sup>	1. School cultural support, 2. Preservice preparation, 3. Stress of the job, 4. Economic conditions, 5. Fringe benefits, 6. Induction program, 7. Community resources, 8. Social–emotional–financial support (changed to parental–financial support), 9. Student behavior, 10. Growth potential, 11. Retention incentives, 12. Noninstructional detractors, 13. Supervisory praise, 14. School friendships	Continuous, at least ordinal	Cronbach’s alpha
Descriptive univariate	Scales created following the principal components analysis and reliability assessment <sup>b</sup>	Continuous, at least ordinal	Mean, standard deviation, minimum, maximum
Inferential bivariate (single criterion	Criterion or dependent variable	Nominal (two categories—	Frequency, percentage

Type of analysis	Variables	Type of data	Statistics
variable)	(i66. Returners to the same school—stayers v. nonreturners to the same school—leavers)	leavers and stayers)	
	Predictor or independent variables Categorical variables (as recoded) i1r. Age, 2 <sup>a</sup> i2r. Ethnicity, 2 i3. Gender, 2 i4r. Experience, 2 i5r. Teaching assignment, 3 i6. Marital status, 2 i7r. Salary, 2 i8r. Final GPA, 2 i9. Certification route, 2 i10r. Geographic setting of school, 2 i11r. School’s accreditation status, 3 i12. School’s AYP status, 2 i13. Highly qualified teacher status, 2 i14. Offered a continuing contract, 2 i15r. Satisfaction with my school, 2 i16r. Preparation time, 2 i17. Parents value education, 2 Scales created from principal components analysis <sup>b</sup>	Nominal (two categories) or Nominal (more than two categories)	Chi-square test for independence
		Continuous, at least ordinal	Independent <i>t</i> test
Inferential multivariate (multiple predictor variables, single criterion variable)	Criterion variable (i66. Returners to the same school—stayers v. nonreturners to the same school—leavers)	Nominal	Logistic regression analysis <i>Note.</i> Because of the very small number of subjects planning to leave education ( $n=8$ ) and not

Type of analysis	Variables	Type of data	Statistics
	Predictor variables	Nominal or continuous, at least ordinal, per the variable list under the univariate analyses. Two-category nominal variables were treated as continuous variables; multiple-category nominal variables were collapsed into two-category variables	returning to the same school ( $n=18$ ), the results of this analysis may not be reliable. They may be indicative of relationships between the predictor and criterion variables, but any conclusions must await studies with larger samples. Variables were selected following the bivariate analyses. Those variables with a significant bivariate relationship with the criterion variable were selected for inclusion in the logistic regression analysis.

<sup>a</sup>The number following the variable name represents the number of categories. <sup>b</sup>See Table 11 for the items within components. Components 9, 12, 13, and 14 contained only one item; therefore, no alpha coefficient was calculated. See Table 11 for items within final scales and proxy items selected to represent the scales that had inadequate coefficients of reliability or had only one item load on the component in the principal components analysis.

## CHAPTER 3: FINDINGS OF THE STUDY

The purpose of this study was to identify variables that would predict whether beginning teachers were planning to leave or stay in hard-to-staff high schools in Virginia. Data were collected from 130 teachers in high schools identified as hard-to-staff throughout the Commonwealth of Virginia. The teachers were within their first 4 years of teaching and were classified as *leavers* (those not planning to return to their hard-to-staff high schools in the following year,  $N=18$ ) and *stayers* (those planning to return to their hard-to-staff high schools in the following year,  $N=111$ ). The predictor variables were identified from the earlier work of Giacometti (2005) and a review of literature on teacher retention and job satisfaction. A theory of teacher retention was created from the literature and tested in this study. The data were analyzed using both descriptive and inferential statistics.

### Descriptive Data for Items and Scales

The questionnaire administered to the beginning teachers in hard-to-staff high schools in Virginia had 67 items (see Appendix A). The first 17 items were characteristics of the respondents, the schools, or the parents. Items 18–65 were domain-specific items created to measure the predictor variables. Items 66 and 67 were identifiers for stayers and leavers within the responding group of teachers. This section contains the descriptive data on the demographic, predictor, and criterion variables.

### Descriptive Data for the Characteristics of Respondents, Schools, and Parents

Data for the characteristics of respondents, schools, and parents are in Appendix F. A description of the 130 respondents is in the section on participants in Chapter 2. Of the 130 respondents, eight were first year teachers, 16 were second year teachers, 23 were third year teachers, and 83 had four or more years of teaching experience. Eighteen respondents did not plan to return to the same school, and 111 planned to return. One person did not respond to this

item. Of the 18 who did not plan to return to the same school, eight responded that they did not plan to continue in the education profession (see Appendix G).

### **Descriptive Statistics for Scales and Items Used as Proxies for the Predictor Variables**

Descriptive statistics for the original continuous items (i15, i18–i33, i35–i37, i39–i40, i42, i44, and i46–i65) and recoded items (i26r, i40r, i48r, i53r, i54r, i61r, i64r, and i65r) are in Appendix H. Data on the scales and proxy items created following the principal components analysis are in Table 13.

Table 13

*Descriptive Statistics for Scales and Proxy Items Created Following the Principal Components Analysis and Cronbach’s Reliability Calculations*

<b>Scale number</b>	<b>Scale name (with proxy items)</b>	<b><i>N</i></b>	<b>Minimum</b>	<b>Maximum</b>	<b><i>M</i></b>	<b><i>SD</i></b>
1	School culture support	130	1.27	4.00	2.68	.542
2	Preservice preparation	129	1.00	4.00	2.79	.611
3	Stress of the job	130	1.00	4.00	2.67	.646
4	Economic conditions (i64r)	128	1.00	4.00	1.72	.720
5	Fringe benefits (i34)	127	1.00	2.00	1.07	.258
6	Induction program (i51)	129	1.00	4.00	2.41	.735
7	Community resources	130	1.00	4.00	2.12	.676
8	Parental support (i46)	130	1.00	4.00	2.56	.704
9	Student behavior (i53r)	129	1.00	4.00	2.49	.849
10	Growth potential (i24)	130	1.00	4.00	2.99	.742
11	Retention incentives ((i43)	130	1.00	2.00	1.86	.347
12	Noninstruction detractions (i54r)	128	1.00	4.00	2.48	.813
13	Supervisory praise (i47)	130	1.00	4.00	2.85	.867
14	School friendships (i58)	130	2.00	4.00	3.12	.623

*Note.* Items with an “r” were recoded as follows: 1=4, 2=3, 3=2, and 4=1. Proxy items were selected to represent a scale when only one item loaded on the component in the principal components analysis or when Cronbach’s alpha was too low (coefficient less than .70) to create a scale from the items loading on a component (see Scales 4, 5, 6, 8, 9,10, 11, 12, 13, and 14 in the table).

## **Exploratory Bivariate Tests for Data Reduction**

Chi-square tests for independence and *t* tests were applied to the data to reduce the number of variables entered into the logistic regression. The primary reason for doing this was to bring the number of variables down as much as possible because of the small sample size (usable  $N=129$ ). Results follow.

### **Bivariate (Chi-square) Analyses for Relationships Between the Criterion Variable (Leavers v. Stayers) and Characteristics of Participants, Schools, and Parents**

Bivariate (chi-square) analyses were run to assess the relationships between the respondent, school, and parent variables (predictor variables with two or more categories) and the criterion variable (leavers v. stayers.). The results of this assessment were used to select variables for inclusion in the binary logistic regression. The finding of a statistically significant bivariate relationship between a predictor variable and a criterion variable in these analyses was an indication that the variable had promise as a predictor in the binary logistic regression analysis. These bivariate analyses reduced the number of predictor variables to be entered and were necessary because of the relatively small number of respondents with usable data ( $N=129$ , *Leavers*=18, *Stayers* 111).

**Recoding of variables.** A preliminary run of the chi-square analyses resulted in tests with insufficient expected frequencies (less than five) in some cells for age, ethnicity, experience, assignment, salary, final grade point average, geographic setting of the school, school accreditation status, level of satisfaction with the school, and time spent in preparing to teach each day. Thus, recoding of these variables became necessary. Table 14 contains the original and recoded items. All characteristics of the participants, schools, and parents identified in Items 1–17 on the Beginning Teacher Retention Questionnaire (see Appendix A) are included in the table to facilitate interpretation of the findings.

Table 14

*Characteristics of Participants, Schools, and Parents: Original Categories and Recoded Categories*

<b>Item</b>	<b>Variable name</b>	<b>Original categories</b>	<b>Original codes</b>	<b>New categories for analysis (Recoded)</b>	<b>New codes for analysis (Recoded)</b>	<b>Level of measurement</b>
1. My age is	Age	35 or younger	1	35 or younger	1	Nominal measure
		36–45	2	Older than 35	2	
		46–55	3			
		Older than 55	4			
2. My ethnicity is	Ethnicity	American Indian or Alaskan Native	1	Minority	1	Nominal measure
		Asian or Pacific Islander	2	White, not of Hispanic origin	2	
		Hispanic	3			
		Black, not of Hispanic origin	4			
		White, not of Hispanic origin	5			
3. My gender is	Gender	Male	1	Male	1	Nominal measure
		Female	2	Female	2	
4. My experience in education is	Experience in education	One year	1	One, 2, or 3 years	1	Nominal measure
		Two years	2			
		Three years	3	More than 3 years	2	
		More than 3 years	4			
5. My teaching assignment is primarily	Teaching assignment (primarily)	English	1	English, History, or		Nominal measure
		Science	2			

Item	Variable name	Original categories	Original codes	New categories for New codes for		Level of measurement
				analysis (Recoded)	analysis (Recoded)	
		Mathematics	3	Social	1	
		History/Social Studies	4	Studies	2	
		Other	5	Science or Mathematics	5	
				Other		
6. My marital status is	Marital status	Single	1	Single	1	Nominal measure
		Married	2	Married	2	
7. My salary is	Salary	Less than \$40,000	1	Less than		Nominal measure
		\$40,000–\$50,000	2	\$40,000	1	
		Greater than \$50,000	3	\$40,000 or more	2	
8. My final grade point average on my highest degree was	Final grade point average on highest degree	Below 2.00	1	3.00 or less	1	Nominal measure
		2.00–2.50	2	More than 3.00	2	
		2.51–3.00	3			
		3.01–3.50	4			
		Over 3.50	5			
9. My route to certifying to teach was	Route to certification to teach	Alternative route	1	Alternative route	1	Nominal measure
		Traditional route	2	Traditional route	2	
10. The geographic setting of my school is mostly	Geographic setting (mostly)	Rural	1	Rural	1	Nominal measure
		Suburban	2	Suburban or		
		Urban	3	urban	2	
11. My school's accreditation status is	School accreditation status	Conditionally accredited	1	Less than fully accredited	1	Nominal measure
		Conditionally		Fully accredited	2	

Item	Variable name	Original categories	Original codes	New categories for New codes for		Level of measurement
				analysis (Recoded)	analysis (Recoded)	
		accredited (new school)	2	Don't know	3	
		Accreditation denied	3			
		Accredited with warning	4			
		Fully accredited	5			
		Don't know	6			
12. My school made "adequate yearly progress" for the 2009–2010 school term.	School Adequate Yearly Progress status	No (not met)	1	No (not met)	1	Nominal measure
		Yes (met)	2	Yes (met)	2	
13. I have met all licensure requirements to be considered highly qualified.	Met full certification requirements to be considered highly qualified	No (not met)	1	No (not met)	1	Nominal measure
		Yes (met)	2	Yes (met)	2	
14. Were you offered a continuing contract for 2011–2012?	Offered continuing contract	No (not offered)	1	No (not offered)	1	Nominal measure
		Yes (offered)	2	Yes (offered)	2	
15. My level of satisfaction with my school is	Level of satisfaction	Very unsatisfied	1	Very unsatisfied		Continuous, at least ordinal; assume interval, but categorize for chi-square analysis
		Unsatisfied	2	or unsatisfied	1	
		Satisfied	3	Satisfied or very		
		Very satisfied	4	satisfied	2	
16. How much time do you spend preparing to teach daily?	Amount of time spent preparing to teach daily	Less than three hours	1	Less than three hours	1	Nominal measure
		Three to seven hours	2	Three or more hours	2	

<b>Item</b>	<b>Variable name</b>	<b>Original categories</b>	<b>Original codes</b>	<b>New categories for analysis (Recoded)</b>	<b>New codes for analysis (Recoded)</b>	<b>Level of measurement</b>
		Greater than seven hours	3			
17. Parents in my school place a high value on education.	Parents place a high value on education	No Yes	1 2	No Yes	1 2	Nominal measure

**Results of the chi square analyses.** The chi-square test for independence was run to test for relationships between the criterion variable (leavers v. stayers) and the 17 variables (as recoded) in Table 14. Alpha was set at .05 (two-tailed) for statistical significance, and post-hoc residual analyses (tests for differences between observed and expected frequencies within cells) were run and tested at the same level ( $\alpha=.05$ ). Any standardized residual greater than plus or minus 1.96 indicates a significant contribution of that cell to the overall chi-square value. A minus value indicates that fewer respondents than expected fell into that cell; a plus value indicates that more respondents than expected fell into that cell. Pearson chi-square values, Yates correction for continuity values, and Fisher's exact test probability values are reported for 2 by 2 tables. If the Pearson chi-square was not significant at the  $\alpha=.05$  level, Fisher's exact test was used instead of the Yates test to determine significance because Fisher's exact test is an exact probability, and the Yates test is considered too conservative by some researchers (see the discussion in Sheskin, 2011).

Six of the 17 variables were found to be significantly related to whether the teachers planned to leave or stay in their hard-to-staff schools: ethnicity ( $X^2_{df=1}=4.605$ ;  $p=.032$ ), gender ( $X^2_{df=1}=5.278$ ;  $p=.022$ ), teaching assignment (primarily;  $X^2_{df=2}=11.397$ ;  $p=.003$ ), certification status (highly qualified or not;  $X^2_{df=1}=4.623$ ;  $p=.032$ ), continuing contract status (offered a continuing contract or not;  $X^2_{df=1}=5.080$ ;  $p=.024$ ), and level of satisfaction with the school ( $X^2_{df=1}=41.875$ ;  $p=.000$ ; see Table 15). None of the standardized residuals for ethnicity or gender was significant at the .05 level. With respect to teaching assignment, significantly more math and science teachers (over twice as many) than expected were not planning to return to their hard-to-staff high schools. Significantly more (about twice as many) teachers who had not met the NCLB highly qualified status than expected were not planning to return to their hard-to-staff high schools, and significantly more (about three times as many) teachers who were not offered a

continuing contract than expected were not planning to return to their hard-to-staff high schools. Finally, significantly more (over three times as many) teachers who were very dissatisfied or dissatisfied with their schools than expected were planning to leave their hard-to-staff high schools. Conversely, significantly fewer teachers who were satisfied or very satisfied with their schools than expected reported that they were planning to leave their schools, and significantly fewer teachers who were very unsatisfied or unsatisfied with their schools than expected reported that they were planning to return to their schools (see Table 15).

Eleven of the 17 variables were found not to be related to whether teachers planned to leave or stay in their hard-to-staff high schools: age, experience in education, marital status, salary, final grade point average, certification route, geographic setting of the school, accreditation status of the school, adequate yearly progress status of the school, hours spent in planning for teaching, and parents' value of education. These variables were dropped from further analysis (see Table 15). Offer status (continuing contract offered or not) was dropped from further analysis as well because of the obvious relationship between being offered a continuing contract or not and the criterion variable (stayers v. leavers). Five variables were retained for the logistic regression analysis: ethnicity, gender, teaching assignment (primarily), certification status (highly qualified or not), and level of satisfaction with the school.

Table 15

*Results of Chi-square Analyses for Relationships Between the Criterion Variable (Leavers v. Stayers) and Characteristics of Participants, Schools, and Parents*

Variable	Categories	Criterion variable: Return to the same school						$X^2$	$p$
		No			Yes				
		Observed frequency	Expected frequency	Standardized residual	Observed frequency	Expected frequency	Standardized residual		
Age	1. 35 or younger	9	10.2	-.4	64	62.8	.1	.370	.543
	2. Over 35	9	7.8	.4	47	48.2	-.2	(.124) <sup>a</sup>	(.725) <sup>a</sup>
	Total	18	18		111	111			(.612) <sup>b</sup>
Ethnicity	1. Minority	12	7.8	1.5	44	48.2	-.6	4.605	.032
	5. White, not of Hispanic origin	6	10.2	-1.3	67	62.8	.5	(3.571)	(.059)
	Total	18	18		111	111			(.041)
Gender	1. Male	1	5.1	-1.8	35	30.9	.7	5.278	.022
	2. Female	17	12.9	1.1	75	79.1	-.5	(4.059)	(.044)
	Total	18	18		110	110			(.023)
Experience in education	1. One to 3 years	6	6.5	-.2	40	39.5	.1	.062	.804
	2. Four years	12	11.5	.1	70	70.5	-.1	(.000)	(1.000)
	Total	18	18		110	110			(1.000)

		Criterion variable: Return to the same school						$X^2$	$p$
		No			Yes				
Variable	Categories	Observed frequency	Expected frequency	Standardized residual	Observed frequency	Expected frequency	Standardized residual		
Teaching assignment (primarily)	1. English or history or social studies	4	6.6	-1.0	43	40.4	.4	11.397	.003 (NA)
	2. Science or mathematics	10	4.3	2.7	21	26.7	-1.1		
	5. Other	4	7.1	-1.2	47	43.9	.5		
	Total	18	18		111	111			
Marital status	1. Single	7	6.3	.3	37	37.7	-.1	.147 (.013)	.703 (.909) (.791)
	2. Married	11	11.7	.2	71	70.3	.1		
	Total	18	18		108	108			
Salary	1. Less than \$40,000	10	8.3	.6	49	50.7	-.2	.755 (.377)	.385 (.539) (.449)
	2. \$40,000 or more	8	9.7	-.5	61	59.3	.2		
	Total	18	18		110	110			
Final grade-point average (GPA) on highest degree	1. 3.0 or less	2	2.9	-.5	19	18.1	.2	.410 (.088)	.522 (.767) (.736)
	2. More than 3.0	16	15.1	.2	92	92.9	-.1		
	Total	18	18		111	111			
Route to certification to teach	1. Alternative route	10	6.8	1.2	41	44.2	-.5	2.946 (2.104)	.086 (.147) (.112)
	2. Traditional	7	10.2	-1.0	70	66.8	.4		

		Criterion variable: Return to the same school						$X^2$	$p$	
		No			Yes					
Variable	Categories	Observed frequency	Expected frequency	Standardized residual	Observed frequency	Expected frequency	Standardized residual			
route										
Total		17	17		111	111				
Geographic setting of the school (mostly)	1. Rural	8	9.5	-.5	60	58.5	.2	.574 (.253)	.449 (.615)	
	2. Suburban or urban	10	8.5	.5	51	52.5	-.2			(.460)
Total		18	18		111	111				
School accreditation status	1. Less than fully accredited	3	1.7	1.0	9	10.3	-.4	1.511	.470 (NA)	
	5. Fully accredited	12	13.7	-.5	86	84.3	.2			
	6. Don't know	3	2.7	.2	16	16.3	-.1			
Total		18	18.1		111	110.9				
School Adequate Yearly Progress status	1. No (not met)	8	6	.8	34	36	-.3	1.226 (.700)	.268 (.403)	
	2. Yes (met)	10	12	-.6	75	73	.2			(.288)
Total		18	18		109	109				
Met full certification requirements to be considered highly qualified	1. No (not met)	4	1.6	1.9	8	10.4	-.7	4.623 (2.901)	.032 (.089)	
	2. Yes (met)	13	15.4	-.6	103	100.6	.2			(.054)
	Total	17	17		111	111				
Offered continuing contract	1. No (not offered)	3	1	2.0	4	6	-.8	5.080 (2.873)	.024 (.090)	

		Criterion variable: Return to the same school						$X^2$	$p$
		No			Yes				
Variable	Categories	Observed frequency	Expected frequency	Standardized residual	Observed frequency	Expected frequency	Standardized residual		
	2. Yes (offered)	15	17	-.5	106	104	.2		(.057)
	Total	18	18		110	110			
Level of satisfaction	1. Very unsatisfied or unsatisfied	15	4.2	5.2	15	25.8	-2.1	41.875 (38.081)	.000 (.000) (.000)
	2. Satisfied or very satisfied	3	13.8	-2.9	95	84.2	1.2		
	Total	18	18		110	110			
Amount of time spent preparing to teach daily	1. Less than 3 hours	8	9.6	-.5	64	62.4	.2	.673 (.311)	.412 (.577)
	2. Three or more hours	9	7.4	.6	47	48.6	-.2		
	Total	17	17		111	111			
Parents place a high value on education	1. No	15	11.6	1.0	66	69.4	-.4	3.319 (2.421)	.069 (.120)
	2. Yes	3	6.4	-1.4	42	38.6	.6		
	Total	18	18		108	108			

*Note.*  $N$  for not planning to return to the same school=18;  $N$  for planning to return to the same school=111. Total  $N$ =129. All tests are two tailed. *NA*=Not applicable. <sup>a</sup>Yates' continuity corrections calculated for two-by-two tables are in the first set of parentheses. <sup>b</sup>Probabilities for Fisher's exact test are in the second set of parentheses.

## **Bivariate (Independent *t* test) Analyses for Relationships Between the Criterion Variable (Leavers v. Stayers) and Predictor Variables**

Independent *t* tests were run to check for differences between leavers and stayers on the predictor variables. Seven of the 14 variables had significant differences: school culture support ( $t_{df=127}=-6.557$ ;  $p=.000$ ), preservice preparation ( $t_{df=126}=-2.218$ ;  $p=.028$ ), stress of the job ( $t_{df=127}=-2.295$ ;  $p=.023$ ), fringe benefits (i34) ( $t_{df=107}=-3.119$ ;  $p=.002$ ), induction program (i51) ( $t_{df=126}=-4.089$ ;  $p=.000$ ), parental support (i46) ( $t_{df=127}=-3.386$ ;  $p=.001$ ), and school friendships (i58) ( $t_{df=127}=-2.589$ ;  $p=.011$ ). All seven differentiated leavers from stayers (see Table 16). Stayers scored significantly higher than leavers on all of these variables (see Appendix I), and all seven variables were retained for the binary logistic regression. No statistical differences were found between leavers and stayers for the remaining seven variables: economic conditions (i64r), community resources, student behavior (i53r), growth potential (i24), retention incentives i43), noninstructional distractions (i54r), and supervisory praise (i47). These variables were dropped from further analysis.

Table 16

*Data for t Tests Between Leavers and Stayers for Scales and Items Used as Proxies for Predictor Variables*

<b>Predictor variable</b>	<b>Results of Levene's test for equality of variances<sup>a</sup></b>	<b><i>t</i></b>	<b><i>df</i></b>	<b><i>p</i> (2-tailed)</b>	<b>Mean difference</b>	<b>Std. error difference</b>
1. School culture support	Equal variances assumed	-6.557	127	.000	-.787	.120
2. Preservice preparation	Equal variances assumed	-2.218	126	.028	-.349	.157
3. Stress of the job	Equal variances assumed	-2.295	127	.023	-.372	.162
4. Economic conditions (i64r)	Equal variances assumed	.387	125	.700	.071	.185
5. Fringe benefits (i34)	Equal variances not assumed	-3.119	107.000	.002	-.083	.027
6. Induction program (i51)	Equal variances assumed	-4.089	126	.000	-.740	.181
7. Community resources	Equal variances assumed	-1.377	127	.171	-.237	.172
8. Parental support (i46)	Equal variances assumed	-3.386	127	.001	-.584	.173
9. Student behavior (i53r)	Equal variances not assumed	.215	18.531	.832	.061	.283
10. Growth potential (i24)	Equal variances assumed	-.293	127	.770	-.056	.190

11. Retention incentives (i43)	Equal variances not assumed	-1.423	19.797	.170	-.161	.113
12. Noninstructional distractions (i54r)	Equal variances not assumed	-1.389	20.128	.180	-.356	.257
13. Supervisory praise (i47)	Equal variances assumed	.814	127	.417	.180	.221
14. School friendships (i58)	Equal variances assumed	-2.589	127	.011	-.402	.155

<sup>a</sup>See Table II in Appendix I for statistics for Levene's test for homogeneity of variances. Coding: 1=Leavers, 2=Stayers; negative values indicate leavers scored lower than stayers.

## **Testing Multivariate Relationships With Binary Logistic Regression**

Binary logistic regression was applied to test the multivariate relationships between the criterion variable (leavers v. stayers) and the retained characteristics of participants, parents, and schools and the retained scales and items used as proxies for scales. The retained characteristics of participants, parents, and schools were all characteristics of participants: ethnicity (i2r), gender (i3), teaching assignment (primarily) (i5rr), certification status (highly qualified or not) (i13), and level of satisfaction with the school (i15r). The retained scales and items used as proxies for scales were school culture support (Scale1CultSupport), preservice preparation (Scale2PreServicePrep), stress of the job (Scale3Stress), fringe benefits (i34), induction program (i51), parental support (i46), and school friendships (i58).

An initial run of the binary logistic regression resulted in an exceedingly high standard error for the variable of fringe benefits. Such a result indicates a problem in the data, and in this case none of the leavers indicated that their school division paid a stipend for hard-to-fill positions. All nine who said their school division paid such stipends were stayers. Thus, a second logistic regression was run without the fringe benefits variable.

In the second run of the binary logistic regression, 126 of the 130 cases were entered into the procedure. Four cases were missing with listwise deletion. With 11 predictor variables, the number of cases was adequate for the analysis [minimum of 10 per predictor variable (Hosmer & Lemeshow, 2000)]. The criterion variable was coded 0=leavers and 1=stayers in their current schools, thus the probability of staying in the current school was the target of prediction. The simultaneous or Enter option was selected. In this option, all predictor variables are entered simultaneously, and the results show the contribution of each predictor variable to the placement of each respondent into one of the two groups.

The Block 0: Beginning Block analysis ended after four iterations and resulted in a  $-2$  log likelihood of 99.700 at the fourth iteration. This is the beginning  $-2$  log likelihood value and is an estimate of the error in predicting group membership without any predictor variables entered. A  $-2$  log likelihood value of zero would indicate no error in predicting group membership; this would be a perfect prediction model.

The test of the overall model (all predictor variables entered) is chi-square. This is a test of whether the difference in the  $-2$  log likelihood value of Block 0 (no variables entered) differs from the  $-2$  log likelihood value of Block 1 (all predictor variables entered). In this case, the  $-2$  log likelihood value decreased from 99.700 to 43.417 ( $\chi^2_{(11, N=126)}=56.283, p=.00$ ), a statistically significant drop. Thus, there is a relationship between the predictor variables and group membership. Further, the overall model increased the accuracy of prediction of group membership from 86.5% with only the constant in the model to 89.5% with all of the predictors in the model. Without the predictors, none of the leavers was classified correctly. With the predictors, six of the 17 leavers were classified correctly (see Appendix J). The question is, then, which predictor variables are related to group membership. These relationships are tested with the Wald chi-square statistic (see Table 17). Using the Wald statistic, which is a test of the relationship between a predictor variable and a criterion variable while accounting for the relationships between the other variables and the criterion variable, three variables were significantly related ( $\alpha =.05$ ) to group membership: ethnicity of the respondent (minority v. other), Scale1CultSupport (cultural support in the school), and Scale8ParentalSup (parental support of the respondent). The odds ratios [Exp(B)] indicate that when holding all other variables constant, the odds of White teachers planning to stay in their hard-to-staff high schools are 74% higher than the odds for minority teachers planning to stay in their hard-to-staff high

schools (see Table 17). A teacher who has a one-point increase on the four-point cultural support scale increases the odds of planning to remain in his or her school more than 25 times (see Table 17). In addition, a teacher who has a one-point increase on the four-point parental support scale increases the odds of planning to remain in his or her school more than four times (see Table 17).

Table 17

*Statistics and Significance Tests for Variables Entered into Block 1 of the Logistic Regression*

<b>Variable</b>	<b>B</b>	<b>S.E.</b>	<b>Wald</b>	<b>df</b>	<b>Sig.</b>	<b>Exp(B)</b>
i3Gender	.264	1.396	.036	1	.850	1.302
i2rEthnicity	.556	.273	4.152	1	.042	1.744
i5rrAssignment	-.314	1.130	.077	1	.781	.731
i13License	1.899	1.301	2.133	1	.144	6.682
i15Satisfaction	.821	.742	1.223	1	.269	2.273
Scale1CultSupport	3.254	1.473	4.881	1	.027	25.893
Scale2PreServicePrep	.539	.728	.549	1	.459	1.714
Scale3Stress	-1.181	.713	2.742	1	.098	.307
Scale6Induction	.541	.854	.402	1	.526	1.718
Scale8ParentalSup	1.430	.726	3.876	1	.049	4.180
Scale14SchFriendships	.972	.719	1.827	1	.177	2.643
Constant	-18.396	7.309	6.335	1	.012	.000

*Note.* B is the regression coefficient in log-odds units and Exp(B) is the regression coefficient expressed as an exponentiated odds ratio.

A review of the bivariate analyses following the binary logistic regression analysis indicated that minorities were significantly more likely to plan to leave their schools (21.4%) than nonminorities (8.2%),  $\chi^2_{(1, N=129)}=4.605, p=.041$  (see Table 15); that those who planned to leave their schools perceived significantly less cultural support within their schools ( $M=2.007, SD=.614$ ) than those who planned to stay in their schools ( $M=2.793, SD=.446$ ),  $t_{(127)}=-6.577, p=.000$ ; and that those who planned to leave their schools perceived significantly less support from parents ( $M=2.056, SD=.725$ ) than those who planned to stay in their schools ( $M=2.640, SD=.671$ ),  $t_{(127)}=-3.386, p=.001$  (see Table 16 and Table I2).

## **CHAPTER 4: SUMMARY, CONCLUSIONS, DISCUSSION, AND IMPLICATIONS FOR PRACTICE AND FURTHER RESEARCH**

The purpose of this research was to identify variables that could be used by school leaders to retain teachers in hard-to staff high schools in Virginia. A theory of retention was constructed from the work of Giacometti (2005) and an updated review of the literature. Variables were identified as measures of the concepts in the theory, and instruments were developed, tested, and administered to the population of 999 teachers within the first 4 years of their teaching experience in hard-to-staff high schools in Virginia. One hundred thirty teachers responded to the questionnaire: 18 were *leavers* (those who planned not on returning to their hard-to-staff high schools), 111 were *stayers* (those who planned on returning to their hard-to-staff high schools), and one did not respond to the item on whether they planned to return to the same school or not (Item 66). A summary of the results, conclusions drawn from these results, a discussion of the meaning of these results, and some implications for both practice and further research are addressed in this chapter.

### **Summary of the Results**

Descriptive and inferential statistics were applied to describe the participants and interpret the data. A description of the participants, the results of the exploratory bivariate statistical analyses (chi-square and *t*-test analyses), and the results of the multivariate statistical analysis (binary logistic regression) follow.

### **Characteristics of the Participants**

The participants tended to be young, married, White (with a large proportion of Black teachers), female high-school teachers who planned to return to the same school in which they were teaching. They taught English, history or social studies, and other subjects, with small numbers teaching math or science. They were academically capable (earned over a 3.0 GPA) in

college. Most earned teaching certificates through traditional routes, and nearly all met the highly qualified criteria of the No Child Left Behind Act (2002). Nearly all were offered continuing contracts for the following year, and most expressed satisfaction with their schools. Most spent less than three hours per day in preparing lessons. Their school districts offered few incentives for them to stay in hard-to-staff schools although they believed that more money would keep teachers in such schools. Most planned to continue in their same schools, with small numbers saying they planned to move to another school or out of the profession.

### **Results of the Exploratory Bivariate Analyses**

Chi-square and *t*-test analyses were applied to test for bivariate relationships between the predictor variables and the criterion variable. Chi square was applied when the predictor variables were measured on a nominal scale, and the *t* test was applied when the predictor variables were measured on at least an ordinal scale.

The chi-square test for independence was run to test for relationships between the criterion variable (leavers v. stayers) and the 17 predictor variables measured on a nominal level. Alpha was set at .05 (two-tailed) for statistical significance, and post-hoc residual analyses (tests for differences between observed and expected frequencies within cells) were run and tested at the same level ( $\alpha=.05$ ). Six of the 17 variables were found to be significantly related to whether the teachers planned to leave or stay in their hard-to-staff high schools: ethnicity, gender, teaching assignment (primarily), continuing contract status, certification status (highly qualified or not), and level of satisfaction with the school. All six variables were retained for use in the binary logistic regression.

Independent *t* tests were run to check for differences between leavers and stayers on the 14 predictor variables measured on at least an ordinal level. There were significant differences ( $\alpha=.05$ ) between leavers and stayers on seven—school culture support, preservice preparation,

stress of the job, fringe benefits, induction program, parental support, and school friendships—of the 14 variables. All seven differentiated leavers from stayers. Stayers scored significantly higher than leavers on all of these variables, and all seven variables were retained for the binary logistic regression.

### **Results of the Binary Logistic Regression Analysis**

Binary logistic regression was applied to test the multivariate relationships between the criterion variable (leavers vs. stayers) and the retained characteristics of participants, parents, and schools and the retained scales and items used as proxies for scales. The retained characteristics of participants, parents, and schools were all characteristics of participants: ethnicity (i2r), gender (i3), teaching assignment (primarily; i5rr), certification status (highly qualified or not) (i13), and level of satisfaction with the school (i15r). The retained scales and items used as proxies for scales were school culture support (Scale1CultSupport), preservice preparation (Scale2PreServicePrep), stress of the job (Scale3Stress), fringe benefits (i34), induction program (i51), parental support (i46), and school friendships (i58).

An initial run of the logistic regression resulted in an exceedingly high estimated standard error for the variable of fringe benefits. Thus, a second logistic regression was run without the fringe benefits variable. In the second run of the logistic regression, 126 of the 130 cases were entered into the procedure. All 11 predictor variables were entered simultaneously, and the results showed the contribution of each predictor variable to the placement of each respondent into one of the two groups.

The test of the overall model (all predictor variables entered) is chi-square. This is a test of whether the difference in the  $-2 \log$  likelihood value of Block 0 (no variables entered) differs from the  $-2 \log$  likelihood value of Block 1 (all predictor variables entered). In this case, the  $-2 \log$  likelihood value decreased from 99.700 to 43.417 ( $\chi^2_{(11, N=126)}=56.283, p=.00$ ), a statistically

significant drop. Thus, there is a relationship between the predictor variables and group membership. Further, the overall model increased the accuracy of prediction of group membership from 86.5% with only the constant in the model to 89.5% with all of the predictors in the model. Without the predictors, none of the leavers was classified correctly. With the predictors, six of the 17 leavers were classified correctly.

Relationships between individual predictor variables and group membership were tested with the Wald chi-square statistic. Using the Wald statistic, three variables were significantly related ( $\alpha=.05$ ) to group membership: ethnicity of the respondent (minority v. other), Scale1CultSupport (cultural support in the school), and Scale8ParentalSup (parental support of the respondent). The odds ratios [Exp(B)] indicate that when holding all other variables constant, the odds of White teachers planning to stay in their hard-to-staff high schools are 74% higher than the odds for minority teachers planning to stay in their hard-to-staff high schools. Teachers with a 1-point increase on the 4-point cultural support scale increase the odds of planning to remain in their schools more than 25 times. In addition, teachers who have a 1-point increase on the 4-point parental support scale increase the odds of planning to remain in their schools more than four times.

A review of the bivariate analyses following the binary logistic regression analysis indicated that minorities were significantly more likely to plan to leave their schools (21.4%) than nonminorities (8.2%), that those who planned to leave their schools perceived significantly less cultural support within their schools ( $M=2.007$ ,  $SD=.614$ ) than those who planned to stay in their schools ( $M=2.793$ ,  $SD=.446$ ), and that those who planned to leave their schools perceived significantly less support from parents ( $M=2.056$ ,  $SD=.725$ ) than those who planned to stay in their schools ( $M=2.640$ ,  $SD=.671$ ).

## Conclusions

Two overarching conclusions can be drawn from the results of this study:

### Conclusion 1

Three variables were found to predict the likelihood of teachers to report that they plan to stay in hard-to-staff high schools in Virginia. These variables are (1) ethnicity (minority, nonminority), (2) school cultural support, and (3) parental support. Leavers were more likely to be minorities, to perceive less school cultural support, and to perceive less parental support than stayers were.

### Conclusion 2

Twenty-eight variables were found NOT to predict the likelihood of teachers to report that they plan to stay in hard-to-staff high schools in Virginia. These variables were eliminated from further analysis following the exploratory chi square or *t*-test analyses, the initial binary logistic analysis, or the final binary logistic analysis. These variables are (1) age, (2) gender, (3) experience in education, (4) primary teaching assignment, (5) marital status, (6) salary, (7) final grade point average on the highest degree, (8) route to certification, (9) school geographic setting, (10) school accreditation status, (11) school adequate yearly progress status, (12) teacher highly qualified status, (13) teacher continuing contract status, (14) teacher level of satisfaction with the school, (15) teacher time spent on preparing to teach each day, (16) teacher perceived value parents placed on education, (17) teacher perceived quality of preservice preparation, (18) teacher perceived stress of the job, (19) teacher perceived economic conditions, (20) teacher perceived fringe benefits, (21) teacher perceived quality of the school division's induction program, (22) teacher perceived availability of community resources, (23) teacher perceived student behavior, (24) teacher perceived growth potential in the position, (25) teacher perceived retention incentives, (26) teacher perceived noninstructional economic distractions

within the school division, (27) teacher perceived supervisory praise, and (28) teacher perceived opportunities to develop friendships with others in the school.

### **Discussion of the Results**

The discussion is focused on the three variables found to be related to whether teachers leave or stay in hard-to-staff schools: ethnicity, school cultural support, and parental support. All three variables have been found by other researchers to contribute to the decision of staying or leaving hard-to-staff schools. Figure 3 is a reconstruction of the original theory, which is located in Chapter 1. In this revised theory, nonsignificant variables have been removed, leaving the three variables that were found to be significantly related ( $\alpha=.05$ ) to group membership.

#### **Ethnicity and Leaving or Staying in Hard-to-Staff Schools**

The majority of the participants in this study was White (over 56%); however, a large proportion (38.5%) was African American. Ethnicity of the respondent (minority vs. other) was significantly related to group membership. If a teacher was not a minority, he or she was more likely to plan to remain in his or her school than if he or she was a minority. A review of the bivariate analyses indicated that minorities were significantly more likely to leave their schools (21.4%) than nonminorities (8.2%).

Mixed views on the relationship between ethnicity and staying in or leaving hard-to-staff schools were discovered in the literature. Connor (2011) accounted for higher rates of minority teacher turnover by reporting that the same hard-to-staff schools that are more likely to employ minority teachers are more likely to have less desirable working conditions. In contrast, Achinstein et al. (2010) reported that teachers of color are more likely than Whites to work and remain in hard-to-staff urban schools with high proportions of students from low-income and nondominant racial and cultural communities. Quartz et al. (2008) used ethnicity, among several

others variables, in a longitudinal study involving 838 novice teachers. The results showed that Latino teachers have lower attrition rates compared to White teachers.

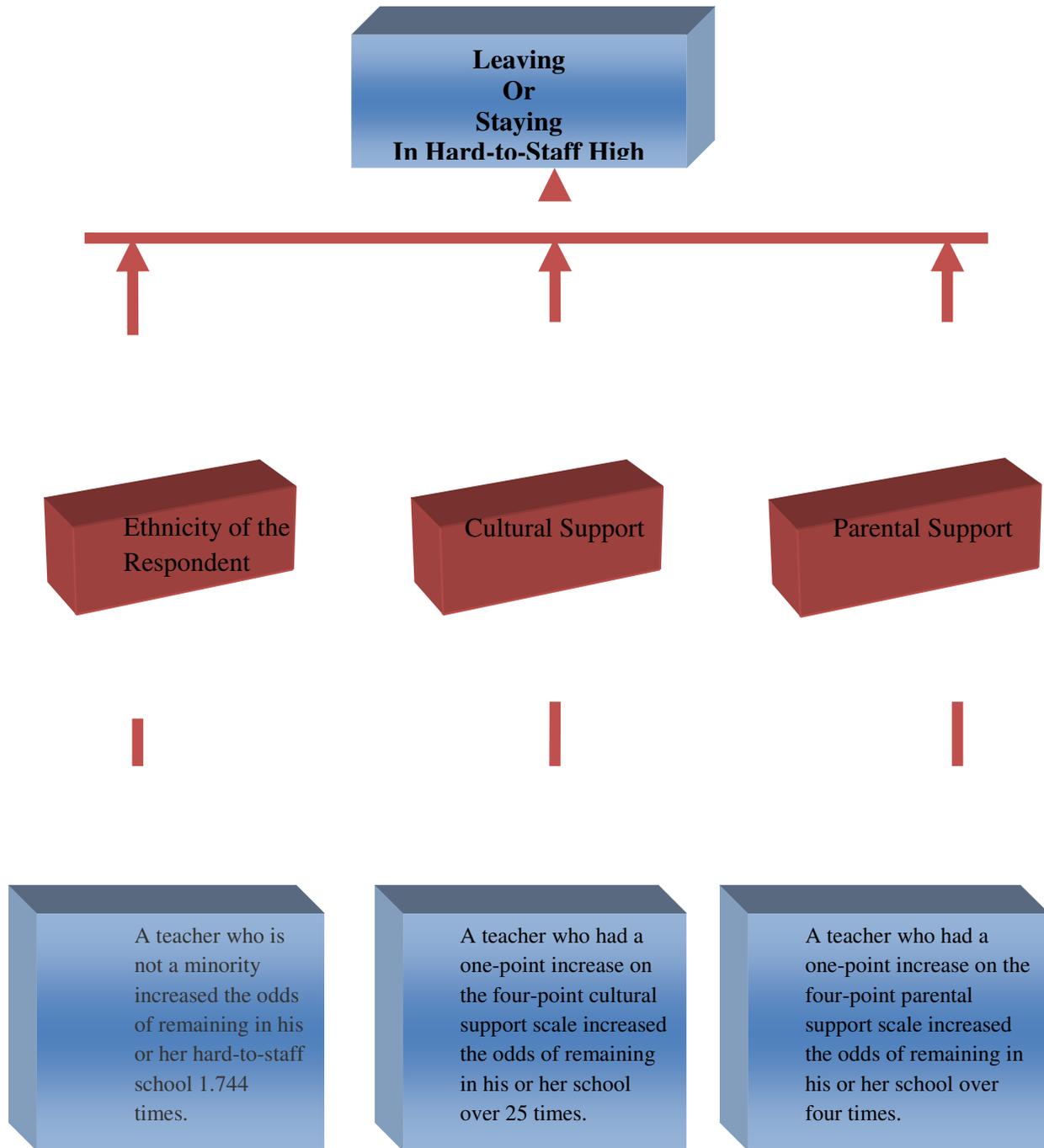


Figure 3. Reconstructed theory of the factors affecting novice teacher retention in hard-to-staff high schools derived from the results of this study.

### **School Cultural Support and Leaving or Staying in Hard-to-Staff Schools**

Every school has a culture. Hard-to-staff schools are no exception. The culture of the school affects the feelings, beliefs, and behaviors of the teachers and staff within the school (Deal & Peterson, 2009). This conclusion was confirmed once again in this study. It was apparent that teachers who felt connected to their schools and believed that they are an important part of them, were more inclined to plan to stay. Similar to this finding, The New Teacher Project (TNTP; 2012) reported that irreplaceable teachers were more likely to stay in schools “where teachers work in an atmosphere of mutual respect and trust, where school leaders take action with teachers who perform poorly, and where great teaching is the top priority” (p. 18).

While numerous researchers have studied the importance of school culture, the culture in hard-to-staff high schools remains a challenge. Ultimately, failure to retain highly qualified teachers in these schools disrupts concerted efforts to build a strong organizational culture and hinders student opportunities that foster academic success. In support of this conclusion, The New Teacher Project (2012) found turnover rates to be 50 percent higher in schools with weak instructional cultures than in those with strong cultures.

In this study, school culture was significantly related to planning to stay in or planning to leave hard-to-staff high schools. A teacher who had a 1-point increase on the 4-point culture scale increased the odds of planning to remain in his or her school more than 25 times. A review of the bivariate analyses following the binary logistic regression analysis indicated that those who planned to leave their schools perceived significantly less cultural support within their schools than those who stayed in their schools.

### **Parental Support and Leaving or Staying in Hard-to-Staff Schools**

Parents make a difference. They make a difference in the lives and school achievement of their children, and they make a difference in the lives of teachers. However, they are not as

involved as they might be; thus, their effect on the performance of teachers and students is diminished. This diminished effect is more pronounced in low-achieving schools, where teachers have reported less satisfaction with parental involvement than teachers in high-achieving schools (The New Teacher Project, 2012). In this study, teachers who perceived higher parental support were more likely to plan to remain in their hard-to-staff high schools. Comparable to this study, Hughes (2012) reported findings that indicated that teachers in the lowest socioeconomic status (SES) schools were more likely to continue teaching until retirement than teachers in the highest SES schools. Among several factors that made statistically significant contributions to teacher retention in Hughes' regression model were parental participation and parental cooperation.

Trask-Tate and Cunningham (2010) identified the social supports in the lives of African American adolescents that influence resilient academic outcomes. Participants included 206 African American students. The effect of parental involvement on academic expectations was examined. The authors concluded that both school support and parental involvement contributed to academic expectations. The results were mitigated by gender. For females, both high socioeconomic status and high parental involvement were related to high academic expectations. For males, high socioeconomic status and low parental involvement were related to high academic expectations.

In this study, a teacher who had a 1-point increase on the 4-point parental support scale increased the odds of planning to remain in his or her school more than four times. Those who planned to leave their schools perceived significantly less support from parents than those who stayed in their schools.

Teaching in hard-to-staff high schools is a difficult task. These schools have large numbers of poor and minority students, and teachers who work in these schools feel less satisfied and are more likely to turn over (Grissom, 2011). Teacher stability, however, is essential if these

schools are to meet the same levels of accountability as other high schools and prepare students for postsecondary education or careers. It is not easy for school divisions to change the ethnic composition of schools; however, they can affect, through policies and programs, the cultural and parental support of teachers who work in these schools.

### **Other Variables and Staying or Leaving Hard-to-Staff Schools**

The school principal has been found to contribute to the effectiveness of the school (Cotton, 2003; Leithwood et al., 2004; Marzano et al., 2005; Strong, Richard, & Catano, 2008). The effect of the principal is primarily indirect (Marzano et al., 2005). This indirect effect is through cultural and environmental variables in the school and classrooms. In this study, there was no relationship between whether a teacher planned to stay or leave his or her hard-to-staff school and the behavior of the principal. Grissom (2011), however, found that teacher behavior was significantly related to teacher satisfaction and the likelihood of teachers staying or leaving their schools. The measure of principal behavior in this study was a single item on supervisory praise for the teacher. This single item was quite obviously inadequate to capture the principal behaviors that make a difference in the planning of teachers to leave or stay in hard-to-staff schools.

There are many reasons why teachers leave their schools. Some leave because of frustration, feelings of failure, and fear for their safety (Johnson & Birkeland, 2003b). Others are pushed out because they cannot maintain classroom control, do not know the content they are teaching, or cannot get along well with students, other teachers, administrators, or parents. Others leave because of policy mandates, too little support and interaction with other professionals, student misbehavior, too few resources, too little pay, too little voice in decisions, too little respect, and too few opportunities for professional development and growth (Kopkowski, 2008). None of the variables in this study that were related to these reasons

(preservice preparation, job stress, the quality of induction programs, financial incentives, expected economic conditions, student behavior, the ability to make friends at work, community resources, and the potential for professional growth) were significant predictors of planning to stay or planning to leave the schools in this study. This does not mean that such variables are not associated with leaving or staying in hard-to-staff schools. The measures in this study were most likely inadequate to capture the effects of these variables. Other researchers should continue to incorporate these variables into their studies and test their relationships to the retention of teachers in hard-to-staff schools.

### **Implications for Practice**

The findings in this study may be valuable in retaining novice teachers. The three variables—ethnicity, school cultural support, and parental support—highlight three areas in which school districts could focus interventions for teachers who would be potential leavers. Districts should help all teachers, but particularly minorities, in their first 4 years of experience to adjust to their new school settings. Given Giacometti's (2005) finding that emotional adjustment to the school setting is a factor in whether teachers leave or stay in their schools, then helping novice teachers to adjust emotionally to their new school settings may help prevent leaving. One possibility is for school districts to develop support groups for new teachers, regardless of ethnicity. These support groups could address such topics as feelings about teaching in hard-to-staff schools, working with parents of children who may have different expectations than their own, developing relationships with other teachers, sharing instructional strategies and materials that work with the student population served in the hard-to-staff high school, and coping with emotional upsets when events don't work out as expected. If desired by the teachers, consideration could be given to the specific concerns of the ethnic groups of teachers within the school.

School culture has been found to be associated with how teachers feel about their work and the learning that occurs in the school (Dufour, 2007; Leithwood & Louis, 1998). Marzano, Waters, and McNulty (2005) and Deal and Peterson (2009) have continued to emphasize the value of supportive cultures in schools. In this study, school culture was found to be associated with whether teachers plan to stay in or leave hard-to-staff schools. Given these findings, school districts should evaluate the effects of school culture on teachers and intervene to improve the work environment and learning cultures within their schools. Efforts to retain teachers should involve cultivating a culture that embraces inclusiveness, ethnic diversity, sensitivity, and content learning.

Although the value of parental involvement in the schooling of students is “incontrovertible” (Leithwood, Louis, Anderson, & Wahlstrom, 2004, p. 46), as a norm, high school parental involvement is much less than that at lower grade levels. Engaging parents effectively in high school activities is complex but vital to the success of the students and their teachers. Given this challenge, school leaders must develop strategies to engage parents successfully in ways that align with student achievement and school improvement. The usual parental association meetings, open houses, report card nights, and parental conferences are not sufficient. It takes serious parental engagement along the lines of the *One Dream, Two Realities* report prepared for the Bill and Melinda Gates Foundation by Bridgeland, Dilulio, Streeter, and Mason (2008). The authors surveyed parents of high schools and reported several ways in which high schools could help parents as they work with their children to increase their chances of success in high school. They were (a) maintaining connections with the home through electronic media, (b) fostering good working relationships with parents, (c) providing training and assistance to parents so they can help their children, (d) keeping parents informed of problems and issues that occur at school, (e) helping parents understand the work that it takes to be

successful in high school and beyond, (f) encouraging parents to come into the school and be part of the educational process, and (g) being sensitive to the timing of conferences and school events so that parents can participate.

Developing partnerships with businesses, civic organizations, and other community groups to promote participation of adults in the education of children and to maximize resources available to support learning is another way to support novice teacher retention. Moreover, key stakeholders such as principals, human resource directors, superintendents, and professors who prepare school leaders should collaborate to develop a common framework of support that includes adequate preservice preparation for the challenges associated with teaching in hard-to-staff schools. Embedding realistic experiences and practical exposure during preservice preparation and in-service training and providing continuous support will help teachers to develop techniques for using their diversity to strengthen school cultures and engage parents in the education of their children.

Although incentives were not significantly related to whether teachers planned to stay in or leave their hard-to-staff schools in Virginia, there is considerable literature on the topic, much of which has been addressed in this dissertation. Interest in incentives as a means of improving teacher quality and performance in high-need schools continues to run high in the political arena. The federal government, for example, is funding grants through its Teacher Incentive Fund to school districts that develop and implement pay-for-performance plans for teachers and school leaders in high-need schools (United States Department of Education, 2012). At least one school division in Virginia has received a grant from the Fund; others may benefit from the services that can be purchased for high-need schools through the relatively large grants that are available in the Fund. Whether such incentives keep teachers in high-need schools or not, however, is yet to be determined.

## **Limitations of This Study and Implications for Further Theory Development and Research**

The research-based theory of teacher retention in hard-to-staff high schools created for this study was useful in identifying and testing variables that may contribute to the decision of teachers to leave or stay in their schools. The small number of respondents who said they were leaving their hard-to-staff high schools may have contributed to the limited number of variables (three) that distinguished leavers from stayers. Thus, the test of the theory was not sufficient to make reasonable decisions about the goodness of fit between the theory and the reality of teacher retention in hard-to-staff high schools in Virginia. Additional research using the theory as it was originally constructed or with modifications to the predictor variables is recommended. At the present, the most apt conclusion that can be drawn about the theory is that it was partially supported. That is, three of the identified predictor variables—ethnicity, school cultural support, and parental support—distinguished leavers from stayers in hard-to-staff high schools in Virginia.

The Beginning Teacher Retention Questionnaire, developed and utilized in this study, must be refined for use in future studies. Domain definitions and items must be revised. Of particular concern to those who may use the questionnaire should be the structure of the questionnaire and the reliability of the subsequent scales derived from any principal components analysis that may be conducted. In this study, four of 14 components were scalable, and one of these—community resources—had only two items, and another—stress of the job—had only three items with sufficient internal consistency to be scalable. One scale—school cultural support—had the most items (15 items), and another—preservice preparation—had five items. The remaining nine components were not scalable because the items that loaded on those components were not closely correlated with the underlying construct of the component. Consequently, single-item proxies were used for those components. Continued refinement of the

questionnaire should focus on two areas: (1) the development of clear definitions of the domains being measured and (2) the development of items that are clearly associated with those domains. Both of these may help questionnaire validators identify the best items for the questionnaire and eliminate poor items.

With refinements noted above, both the theory of teacher retention and the Beginning Teacher Retention Questionnaire may be used to study leavers and stayers in all schools, not just hard-to-staff high schools. The predictor variables in the theory appear to be relevant to all teachers; however, future researchers should check the literature to be sure that the identified variables are widely applicable across teachers at all levels of experience and in all types of schools. For example, it is possible that teachers in elementary schools may not experience the same levels of alienation from the school culture and from parents that teachers, particularly the leavers, in high schools may experience.

Additional studies with larger numbers of participants, particularly leavers, may strengthen the findings. There were 130 respondents (of 999 in the population) in this study. Of these 130 respondents, 129 had valid responses. Eighteen (14.0%) planned to move from their schools or leave education at the end of the 2009–2010 school year. One hundred eleven (86%) planned to remain at their current schools. When compared to the 2007–2008 cohort of beginning teachers (those in their first year of teaching) followed by the National Center for Education Statistics (Kaiser, 2011), in this study, those staying at their schools are over-represented and those leaving are under-represented. The statistics for the 2009–2010 school year from the National Center for Education Statistics (Kaiser, 2010) are 22.5% for movers and leavers and 74.4% for stayers. These statistics are for teachers in their third year of teaching and represent those who remained or moved from their schools since the National Center for Education Statistics study began in 2007–2008.

The time of year in which the questionnaire in this study was administered may have contributed to the small participation rate. The questionnaire was administered in June after the 2009–2010 school year had ended. Most likely, those who were not returning to their schools or were leaving the profession had little interest in completing a questionnaire on why they were leaving. Those who were leaving under pressure from the school division would be unlikely to respond. They would likely want to put the entire experience behind them and move on. Administering the survey earlier in the school term, possibly shortly after April 15—the contract renewal date in Virginia—may result in greater participation. This, in itself, however, would not overcome the reluctance to respond of those not returning to their schools or those leaving the profession. It is possible that the questionnaire approach used in this study is not a good way of collecting the data. Interviews through phone calls may get a better response.

This study was limited to the Commonwealth of Virginia. The study could be replicated, following revision of the theory and instrumentation, in other states and, perhaps, localities. An analysis of state and local data might be useful in developing specific interventions to help retain highly qualified novice teachers.

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## Appendices

## APPENDIX A: THE BEGINNING TEACHER RETENTION QUESTIONNAIRE

Dear Colleague:

Thank you for participating in my study of beginning teachers. The Beginning Teacher Retention Questionnaire is a first-time Internet questionnaire designed to identify factors that affect teacher retention in hard-to-staff high schools in Virginia. The information gained will help school districts enhance their support of new teachers in an effort to increase their retention rate.

All information you provide will remain confidential and will be used solely for the purpose of statistical analysis in this study. Your name will not be associated with any information you provide in any reports of the study, and you will not be identified in the study in any way. Your completion of the questionnaire is your consent for participating in the study. If you are leaving the school in which you taught during the 2010–2011 school year, please complete the questionnaire for the school you are leaving.

Participants who complete the survey by the closing date of August 1, 2011, will have their names entered into a drawing to win a \$100.00 gas card.

Should you need further information or clarification, call 757-653-0157 (home) or 757-377-6376 (cellular) or by e-mail at [meblunt@vt.edu](mailto:meblunt@vt.edu). I appreciate your support and look forward to your participation.

Sincerely,

Mechelle S. Blunt  
Doctoral Candidate

Dr. David Parks  
Professor

### 1. My age is

- 1. 35 or younger
- 2. 36–45
- 3. 46–55
- 4. Older than 55

### 2. My ethnicity is

- 1. American Indian or Alaskan Native
- 2. Asian or Pacific Islander
- 3. Hispanic
- 4. Black, not of Hispanic Origin

5. White, not of Hispanic Origin

**3. My gender is**

1. Male

2. Female

**4. My experience in education is**

1. One year

2. Two years

3. Three years

4. More than 3 years

**5. My teaching assignment is primarily**

1. English

2. Science

3. Mathematics

4. History/Social Studies

5. Other

**6. My marital status is**

1. Single

2. Married

**7. My salary is**

1. Less than \$40,000

2. \$40,000 – \$50,000

3. Greater than \$50,000

**8. My final grade point average on my highest degree was**

1. Below 2.00

2. 2.00 to 2.50

3. 2.51 to 3.00

4. 3.01 to 3.50

5. Over 3.50

**9. My route to certifying to teach was**

- 1. Alternative certification program
- 2. Traditional certification program

**10. The geographic setting of my school is mostly**

- 1. Rural
- 2. Suburban
- 3. Urban

**11. My school's accreditation status is**

- 1. Conditionally accredited
- 2. Conditionally accredited (New School)
- 3. Accreditation denied
- 4. Accredited with warning
- 5. Fully accredited
- 6. Don't know

**12. My school made "adequate yearly progress" for the 2009–2010 school term.**

- 1. No
- 2. Yes

**13. I have met all licensure requirements to be considered highly qualified.**

- 1. No
- 2. Yes

**14. Were you offered a continuing contract for 2011–2012?**

- 1. No
- 2. Yes

**15. My level of satisfaction with my school is**

- 1. Very unsatisfied
- 2. Unsatisfied
- 3. Satisfied
- 4. Very satisfied

**16. How much time do you spend preparing to teach daily?**

- 1. Less than three hours

- 2. Three to seven hours
- 3. Greater than seven hours

**17. Parents in my school place a high value on education.**

- 1. No
- 2. Yes

**18. The feedback from my mentor's (or principal's) visits to my classroom has been very useful.**

- 1. Strongly disagree
- 2. Disagree
- 3. Agree
- 4. Strongly agree

**19. My administrators support my work as a teacher.**

- 1. Strongly disagree
- 2. Disagree
- 3. Agree
- 4. Strongly agree

**20. The school climate in my building creates a high level of staff morale.**

- 1. Strongly disagree
- 2. Disagree
- 3. Agree
- 4. Strongly agree

**21. Classroom discipline was effectively addressed in my teacher-preparation classes.**

- 1. Strongly disagree
- 2. Disagree
- 3. Agree
- 4. Strongly agree

**22. My principal is very supportive of the staff when new teaching methods are being implemented.**

- 1. Strongly disagree
- 2. Disagree

- 3. Agree
- 4. Strongly agree

You are now one-third through the questionnaire. Thank you for staying with the process.  
Mechelle

**23. I went into teaching because it is such a challenging profession.**

- 1. Strongly disagree
- 2. Disagree
- 3. Agree
- 4. Strongly agree

**24. There is much growth potential for me in the education field.**

- 1. Strongly disagree
- 2. Disagree
- 3. Agree
- 4. Strongly agree

**25. Everyone knows what they are supposed to be doing in my school.**

- 1. Strongly disagree
- 2. Disagree
- 3. Agree
- 4. Strongly agree

**26. I have anxiety attacks when I think of going to work.**

- 1. Strongly disagree
- 2. Disagree
- 3. Agree
- 4. Strongly agree

**27. My administrators support my decisions.**

- 1. Strongly disagree
- 2. Disagree
- 3. Agree
- 4. Strongly agree

**28. Having children learn from me motivates me to teach them more.**

- 1. Strongly disagree
- 2. Disagree
- 3. Agree
- 4. Strongly agree

**29. My courses in my preparation program prepared me to teach the content of the courses that I have been assigned to teach.**

- 1. Strongly disagree
- 2. Disagree
- 3. Agree
- 4. Strongly agree

**30. My job has very few stressful days.**

- 1. Strongly disagree
- 2. Disagree
- 3. Agree
- 4. Strongly agree

**31. Classroom management was emphasized in my teacher preparation program.**

- 1. Strongly disagree
- 2. Disagree
- 3. Agree
- 4. Strongly agree

**32. Teachers demand respect in my school.**

- 1. Strongly disagree
- 2. Disagree
- 3. Agree
- 4. Strongly agree

**33. My “upbeat and positive” approach with the students causes my job to be less stressful.**

- 1. Strongly disagree
- 2. Disagree
- 3. Agree
- 4. Strongly agree

**34. My school division pays an extra stipend for hard-to-fill positions.**

- 1. No
- 2. Yes

**35. My school division offers effective training to new teachers.**

- 1. Strongly disagree
- 2. Disagree
- 3. Agree
- 4. Strongly agree

**36. My principal treats everyone professionally.**

- 1. Strongly disagree
- 2. Disagree
- 3. Agree
- 4. Strongly agree

**37. In-service activities in my school division are tailored to meet specific needs of faculty.**

- 1. Strongly disagree
- 2. Disagree
- 3. Agree
- 4. Strongly agree

**38. My school division provides extra incentives for its teachers in the way of leave, sabbatical, tuition reimbursement, or scholarships to further one's education.**

- 1. No
- 2. Yes

**39. My school division has a staff development program that has enabled me to enhance my skills as a teacher.**

- 1. Strongly disagree
- 2. Disagree
- 3. Agree
- 4. Strongly agree

**40. Teaching the Virginia Standards of Learning objectives limits the use of my creativity.**

- 1. Strongly disagree
- 2. Disagree
- 3. Agree
- 4. Strongly agree

**41. The fringe benefits (insurance and retirement plans) provided in my school division are extremely generous.**

- 1. No
- 2. Yes

**42. The community has many resources available to deal with social problems of young people.**

- 1. Strongly Disagree
- 2. Disagree
- 3. Agree
- 4. Strongly Agree

**43. Offering more money is likely to overcome some reluctance of teachers to remain in hard-to-staff schools.**

- 1. No
- 2. Yes

**44. The state and federal mandates for accountability have helped me to be a better teacher.**

- 1. Strongly Disagree
- 2. Disagree
- 3. Agree
- 4. Strongly Agree

You are now about two-thirds through the questionnaire. Thank you for staying with the process.  
Mechelle

**45. I am able to receive compensation for participation in an induction program provided by my school division.**

- 1. No
- 2. Yes

**46. My students' parents are very supportive when I have asked for their help.**

- 1. Strongly disagree
- 2. Disagree
- 3. Agree
- 4. Strongly agree

**47. I need to hear my supervisor say, "Good job. Keep up the good work."**

- 1. Strongly disagree
- 2. Disagree
- 3. Agree
- 4. Strongly agree

**48. There is not enough funding to supply teachers with the resources needed to make instruction meaningful for students.**

- 1. Strongly disagree
- 2. Disagree
- 3. Agree
- 4. Strongly agree

**49. My coursework in my preparation program effectively taught me how to assess student learning.**

- 1. Strongly disagree
- 2. Disagree
- 3. Agree
- 4. Strongly agree

**50. My school is student friendly.**

- 1. Strongly disagree
- 2. Disagree
- 3. Agree
- 4. Strongly agree

**51. The induction program for new teachers is effective in helping new teachers learn how to survive in their new positions.**

- 1. Strongly disagree
- 2. Disagree

- 3. Agree
- 4. Strongly agree

**52. I was able to share my talents with my students during this past school year.**

- 1. Strongly disagree
- 2. Disagree
- 3. Agree
- 4. Strongly agree

**53. My students' poor behavior caused me to be stressed during the past year.**

- 1. Strongly disagree
- 2. Disagree
- 3. Agree
- 4. Strongly agree

**54. Noninstructional positions use monetary resources that could be used to purchase much needed supplies for the classroom.**

- 1. Strongly disagree
- 2. Disagree
- 3. Agree
- 4. Strongly agree

**55. The evaluation process for teachers is implemented fairly.**

- 1. Strongly disagree
- 2. Disagree
- 3. Agree
- 4. Strongly agree

**56. My teaching position in my school met my expectations.**

- 1. Strongly disagree
- 2. Disagree
- 3. Agree
- 4. Strongly agree

**57. My coursework in my preparation program prepared me to employ effective strategies and methods to meet the diverse needs of the students I teach.**

- 1. Strongly disagree
- 2. Disagree
- 3. Agree
- 4. Strongly agree

**58. I am able to develop close friendships with coworkers in my school.**

- 1. Strongly disagree
- 2. Disagree
- 3. Agree
- 4. Strongly agree

**59. The mentoring I received by administrators or other teachers helped me to become an effective teacher.**

- 1. Strongly disagree
- 2. Disagree
- 3. Agree
- 4. Strongly agree

**60. My experience in my school increased my motivation to teach.**

- 1. Strongly disagree
- 2. Disagree
- 3. Agree
- 4. Strongly agree

**61. I get stressed almost every day on my job.**

- 1. Strongly disagree
- 2. Disagree
- 3. Agree
- 4. Strongly agree

**62. My salary from teaching adequately meets my needs.**

- 1. Strongly disagree
- 2. Disagree
- 3. Agree
- 4. Strongly agree

**63. The community has many resources available to deal with multicultural issues in my school.**

- 1. Strongly disagree
- 2. Disagree
- 3. Agree
- 4. Strongly agree

**64. Financial support for education looks bleak in the near future.**

- 1. Strongly disagree
- 2. Disagree
- 3. Agree
- 4. Strongly agree

**65. Teaching has little economic potential in the near future.**

- 1. Strongly disagree
- 2. Disagree
- 3. Agree
- 4. Strongly agree

**66. Do you plan to return to the same school in 2011–2012?**

- 1. No
- 2. Yes

**67. If you answered "No" to Item 66, do you plan to continue in the education profession in 2011–2012?**

- 1. No
- 2. Yes

Thank you for completing the questionnaire. Your help is sincerely appreciated. Mechelle

**APPENDIX B: INFORMATION ON IDENTIFICATION OF NOVICE TEACHERS IN  
HARD-TO-STAFF HIGH SCHOOLS IN VIRGINIA**

This appendix contains the letter to the Virginia Department of Education requesting information on teachers in hard-to-staff high schools in the Commonwealth and the list of hard-to-staff high schools provided by the Virginia Department of Education with the number of teachers in each.

**Letter to the Virginia Department of Education Requesting Information on Teachers in Hard-to-Staff High Schools in Virginia**

Virginia Department of Education  
Richmond, Virginia

Dear:

My name is Mechelle S. Blunt. I am a graduate student working on my dissertation at Virginia Polytechnic and State University. The focus of my study is to identify factors affecting job satisfaction and retention of Virginia novice teachers in hard-to-staff high schools. My goal is to determine the factors that new teachers find satisfactory in the profession as well as identify areas that that might be causing dissatisfaction. Dr. David Parks is serving as my committee chair.

Recognizing that we lose an average of 5% of new teachers each year, our schools are suffering because of perceived premature teacher turnover. I am hopeful that my study will add to the existing body of knowledge on the topic and will provide meaningful data to help remedy the crisis we face in Virginia.

Your office has been most accommodating in providing me with information related to the topic. I am seeking your continued support of this project. With Dr. Parks' guidance and the support of your staff, I am confident that my study will provide useful information to enhance administrative support of novice teachers, while fostering their retention in the commonwealth.

I sincerely appreciate your support. Should you need further information or clarification, please call 757—(home) or 757- (cellular) or e-mail [meblunt@vt.edu](mailto:meblunt@vt.edu).

Sincerely yours,

Mechelle S. Blunt

Cc: Dr. David Parks, Chair

## List of Hard-to-Staff High Schools in Virginia

Table B 1

*Number of Novice Teachers in Hard-to-Staff High Schools in Virginia, 2009–2010, by School<sup>a</sup>*

High school	Number of novice teachers	High school	Number of novice teachers
1	31	27	52
2	12	28	31
3	15	29	3
4	12	30	31
5	15	31	25
6	21	32	16
7	10	33	34
8	31	34	36
9	18	35	14
10	21	36	18
11	32	37	13
12	33	38	21
13	21	39	20
14	28	40	27
15	5	41	18
16	47	42	21
17	52	43	32
18	31	44	24
19	3	45	30
20	31	46	16
21	25	47	12
22	16	48	63
23	34	49	12
24	36	50	27
25	14	51	16
26	47		
Novice teachers (column total)	387		612
Grand total of novice teachers			999

*Note.* From the Virginia Department of Education, October 5, 2010. <sup>a</sup>Schools have been numbered.

**APPENDIX C: VALIDATION INFORMATION AND DATA FOR THE BEGINNING  
TEACHER RETENTION QUESTIONNAIRE**

This appendix contains the relevant information on the content validation of the Beginning Teacher Retention Questionnaire (Giacometti, 2005), used with permission of Dr. K. S. Giacometti. The items used to develop the content validation instrument, the content-validation instrument with details on administration of it to the second and final validation panel, and the results of the validation are reported.

**Items Used in Developing the Content Validation Instrument**

Table C 1

*Items by Domain Used for Developing the Content Validation Instrument*

<b>Domain 1 – Compensation</b>	<b>Domain 2 – Preservice Preparation</b>
11. I am able to receive compensation for participation in the induction program.	6. I am a highly qualified teacher according to the No Child Left Behind Act.
28. Incentives are given in my school to hire high performing teachers.	17. More than one semester of student teaching is needed.
30. My division provides a lucrative retirement package.	25. It is not unusual to have students at my school taught by a teacher in a core area class who did not major or even minor in the subject they are teaching.
36. My school division pays an extra stipend for hard-to-fill positions.	32. There were undergraduate courses during my studies that dealt [e]specially with the student population that I encounter daily.
52. The salary for teachers in my geographical area is comparable to other people with the same level of education.	35. Good teacher preparation is the key to retaining new teachers and preventing turnover.
54. My pay and the amount of work I do are comparable to other professions.	61. I obtained my certification to teach through a traditional college program.
57. There is a “fair” reward system for our increased efforts.	73. Classroom discipline was addressed in very few of my classes.
62. My school district offers scholarship or loan forgiveness programs.	76. My coursework specifically dealt with assessing students’ abilities.
68. Pay inequities influence teacher turnover rates.	

- 
- 79. My school division provides extra incentives for its teachers in the way of leave, sabbatical, and scholarships to further one's education.
  - 84. The fringe benefits (insurance and retirement plans) provided in my division are extremely generous.
  - 88. Offering more money is likely to overcome some reluctance of teachers working in hard-to-staff schools.
  - 93. Raising teacher salaries will encourage more teachers to stay in my school.
  - 128. I am able to receive compensation for participation in the induction program.
  - 133. My division included many perks in its recruiting process such as relocation costs and coupons from local merchants.

**Domain 3 – In-Service Training Support**

- 9. The beginning teacher induction program helped me prepare for the classroom on the first day of school.
- 13. ~~[In-service activities are tailored to meet specific needs of the staff.]~~[Professional development is ongoing and meaningful to staff.]
- 18. Nearby universities collaborate with my school to create a clinical learning environment for beginning teachers.
- 23. Staff members at my school are trained in research-based instructional strategies.
- 33. The induction program for new teachers is not long enough.
- 39. The induction program encourages new teachers to be reflective about their work.

- 85. Teachers in my school have a high degree of content knowledge.
- 107. My courses in college prepared me to teach the curriculum for the courses that I have been assigned to teach.
- 135. Classroom management was taught in my undergraduate program.
- 138. My school is nothing like the one in which I did my student teaching.

**Domain 4 – School Culture**

- 4. [In my school,] everyone knows what ~~they~~ he or she is ~~are~~ supposed to be doing. ~~in my school.~~
  - 8. Too many teachers in my school are assigned “out-of-field” classes for which they lack subject knowledge
  - 29. Teachers in my school have a high degree of enthusiasm.
  - 31. My school is “very good” when it comes to having a safe and respectful atmosphere.
  - 41. Teachers in my school have a high degree of effectiveness.
  - 43. The staff works as a team to ensure student achievement.
  - 45. The school climate in my building is
-

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- 53. My school offers intensive training to new teachers.
  - 58. The in-service activities are a waste of time.
  - 65. My school offers intensive mentoring [~~for~~ to] new teachers.
  - 67. The division stresses professional development activities as a way of increasing the skill level of teachers.
  - 80. The feedback from my mentor's visits to my classroom has been very useful.
  - 81. My division has a staff development program that has enabled me to enhance my skills as a teacher.
  - 94. The induction program is designed to satisfy certification requirements.
  - 97. The induction program provides assistance with everyday problems.
  - 105. The portfolio requirement in my division has helped me to reflect on my strengths and weaknesses.
  - 108. As part of the professional development plan for teachers, I am given the opportunity to seek advice from experienced teachers.
  - 110. In-service activities are tailored to meet specific needs of the staff.

**Domain 5 – External Forces**

- 15. Most students do not go to college when they graduate from school.
- 22. My students' parents are very supportive

positive.

- 51. Teachers in my school have a high degree of classroom management.
- 56. School committees do not represent all aspects of the community's population.
- 70. There are differences shown between students of color and those who are not of color in my school.
- 77. Teachers in my school have a high degree of verbal ability.
- 98. Teachers demand respect in my school.
- 113. The school climate in my building creates a high level of staff morale.
- 118. My school is customer-service friendly.
- 120. The students at my school can academically compete with their peers in the Commonwealth.
- 123. The school's goals are reasonable expectations designed for student success and school improvement.
- 125. Violence occurs in my school.
- 130. Major discipline problems exist in my school.
- 131. The "good old boy" operating procedure controls our school.
- 132. I have a chance to develop close friendships with coworkers.

**Domain 6 – Motivation to Teach**

- 5. My job meets my expectations.
  - 7. I am dedicated and willing to share my talents with students.
-

- 
- when I have asked for their help.
24. Teaching the Virginia Standards of Learning objectives limits the use of my creativity.
44. I understand the impact of state and federal mandates for accountability as they relate to me as a teacher.
49. The community has many resources available to deal with social problems of young people.
60. Most people in the community seek power through social or civic organization affiliation.
64. With the certification requirements mandated by the No Child Left Behind Act, teacher shortages in specialized areas are likely to increase.
66. The community has many resources available to deal with multicultural issues.
75. The school's community is not sensitive to the needs of the total population.
90. The public has a negative view of the teaching profession.
91. My students' parents have been very supportive when I have asked for ~~their~~ help.
96. I understand the federal and state mandates.
100. The social issues that my students face were a shock to me.
103. The parents or guardians of my students rarely call me.
12. Teachers would rather teach in schools where parents are supportive than in schools where they would earn significantly higher salaries.
19. Teachers want to succeed on their job.
21. I teach because I love helping to make a positive difference in the lives of children.
83. Having children learn from me motivates me to teach them more.
95. Teachers would rather teach in schools where students are well behaved than in schools where they would earn significantly higher salaries.
106. My enthusiasm in my classroom rubs off on my students.
115. There is much growth potential in the educational field.
129. I went into teaching because it is such a challenging profession.

**Domain 7 – Emotional Factors**

**Domain 8 – Principal Leadership**

3. I love my job as a teacher.
47. A large majority of the students in my building has no respect for adults;
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10. My “upbeat [ <del>and</del> ] positive” approach with the students [ <del>helps them to learn and</del> ] causes my job to be less stressful.	however, the administrators impose strong discipline.
14. I sense that the attitude of my supervisor towards me is “sink or swim.”	48. My administrators cause stress in my life.
16. My students’ poor behavior causes me to be stressed.	55. It is not fair that new teachers are given the same tasks as veteran teachers.
27. I feel like I have been given the most challenging students.	63. My principal treats everyone professionally.
34. When my attitude is positive, my day goes better.	71. I need to hear my supervisor say “Good job. Keep up the good work.”
37. I feel that I am making a difference in the lives of children.	87. Too many duties related to my job do not involve instruction.
38. I hate my principal.	89. I feel there is a gap between teachers and administrators.
42. I wish <del>ed</del> I had never pursued a career in teaching.	99. My administrators support my actions.
50. I feel confident that I have the skills necessary to perform my duties.	104. My principal is very supportive of the staff when new teaching methods are being implemented.
59. My job has very few stressful days.	117. My school focuses on supporting me and not assessing my work.
69. I get stressed almost every day on my job.	121. Staff members are expected to use research-based instructional strategies.
74. I have anxiety attacks when I think of going to work	122. Recognition is given to employees who do a good job.
78. Teachers have a sense of empowerment in my school.	127. My administrators support my decisions.
82. I do not feel a sense of unity among staff members.	134. Many veteran teachers in my school are allowed to perform poorly, but I am held to a higher standard.
86. I feel like crying when my students are unsuccessful.	136. The evaluation process for teachers is implemented with clear objectives.
92. My job is too frustrating for me.	
101. I am energized when I am around colleagues.	

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- 102. I resent the help that is given to me.
  - 109. My workload is overwhelming.
  - 114. I feel burned out by the end of September.
  - 119. I feel insecure because I do not understand school policy and procedures.
  - 124. My colleagues' support helps me to reduce my stress level.
  - 126. The stress on my job reduces my confidence level as a teacher.
  - 137. Teachers are often "burned out" too early in the year.

**Domain 9 – Economic Conditions**

**Domain 10 – Demographics**

- |  |  |
|--|--|
| <ul style="list-style-type: none"> <li>1. My salary adequately meets my needs.</li> <li>2. I feel that there is not enough funding to supply teachers with the resources needed to make instruction meaningful for students.</li> <li>26. Most of the students in my school receive free or reduced-price lunches.</li> <li>40. Schools serving low-income and minority students are often at a competitive disadvantage in trying to meet their employees' needs.</li> <li>72. My division could be facing layoffs in the near future.</li> <li>111. Noninstructional positions use monetary resources that could be used to purchase much needed supplies for the classroom.</li> <li>116. I am satisfied with the way that my division spends money.</li> </ul> | <ul style="list-style-type: none"> <li>20. Parents do not place a high value on education.</li> <li>46. My school made AYP.</li> <li>112. My school is fully accredited.</li> <li>U. My age is ....</li> <li>U. My ethnicity is ....</li> <li>U. My gender is ....</li> <li>U. The experience in education is ....</li> <li>U. My teaching assignment is primarily....</li> <li>U. My marital status is ....</li> <li>U. My salary is ....</li> <li>U. My final grade point average on my highest degree was ....</li> <li>U. My route to certifying to teach was ....</li> <li>U. The geographic setting of my school is</li> </ul> |
|--|--|
-

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mostly....

U. My school's accreditation status is ....

U. My school made "adequately yearly progress" for the 2009–2010 school term....

U. I have met all licensure requirements to be considered highly qualified....

U. Were you offered a continuing contract for 2011–2012?

U. My level of satisfaction with my school is

U. How much time do you spend preparing to teach daily?

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*Note.* U=unused item in the content validation instrument. Most demographic items were obvious domain placements; thus, they were omitted from the content validation process. Response categories for the demographic items are on the Beginning Teacher Retention Questionnaire (Giacometti, 2005) in Appendix A. Changes in wording resulting from review of the items prior to placement on the content validation instrument are in brackets. The Beginning Teacher Retention Questionnaire used with permission of Dr. K. S. Giacometti.

## Content Validation Instructions and Instrument

The letter of instructions to the validation panel and the validation instrument are in this section.

**Letter of instructions to the validation panel.** The letter follows.

June 2010

Dear Colleague:

This correspondence is a follow-up to our telephone conversation regarding your participation in a study at Virginia Tech. As a part of the research plan, I am soliciting the support of veteran educators who have a doctoral degree in education, experience working in hard-to-staff schools in Virginia, and are familiar with the dissertation validation process. The information you provide will help to validate The Beginning Teacher Retention Questionnaire. The questionnaire is designed to identify factors that affect teacher retention in hard-to-staff high schools in Virginia. The information gained is expected to help school districts support new teachers in their first 3 years on the job.

This research will present no more than minimal risk to you. To protect your identify and reduce the risk that might accrue from the identification of your responses with you, you will be assigned an identification code. A master list of the participants and coded numbers will be maintained by the researcher on a computer disk that is password protected. Your responses will remain confidential and will be used solely for constructing the questionnaire. At no time will your name be associated with your responses, and your name will not be included in the report of the study. Completing the questionnaire implies that you have given your permission to use the data that you provide to validate The Beginning Teacher Retention Questionnaire.

You will find the definitions and validation instrument attached. Please print the instrument and follow the instructions for validating the items. Your response can be faxed to me at 757-. Should you prefer mailing your response, please e-mail your address to me, and I will forward a self-addressed stamped envelope to you. Feel free to contact me should you need further information or clarification at 757- (home) or 757- (cellular). My home address is \_\_\_\_\_, and my e-mail address is [meblunt@vt.edu](mailto:meblunt@vt.edu). I appreciate your participation.

Sincerely,

Mechelle S. Blunt  
Doctoral Candidate

David Parks  
Research Advisor

**The content validation instrument.** Definitions of domains and the content validation instrument used with the panel of validators follow.

**Definitions to be Used to Categorize Factors That Contribute to Retention  
for Beginning Teachers**

Directions: Apply the definitions below to categorize by domain the factors that contribute to job retention for novice teachers.

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<b>Domains</b>	<b>Description</b>
Domain 1: Compensation	The pay and benefits for teachers. It includes, but is not limited to, wages, fringe benefits, scholarships, inequities with level of skills or education not comparable to other fields, tuition reimbursement, retirement, coupons from community organizations, relocation costs, and signing bonuses.
Domain 2: Preservice preparation	A teacher education program at the college or university level that provides instruction for teacher candidates to become effective facilitators of teaching. It includes, but is not limited to acquisition of subject knowledge of the discipline taught, preparation for classroom diversity and exposure to school setting, classroom organization and management, assessments, curriculum usage, self-confidence to teach, and extent of student teaching.
Domain 3: External forces <sup>a</sup>	Outside factors that could help or hinder novice teachers as they perform their duties. They include, but are not limited to, partnerships, minority affiliations, community organizations, parental involvement, social issues and conditions, increased diversity, spending by the school district, housing, and job availability.
Domain 4: School culture	School culture includes the organization's values and visions and the everyday experiences of the school community members. It includes, but is not limited to, support with discipline, staff involvement, teamwork, a conducive environment for learning that meets the needs of all segments of the student population, climate, safety and orderliness, a fair evaluation system, and staff morale.

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Domains	Description
Domain 5: In-service training support <sup>a</sup>	Administrative, supervisory, professional development and peer support provided to novice teachers once they are hired to teach. It includes, but is not limited to, an established induction process. Support is provided to teachers once they are hired to teach. Mentoring, professional development, intensive support, peer evaluations, observations of experienced teachers, and portfolio development are forms of support.
Domain 6: Motivation to teach	The driving force that causes a teacher to enter and remain in the profession. It includes, but is not limited to, a sense of satisfaction with working with students from dysfunctional families, wanting to work with young people, a desire to face the challenge of teaching, professional development, yearning to contribute to humanity, a positive difference in society, solid commitment, and social status.
Domain 7: Emotional factors	A novice teacher's feelings about the teaching profession and their mental health. Some factors include the following: desire to work with young people and stimulus to teach others, feeling efficacious and motivated in the classroom. Having a feeling of strong commitment to the field of education. Positive factors are enthusiasm, optimism, upbeat. Negative factors are stress, anxiety, burnout, and frustration.
Domain 8: Principal leadership actions	Supervisory support given to the novice teacher through leadership actions and behaviors exhibited by the building principal. These include, but are not limited to, reduction or elimination of extra duties, mentoring, smaller class sizes, less challenging classes, professional development opportunities, and accessibility.
Domain 9: Economic conditions	The economic conditions of a school associated with the economy's downturn and its influence on the retention or departure of individuals employed in a hard-to-staff school.

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**Domains****Description**

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Domain 10: Demographics

Characteristic profiles of novice teachers and hard-to-staff schools. These include: age, ethnicity, gender, years of experience, teaching assignment, marital status, current salary, final undergraduate grade point average, route to teacher certification, location of school, accreditation status, adequate yearly progress of school, type of license, tenure status, level of satisfaction, and intent to return to present school.

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<sup>a</sup>The domain numbers were transposed for Domains 3 and 5 in these instructions at the time the content validation instrument was distributed to the content validation panel; however, the numbers and labels were correct on each page of the instrument. It is assumed that the respondents used the domain numbers on the top of each page in recording their responses. The data in Table C2 are consistent with this assumption.

## Validation Instrument for the Beginning Teacher Retention Questionnaire

Directions: Read each item and circle the number of the domain with which the item is mostly closely associated.

### **Domain Placement:**

- |   |  |                               |
|---|--|-------------------------------|
| <i>1. Compensation</i>                            | <i>5. External forces<sup>a</sup></i>  | <i>9. Economic conditions</i> |
| <i>2. Preservice preparation</i>                  | <i>6. Motivation to teach</i>          | <i>10. Demographics</i>       |
| <i>3. In-service training support<sup>a</sup></i> | <i>7. Emotional factors</i>            |                               |
| <i>4. School culture</i>                          | <i>8. Principal leadership actions</i> |                               |

**Clarity Rating:** Circle the number that best represents your estimate of the clarity of the Item:

1=Very unclear, delete; 2=Somewhat clear, revise, 3=Clear, leave as written

(For any items that you rate as 1 or 2 for clarity, please write directly on the page your suggestions for improvement.)

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Questionnaire statements	Domain placement	Clarity
1. My salary adequately meets my needs.	1 2 3 4 5 6 7 8 9 10	1 2 3
2. I feel that there is not enough funding to supply teachers with the resources needed to make instruction meaningful for students.	1 2 3 4 5 6 7 8 9 10	1 2 3
3. I love my job as a teacher.	1 2 3 4 5 6 7 8 9 10	1 2 3
4. In my school, everyone knows what he or she is supposed to be doing.	1 2 3 4 5 6 7 8 9 10	1 2 3
5. My job meets my expectations.	1 2 3 4 5 6 7 8 9 10	1 2 3
6. I am a highly qualified teacher according to the No Child Left Behind Act.	1 2 3 4 5 6 7 8 9 10	1 2 3
7. I am dedicated and willing to share my talents with students.	1 2 3 4 5 6 7 8 9 10	1 2 3

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Questionnaire statements	Domain placement	Clarity
8. Too many teachers in my school are assigned “out-of-field” classes for which they lack subject knowledge.	1 2 3 4 5 6 7 8 9 10	1 2 3
9. The beginning teacher induction program helped me prepare for the classroom on the first day of school.	1 2 3 4 5 6 7 8 9 10	1 2 3
10. My “upbeat, positive” approach with the students causes my job to be less stressful.	1 2 3 4 5 6 7 8 9 10	1 2 3
11. I am able to receive compensation for participation in the induction program.	1 2 3 4 5 6 7 8 9 10	1 2 3
12. Teachers would rather teach in schools where parents are supportive than in schools where they would earn significantly higher salaries.	1 2 3 4 5 6 7 8 9 10	1 2 3
13. Professional development is ongoing and meaningful to staff.	1 2 3 4 5 6 7 8 9 10	1 2 3
14. I sense that the attitude of my supervisor towards me is “sink or swim.”	1 2 3 4 5 6 7 8 9 10	1 2 3
15. Most students do not go to college when they graduate from school.	1 2 3 4 5 6 7 8 9 10	1 2 3
16. My students’ poor behavior causes me to be stressed.	1 2 3 4 5 6 7 8 9 10	1 2 3
17. More than one semester of student teaching is needed.	1 2 3 4 5 6 7 8 9 10	1 2 3
18. Nearby universities collaborate with my school to create a clinical learning environment for beginning teachers.	1 2 3 4 5 6 7 8 9 10	1 2 3

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Questionnaire statements	Domain placement	Clarity
19. Teachers want to succeed on their job.	1 2 3 4 5 6 7 8 9 10	1 2 3
20. Parents do not place a high value on education.	1 2 3 4 5 6 7 8 9 10	1 2 3
21. I teach because I love helping to make a positive difference in the lives of children.	1 2 3 4 5 6 7 8 9 10	1 2 3
22. My students' parents are very supportive when I have asked for their help.	1 2 3 4 5 6 7 8 9 10	1 2 3
23. Staff members at my school are trained in research-based instructional strategies.	1 2 3 4 5 6 7 8 9 10	1 2 3
24. Teaching the Virginia Standards of Learning objectives limits the use of my creativity.	1 2 3 4 5 6 7 8 9 10	1 2 3
25. It is not unusual to have students at my school taught by a teacher in a core area class who did not major or even minor in the subject they are teaching.	1 2 3 4 5 6 7 8 9 10	1 2 3
26. Most of the students in my school receive free or reduced-price lunches.	1 2 3 4 5 6 7 8 9 10	1 2 3
27. I feel like I have been given the most challenging students.	1 2 3 4 5 6 7 8 9 10	1 2 3
28. Incentives are given in my school to hire high performing teachers.	1 2 3 4 5 6 7 8 9 10	1 2 3
29. Teachers in my school have a high degree of enthusiasm.	1 2 3 4 5 6 7 8 9 10	1 2 3
30. My division provides a lucrative retirement package.	1 2 3 4 5 6 7 8 9 10	1 2 3

<b>Questionnaire statements</b>	<b>Domain placement</b>	<b>Clarity</b>
31. My school is “very good” when it comes to having a safe and respectful atmosphere.	1 2 3 4 5 6 7 8 9 10	1 2 3
32. There were undergraduate courses during my studies that dealt especially with the student population that I encounter daily.	1 2 3 4 5 6 7 8 9 10	1 2 3
33. The induction program for new teachers is not long enough.	1 2 3 4 5 6 7 8 9 10	1 2 3
34. When my attitude is positive, my day goes better.	1 2 3 4 5 6 7 8 9 10	1 2 3
35. Good teacher preparation is the key to retaining new teachers and preventing turnover.	1 2 3 4 5 6 7 8 9 10	1 2 3
36. My school division pays an extra stipend for hard-to-fill positions.	1 2 3 4 5 6 7 8 9 10	1 2 3
37. I feel that I am making a difference in the lives of children.	1 2 3 4 5 6 7 8 9 10	1 2 3
38. I hate my principal.	1 2 3 4 5 6 7 8 9 10	1 2 3
39. The induction program encourages new teachers to be reflective about their work.	1 2 3 4 5 6 7 8 9 10	1 2 3
40. Schools serving low-income and minority students are often at a competitive disadvantage in trying to meet their employees’ needs.	1 2 3 4 5 6 7 8 9 10	1 2 3
41. Teachers in my school have a high degree of effectiveness.	1 2 3 4 5 6 7 8 9 10	1 2 3

<b>Questionnaire statements</b>	<b>Domain placement</b>	<b>Clarity</b>
42. I wish I had never pursued a career in teaching.	1 2 3 4 5 6 7 8 9 10	1 2 3
43. The staff works as a team to ensure student achievement.	1 2 3 4 5 6 7 8 9 10	1 2 3
44. I understand the impact of state and federal mandates for accountability as they relate to me as a teacher.	1 2 3 4 5 6 7 8 9 10	1 2 3
45. The school climate in my building is positive.	1 2 3 4 5 6 7 8 9 10	1 2 3
46. My school made AYP.	1 2 3 4 5 6 7 8 9 10	1 2 3
47. A large majority of the students in my building has no respect for adults; however, the administrators impose strong discipline.	1 2 3 4 5 6 7 8 9 10	1 2 3
48. My administrators cause stress in my life.	1 2 3 4 5 6 7 8 9 10	1 2 3
49. The community has many resources available to deal with social problems of young people.	1 2 3 4 5 6 7 8 9 10	1 2 3
50. I feel confident that I have the skills necessary to perform my duties.	1 2 3 4 5 6 7 8 9 10	1 2 3
51. Teachers in my school have a high degree of classroom management.	1 2 3 4 5 6 7 8 9 10	1 2 3
52. The salary for teachers in my geographical area is comparable to other people with the same level of education.	1 2 3 4 5 6 7 8 9 10	1 2 3
53. My school offers intensive training to new teachers.	1 2 3 4 5 6 7 8 9 10	1 2 3

<b>Questionnaire statements</b>	<b>Domain placement</b>	<b>Clarity</b>
54. My pay and the amount of work I do are comparable to other professions.	1 2 3 4 5 6 7 8 9 10	1 2 3
55. It is not fair that new teachers are given the same tasks as veteran teachers.	1 2 3 4 5 6 7 8 9 10	1 2 3
56. School committees do not represent all aspects of the community's population.	1 2 3 4 5 6 7 8 9 10	1 2 3
57. There is a "fair" reward system for our increased efforts.	1 2 3 4 5 6 7 8 9 10	1 2 3
58. The in-service activities are a waste of time.	1 2 3 4 5 6 7 8 9 10	1 2 3
59. My job has very few stressful days.	1 2 3 4 5 6 7 8 9 10	1 2 3
60. Most people in the community seek power through social or civic organization affiliation.	1 2 3 4 5 6 7 8 9 10	1 2 3
61. I obtained my certification to teach through a traditional college program.	1 2 3 4 5 6 7 8 9 10	1 2 3
62. My school district offers scholarship or loan forgiveness programs.	1 2 3 4 5 6 7 8 9 10	1 2 3
63. My principal treats everyone professionally.	1 2 3 4 5 6 7 8 9 10	1 2 3
64. With the certification requirements mandated by the No Child Left Behind Act, teacher shortages in specialized areas are likely to increase.	1 2 3 4 5 6 7 8 9 10	1 2 3
65. My school offers intensive mentoring to new teachers.	1 2 3 4 5 6 7 8 9 10	1 2 3
66. The community has many resources available to deal with multicultural issues.	1 2 3 4 5 6 7 8 9 10	1 2 3

<b>Questionnaire statements</b>	<b>Domain placement</b>	<b>Clarity</b>
67. The division stresses professional development activities as a way of increasing the skill level of teachers.	1 2 3 4 5 6 7 8 9 10	1 2 3
68. Pay inequities influence teacher turnover rates.	1 2 3 4 5 6 7 8 9 10	1 2 3
69. I get stressed almost every day on my job.	1 2 3 4 5 6 7 8 9 10	1 2 3
70. There are differences shown between students of color and those who are not of color in my school.	1 2 3 4 5 6 7 8 9 10	1 2 3
71. I need to hear my supervisor say “Good job. Keep up the good work.”	1 2 3 4 5 6 7 8 9 10	1 2 3
72. My division could be facing layoffs in the near future.	1 2 3 4 5 6 7 8 9 10	1 2 3
73. Classroom discipline was addressed in very few of my classes.	1 2 3 4 5 6 7 8 9 10	1 2 3
74. I have anxiety attacks when I think of going to work.	1 2 3 4 5 6 7 8 9 10	1 2 3
75. The school’s community is not sensitive to the needs of the total population.	1 2 3 4 5 6 7 8 9 10	1 2 3
76. My coursework specifically dealt with assessing students’ abilities.	1 2 3 4 5 6 7 8 9 10	1 2 3
77. Teachers in my school have a high degree of verbal ability.	1 2 3 4 5 6 7 8 9 10	1 2 3
78. Teachers have a sense of empowerment in my school.	1 2 3 4 5 6 7 8 9 10	1 2 3
79. My school division provides extra incentives for its teachers in the way of	1 2 3 4 5 6 7 8 9 10	1 2 3

Questionnaire statements	Domain placement	Clarity
leave, sabbatical, and scholarships to further one's education, payments for coursework, etc.		
80. The feedback from my mentor's visits to my classroom has been very useful.	1 2 3 4 5 6 7 8 9 10	1 2 3
81. My division has a staff development program that has enabled me to enhance my skills as a teacher.	1 2 3 4 5 6 7 8 9 10	1 2 3
82. I do not feel a sense of unity among staff members.	1 2 3 4 5 6 7 8 9 10	1 2 3
83. Having children learn from me motivates me to teach them more.	1 2 3 4 5 6 7 8 9 10	1 2 3
84. The fringe benefits (insurance and retirement plans) provided in my division are extremely generous.	1 2 3 4 5 6 7 8 9 10	1 2 3
85. Teachers in my school have a high degree of content knowledge.	1 2 3 4 5 6 7 8 9 10	1 2 3
86. I feel like crying when my students are unsuccessful.	1 2 3 4 5 6 7 8 9 10	1 2 3
87. Too many duties related to my job do not involve instruction.	1 2 3 4 5 6 7 8 9 10	1 2 3
88. Offering more money is likely to overcome some reluctance of teachers working in hard-to-staff schools.	1 2 3 4 5 6 7 8 9 10	1 2 3
89. I feel there is a gap between teachers and administrators.	1 2 3 4 5 6 7 8 9 10	1 2 3
90. The public has a negative view of the teaching profession.	1 2 3 4 5 6 7 8 9 10	1 2 3

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Questionnaire statements	Domain placement	Clarity
91. My students' parents have been very supportive when I have asked for help.	1 2 3 4 5 6 7 8 9 10	1 2 3
92. My job is too frustrating for me.	1 2 3 4 5 6 7 8 9 10	1 2 3
93. Raising teacher salaries will encourage more teachers to stay in my school.	1 2 3 4 5 6 7 8 9 10	1 2 3
94. The induction program is designed to satisfy certification requirements.	1 2 3 4 5 6 7 8 9 10	1 2 3
95. Teachers would rather teach in schools where students are well behaved than in schools where they would earn significantly higher salaries.	1 2 3 4 5 6 7 8 9 10	1 2 3
96. I understand the federal and state mandates.	1 2 3 4 5 6 7 8 9 10	1 2 3
97. The induction program provides assistance with everyday problems.	1 2 3 4 5 6 7 8 9 10	1 2 3
98. Teachers demand respect in my school.	1 2 3 4 5 6 7 8 9 10	1 2 3
99. My administrators support my actions.	1 2 3 4 5 6 7 8 9 10	1 2 3
100. The social issues that my students face were a shock to me.	1 2 3 4 5 6 7 8 9 10	1 2 3
101. I am energized when I am around colleagues.	1 2 3 4 5 6 7 8 9 10	1 2 3
102. I resent the help that is given to me.	1 2 3 4 5 6 7 8 9 10	1 2 3
103. The parents or guardians of my students rarely call me.	1 2 3 4 5 6 7 8 9 10	1 2 3

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<b>Questionnaire statements</b>	<b>Domain placement</b>	<b>Clarity</b>
104. My principal is very supportive of the staff when new teaching methods are being implemented.	1 2 3 4 5 6 7 8 9 10	1 2 3
105. The portfolio requirement in my division has helped me to reflect on my strengths and weaknesses.	1 2 3 4 5 6 7 8 9 10	1 2 3
106. My enthusiasm in my classroom rubs off on my students.	1 2 3 4 5 6 7 8 9 10	1 2 3
107. My courses in college prepared me to teach the curriculum for the courses that I have been assigned to teach.	1 2 3 4 5 6 7 8 9 10	1 2 3
108. As part of the professional development plan for teachers, I am given the opportunity to seek advice from experienced teachers.	1 2 3 4 5 6 7 8 9 10	1 2 3
109. My workload is overwhelming.	1 2 3 4 5 6 7 8 9 10	1 2 3
110. In-service activities are tailored to meet specific needs of the staff.	1 2 3 4 5 6 7 8 9 10	1 2 3
111. Noninstructional positions use monetary resources that could be used to purchase much needed supplies for the classroom.	1 2 3 4 5 6 7 8 9 10	1 2 3
112. My school is fully accredited.	1 2 3 4 5 6 7 8 9 10	1 2 3
113. The school climate in my building creates a high level of staff morale.	1 2 3 4 5 6 7 8 9 10	1 2 3
114. I feel burned out by the end of September.	1 2 3 4 5 6 7 8 9 10	1 2 3

<b>Questionnaire statements</b>	<b>Domain placement</b>	<b>Clarity</b>
115. There is much growth potential in the educational field.	1 2 3 4 5 6 7 8 9 10	1 2 3
116. I am satisfied with the way that my division spends money.	1 2 3 4 5 6 7 8 9 10	1 2 3
117. My school focuses on supporting me and not assessing my work.	1 2 3 4 5 6 7 8 9 10	1 2 3
118. My school is customer-service friendly.	1 2 3 4 5 6 7 8 9 10	1 2 3
119. I feel insecure because I do not understand school policy and procedures.	1 2 3 4 5 6 7 8 9 10	1 2 3
120. The students at my school can academically compete with their peers in the Commonwealth.	1 2 3 4 5 6 7 8 9 10	1 2 3
121. Staff members are expected to use research-based instructional strategies.	1 2 3 4 5 6 7 8 9 10	1 2 3
122. Recognition is given to employees who do a good job.	1 2 3 4 5 6 7 8 9 10	1 2 3
123. The school's goals are reasonable expectations designed for student success and school improvement.	1 2 3 4 5 6 7 8 9 10	1 2 3
124. My colleagues' support helps me to reduce my stress level.	1 2 3 4 5 6 7 8 9 10	1 2 3
125. Violence occurs in my school.	1 2 3 4 5 6 7 8 9 10	1 2 3
126. The stress on my job reduces my confidence level as a teacher.	1 2 3 4 5 6 7 8 9 10	1 2 3
127. My administrators support my decisions.	1 2 3 4 5 6 7 8 9 10	1 2 3

<b>Questionnaire statements</b>	<b>Domain placement</b>	<b>Clarity</b>
128. I am able to receive compensation for participation in the induction program.	1 2 3 4 5 6 7 8 9 10	1 2 3
129. I went into teaching because it is such a challenging profession.	1 2 3 4 5 6 7 8 9 10	1 2 3
130. Major discipline problems exist in my school.	1 2 3 4 5 6 7 8 9 10	1 2 3
131. The “good old boy” operating procedure controls our school.	1 2 3 4 5 6 7 8 9 10	1 2 3
132. I have a chance to develop close friendships with coworkers.	1 2 3 4 5 6 7 8 9 10	1 2 3
133. My division included many perks in its recruiting process such as relocation cost and coupons from local merchants.	1 2 3 4 5 6 7 8 9 10	1 2 3
134. Many veteran teachers in my school are allowed to perform poorly, but I am held to a higher standard.	1 2 3 4 5 6 7 8 9 10	1 2 3
135. Classroom management was taught in my undergraduate program.	1 2 3 4 5 6 7 8 9 10	1 2 3
136. The evaluation process for teachers is implemented with clear objectives.	1 2 3 4 5 6 7 8 9 10	1 2 3
137. Teachers are often “burned out” too early in the year.	1 2 3 4 5 6 7 8 9 10	1 2 3
138. My school is nothing like the one in which I did my student teaching.	1 2 3 4 5 6 7 8 9 10	1 2 3

*Note.* The directions were placed at the top of each page in the original instrument. They have been omitted here to conserve space and to ease reading. <sup>a</sup>Domains 3 and 5 were transposed between the descriptions and the list on each page. Because all of the pages contained these domains, as listed here, it is assumed that the list at the top of each page is the list used by the content validators. The data in Table C2 are consistent with this assumption.

**Data from the content validation panel.** This section contains the domain and clarity data collected from the validation panel

and a summary of items validated by the process.

Table C 2

*Content Validation Data for the Beginning Teacher Retention Questionnaire: Classification of Items Into Domains and Clarity Ratings by Experts, August 2009*

Item	Expected domain	Domains																				Clarity rating
		Compensation (1)		Preservice preparation (2)		In-service training support (3)		School culture (4)		External forces (5)		Motivation to teach (6)		Emotional factors (7)		Principal leadership actions (8)		Economic conditions (9)		Demographics (10)		
		N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	
1	9	1	7							1	7							13	87			3
2	9											1	7			2	13	12	80			3
3	7											3	20	12	80							3
4	4							13	87							2	13					3
5	6											12	80	3	20							3
6	2			12	80							3	20									3
7	6											13	87	2	13							3
8	4			2	13	2	13	4	27	3	20			1	7	1	7	1	7	1	7	3
9	3			2	13	13	87															3
10	7							1	7			1	7	13	87							3
11	1	13	87											1	7			1	7			3
12	6	1	7					2	13	2	13	4	27	3	20			2	13	1	7	3
13	3					14	93									1	7					3
14	7							1	7	1	7	1	7	4	27	7	47	1	7			3
15	5							2	13	3	20							2	13	8	53	3

Item	Expected domain	Domains																		Clarity rating		
		Compensation (1)		Preservice preparation (2)		In-service training support (3)		School culture (4)		External forces (5)		Motivation to teach (6)		Emotional factors (7)		Principal leadership actions (8)		Economic conditions (9)			Demographics (10)	
16	7											2	13	13	87							3
17	2			14	93	1	7															3
18	3			2	13	12	80			1	7											3
19	6											12	80	3	20							3
20	10													2	13					13	87	3
21	6											12	80	3	20							3
22	5							2	13	13	87											3
23	3			2	13	13	87															3
24	5									12	80	3	20									3
25	2			3	20	3	20	3	20	1	7			1	7				3	20		3
26	9							1	7	1	7						5	33	8	53		3
27	7							1	7					12	80					2	13	3
28	1	12	80									3	20									3
29	4							5	33			3	20	3	20	1	7	3	20			3
30	1	12	80															3	20			3
31	4			2	13			13	87													3
32	2			12	80					2	13									1	7	3
33	5									15	100											3
34	7					1	7			1	7	1	7	12	80							3
35	2			14	93					1	7											3
36	1	14	93														1	7				3
37	7											3	20	12	80							3
38	7													12	80	3	20					3

Item	Expected domain	Domains																		Clarity rating		
		Compensation (1)		Preservice preparation (2)		In-service training support (3)		School culture (4)		External forces (5)		Motivation to teach (6)		Emotional factors (7)		Principal leadership actions (8)		Economic conditions (9)			Demographics (10)	
39	3					13	87	1	7			1	7									3
40	9							2	13	2	13							6	40	5	33	3
41	4							13	87			2	13									3
42	7									1	7	2	13	12	80							3
43	4							12	80							3	20					3
44	5			3	20					12	80											3
45	4							12	80			2	13			1	7					3
46	10									3	20									12	80	3
47	8							3	20							12	80					3
48	8													3	20	12	80					3
49	5									12	80									3	20	3
50	7			3	20									12	80							3
51	4					3	20	12	80													3
52	1	6	40															5	33	4	27	3
53	3					15	100															3
54	1	12	80															3	20			3
55	8							1	7					2	13	12	80					3
56	4							12	80							2	13			1	7	3
57	1	12	80									2	13									3
58	3	1	7			13	87							1	7							3
59	7											1	7	14	93							3
60	5									12	80									3	20	3
61	2			15	100																	3

Item	Expected domain	Domains																		Clarity rating		
		Compensation (1)		Preservice preparation (2)		In-service training support (3)		School culture (4)		External forces (5)		Motivation to teach (6)		Emotional factors (7)		Principal leadership actions (8)		Economic conditions (9)			Demographics (10)	
62	1	12	80															3	20			3
63	8							1	7							14	93					3
64	5			1	7					8	53							3	20	1	7	3
65	3					15	100															3
66	5									12	80									3	20	3
67	3					14	93			1	7											3
68	1	12	80															3	20			3
69	7													15	100							3
70	4							12	80	3	20											3
71	8											3	20			12	80					3
72	9																	14	93			3
73	2			15	100																	3
74	7													15	100							3
75	5									12	80											3
76	2			15	100																	3
77	4			3	20			7	47	1	7	3	20									3
78	7							1	7					13	87	1	7					3
79	1	13	87																	2	13	3
80	3					15	100															3
81	3					15	100															3
82	7							2	13					13	87							3
83	6							1	7			13	87									3

Item	Expected domain	Domains																				Clarity rating
		Compensation (1)		Preservice preparation (2)		In-service training support (3)		School culture (4)		External forces (5)		Motivation to teach (6)		Emotional factors (7)		Principal leadership actions (8)		Economic conditions (9)		Demographics (10)		
		N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	
84	1	13	87															2	13			3
85	2			14	93			1	7													3
86	7					1	7			1	7			13	87							3
87	8							1	7	1	7			1	7	12	80					3
88	1	13	87															1	7	1	7	3
89	8													2	13	12	80	1	7			3
90	5									12	80											3
91	5							3	20	12	80											3
92	7											2	13	13	87							3
93	1	12	80															3	20			3
94	3					15	100															3
95	6	1	7					2	13	2	13	4	27	3	20			2	13	1	7	3
96	5			3	20					12	80											3
97	3					14	93	1	7													3
98	4							14	93							1	7					3
99	8															15	100					3
100	5							2	13	3	20			3	20	1	7					3
101	7											3	20	12	80							3
102	7					4	27							11	73							3
103	5							11	73	3	20			1	7							3
104	8															15	100					3
105	3					12	80							3	20							3

Item	Expected domain	Domains																				Clarity rating	
		Compensation (1)		Preservice preparation (2)		In-service training support (3)		School culture (4)		External forces (5)		Motivation to teach (6)		Emotional factors (7)		Principal leadership actions (8)		Economic conditions (9)		Demographics (10)			
		N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%		
106	6											12	80	3	20								3
107	2			15	100																		3
108	3					14	93			1	7												3
109	7							2	13					13	87								3
110	3					15	100																3
111	9	2	13							1	7							12	80				3
112	10							5	33	2	13	3	20			1	7			4	27		3
113	4							15	100														3
114	7							1	7			2	13	12	80								3
115	6									2	13	13	87										3
116	9	1	7							2	13							12	80				
117	8			1	7	2	13	1	7	1	7	3	20	1	7	6	40						3
118	4							15	100														3
119	7													13	87	2	13						3
120	4							12	80												3	20	3
121	8					3	20									12	80						3
122	8							3	20							12	80						3
123	4							12	80							3	20						3
124	7							3	20					12	80								3
125	4							12	80												3	20	3
126	7									1	7	2	13	12	80								3

Item	Expected domain	Domains																				Clarity rating
		Compensation (1)		Preservice preparation (2)		In-service training support (3)		School culture (4)		External forces (5)		Motivation to teach (6)		Emotional factors (7)		Principal leadership actions (8)		Economic conditions (9)		Demographics (10)		
		N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	
127	8															15	100					3
128	1	13	87			2	13															3
129	6											15	100									3
130	4							12	80							3	20					3
131	4							7	47	1	7					7	47					3
132	4							14	93					1	7							3
133	1	12	80															3	20			3
134	8							3	20							12	80					3
135	2			15	100																	3
136	8							2	13							13	87					3
137	7											3	20	12	80							3
138	2			13	87	1	7													1	7	3

Note. N=15. Item content is in the content validation instrument above in this appendix. Whenever a row does not total to 15 respondents, the missing numbers were nonrespondents.

Table C 3

*Postvalidation Chart by Domain: Items Meeting the 80% Criterion for Content Validity*

Compensation (1)		Preservice preparation (2)		In-service training support (3)		School culture (4)		External forces (5)		Motivation to teach (6)		Emotional factors (7)		Principal leadership actions (8)		Economic conditions (9)		Demographics (10)	
Item	%	Item	%	Item	%	Item	%	Item	%	Item	%	Item	%	Item	%	Item	%	Item	%
11	87	6	80	9	87	4	87	22	87	5	80	3	80	47	80	1	87	20	87
28	80	17	93	13	93	31	87	24	80	7	87	10	87	48	80	2	80	46	80
30	80	32	80	18	80	41	87	33	100	19	80	16	87	55	80	72	93		
36	93	35	93	23	87	43	80	44	80	21	80	27	80	63	93	111	80		
54	80	61	100	39	87	45	80	49	80	83	87	34	80	71	80	116	80		
57	80	73	100	53	100	51	80	60	80	106	80	37	80	87	80				
62	80	76	100	58	87	56	80	66	80	115	87	38	80	89	80				
68	80	85	93	65	100	70	80	75	80	129	100	42	80	99	100				
79	87	107	100	67	93	98	93	90	80			50	80	104	100				
84	87	135	100	80	100	113	100	91	80			59	93	121	80				
88	87	138	87	81	100	118	100	96	80			69	100	122	80				
93	80			94	100	120	80					78	87	127	100				
128	87			97	93	123	80					82	87	134	80				
133	80			105	80	125	80					86	87	136	87				
				108	93	130	80					92	87						
				110	100	132	93					101	80						
												109	87						
												114	80						
												119	87						
												124	80						

<b>Compensation (1)</b>		<b>Preservice preparation (2)</b>		<b>In-service training support (3)</b>		<b>School culture (4)</b>		<b>External forces (5)</b>		<b>Motivation to teach (6)</b>		<b>Emotional factors (7)</b>		<b>Principal leadership actions (8)</b>		<b>Economic conditions (9)</b>		<b>Demographics (10)</b>	
												126	80						
												137	80						

*Note.* Items were randomly selected for the Beginning Teacher Retention Questionnaire (Giacometti, 2005). Used with permission of Dr. K. S. Giacometti.

## **APPENDIX D: CORRESPONDENCE WITH PARTICIPANTS**

This appendix has all of the correspondence sent to the participants in the study.

### **Initial Letter Mailed to All Members of the Population**

June 29, 2011

Dear Colleague:

I am a doctoral candidate at Virginia Tech conducting a study on the factors that affect the retention of beginning teachers. Research shows that schools, as a whole, lose an average of 5% of new teachers each year. The Commonwealth is no exception to this dilemma. As a part of my research, I am soliciting Virginia high school teachers' support in completing my investigation.

The Beginning Teacher Retention Questionnaire is a first-time Internet questionnaire designed to identify factors that affect teacher retention in hard-to-staff high schools in Virginia. The information gained will help school districts enhance their support of new teachers in an effort to increase their retention rate. All information you provide will remain confidential and will be used solely for the purpose of statistical analysis in this study. I am asking that you forward your e-mail address to me within five days. Upon receipt of your response, I will send an e-mail with directions for linking to the questionnaire and with instructions for completing it. Participants responding by the closing date of August 1, 2011 have their names entered into a drawing to win a \$100.00 gas card.

Should you need further information or clarification, call 757- (home) or 757- (cellular) or by e-mail at [meblunt@vt.edu](mailto:meblunt@vt.edu). I appreciate your support and look forward to your participation.

Sincerely,

Mechelle S. Blunt  
Doctoral Candidate

Dr. David Parks  
Professor

## **Email to Those Responding to the Initial Letter**

July 2011

From: Mechelle S. Blunt

Re: Survey

My name is Mechelle Savedge-Blunt, and I am a student at Virginia Tech conducting a study on the factors that affect the retention of beginning teachers. Recently you received a letter soliciting your participation in this study. The link to this questionnaire is <https://survey.vt.edu/survey/entry.msb>. Should you have questions or concerns, feel free to e-mail me at [meblunt@vt.edu](mailto:meblunt@vt.edu) or call 757-.

Please respond within one week. Thank you for your participation.

Sincerely,

Mechelle S. Blunt  
Doctoral Candidate

Dr. David Parks  
Professor

## Follow-up E-mail

From: Mechelle S. Blunt  
Re: Survey Response

Dear Colleague

My name is Mechelle Savedge-Blunt and I am a student at Virginia Tech conducting a study on the factors that affect the retention of beginning teachers. I am asking that you complete an Internet questionnaire to help me complete my study. The data collected is confidential and will be used for statistical purposes only. The link to this questionnaire is <https://survey.vt.edu/survey/entry.jsp?id=1306579729688>. Should you have questions or concerns, feel free to e-mail me at [meblunt@vt.edu](mailto:meblunt@vt.edu) or call 757-.

Participants who complete the survey by the closing date of July 8, 2011, will have their names entered into a drawing to win a \$100.00 gas card. Thank you for your participation.

Sincerely,

Mechelle S. Blunt  
Doctoral Candidate

Dr. David Parks  
Professor

## APPENDIX E: DATA FOR THE PRINCIPAL COMPONENTS ANALYSIS

Table E 1

*Descriptive Statistics for Items in the Teacher Retention Questionnaire Included in the Principal Components Analysis*

Item	<i>M</i>	<i>SD</i>	Analysis <i>N</i>	Missing <i>N</i>
i18	2.67	.848	130	0
i19	2.95	.850	128	2
i20	2.28	.925	127	3
i21	2.62	.890	127	3
i22	2.96	.722	129	1
i23	2.50	.894	129	1
i24	2.99	.742	130	0
i25	2.41	.760	127	3
i27	2.91	.696	129	1
i28	3.54	.637	130	0
i29	2.88	.910	129	1
i30	2.15	.818	130	0
i31	2.73	.892	128	2
i32	2.70	.700	130	0
i33	3.17	.728	130	0
i34	1.07	.258	127	3
i35	2.40	.822	130	0
i36	2.77	.859	130	0
i37	2.41	.816	129	1
i38	1.53	.501	130	0
i39	2.55	.780	129	1
i41	1.34	.475	130	0
i42	2.15	.802	130	0
i43	1.86	.347	130	0
i44	2.27	.737	128	2
i45	1.19	.394	126	4
i46	2.56	.704	130	0
i47	2.85	.867	130	0
i49	2.82	.744	129	1
i50	2.97	.599	129	1
i51	2.41	.735	129	1
i52	3.23	.593	129	1

Item	<i>M</i>	<i>SD</i>	Analysis <i>N</i>	Missing <i>N</i>
i55	2.52	.750	130	0
i56	2.79	.757	129	1
i57	2.87	.764	129	1
i58	3.12	.623	130	0
i59	2.88	.692	129	1
i60	2.74	.783	129	1
i62	1.94	.781	128	2
i63	2.08	.716	130	0
i26r	3.22	.747	130	0
i40r	2.28	.917	130	0
i48r	2.21	.804	130	0
i53r	2.49	.849	129	1
i54r	2.48	.813	128	2
i61r	2.71	.839	130	0
i64r	1.72	.720	128	2
i65r	2.13	.784	129	1

*Note.* Content of the items is in Appendix A.

Table E 2

*Correlation Matrix for Items in the Teacher Retention Questionnaire Included in the Principal Components Analysis*

Item	i18	i19	i20	i21	i22	i23	i24	i25	i27	i28	i29	i30	i31	i32	i33	i34	i35	i36	i37
i19	.640																		
i20	.518	.565																	
i21	.281	.403	.383																
i22	.476	.649	.416	.207															
i23	.291	.124	.233	.326	.030														
i24	.218	.111	.010	.080	.072	.299													
i25	.426	.507	.445	.374	.414	.181	-.014												
i27	.492	.669	.450	.251	.584	.018	.149	.508											
i28	.174	.221	-.027	.205	.215	.093	.058	.238	.316										
i29	.168	.094	.120	.314	.064	.230	.310	.142	.045	.102									
i30	.294	.348	.384	.279	.276	.059	.181	.265	.282	.131	.066								
i31	.202	.179	.299	.606	-.032	.321	.148	.233	.150	.139	.306	.331							
i32	.236	.215	.478	.248	.214	.253	.175	.206	.218	-.087	.149	.253	.124						
i33	.292	.419	.251	.203	.368	-.005	.160	.224	.367	.237	.031	.453	.101	.100					
i34	.182	.167	.213	.087	.140	.123	.130	.141	.122	.009	.142	.177	.188	.208	.022				
i35	.469	.498	.489	.236	.367	.167	.145	.324	.360	-.044	.222	.201	.155	.358	.171	.203			
i36	.544	.703	.466	.251	.653	.029	.058	.490	.605	.172	.172	.181	.049	.129	.262	.182	.450		
i37	.480	.443	.537	.346	.381	.230	.179	.377	.444	.100	.190	.250	.273	.296	.255	.187	.500	.333	
i38	.143	.150	.000	-.019	.208	-.170	.136	.045	.132	.045	.144	-.021	-.092	-.073	.007	.200	.309	.305	.211
i39	.396	.453	.347	.233	.316	.076	.196	.370	.491	.267	.317	.238	.221	.220	.268	.202	.534	.389	.536
i41	.261	.235	.304	.174	.129	.215	.227	.163	.136	.034	.206	.251	.138	.261	.125	.262	.385	.060	.351
i42	.406	.367	.241	.134	.239	.104	.106	.371	.345	.064	.100	.249	.088	.193	.394	.069	.306	.277	.414
i43	.133	.087	.174	.311	.075	.099	.056	.090	.080	.200	.093	.099	.081	.051	.063	-.064	-.076	.048	.093
i44	.391	.285	.431	.271	.229	.230	.187	.258	.117	-.156	.164	.220	.236	.366	.157	.239	.275	.284	.388

Item	i18	i19	i20	i21	i22	i23	i24	i25	i27	i28	i29	i30	i31	i32	i33	i34	i35	i36	i37
i45	.260	.192	.206	.053	.054	.049	.066	.098	-.031	-.182	.082	.132	.076	.260	.110	.106	.242	.156	.079
i46	.248	.253	.164	.124	.334	-.021	-.036	.244	.241	.202	.048	.233	.061	.313	.252	.262	.278	.229	.263
i47	-.017	-.009	-.072	-.108	.091	.176	.058	.088	.068	-.003	-.004	-.077	-.047	.026	.066	-.094	.065	.025	.046
i49	.053	.011	.128	.229	-.086	.216	.223	.041	.015	.038	.475	.146	.299	.195	-.076	.068	.141	.032	.101
i50	.348	.490	.443	.170	.557	.014	.070	.393	.481	.003	.007	.185	.058	.182	.173	.219	.247	.471	.315
i51	.583	.521	.504	.318	.369	.139	.134	.298	.360	.011	.170	.287	.202	.318	.210	.140	.710	.423	.404
i52	.139	.302	.103	.210	.204	.105	.181	.123	.106	.288	-.019	.250	.190	.039	.401	-.059	.162	.122	.020
i55	.526	.517	.348	.230	.412	.061	.258	.247	.487	.129	.162	.306	.095	.282	.336	.101	.468	.475	.392
i56	.473	.631	.467	.288	.499	-.030	.066	.380	.559	.217	.064	.352	.112	.159	.517	.159	.460	.488	.453
i57	.268	.220	.209	.453	.189	.314	.218	.216	.184	.290	.437	.181	.479	.100	.095	.129	.257	.226	.321
i58	.107	.188	.076	.095	.184	.169	.153	.177	.096	.183	.261	.162	-.014	-.004	.210	.046	.085	.242	.121
i59	.465	.378	.434	.056	.382	.119	.180	.282	.291	.089	.200	.168	.022	.200	.162	.089	.383	.439	.441
i60	.445	.548	.494	.221	.341	.159	.305	.452	.490	.155	.218	.349	.226	.298	.417	.169	.403	.409	.409
i62	.263	.197	.265	.136	.149	.056	.120	.205	.236	.147	.121	.272	.145	.253	.115	.228	.209	.223	.254
i63	.315	.240	.215	.180	.159	.000	.016	.227	.311	.171	.063	.164	.042	.252	.225	.145	.271	.234	.334
i26r	.297	.257	.212	.135	.218	.137	.283	.180	.230	-.066	.099	.354	.148	.154	.261	.045	.174	.211	.166
i40r	.092	.006	.065	.028	.017	.011	.129	-.036	.074	.054	-.024	.327	.107	.025	.206	.048	.033	.005	-.008
i48r	-.024	-.043	.070	.027	.013	-.058	-.062	.090	.032	.113	.046	.142	-.045	.084	.059	.044	.061	-.054	-.032
i53r	.227	.315	.233	.303	.222	.100	.204	.181	.243	.033	.008	.434	.306	.092	.225	.023	-.021	.167	.134
i54r	.051	.136	.189	.232	.059	.024	.000	.071	.031	-.112	.044	.088	.040	.173	-.027	-.046	.149	.065	.112
i61r	.419	.452	.280	.215	.303	.081	.171	.264	.316	.210	.054	.571	.112	.245	.437	.061	.238	.293	.246
i64r	.195	.117	.234	.120	.082	-.017	.100	.037	.095	-.113	.042	.187	.019	.410	.085	.144	.238	.131	.138
i65r	.195	.222	.181	.225	.133	.057	.109	.121	.107	-.050	.132	.142	.159	.262	.097	.041	.185	.115	.215

Significance level (one-tailed test)

Item	i18	i19	i20	i21	i22	i23	i24	i25	i27	i28	i29	i30	i31	i32	i33	i34	i35	i36	i37
i19	.000																		
i20	.000	.000																	
i21	.001	.000	.000																
i22	.000	.000	.000	.010															
i23	.000	.082	.004	.000	.367														
i24	.006	.106	.456	.186	.209	.000													
i25	.000	.000	.000	.000	.000	.021	.438												
i27	.000	.000	.000	.002	.000	.421	.046	.000											
i28	.024	.006	.383	.010	.007	.148	.256	.004	.000										
i29	.028	.146	.090	.000	.237	.004	.000	.056	.308	.126									
i30	.000	.000	.000	.001	.001	.252	.020	.001	.001	.069	.227								
i31	.011	.022	.000	.000	.360	.000	.047	.004	.046	.059	.000	.000							
i32	.003	.007	.000	.002	.008	.002	.024	.010	.006	.163	.046	.002	.081						
i33	.000	.000	.002	.011	.000	.477	.034	.006	.000	.003	.365	.000	.128	.128					
i34	.021	.031	.009	.168	.059	.086	.073	.059	.086	.461	.056	.023	.018	.010	.405				
i35	.000	.000	.000	.004	.000	.030	.050	.000	.000	.308	.006	.011	.040	.000	.026	.011			
i36	.000	.000	.000	.002	.000	.371	.256	.000	.000	.025	.026	.020	.291	.072	.001	.020	.000		
i37	.000	.000	.000	.000	.000	.004	.021	.000	.000	.130	.016	.002	.001	.000	.002	.018	.000	.000	
i38	.053	.045	.499	.417	.009	.027	.061	.308	.068	.306	.051	.408	.152	.205	.469	.012	.000	.000	.008
i39	.000	.000	.000	.004	.000	.196	.013	.000	.000	.001	.000	.003	.006	.006	.001	.012	.000	.000	.000
i41	.001	.004	.000	.025	.072	.007	.005	.034	.063	.353	.010	.002	.060	.001	.079	.001	.000	.249	.000
i42	.000	.000	.003	.066	.003	.119	.114	.000	.000	.234	.129	.002	.161	.014	.000	.220	.000	.001	.000
i43	.066	.164	.025	.000	.201	.133	.263	.156	.185	.011	.147	.131	.180	.282	.239	.238	.195	.293	.146
i44	.000	.001	.000	.001	.005	.005	.017	.002	.094	.039	.032	.006	.004	.000	.038	.004	.001	.001	.000
i45	.002	.016	.011	.280	.273	.292	.233	.141	.364	.020	.180	.071	.201	.002	.109	.120	.003	.040	.189
i46	.002	.002	.033	.083	.000	.405	.341	.003	.003	.011	.295	.004	.248	.000	.002	.001	.001	.004	.001

Item	i18	i19	i20	i21	i22	i23	i24	i25	i27	i28	i29	i30	i31	i32	i33	i34	i35	i36	i37
i47	.424	.460	.209	.113	.154	.023	.255	.161	.221	.485	.484	.191	.300	.387	.227	.148	.230	.390	.301
i49	.274	.449	.076	.005	.168	.007	.006	.325	.431	.335	.000	.050	.000	.013	.196	.226	.055	.358	.129
i50	.000	.000	.000	.028	.000	.437	.217	.000	.000	.484	.468	.018	.259	.020	.025	.007	.002	.000	.000
i51	.000	.000	.000	.000	.000	.058	.065	.000	.000	.451	.027	.000	.011	.000	.008	.058	.000	.000	.000
i52	.058	.000	.125	.009	.010	.118	.020	.085	.118	.000	.418	.002	.016	.331	.000	.256	.033	.084	.412
i55	.000	.000	.000	.005	.000	.246	.002	.003	.000	.072	.033	.000	.143	.001	.000	.130	.000	.000	.000
i56	.000	.000	.000	.001	.000	.368	.227	.000	.000	.007	.235	.000	.104	.036	.000	.038	.000	.000	.000
i57	.001	.006	.009	.000	.016	.000	.007	.008	.019	.000	.000	.020	.000	.130	.142	.076	.002	.005	.000
i58	.113	.017	.198	.144	.018	.028	.041	.023	.139	.018	.001	.033	.436	.484	.008	.303	.169	.003	.086
i59	.000	.000	.000	.265	.000	.089	.020	.001	.000	.158	.011	.028	.401	.011	.033	.161	.000	.000	.000
i60	.000	.000	.000	.006	.000	.036	.000	.000	.000	.040	.007	.000	.005	.000	.000	.028	.000	.000	.000
i62	.001	.013	.001	.064	.048	.264	.088	.011	.004	.049	.086	.001	.051	.002	.098	.005	.009	.006	.002
i63	.000	.003	.008	.022	.036	.498	.429	.005	.000	.026	.239	.031	.319	.002	.005	.052	.001	.004	.000
i26r	.000	.002	.008	.065	.007	.061	.001	.022	.004	.226	.131	.000	.048	.040	.001	.310	.024	.008	.030
i40r	.149	.471	.233	.378	.422	.451	.072	.345	.202	.270	.395	.000	.114	.387	.009	.295	.355	.476	.463
i48r	.395	.316	.216	.381	.441	.255	.241	.158	.359	.100	.301	.053	.308	.171	.253	.312	.245	.273	.360
i53r	.005	.000	.004	.000	.006	.129	.010	.021	.003	.354	.463	.000	.000	.149	.005	.398	.405	.029	.066
i54r	.284	.065	.017	.005	.255	.393	.500	.215	.364	.105	.313	.163	.327	.025	.383	.305	.047	.232	.105
i61r	.000	.000	.001	.008	.000	.179	.026	.001	.000	.008	.272	.000	.104	.002	.000	.246	.003	.000	.003
i64r	.014	.097	.004	.092	.181	.423	.132	.340	.143	.102	.320	.017	.415	.000	.171	.054	.003	.070	.061
i65r	.013	.006	.021	.006	.067	.260	.110	.089	.115	.285	.069	.055	.037	.001	.137	.325	.018	.097	.007

Item	i38	i39	i41	i42	i43	i44	i45	i46	i47	i49	i50	i51	i52	i55	i56	i57	i58	i59	i60	i62	i63	i26r	i40r	i48r	i53r	i54r	i61r	i64r	
i39	.291																												
i41	.086	.303																											
i42	.181	.294	.310																										
i43	-.198	.026	-.043	.021																									
i44	.068	.275	.306	.170	.079																								
i45	.065	.224	.214	.212	-.033	.314																							
i46	.159	.331	.169	.244	.003	.259	.248																						
i47	-.132	.075	-.004	.068	-.046	.189	-.083	.066																					
i49	.065	.264	.104	-.034	.054	.059	.141	-.062	.044																				
i50	.108	.255	.120	.270	.017	.158	.227	.226	-.099	.022																			
i51	.234	.501	.299	.215	-.018	.322	.376	.367	-.051	.178	.349																		
i52	-.048	.110	.139	.125	.007	-.049	-.024	.079	.067	.112	.043	.137																	
i55	.133	.422	.203	.357	.128	.305	.210	.255	-.068	.067	.279	.437	.099																
i56	.190	.369	.240	.335	.066	.242	.052	.264	.084	.030	.399	.394	.353	.478															
i57	.122	.319	.252	.160	.107	.185	.085	-.036	-.018	.508	.145	.236	.241	.186	.195														
i58	.037	.115	.199	.179	.115	.069	-.028	.195	.179	.199	.156	.024	.259	.046	.237	.198													
i59	.178	.423	.191	.172	.029	.338	.199	.182	.141	.157	.371	.448	.124	.311	.326	.266	.359												
i60	.033	.388	.257	.297	.097	.295	.081	.204	.136	.122	.349	.376	.332	.344	.607	.269	.321	.470											
i62	.104	.301	.333	.218	-.032	.246	.219	.362	-.002	.117	.113	.222	-.036	.242	.218	.157	.032	.204	.274										
i63	.285	.245	.120	.585	-.015	.197	.156	.366	-.016	.026	.152	.236	-.006	.323	.247	.090	.116	.097	.178	.319									
i26r	.024	.122	.099	.268	.086	.109	.051	.107	.040	-.012	.137	.173	.235	.257	.265	.066	.176	.067	.321	.037	.096								
i40r	-.045	.013	.062	-.007	.003	.171	.073	.039	-.013	-.018	-.055	.037	.109	.044	.073	-.036	.088	-.022	.143	.123	.164	.068							
i48r	.128	.113	.180	.058	-.146	.024	.176	.272	-.054	.011	-.035	.236	-.005	.065	.047	-.018	.026	.044	-.001	.257	.158	.002	.077						
i53r	-.022	.051	.156	.169	.021	.342	.104	.154	-.008	.089	.230	.164	.161	.181	.331	.160	.003	.004	.259	.177	.118	.283	.084	.237					
i54r	-.036	.061	.062	-.073	.099	.160	-.010	.125	-.094	.011	-.018	.190	.062	.077	.035	-.025	-.041	.093	.071	-.004	.104	.118	.098	.253	.185				
i61r	-.071	.201	.095	.171	.046	.191	.107	.214	-.094	.152	.261	.373	.216	.365	.429	.206	.158	.276	.430	.151	.132	.361	.169	.045	.421	.111			

Item	i38	i39	i41	i42	i43	i44	i45	i46	i47	i49	i50	i51	i52	i55	i56	i57	i58	i59	i60	i62	i63	i26r	i40r	i48r	i53r	i54r	i61r	i64r	
i64r	.149	.164	.117	.231	-.025	.274	.210	.247	-.037	.077	.188	.275	-.057	.181	.103	-.026	-.143	.039	.037	.383	.325	.034	.236	.058	.110	.081	.108		
i65r	-.039	.170	.260	.104	-.022	.325	.155	.261	-.029	.039	.142	.225	.089	.097	.098	-.038	.014	.099	.170	.361	.233	.083	.165	.067	.214	.216	.166	.392	
i39	.000																												
i41	.165	.000																											
i42	.020	.000	.000																										
i43	.012	.384	.315	.404																									
i44	.222	.001	.000	.028	.188																								
i45	.233	.006	.008	.008	.357	.000																							
i46	.035	.000	.027	.003	.485	.002	.003																						
i47	.067	.200	.480	.222	.303	.016	.178	.226																					
i49	.231	.001	.122	.350	.272	.255	.058	.243	.311																				
i50	.112	.002	.088	.001	.426	.038	.005	.005	.131	.401																			
i51	.004	.000	.000	.007	.418	.000	.000	.000	.282	.022	.000																		
i52	.296	.108	.058	.080	.468	.292	.394	.186	.225	.102	.316	.060																	
i55	.066	.000	.010	.000	.074	.000	.009	.002	.221	.227	.001	.000	.132																
i56	.015	.000	.003	.000	.228	.003	.282	.001	.173	.367	.000	.000	.000	.000															
i57	.085	.000	.002	.035	.115	.018	.172	.341	.421	.000	.052	.004	.003	.017	.013														
i58	.336	.097	.012	.021	.095	.220	.379	.013	.021	.012	.038	.393	.002	.303	.003	.012													
i59	.022	.000	.015	.026	.370	.000	.013	.020	.056	.038	.000	.000	.082	.000	.000	.001	.000												
i60	.356	.000	.002	.000	.136	.000	.185	.010	.062	.086	.000	.000	.000	.000	.000	.001	.000	.000											
i62	.121	.000	.000	.007	.358	.003	.007	.000	.490	.094	.102	.006	.343	.003	.007	.039	.359	.010	.001										
i63	.001	.003	.086	.000	.433	.013	.041	.000	.427	.384	.043	.003	.473	.000	.002	.154	.095	.136	.022	.000									
i26r	.395	.084	.132	.001	.165	.110	.287	.112	.327	.448	.061	.025	.004	.002	.001	.227	.023	.227	.000	.338	.138								
i40r	.307	.442	.242	.467	.486	.027	.208	.331	.443	.419	.267	.338	.109	.308	.204	.342	.161	.401	.052	.084	.031	.220							
i48r	.073	.100	.020	.255	.048	.393	.024	.001	.271	.453	.347	.004	.480	.230	.300	.419	.385	.311	.495	.002	.036	.489	.192						
i53r	.401	.283	.039	.028	.407	.000	.123	.040	.466	.157	.005	.032	.035	.020	.000	.035	.488	.481	.002	.023	.092	.001	.171	.003					
i54r	.341	.247	.245	.207	.132	.037	.456	.079	.146	.450	.422	.016	.243	.192	.347	.391	.325	.149	.214	.482	.121	.092	.135	.002	.019				

Item	i38	i39	i41	i42	i43	i44	i45	i46	i47	i49	i50	i51	i52	i55	i56	i57	i58	i59	i60	i62	i63	i26r	i40r	i48r	i53r	i54r	i61r	i64r
i61r	.212	.011	.142	.026	.300	.015	.118	.007	.143	.042	.001	.000	.007	.000	.000	.010	.036	.001	.000	.045	.067	.000	.027	.307	.000	.106		
i64r	.046	.033	.093	.004	.389	.001	.010	.003	.341	.195	.017	.001	.262	.021	.125	.385	.054	.331	.339	.000	.000	.352	.004	.256	.108	.185	.114	
i65r	.331	.027	.001	.122	.401	.000	.042	.001	.374	.332	.055	.005	.160	.138	.137	.337	.437	.132	.027	.000	.004	.175	.030	.225	.008	.007	.030	.000

*Note.* Content of the items is in Appendix A.

Table E 3

*Kaiser-Meyer-Olkin Measure of Sampling Adequacy and Bartlett's Test of Sphericity Results*

Kaiser-Meyer-Olkin measure of sampling adequacy.		.781
Approximate chi-square		2771.412
Bartlett's test of sphericity	<i>df</i>	1128
	Significance level	.000

Table E 4

*Item Communalities*

<b>Item</b>	<b>Initial</b>	<b>Extraction</b>
i18	1.000	.643
i19	1.000	.779
i20	1.000	.728
i21	1.000	.777
i22	1.000	.669
i23	1.000	.565
i24	1.000	.701
i25	1.000	.588
i27	1.000	.725
i28	1.000	.779
i29	1.000	.632
i30	1.000	.669
i31	1.000	.738
i32	1.000	.533
i33	1.000	.633
i34	1.000	.711
i35	1.000	.798
i36	1.000	.747
i37	1.000	.622
i38	1.000	.728
i39	1.000	.649
i41	1.000	.583
i42	1.000	.836
i43	1.000	.685
i44	1.000	.605
i45	1.000	.672
i46	1.000	.581

<b>Item</b>	<b>Initial</b>	<b>Extraction</b>
i47	1.000	.756
i49	1.000	.685
i50	1.000	.687
i51	1.000	.762
i52	1.000	.701
i55	1.000	.658
i56	1.000	.662
i57	1.000	.702
i58	1.000	.810
i59	1.000	.671
i60	1.000	.629
i62	1.000	.597
i63	1.000	.724
i26r	1.000	.600
i40r	1.000	.508
i48r	1.000	.762
i53r	1.000	.814
i54r	1.000	.768
i61r	1.000	.648
i64r	1.000	.694
i65r	1.000	.600

*Note.* Extraction Method: principal components analysis. Content of the items is in Appendix A.

Table E 5

*Total Variance Explained by Components*

Component	Initial eigenvalues			Extraction sums of squared loadings			Rotation sums of squared loadings		
	Total	% of variance	Cumulative %	Total	% of variance	Cumulative %	Total	% of variance	Cumulative %
1	11.109	23.143	23.143	11.109	23.143	23.143	7.870	16.396	16.396
2	2.930	6.103	29.246	2.930	6.103	29.246	3.156	6.576	22.972
3	2.829	5.893	35.140	2.829	5.893	35.140	2.457	5.119	28.091
4	2.376	4.950	40.090	2.376	4.950	40.090	2.283	4.756	32.847
5	1.919	3.998	44.088	1.919	3.998	44.088	1.986	4.137	36.984
6	1.727	3.599	47.687	1.727	3.599	47.687	1.951	4.064	41.048
7	1.533	3.193	50.880	1.533	3.193	50.880	1.934	4.029	45.077
8	1.433	2.986	53.866	1.433	2.986	53.866	1.823	3.799	48.876
9	1.283	2.672	56.538	1.283	2.672	56.538	1.739	3.623	52.498
10	1.238	2.578	59.116	1.238	2.578	59.116	1.624	3.384	55.883
11	1.162	2.422	61.538	1.162	2.422	61.538	1.619	3.374	59.256
12	1.151	2.398	63.936	1.151	2.398	63.936	1.511	3.149	62.405
13	1.080	2.250	66.187	1.080	2.250	66.187	1.476	3.074	65.479
14	1.047	2.181	68.368	1.047	2.181	68.368	1.387	2.889	68.368
15	.999	2.082	70.450						
16	.978	2.038	72.488						
17	.943	1.964	74.453						
18	.883	1.839	76.291						
19	.802	1.671	77.962						
20	.775	1.616	79.577						
21	.710	1.480	81.057						
22	.676	1.407	82.465						

Component	Initial eigenvalues			Extraction sums of squared loadings			Rotation sums of squared loadings		
	Total	% of variance	Cumulative %	Total	% of variance	Cumulative %	Total	% of variance	Cumulative %
23	.666	1.387	83.851						
24	.601	1.252	85.103						
25	.573	1.194	86.297						
26	.561	1.169	87.466						
27	.494	1.030	88.496						
28	.472	.984	89.480						
29	.465	.969	90.449						
30	.439	.914	91.363						
31	.411	.857	92.220						
32	.386	.803	93.023						
33	.371	.773	93.796						
34	.321	.669	94.466						
35	.312	.651	95.116						
36	.279	.581	95.698						
37	.268	.558	96.255						
38	.246	.513	96.768						
39	.219	.457	97.226						
40	.204	.426	97.652						
41	.182	.380	98.031						
42	.168	.351	98.382						
43	.160	.334	98.716						
44	.156	.325	99.042						
45	.140	.291	99.332						
46	.116	.241	99.573						
47	.110	.230	99.803						

Component	Initial eigenvalues			Extraction sums of squared loadings			Rotation sums of squared loadings		
	Total	% of variance	Cumulative %	Total	% of variance	Cumulative %	Total	% of variance	Cumulative %
48	.095	.197	100.000						

*Note.* Extraction method: principal components analysis.

Table E 6

*Components Matrix*

Item	Component													
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
i18	.738	-.074	-.001	-.075	-.139	.055	.013	-.153	.084	.022	-.013	-.083	-.021	-.162
i19	.789	-.278	-.152	-.016	-.186	-.065	-.060	-.005	.001	-.021	-.033	.065	.068	.054
i20	.698	.046	.084	-.001	-.411	-.013	.035	.082	-.062	-.046	-.136	-.057	-.140	.090
i21	.492	.401	-.222	.101	-.233	-.443	.090	.033	.120	-.057	.041	.057	.058	.172
i22	.635	-.415	-.115	-.081	-.117	-.013	-.005	.083	-.125	.116	.115	.102	.024	.022
i23	.251	.509	-.199	-.091	-.157	.186	.288	-.003	.014	-.170	.021	-.027	-.083	-.126
i24	.288	.334	-.140	.007	.211	.389	-.133	-.321	.060	.155	.197	.204	-.116	-.220
i25	.595	-.117	-.140	-.083	-.131	-.186	.252	.150	-.132	-.157	.086	-.047	.064	.012
i27	.676	-.354	-.160	-.052	-.040	-.176	.097	-.085	-.021	.065	.000	.153	.027	-.190
i28	.233	-.084	-.435	-.014	.416	-.432	.177	.141	.001	.192	-.149	-.029	-.085	-.222
i29	.298	.516	-.115	-.332	.188	-.029	-.084	-.012	.065	.183	.255	.004	.011	.078
i30	.531	.103	-.106	.506	.108	-.001	-.166	-.085	-.160	.012	-.088	-.106	-.131	-.027
i31	.346	.570	-.229	.103	-.119	-.310	.035	-.121	-.124	-.199	-.139	.131	.114	.024
i32	.454	.258	.335	.104	-.188	.144	.154	.043	.056	.085	-.092	-.157	-.103	.036
i33	.497	-.235	-.242	.364	.256	.099	.031	-.087	.089	-.046	-.176	-.102	.037	.054
i34	.291	.130	.217	-.132	.082	-.054	.023	-.157	-.508	-.045	-.025	.157	-.463	.103
i35	.658	.009	.227	-.296	-.035	.115	-.169	.040	.273	-.154	-.254	.104	-.047	.075
i36	.670	-.345	-.073	-.244	-.130	-.060	-.064	-.009	-.078	.179	.159	.086	.125	.063
i37	.667	.057	.058	-.213	-.075	-.022	.196	-.068	.130	-.132	-.046	.128	-.139	-.059
i38	.222	-.174	.252	-.397	.366	-.140	-.303	-.197	.047	-.042	.227	.273	-.014	.113
i39	.638	.046	.076	-.313	.204	-.093	-.051	.061	.112	.035	-.159	.055	.015	-.193
i41	.428	.284	.187	-.031	.192	.160	.046	.075	-.092	-.316	-.119	.052	-.289	.062
i42	.512	-.144	.099	.019	.260	.027	.321	-.325	.184	-.340	.153	-.249	.094	.148

Item	Component													
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
i43	.118	.121	-.294	.078	-.249	-.168	.269	-.005	.244	.376	.137	-.301	-.301	-.025
i44	.502	.254	.283	.067	-.216	.234	.182	.050	-.114	.030	.125	.119	.072	-.130
i45	.298	.139	.420	-.001	-.023	.133	-.188	-.020	-.110	-.065	-.048	-.521	.207	.016
i46	.447	-.134	.331	.125	.272	-.117	.171	.296	-.080	.036	.071	-.120	-.080	.012
i47	.036	-.015	-.129	-.105	.108	.461	.449	.265	.023	-.086	.000	.171	.363	-.250
i49	.205	.585	-.141	-.238	.142	-.020	-.244	.018	-.041	.203	.019	-.156	.271	.059
i50	.532	-.289	.026	-.111	-.250	-.017	-.064	-.065	-.379	.064	.140	-.115	.086	.219
i51	.680	.029	.251	-.124	-.108	.000	-.332	.146	.170	-.065	-.172	-.084	.053	-.063
i52	.289	.009	-.448	.245	.226	.126	-.143	.158	.139	-.138	-.285	.083	.121	.322
i55	.634	-.140	.052	-.019	-.005	.001	-.113	-.222	.257	.093	.022	-.125	-.072	-.274
i56	.697	-.303	-.188	.077	.057	.019	-.060	.015	-.011	-.086	-.112	.108	.009	.063
i57	.419	.472	-.347	-.287	.117	-.197	-.115	-.066	-.069	-.037	-.024	-.054	.145	.016
i58	.278	.029	-.349	-.107	.352	.307	.137	.290	-.097	.138	.256	-.155	-.112	.384
i59	.551	-.061	-.019	-.346	-.022	.314	-.091	.287	-.050	.197	-.005	-.100	-.011	-.050
i60	.686	-.030	-.237	.048	.030	.260	.026	.082	-.072	.023	-.081	.082	-.062	.022
i62	.424	.137	.363	.099	.282	-.134	.181	.045	-.243	.151	-.070	.031	.028	-.191
i63	.431	-.098	.326	.067	.333	-.226	.307	-.186	.253	-.026	.168	-.081	.068	.150
i26r	.370	-.011	-.187	.306	-.021	.287	-.123	-.220	.155	-.178	.339	.006	-.129	.037
i40r	.133	.090	.072	.442	.200	.111	-.006	-.069	.009	.342	-.229	.209	-.080	.073
i48r	.121	.040	.304	.202	.337	-.220	-.221	.487	-.017	-.231	.197	-.111	-.082	-.231
i53r	.385	.112	-.087	.518	-.076	-.083	-.154	-.014	-.236	-.190	.369	.116	.243	-.201
i54r	.161	.125	.161	.242	-.248	-.109	-.186	.442	.411	.026	.280	.234	-.169	.088
i61r	.542	-.054	-.197	.393	-.006	.084	-.279	-.026	-.053	.140	-.021	-.176	.011	-.135
i64r	.296	.102	.564	.199	.023	-.028	.099	-.225	.048	.312	-.092	.072	.206	.146
i65r	.325	.190	.351	.280	-.035	.006	.154	.126	.037	.207	.013	.282	.221	.208

Note. Extraction method: principal components analysis. Fourteen components extracted. Content of the items is in Appendix A.

Table E 7

*Rotated Components Matrix*

Item	Component													
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
i18	.663	.125	.079	.071	.119	.200	.184	.024	.019	.225	.143	.003	.044	-.118
i19	.825	.084	.232	.049	.045	.042	.103	-.030	.104	-.025	.009	.083	-.025	-.021
i20	.610	.113	.089	.146	.357	.271	-.009	-.066	.046	-.117	.226	.189	-.021	-.075
i21	.279	.581	.128	.130	.115	-.108	.157	-.045	.209	-.213	.281	.289	-.090	-.133
i22	.783	-.073	.056	.051	-.010	-.060	.014	.047	.096	-.005	-.023	.014	-.005	.168
i23	.021	.383	-.008	-.074	.357	.066	.055	-.124	.081	.129	.302	.059	.379	-.029
i24	.057	.256	.081	.104	.146	-.037	.002	-.078	.098	.747	-.032	-.032	.107	.072
i25	.591	.158	.022	-.042	.154	-.026	.197	.115	.172	-.248	.133	.014	.151	.063
i27	.778	.017	.092	.054	-.002	-.198	.141	.122	.072	.070	.045	-.084	.026	-.117
i28	.221	.251	.255	-.093	-.112	-.464	.054	.477	-.132	-.043	.234	-.247	-.027	.006
i29	.067	.662	-.132	.058	.068	.013	.069	.051	-.081	.268	.003	.095	-.014	.262
i30	.240	.086	.500	.186	.207	.132	.011	.192	.350	.184	.164	-.051	-.190	-.024
i31	.072	.643	.183	.098	.282	-.077	.022	-.077	.283	-.128	.103	.018	.014	-.278
i32	.197	.073	.011	.365	.299	.388	.098	.034	-.040	.052	.267	.150	.080	-.026
i33	.337	-.075	.626	.070	-.027	.005	.252	.098	.099	.108	.076	-.117	.021	.040
i34	.177	.050	-.142	.141	.701	-.058	-.048	.081	.042	.058	-.099	-.192	-.265	.112
i35	.532	.171	.155	.087	.260	.283	.149	.003	-.356	.102	-.221	.272	.050	-.147
i36	.824	.085	-.060	.081	-.087	-.004	.060	-.020	.029	.024	-.086	.002	-.058	.165
i37	.546	.196	-.002	.078	.352	.004	.273	.019	-.119	.105	.064	.127	.140	-.124
i38	.249	.109	-.204	.018	.024	-.113	.253	.120	-.169	.220	-.592	.046	-.288	.088
i39	.520	.324	.061	.086	.126	.069	.119	.310	-.272	.157	-.112	.004	.086	-.113
i41	.097	.150	.177	.057	.625	.167	.152	.172	-.048	.096	-.104	.104	.101	.041
i42	.287	.014	.147	.010	.115	.161	.813	.010	.074	.051	-.018	-.111	.083	.056

Item	Component													
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
i43	.105	.118	-.052	-.021	-.094	-.108	.061	-.036	-.064	.080	.764	.098	-.129	.106
i44	.308	.107	-.142	.379	.291	.244	.013	.013	.217	.148	.079	.136	.311	-.014
i45	.088	.099	-.018	.133	.034	.760	.124	.148	.055	-.027	-.041	-.105	-.062	.008
i46	.276	-.102	.046	.273	.160	.111	.233	.522	.009	-.113	.022	.057	.012	.190
i47	.047	-.047	.016	.024	-.075	-.069	.010	.012	-.020	.038	-.061	-.085	.845	.118
i49	-.035	.743	.023	.085	-.092	.236	-.120	.036	-.039	.127	-.034	-.058	-.006	.150
i50	.651	-.011	-.078	.075	.084	.208	.009	-.120	.222	-.161	-.048	-.143	-.176	.238
i51	.546	.199	.141	.100	.099	.449	.013	.192	-.140	.067	-.124	.268	-.049	-.179
i52	.119	.184	.763	-.042	-.029	-.078	.009	-.076	-.010	-.075	-.102	.111	.081	.147
i55	.561	.048	.088	.045	-.036	.182	.238	.144	-.051	.391	.130	.030	-.086	-.198
i56	.671	.002	.408	.025	.098	-.039	.124	.059	.066	.029	-.086	.018	.010	.030
i57	.217	.781	.107	-.106	.095	.009	.032	.028	.021	.048	-.001	-.094	-.001	.018
i58	.138	.166	.240	-.078	.084	-.044	.094	.064	-.054	.064	.080	.000	.134	.804
i59	.560	.129	.006	.000	.072	.280	-.168	.126	-.224	.158	-.002	.044	.203	.308
i60	.557	.119	.372	.077	.229	.036	-.015	.012	.055	.179	.062	.015	.188	.176
i62	.190	.115	-.039	.466	.235	.063	.100	.462	.056	.041	-.015	-.190	.061	-.046
i63	.208	.028	-.001	.332	.006	-.002	.716	.221	-.044	.008	-.013	.027	-.071	.034
i26r	.199	-.048	.266	-.095	.087	.071	.249	-.160	.370	.421	.059	.216	-.020	.116
i40r	-.067	-.079	.378	.518	.057	-.113	-.107	.053	-.004	.208	.068	-.026	-.083	.005
i48r	-.078	-.024	.024	-.055	.067	.153	.044	.758	.181	-.048	-.164	.291	-.041	.014
i53r	.210	.126	.146	.112	-.012	.032	.018	.161	.809	.109	-.049	.115	.047	-.094
i54r	.065	-.009	-.009	.144	-.025	-.023	-.072	.139	.087	.017	.097	.834	-.066	.012
i61r	.399	.051	.438	.082	-.074	.211	-.092	.154	.301	.257	.178	-.021	-.127	.002
i64r	.095	.002	-.051	.751	-.001	.219	.206	-.008	-.030	.046	-.051	-.019	-.104	-.108
i65r	.109	.080	.053	.685	.051	.037	.061	.020	.115	-.081	-.049	.251	.120	.039

Note. Extraction method: principal components analysis. Rotation method: Varimax with Kaiser Normalization. Rotation converged in 19 iterations. Content of the items is in Appendix A.

Table E 8

*Component Transformation Matrix*

Component	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	.790	.267	.242	.212	.239	.174	.220	.155	.091	.141	.053	.089	.037	.034
2	-.444	.734	-.044	.188	.309	.152	-.101	-.029	.084	.145	.175	.148	.116	-.060
3	-.117	-.302	-.414	.511	.196	.432	.173	.229	-.133	-.050	-.271	.142	-.104	-.175
4	-.240	-.320	.519	.344	-.061	-.015	.014	.112	.572	.023	.254	.136	-.094	-.127
5	-.261	.107	.301	.048	-.017	-.212	.327	.530	-.187	.242	-.361	-.295	-.001	.288
6	-.065	-.297	.175	-.002	.131	.360	-.159	-.332	-.068	.467	-.103	-.027	.496	.339
7	-.035	-.126	-.181	.221	.191	-.306	.418	-.051	-.071	-.265	.441	-.217	.520	.083
8	.020	-.032	.066	-.073	-.032	.040	-.383	.496	-.104	-.400	.040	.461	.331	.313
9	-.074	.009	.152	-.051	-.378	-.020	.399	-.084	-.427	.237	.162	.576	.073	-.238
10	.104	.045	-.141	.533	-.388	-.124	-.361	.026	-.260	.245	.341	-.158	-.205	.275
11	.011	.019	-.492	-.133	-.173	-.098	.267	.058	.517	.271	-.008	.290	-.046	.445
12	.093	-.019	-.035	.301	.177	-.652	-.219	-.181	.042	.128	-.454	.281	.171	-.170
13	.042	.269	.018	.225	-.621	.199	.072	-.125	.224	-.263	-.345	-.173	.387	-.103
14	-.078	.072	.230	.196	.099	.021	.208	-.458	-.120	-.417	-.153	.184	-.333	.526

*Note.* Extraction method: principal components analysis. Rotation method: Varimax with Kaiser Normalization.

**APPENDIX F: DESCRIPTIVE STATISTICS FOR VARIABLES WITH NOMINAL  
MEASUREMENT**

Variable or item	Categories	<i>N</i>	<i>%</i>
1. My age is	1. 35 or Younger	73	56.2
	2. 36-45	28	21.5
	3. 46-55	23	17.7
	4. Older than 55	6	4.6
	Total	130	100.0
2. My ethnicity is	1. American Indian or Alaskan Native	0	0.0
	2. Asian or Pacific Islander	3	2.3
	3. Hispanic	4	3.1
	4. Black, not of Hispanic Origin	50	38.5
	5. White, not of Hispanic Origin	73	56.2
	Total	130	100.0
3. My gender is	1. Male	36	27.7
	2. Female	93	71.5
	Total	129	99.2
	Missing	1	.8
	Total	130	100.0
4. My experience in education is	1. One year	8	6.2
	2. Two years	16	12.3
	3. Three years	23	17.7
	4. More than 3 years	82	63.1
	Total	129	99.2
	Missing	1	.8
	Total	130	100.0
5. My teaching assignment is primarily	1. English	27	20.8
	2. Science	14	10.8

<b>Variable or item</b>	<b>Categories</b>	<b>N</b>	<b>%</b>
	3. Mathematics	18	13.8
	4. History/Social Studies	20	15.4
	5. Other	51	39.2
	Total	130	100.0
6. My marital status is	1. Single	44	33.8
	2. Married	83	63.8
	Total	127	97.7
	Missing	3	2.3
	Total	130	100.0
7. My salary is	1. Less than \$40,000	59	45.4
	2. \$40,000-\$50,000	47	36.2
	3. Greater than \$50,000	23	17.7
	Total	129	99.2
	Missing	1	.8
	Total	130	100.0
. My final grade point average on my highest degree was	1. Below 2.0	0	0
	2. 2.00-2.50	5	3.8
	3. 2.51 to 3.00	16	12.3
	4. 3.01 to 3.50	35	26.9
	5. Over 3.50	74	56.9
	Total	130	100.0
9. My route to certifying to teach was	1. Alternative	52	40.0
	2. Traditional	77	59.2
	Total	129	99.2
	Missing	1	.8
	Total	130	100.0
10. The geographic setting of my school is mostly	1. Rural	68	52.3
	2. Suburban	24	18.5
	3. Urban	37	28.5

Variable or item	Categories	<i>N</i>	<i>%</i>
	Total	129	99.2
	Missing	1	.8
	Total	130	100.0
11. My school's accreditation status is	1. Conditionally accredited	1	.8
	2. Conditionally accredited (New School)		
	3. Accreditation denied	1	.8
	4. Accredited with warning	10	7.7
	5. Fully accredited	99	76.2
	6. Don't know	19	14.6
	Total	130	100.0
12. My school made "adequate yearly progress" for the 2009-2010 school term	1. No	42	32.3
	2. Yes	86	66.2
	Total	128	98.5
	Missing	2	1.5
	Total	130	100.0
13. I have met all licensure requirements to be considered highly qualified.	1. No	12	9.2
	2. Yes	117	90.0
	Total	129	99.2
	Missing	1	.8
	Total	130	100.0
14. Were you offered a continuing contract for 2011-2012?	1. No	7	5.4
	2. Yes	122	93.8
	Total	129	99.2
	Missing	1	.8
	Total	130	100.0

<b>Variable or item</b>	<b>Categories</b>	<i>N</i>	<i>%</i>
15. My level of satisfaction with my school is	1. Very unsatisfied	9	6.9
	2. Unsatisfied	21	16.2
	3. Satisfied	74	56.9
	4. Very satisfied	25	19.2
	Total	129	99.2
	Missing	1	.8
	Total	130	100.0
16. How much time do you spend preparing to teach daily?	1. Less than three hours	73	56.2
	2. Three to seven hours	51	39.2
	3. Greater than seven hours	5	3.8
	Total	129	99.2
	Missing	1	.8
	Total	130	100.0
	17. Parents in my school place a high value on education.	1. No	82
2. Yes		45	34.6
Total		127	97.7
Missing		3	2.3
Total		130	100.0
34. My school division pays an extra stipend for hard-to-fill positions.	1. No	118	90.8
	2. Yes	9	6.9
	Total	127	97.7
	Missing	3	2.3
	Total	130	100.0
38. My school division provides extra incentives for its teachers in the way of leave, sabbatical, tuition	1. No	61	46.9

Variable or item	Categories	N	%
reimbursement, or scholarships to further one's education.	2. Yes	69	53.1
	Total	130	100.0
41. The fringe benefits (insurance and retirement plans) provided in my school division are extremely generous.	1. No	86	66.2
	2. Yes	44	33.8
	Total	130	100.0
43. Offering more money is likely to overcome some reluctance of teachers to remain in hard-to-staff schools.	1. No	18	13.8
	2. Yes	112	86.2
	Total	130	100.0
45. I am able to receive compensation for participation in an induction program provided by my school division.	1. No	102	78.5
	2. Yes	24	18.5
	Total	126	96.9
	Missing	4	3.1
	Total	130	100.0
66. Do you plan to return to the same school in 2011-2012?	1. No	18	13.8
	2. Yes	111	85.4
	Total	129	99.2
	Missing	1	.8
	Total	130	100.0
67. If you answered "No" to Item 66, do you plan to	1.No	8	6.2

<b>Variable or item</b>	<b>Categories</b>	<i>N</i>	<i>%</i>
continue in the education profession in 2011-2012?	2. Yes	27	20.80
	Total	35	26.9
	Missing	95	73.1
	Total	130	100.0

**APPENDIX G: CROSTAB OF LEAVERS FROM CURRENT SCHOOL WITH  
LEAVERS OF THE PROFESSION, ITEMS 66 AND 67**

			i66. Do you plan to return to the same school in 2011–2012?		Total
			No	Yes	
i67. If you answered “No” to Item 66, do you plan to continue in the education profession in 2011–2012?	No	Count	8	0	8
		% within i67. Do you plan to continue in the education profession in 2011–2012?	100.0	0.0	100.0
		% within i66. Do you plan to return to the same school in 2011–2012?	44.4	0.0	22.9
	Yes	Count	10	17	27
		% within i67. Do you plan to continue in the education profession in 2011–2012?	37.0	63.0	100.0
		% within i66. Do you plan to return to the same school in 2011–2012?	55.6	100.0	77.1
Total	Count	18	17	35	
	% within i67. Do you plan to continue in the education profession in 2011–2012?	51.4%	48.6%	100.0%	
	% within i66. Do you plan to return to the same school in 2011–2012?	100.0%	100.0%	100.0%	

*Note.* Some people were obviously confused by this question. The 17 respondents who answered “Yes” to Item 66 (returning to the same school) should not have answered Item 67. The table shows that eight of the 18 people not returning to the same school planned to leave the profession, and 10 of the 18 people not returning to the same school planned to stay in the profession; thus, the leavers were both those who planned to leave their schools and remain in the profession ( $N=10$ ) and those who planned to leave their schools and the profession ( $N=8$ ).

**APPENDIX H: DESCRIPTIVE STATISTICS FOR ITEMS THAT ARE CONTINUOUS**

**VARIABLES, INCLUDING RECODED ITEMS**

<b>Item number</b>	<b>Item</b>	<b>N</b>	<b>Minimum</b>	<b>Maximum</b>	<b>M</b>	<b>SD</b>
i15	My level of satisfaction with my school is	129	1	4	2.89	.793
i18	The feedback from my mentor's (or principal's) visits to my classroom has been very useful.	130	1	4	2.67	.848
i19	My administrators support my work as a teacher.	128	1	4	2.95	.850
i20	The school climate in my building creates a high level of staff morale.	127	1	4	2.28	.925
i21	Classroom discipline was effectively addressed in my teacher-preparation classes.	127	1	4	2.62	.890
i22	My principal is very supportive of the staff when new teaching methods are being implemented.	129	1	4	2.96	.722
i23	I went into teaching because it is such a challenging profession.	129	1	4	2.50	.894
i24	There is much growth potential for me in the education field.	130	1	4	2.99	.742
i25	Everyone knows what they are supposed to be doing in my school.	127	1	4	2.41	.760
i26	I have anxiety attacks when I think of going to work.	130	1	4	1.78	.747
i27	My administrators support my decisions.	129	1	4	2.91	.696
i28	Having children learn from me motivates me to teach them more.	130	1	4	3.54	.637
i29	My courses in my preparation program prepared me to teach the content of the courses that I have been assigned to teach.	129	1	4	2.88	.910
i30	My job has very few stressful days.	130	1	4	2.15	.818
i31	Classroom management was emphasized in my teacher preparation program.	128	1	4	2.73	.892
i32	Teachers demand respect in my school.	130	1	4	2.70	.700
i33	My "upbeat and positive" approach with the students causes my job to be less stressful.	130	1	4	3.17	.728
i35	My school division offers effective training to new teachers.	130	1	4	2.40	.822
i36	My principal treats everyone professionally.	130	1	4	2.77	.859
i37	In-service activities in my school division are tailored to meet specific needs of faculty.	129	1	4	2.41	.816

<b>Item number</b>	<b>Item</b>	<b>N</b>	<b>Minimum</b>	<b>Maximum</b>	<b>M</b>	<b>SD</b>
i39	My school division has a staff development program that has enabled me to enhance my skills as a teacher.	129	1	4	2.55	.780
i40	Teaching the Virginia Standards of Learning objectives limits the use of my creativity.	130	1	4	2.72	.917
i42	The community has many resources available to deal with social problems of young people.	130	1	4	2.15	.802
i44	The state and federal mandates for accountability have helped me to be a better teacher.	128	1	4	2.27	.737
i46	My students' parents are very supportive when I have asked for their help.	130	1	4	2.56	.704
i47	I need to hear my supervisor say, "Good job. Keep up the good work."	130	1	4	2.85	.867
i48	There is not enough funding to supply teachers with the resources needed to make instruction meaningful for students.	130	1	4	2.79	.804
i49	My coursework in my preparation program effectively taught me how to assess student learning.	129	1	4	2.82	.744
i50	My school is student friendly.	129	1	4	2.97	.599
i51	The induction program for new teachers is effective in helping new teachers learn how to survive in their new positions.	129	1	4	2.41	.735
i52	I was able to share my talents with my students during this past school year.	129	2	4	3.23	.593
i53	My students' poor behavior caused me to be stressed during the past year.	129	1	4	2.51	.849
i54	Noninstructional positions use monetary resources that could be used to purchase much needed supplies for the classroom.	128	1	4	2.52	.813
i55	The evaluation process for teachers is implemented fairly.	130	1	4	2.52	.750
i56	My teaching position in my school met my expectations.	129	1	4	2.79	.757
i57	My coursework in my preparation program prepared me to employ effective strategies and methods to meet the diverse need of the students I teach.	129	1	4	2.87	.764
i58	I am able to develop close friendships with coworkers in my school.	130	2	4	3.12	.623

<b>Item number</b>	<b>Item</b>	<b>N</b>	<b>Minimum</b>	<b>Maximum</b>	<b>M</b>	<b>SD</b>
i59	The mentoring I received by administrators or other teachers helped me to become an effective teacher.	129	1	4	2.88	.692
i60	My experience in my school increased my motivation to teach.	129	1	4	2.74	.783
i61	I get stressed almost every day on my job.	130	1	4	2.29	.839
i62	My salary from teaching adequately meets my needs.	128	1	4	1.94	.781
i63	The community has many resources available to deal with multicultural issues in my school.	130	1	4	2.08	.716
i64	Financial support for education looks bleak in the near future.	128	1	4	3.28	.720
i65	Teaching has little economic potential in the near future.	129	1	4	2.87	.784
i26r	I have anxiety attacks when I think of going to work.	130	1	4	3.22	.747
i40r	Teaching the Virginia Standards of Learning objectives limits the use of my creativity.	130	1	4	2.28	.917
i48r	There is not enough funding to supply teachers with the resources needed to make instruction meaningful for students.	130	1	4	2.21	.804
i53r	My students' poor behavior caused me to be stressed during the past year.	129	1	4	2.49	.849
i54r	Noninstructional positions use monetary resources that could be used to purchase much needed supplies for the classroom.	128	1	4	2.48	.813
i61r	I get stressed almost every day on my job.	130	1	4	2.71	.839
i64r	Financial support for education looks bleak in the near future.	128	1	4	1.72	.720
i65r	Teaching has little economic potential in the near future.	129	1	4	2.13	.784
Valid N (listwise)		116				

*Note.* Response categories for all items except Item 15 are: 1=Strongly disagree, 2=Disagree, 3= Agree, and 4=Strongly agree. Response categories for Item 15 are: 1=Very unsatisfied, 2=Unsatisfied, 3=Satisfied, and 4=Very satisfied. Items marked with “r” were recoded as follows: 1=4, 2=3, 3=2, and 4=1.

**APPENDIX I: DATA FOR INDEPENDENT *T* TESTS BETWEEN LEAVERS AND STAYERS FOR SCALES AND ITEMS REPRESENTING PREDICTOR VARIABLES**

Table I 1

*Levene's Test for Equality of Variances for Leavers and Stayers*

<b>Predictor variable</b>	<b><i>F</i></b>	<b><i>p</i></b>
1. School culture support	2.994	.086
2. Preservice preparation	.897	.345
3. Stress of the job	1.833	.178
4. Economic conditions (i64r)	1.126	.291
5. Fringe benefits	7.794	.006
6. Induction program	.809	.370
7. Community resources	1.337	.250
8. Parental support (i46)	.123	.726
9. Student behavior (i53r)	6.855	.010
10. Growth potential (i24)	.000	.987
11. Retention incentives (i43)	9.990	.002
12. Noninstructional distractions (i54r)	4.111	.045
13. Supervisory praise (i47)	.042	.838
14. School friendships (i58)	2.410	.123

Table I 2

*Descriptive Data for Independent t Tests Between Leavers and Stayers on Scales and Items Representing Predictor Variables*

<b>Predictor variable</b>	<b>Group 1=Leavers 3=Stayers</b>	<b>N</b>	<b>Mean</b>	<b>SD</b>	<b>SE (Mean)</b>
1. School culture support	1	18	2.01	.614	.145
	3	111	2.79	.446	.042
2. Preservice preparation	1	17	2.48	.693	.168
	3	111	2.83	.590	.056
3. Stress of the job	1	18	2.35	.788	.186
	3	111	2.72	.611	.058
4. Economic conditions (i64r)	1	18	1.78	.878	.207
	3	109	1.71	.698	.067
5. Fringe benefits	1	18	1.00	.000	.000
	3	108	1.08	.278	.027
6. Induction program	1	17	1.77	.664	.161
	3	111	2.51	.699	.066
7. Community resources	1	18	1.92	.575	.136
	3	111	2.15	.690	.066
8. Parental support (i46)	1	18	2.06	.725	.171
	3	111	2.64	.671	.064
9. Student behavior (i53r)	1	17	2.53	1.125	.273
	3	111	2.47	.796	.076
10. Growth potential (i24)	1	18	2.94	.725	.171
	3	111	3.00	.751	.071
11. Retention incentives (i43)	1	18	1.72	.461	.109
	3	111	1.88	.323	.031
12. Noninstructional distractions (i54r)	1	18	2.17	1.04	.246
	3	109	2.52	.765	.073
13. Supervisory praise (i47)	1	18	3.00	.840	.198
	3	111	2.82	.876	.083
14. School friendships (i58)	1	18	2.78	.732	.173
	3	111	3.18	.591	.056

*Note.* The item number in parentheses represents the proxy item for the scale. The scales with proxy items had Alpha reliability coefficients too small to use in further analyses; an item was selected to represent the content of the scale.

## APPENDIX J: STATISTICS FOR THE BINARY LOGISTIC REGRESSION

Table J 1

*Binary Logistic Regression: Case-Processing Summary*

Cases		<i>N</i>	%
	Included in Analysis	126	96.9
Selected Cases	Missing Cases	4	3.1
	Total	130	100.0
Unselected Cases		0	.0
Total		130	100.0

Table J 2

*Binary Logistic Regression: Coding of the Criterion Variable (Leavers v. Stayers)*

Group	Original value	Recoded value
Leavers of the school	1	0
Stayers in the school	3	1

Table J 3

*Block 0 Iteration History<sup>a,b,c</sup>*

Iteration	-2 Log likelihood	Constant
1	102.261	1.460
Step 0	2	1.810
	3	1.857
	4	1.858

<sup>a</sup> Constant is included in the model. <sup>b</sup> Initial -2 Log Likelihood: 99.700. <sup>c</sup> Estimation terminated at iteration number 4 because parameter estimates changed by less than .001.

Table J 4

*Binary Logistic Regression: Step 0—Beginning Block Classification Table<sup>a,b</sup>*

Observed		Predicted		
		Leavers of school vs stayers in school		Percentage correctly classified
		Leavers of the school	Stayers in the school	
Leavers of School vs Stayers in school	Leavers of the school	0	17	.0
	Stayers in the school	0	109	100.0
Overall percentage				86.5

<sup>a</sup> Constant is included in the model. <sup>b</sup>The cut value is .500

Table J 5

*Binary Logistic Regression: Step 0—Variables in the Equation (Constant Only)*

	<i>B</i>	<i>SE</i>	Wald	<i>df</i>	Sig.	Exp( <i>B</i> )
Constant	1.858	.261	50.776	1	.000	6.412

Table J 6

*Binary Logistic Regression: Step 0—Variables Not in the Equation*

Variables not in the equation	Score	<i>df</i>	Sig.
i3Gender	4.696	1	.030
i2rEthnicity	3.542	1	.060
i5rrAssignment	3.094	1	.079
i13License	4.474	1	.034
i15Satisfaction	27.645	1	.000
Scale1CultSupport	35.246	1	.000
Scale2PreServicePrep	4.845	1	.028
Scale3Stress	6.060	1	.014
Scale6Induction	14.516	1	.000
Scale8ParentalSup	12.109	1	.001
Scale14SchFriendships	6.317	1	.012
Overall statistics	50.406	11	.000

Table J 7

*Block 1 Iteration History<sup>a,b,c,d</sup>*

Iteration	-2 Log likelihood						Coefficients						
		Constant	i3Gender	i2rEthnicity	i5rr Assignment	i13License	i15Satis- faction	Scale1Cult Support	Scale2Pre ServicePrep	Scale3Stress	Scale6I nduction	Scale8 ParentalSup	Scale14Sch Friendships
1	70.976	-4.096	-.232	.129	.150	.626	.294	.942	.122	-.235	.047	.214	.113
2	52.132	-7.940	-.386	.241	.127	1.049	.477	1.646	.309	-.499	.117	.504	.330
3	45.649	-11.888	-.352	.354	.016	1.456	.599	2.313	.463	-.791	.222	.855	.585
4	43.777	-15.428	-.092	.462	-.134	1.744	.701	2.860	.527	-1.021	.369	1.171	.797
5	43.436	-17.682	.172	.533	-.264	1.868	.787	3.165	.538	-1.145	.496	1.368	.929
6	43.417	-18.351	.258	.554	-.310	1.897	.819	3.248	.539	-1.179	.538	1.426	.969
7	43.417	-18.396	.264	.556	-.314	1.899	.821	3.254	.539	-1.181	.541	1.430	.972
8	43.417	-18.396	.264	.556	-.314	1.899	.821	3.254	.539	-1.181	.541	1.430	.972

<sup>a</sup> Method: Enter. <sup>b</sup> Constant is included in the model. <sup>c</sup> Initial -2 Log Likelihood: 99.700. <sup>d</sup> Estimation terminated at iteration number 8 because parameter estimates changed by less than .001.

Table J 8

*Binary Logistic Regression: Step 1—Omnibus Tests of Model Coefficients*

		Chi-square	df	Sig.
Step 1	Step	56.283	11	.000
	Block	56.283	11	.000
	Model	56.283	11	.000

Note. Method: Enter.

Table J 9

*Binary Logistic Regression: Step 1—Model Summary<sup>a</sup>*

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	43.417 <sup>a</sup>	.360	.659

<sup>a</sup> Estimation terminated at iteration number 8 because parameter estimates changed by less than .001.

Table J 10

*Binary Logistic Regression: Step 1—Classification Table<sup>a</sup>*

Observed		Predicted		
		Leavers of the school	Stayers in the school	Percentage correctly classified
Leavers of school vs stayers in school	Leavers of the school	11	6	64.7
	Stayers in the school	7	102	93.6
Overall percentage correctly classified				89.7

<sup>a</sup>The cut value is .500.

Table J 11

*Binary Logistic Regression: Step 1—Variables in the Equation*

Variables in the equation	B	S.E.	Wald	df	Sig.	Exp(B)
i3Gender	.264	1.396	.036	1	.850	1.302
i2rEthnicity	.556	.273	4.152	1	.042	1.744
i5rrAssignment	-.314	1.130	.077	1	.781	.731
i13License	1.899	1.301	2.133	1	.144	6.682
i15Satisfaction	.821	.742	1.223	1	.269	2.273
Scale1CultSupport	3.254	1.473	4.881	1	.027	25.893
Scale2PreServicePrep	.539	.728	.549	1	.459	1.714
Scale3Stress	-1.181	.713	2.742	1	.098	.307
Scale6Induction	.541	.854	.402	1	.526	1.718
Scale8ParentalSup	1.430	.726	3.876	1	.049	4.180
Scale14SchFriendships	.972	.719	1.827	1	.177	2.643
Constant	-18.396	7.309	6.335	1	.012	.000

<sup>a</sup>Variable(s) entered on step 1: i3Gender, i2rEthnicity, i5rrAssignment, i13License, i15Satisfaction, Scale1CultSupport, Scale2PreServicePrep, Scale3Stress, Scale6Induction, Scale8ParentalSup, Scale14SchFriendships.