The Relationship of Occupational Stress, Psychological Strain, Satisfaction with Job, Commitment to the Profession, Age, and Resilience to the Turnover Intentions of Special Education Teachers

Toni Elitharp

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Richard Salmon, Chair

Martin Aylesworth

Alice Anderson

Rose Martin

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(ABSTRACT)

This paper presents findings from a study of factors that lead to special education teacher attrition and retention involving 212 special educators in the Commonwealth of Virginia. Structural equation modeling was used to test a hypothesized model of the relationship between Teacher/Administrative Support, Role Dissonance, Psychological Strain, Satisfaction with Job, Commitment to the Profession, Age, and Psychological Resilience to determine which variables directly and indirectly affect the turnover intentions of special education teachers. Structural equation modeling identified a path model wherein nine variables had a statistically significant influence on special education teacher turnover intentions. This paper reports on significant findings that emphasize for the first time the role of psychological resilience in the study of special education teacher retention. In addition, the confirmed path model suggests that one's perception of the effects of adversity due to physical or sexual abuse and adversity due to family loss play some role related to resilience. As the perception of Psychological Resilience increases, Commitment to the Profession increases, and the Intent to Leave the field of special education decreases.

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Chapter One

Introduction to the Study

Occupational stress and its relationship to the attrition of professionals is a concern in the human service and helping professions (Cherniss, 1980). Occupational stress and teacher attrition are also concerns of special educators (Brownell & Smith, 1992), and those who provide related services for students with special needs (Fimian, Lieberman, & Fastenau, 1991). Occupational stress when frequent and intense leads to behavioral, physiological, and psychological responses. The cumulative effects will influence a teacher's commitment to remain in field. The level of stress may reach a condition described as "burnout" (Maslach, 1982). Stress and burnout constitute one set of factors that directly influence teacher attrition in special education. (Cooley & Yovanoff, 1986).

Statement of the Problem

Teacher Attrition and Rates of Burnout

In the United States, the field of special education has a long history with nearly 30 years of progress. Individuals working in this field serve as advocates for children with disabilities. As advocates that serve traditionally differentiated populations, special education teachers have a documented history of high job turnover. Billingsley (1993) reported that among newly hired special educators, yearly attrition rates averaged 10% each year for the first 6 years of teaching and 6% per year for the next six years. On average, special education teachers remain in the classroom for approximately six years (Brownell & Smith, 1993).

The need for qualified special education teachers continues to be a persistent problem. In 1994 the U.S. Department of Education estimated 28,000 teaching positions in special education were filled by less than fully-certified educators. This was approximately 34% of the workforce. In 2003, the U.S. Department of Education identified that 47,532 individuals employed to teach special education (approximately 11.4% of all teachers) during the 1999-2000 and 2000-2001 school years were not fully-certified special education teachers. This represented a 23% increase from the prior year. The data from the Annual Reports to Congress indicated that the shortage of 47,532 teachers resulted in approximately 808,000 students in 2000-2001 being taught by personnel who were not fully-certified (McLeskey, Tyler & Saunders, 2002).

Special educators are leaving the profession for various reasons. One of the contributing sets of variables is professional stress (Brownell & Smith, 1992; Gersten, et al., 2001). Considerable research exists concerning the specific variables that teachers report to be stressful.

The Limits of Previous Research

A plethora of research has been collected over the last three decades that has furthered our understanding of teacher burnout (Billingsley, 1993; Billingsley & Cross, 1992; Cherniss, 1980; Elman & Dowd, 1997; Flett, Biggs & Alpass, 1995). This research has identified variables that mediate (explain) the relationship between task demands that teachers face and teacher attrition (Billingsley, 1993; Billingsley & Cross, 1992; Billingsley, Pyecha, Smith-Davis, Murray, & Hendricks, 1995). However, this research has not produced an understanding of those variables that moderate (influence the strength of) the relationship between stress and attrition (Wisniewski & Gargiulo, 1997). Consequently, as a result of three decades of research, we have some understanding of the factors that cause teachers to leave, but less understanding of why others stay when faced with the same stressors.

The Relationship between Stress, Strain and Outcome

The research literature provides substantial data regarding the relationship between stress, strain, and outcome. A stressor is defined as "the particular relationship between the person and the environment that is appraised by the person as taxing or exceeding his or her resources and endangering his or her well-being" (Lazarus & Folkman, 1984, p. 19). A stressor (stress), real or perceived, is "an event that an individual interprets as a hassle or troublesome" (Lazarus & Folkman, 1984).

Between the stressors of an environment and its outcomes is the variable of strain. Strain, the consequence of stress, is a mediating factor (Koeske & Koeske, 1993). Koeske & Koeske reported that stress can produce negative and positive consequences and that strain is the negative consequence of stress. Stress and strain affect both individual and professional outcomes. The ultimate response to frequent and intense periods of stress is burnout (Koeske & Koeske, 1993).

The Complexity of Special Education and its Stressors

The literature provides substantial information about the variables that contribute to the complexity of the work environment in special education and the specific variables that teachers report as stressful. This multiplicity of variables is capable of producing strain. These strain-

producing variables can be organized into four domains: organizational, interpersonal, training, and instructional (Koeske & Koeske, 1993).

Organizational structure and work conditions will influence commitment to the teaching profession (Bandura, 1989). Ambiguity and conflict that teachers experience will influence their professional commitment (Singer, 1993). Among special educators, two organizational work conditions have emerged as a major source of stress: role conflict and role ambiguity (Boe, Bobbitt, Cook, Whitener & Weber, 1997). Role conflict occurs when a teacher's roles and responsibilities conflict with the realities of the daily professional life. Role ambiguity occurs when an educator has insufficient information to carry out his professional responsibilities adequately (Boe, Bobbitt, Cook, Whitener & Weber, 1997).

The professional interactions that teachers develop with other teachers, administrators, and parents can also be a significant source of stress (Cook & Leffingwell, 1982). Professional interaction with supervisors has been known to cause stress (Cherniss, 1980). Cherniss (1980) noted that when supervisory management style caused a sense of powerlessness to effect positive change, or when excessive control was imposed, teachers felt alienated from the decision-making process. Cherniss also noted that when positive interactions and proactive communication occurred, stress was decreased and professional commitment increased.

Professional training is essential in meeting the demands of the teaching profession (Fimian & Santoro, 1983). The need for preservice and professional level training is guided by the shifting pattern of stressors and strain, specifically during the first five years of teaching (Fimian & Santoro, 1983).

Instructional assignments refer to the categorical groupings within which a teacher works. The literature provides data regarding stresses they experience as a function of these assignments (Fimian, 1983; Caton et al., 1998; and Lawrenson & McKinnon, 1982). An overview of specific stressors according of categorical grouping follows:

1. Mental Retardation--negative administrative attitudes and behaviors (Fimian, 1983).
2. Developmental Disabilities--attitudes toward interventions, and engagement in the decision-making process (Caton et al., 1998).
3. Emotional and Behavioral Disorders--task demands, role ambiguity, fear of physical and verbal abuse by students (Johnson et al., 1982), student discipline (Lawrenson & McKinnon, 1982), low status of teaching assignments, few career opportunities for

professional development and growth, interpersonal difficulties with parents (Johnson et al., 1982), and administrators (Lawrenson & McKinnon, 1982), along with lack of recognition for a job well done (Johnson et al., 1982).

4. Other categories of exceptionality--role confusion, inadequate support structures, implementation of individualized curricula, and lack of planning time (Blackhurst, and Morsink and Williams, 1979).

Teachers entering the profession bring expectations about the duties and roles (Bandura, 1989). Failed expectations become the basis for leaving the field (Bandura, 1989). The variables identified are sources of stress which lead to conflicts between teacher expectations and realities of the profession (Bandura, 1989).

The exact relationship between teacher burnout and attrition remains unclear. Occupational stress, strain, and burnout are valid psychological constructs in teacher commitment to the profession (Brownell & Smith, 1992). Brownell and Smith suggested that: (a) the relationship between burnout and attrition has not been clearly specified; and (b) the burnout paradigm does not consider demographic contributions, role conflict and ambiguity, adequacy of instructional resources, absence of administrative support, and paperwork requirement. Brownell and Smith (1992) noted that some educators experiencing stress remain in the classroom while others leave. This provides inconsistency worth investigating (Brownell and Smith, 1992).

A significant study in the area of turnover intentions of rehabilitation counselors may be useful in understanding special education teacher attrition. Layne, Hohenshil and Singh (2004); *The Relationship between Occupational Stress, Psychological Strain, and Coping Resource in the Turnover Intention of Rehabilitation Counselors* utilized key definitions that may be useful in the study of turnover intentions of special education teachers. *Turnover* was defined as "the degree of individual movement across the membership boundary of a social system" (Price, 1977, p.4). Layne et al., (2004) suggested that based on the analysis of turnover intentions reported by individuals, the expectation that turnover intentions will provide an accurate view of the potential turnover is accepted. These authors accepted a model of employee's turnover-related decision-making process by Mobley (1977) in stating that the intention to leave occurs immediately before one actually makes the decision to either leave the current position or stay and hypothesized that the intention to leave one's current position, referred to as *turnover intention* is a good predictor of actual turnover.

In their review of turnover intention of rehabilitation counselors, *burnout* was defined as "emotional exhaustion resulting from excessive emotional demands made on helping professionals" (Schwab & Iwaniki, 1982; Schuler, 1980). Other concepts accepted for the purposes of their study included: physical exhaustion, emotional exhaustion, and mental exhaustion as three important components of burnout (Pines & Aronson, 1988). Layne et al., (2004) identified factors cited by Elman and Dowd (1997) relating to burnout as excessive job demands, lack of proper performance recognition, unclear performance expectations, role conflict, poor attitudes toward work, emotional distress, and frequent physical symptoms seem to be the most salient features that correlated with burnout. Maslach and Schaufeli's (1993) reporting that factors related to one's occupation are more highly correlated to burnout than biographical or personal factors will be cited in this study.

Interactional Approach to Studying Stress

In studying the turnover intentions of rehabilitation counselors, Layne et al., (2004) hypothesized that "because work stress is correlated with burnout (Cherniss, 1980), and turnover is linked to burnout (Maslach & Florian, 1988; Pines & Aronson, 1988), turnover intention is a viable variable for further analysis" (p. 20). In addition, they hypothesized that "if burnout is linked to both turnover and stress, it is imperative to conduct an analysis of the relationship between stress and turnover intentions to determine if a correlation exists" (p. 20).

Support for the theoretical construct of the interactional approach to studying stress, as one that incorporates stimulus-based and response-based approaches (Richard & Krieshok, 1989) and stipulates that situational variables interact with personal variables to cause strain (Ryan, 1996) was the objective of the study done by Layne et al., (2004). This study (Layne et al., 2004), utilized the Occupational Stress Inventory in collecting data. The basis for using this instruments was that other studies (Fogarty, et al., 1999) analyzing stress, strain, and coping through path analysis concluded that stress and coping variables significantly predicted the amount of variance in strain. These studies are the substantiating evidence used in the Occupational Stress Inventory-Revised (OSI-R; Osipow, 1998).

Turnover can adversely affect an organization's effectiveness, or the degree to which the organization is able to achieve its goals (Price, 1975). Therefore, an understanding of the types of occupational stress that special education teachers are prone to and the related reasons could assist school systems in developing programs to increase the rate of special education teacher

retention. The proposed study is designed to examine variables identified in the research as viable variables in the retention problem among special education teachers. This study will collect data to determine whether stress, strain, and coping resources directly or indirectly affect the turnover intentions of special education teachers.

Theoretical Base/Relationship to Prior Knowledge

A review of the literature related to the interactional approach to stress detailed in Chapter Two, reveals that the theoretical base and body of research directly related to this substantive area exists. These studies (Ryan, 1996; Richard & Krieshok, 1989; Layne et al., 2004; Fogarty, et al., 1999) resulted in the idea that the movement of an individual in and out of organizations is a dynamic concept and the implications are of interest to researchers in fully examining an individual's unique psychological experience of work (Decker & Borgen, 1993). However, this literature lacks detailed descriptions or explanatory information regarding whether stress, strain, satisfaction with job, commitment to the profession, age, psychological resilience, and intent to stay in special education directly or indirectly affect the turnover intentions of special education teachers. Furthermore, while there have been many studies of variables explaining why teachers leave special education (Billingsley, 2002; Billingsley, Bodkins & Hendricks, 1993; Boe, Bobbitt, & Cook, 1997), few studies have investigated the effects of moderating variables such as resilience to explain why some teachers do not leave (Brownell & Smith, 1992; Cross & Billingsley, 1994; Gersten, Keating & Yovanoff, 2001).

Purpose of the Study

The purpose of this study is to test a hypothesized model of the relationships between Teacher/Administrative Support, Role Dissonance, Professional Development, Strain, Satisfaction with Job, Commitment to the Profession, Age, Psychological Resilience, and Intent to leave special education. Data analysis through structural equation modeling will test the hypothesized model of these relationships.

The model, based on prior research and illustrated in Figure 1.1, hypothesized that: (a) Teacher/Administrative Support has a direct effect on Role Dissonance, Professional Development, Strain, and Satisfaction with Job, and has an indirect effect on Commitment to the Profession and on the Intent to Leave; (b) Role Dissonance has a direct effect on Satisfaction with Job and Strain, and has an indirect effect on Commitment to the Profession and Intent to Leave; (c) Professional Development has a direct effect on Role Dissonance and Commitment to

the Profession, and has an indirect effect on Intent to Leave; (d) Satisfaction with Job has a direct effect on Commitment to the Profession, and has both a direct and indirect effect on Intent to Leave; (e) Strain, with the operational definition of "stress due to job design" (Gersten et al., 2001), has a direct effect on Satisfaction with Job and Commitment to the Profession, and has an indirect effect on Intent to Leave; (f) Commitment to the Profession has a direct effect on Intent to Leave; (g) Age has a direct effect on Intent to Leave; and (h) Psychological Resilience, as a moderator variable interacting with Commitment, has a direct effect on Intent to Leave.

In summary, turnover intentions are influenced by indirect effects from stressors; mediated indirectly by personal Strain; mediated directly by Satisfaction and Commitment; with Age directly influencing Intent; and the moderating variable of Resilience influences the strength of these effects (Cross & Billingsley, 1994; Gersten et al., 2001). Of secondary interest are the relationships of Stress, Strain, turnover intentions, and various demographic variables (Cross & Billingsley, 1994; Gersten et al., 2001). Also of interest are the mediating variables: (a) Psychological Strain; (b) Job Satisfaction; and (c) Commitment to the Profession, and the moderating variable of Resilience in the hypothesized path diagram (Figure 1).

Research Questions

The over-all guiding question for this study was: Is the hypothesized model of relationships between Teacher/Administrative Support, Role Dissonance, Professional Development, Strain, Satisfaction with Job, Commitment to the Profession, Age, Psychological Resilience, and Intent to Leave special education confirmed by data from a sample of special education teachers in Virginia? A secondary question is whether Psychological Resilience plays a moderating role in the relationship between the other variables and Intent to Leave the profession.

Significance of the Study

The interactional approach to studying stress can be used to suggest ways of reducing turnover intentions of special education teachers (Richard & Krieshok, 1989). Although many variables may relate to turnover intentions, this approach is designed to identify the variables with the largest effects. An understanding of the occupational stressors that special education teachers are prone to and the related reasons that they voluntarily leave could assist school systems in developing programs to address occupational stress and at the same time increase

teacher retention rates (Ryan, 1996; Richard & Krieshok, 1989; Layne et al., 2004; Fogarty, et al., 1999)

This topic is important for several reasons. First, it would be of interest to investigate specifically what administrators in school systems could do to address and subsequently reduce stress inherent in the functions of special education teachers. "Being equipped with accurate and detailed knowledge about stress related concerns" may have empowering effects" (Flett, Biggs, and Alpass, 1995, p. 285). Second, recent educational reform movements and shortage of special education teachers have implications that can affect the educational outcomes for all students (Jex, 1998). Third, coping resources and strain are useful in understanding how people deal with stress, and if occupational stress affects the turnover intentions of special education teachers, this implication addresses the negative affect stress has on job satisfaction (Jex, 1998).

In addition, the proposed study expands the findings of previous studies in two important respects. First, while many previous studies have identified variables related to turnover intentions (Ryan, 1996; Richard & Krieshok, 1989; Layne et al., 2004; and Fogarty, et al., 1999), only a couple (Gersten, Keating, Yovanoff, & Harris, 2001; Cross and Billingsley, 1994) have used path analysis to identify the interrelationships among the predictor variables. Understanding these interrelationships, including direct and indirect effects of each variable, is a major advance over simply identifying significant correlations (Gersten, Keating, Yovanoff, & Harris, 2001; Cross and Billingsley, 1994). Second, according to the research, no previous study has considered the role of resilience as a moderating variable to explain why, under the same conditions of stress, some teachers leave the profession while other teachers remain.

Limitations

First, this study is based on a sample of randomly selected special education teachers from the Commonwealth of Virginia. The reader of the research must make the decision of the transferability of the study's findings to other settings. The reader should compare the findings to his or her own school contexts.

Second, the best fitting model between the hypothesized relationships and the data was derived from exploratory path analysis. Further research is needed to confirm these results.

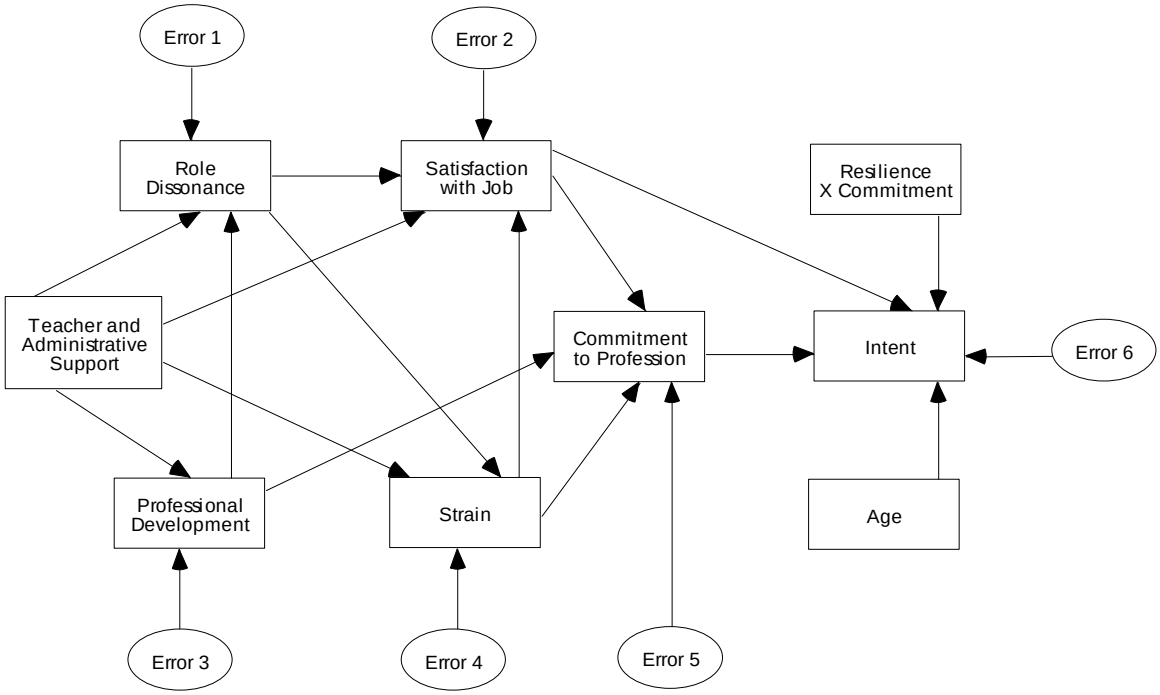

Figure 1.1. Specified Model: Path Diagram of Hypothesized Relationships. The Relationship between Occupational Stress, Psychological Strain, Satisfaction with Job, Commitment to the Profession, Age, and Resilience to the Turnover Intentions of Special Education Teachers.

Chapter Two

Review of the Literature

This chapter examines the literature related to the teacher turnover in human service fields. This topic is important for several reasons. First, it would be of interest to investigate specifically what administrators in school systems could do to address and subsequently reduce stress inherent in the functions of special education teachers. "Being equipped with accurate and detailed knowledge about stress related concerns" may have empowering effects" (Flett, Biggs, and Alpass, 1995, p. 285). Second, recent educational reform movements and shortage of special education teachers have implications that can affect the educational outcomes for all students (United States Department of Education, 2002). Third, coping resources and strain are useful in examining how people deal with stress, and fourth, if occupational stress affects the turnover intentions of special education teachers, this implication addresses the negative affect stress has on job satisfaction (Jex, 1998).

Community of Scholars

The field of teacher attrition and retention, along with stress, has been the focus of recent scholarly writing and research (Gersten, Keating, Yovanoff, & Harris, 2001; Cross and Billingsley, 1994). In order to gain a greater understanding of teacher attrition and retention, works from the following group of scholars were reviewed: Bonnie Billingsley, professor at Virginia Polytechnic Institute and State University with co-authors Carlson and Klein (2004); *The working conditions and induction support of early career special educators*; James McLeskey, professor at the University of Florida of *Critical Issues in Special Education Teacher Supply and Demand* (2004); Russell Gersten of Eugene Research Institute at the University of Oregon, along with co-authors Thomas Keating of the Eugene Research Institute, Paul Yovanoff from the University of Oregon, and Mark K. Harniss from the University of Washington, Tacoma of *Working in Special Education: Factors that Enhance Special Educators' Intent to Stay* (2001); Billingsley with co-author Lawrence H. Cross both of Virginia Polytechnic Institute and State University on *Predictors of Commitment, Job Satisfaction, and Intent to Stay in Teaching: A Comparison of General and Special Educators* (1992); and M. David Miller, Mary T. Brownell, and Stephen W. Smith from the University of Florida, Gainsville on *Factors that Predict Teachers Staying in, Leaving, or Transferring from the Special Education Classroom*

(1999). In addition Journals of Special Education and Focus on Exceptional Children were particularly informative regarding current issues and research.

Purpose of Inquiry

The primary purpose of this chapter is to review the examination of existing literature in the field of special education specifically related to attrition and retention. A secondary purpose is to examine existing literature in the field of stress issues in special education specifically related to teacher attrition and retention. The guiding questions for this review are: (1) What are the issues in special education that affect teacher attrition and retention and; (2) How do special education teachers perceive occupational stress, psychological strain, job satisfaction, professional commitment and resilience. In order to provide background and to answer this question, I will first consider the following: (a) the current context of attrition and retention in special education; (b) current models of attrition and retention awareness; and (c) theoretical bases for understanding attrition and retention in special education. Then, I will analyze and synthesize findings of selected research studies. Conceptual and methodological issues will be discussed in this body of research. Following that, I will discuss the conceptual and methodological issues in the research. Next, I will consider the need for understanding the issues of stress as they relate to teacher attrition and retention in special education. Finally, following the analysis and synthesis of studies related to teacher attrition and retention, I will provide a review of current literature on stress, and resilience in order to answer the question: Is there a relationship between occupational stressors, psychological strain, satisfaction with job, commitment to the profession, age, and resilience to the turnover intentions of special education teachers? In order to provide background and to answer this question, I will first consider the following: (a) stress theory; (b) individual differences in relation to stress; (c) the construct of psychological resilience; and (d) theoretical aspects of resilience.

In order to accomplish this review of literature, computerized database searches for ERIC, PSYCHINFO, and Dissertation Abstracts International were conducted. Journal articles, book chapters and other texts were used as additional sources. In reviewing literature on teacher attrition and retention, and stress issues in special education, search terms included, but were not limited to, teacher, education, attrition, retention, stress, stress factors, resilience, special education, disability education, job stress, job satisfaction, dispositions, characteristics, teacher quality, teacher supply and demand, and teacher turnover were used. Because of interest in the

relationship between past influences and current influences on teacher attrition, retention and stress issues in the field of special education, no time limits were applied to these search terms.

In order to locate studies related to this topic of interest, the same databases were utilized, with the above search terms being combined with terms within those included previously. Three studies were included for this critical review that specifically investigated the following: (a) factors the contribute to teacher attrition and retention in special education; (Gersten, Keating, Yovanoff, & Harris, 2001; Cross & Billingsley, 1994); (b) factors that contribute to teacher attrition and retention in general education (Billingsley & Cross, 1992); and (c) Specific stress issues in the field of special education over time (Miller, Brownell & Smith, 1999).

Definition of Terms

Defining attrition and retention seems to be less of a controversial issue in the field of special education than the factors contributing to this issue (Billingsley & Cross, 1992). Billingsley (2005) provided a four-category representation of special education teacher retention, transfer and attrition. She defines retention as "teachers who remained in the same teaching assignment and the same school as the previous year" (p. 40). Billingsley identifies the second category as "transfers to another special education teaching position, including those who stayed in special education teaching but transferred to another position" (p. 40). The third category, "transfers to general education teaching" reflected a loss to the special education teaching force, and fourth "exit attrition" (p. 40) included those who left the teaching field altogether. Billingsley cited how others (Miller & Brownell, 1999; Gersten, Keating, Yovanoff, & Harris, 2001) have defined attrition or retention in the following ways:

1. Intent to leave;
2. Teachers who left special education teaching;
3. Teachers who left their teaching positions;
4. Stayers, those with the intent to stay;
5. Leavers, those with the intent to leave;
6. Leavers as those who left public school teaching;
7. Movers as those who transferred to another school;
8. Stayers as those who remained in the same school;
9. Leavers and Stayers;

10. Leavers as those who switched to general education, moved to administration, or left teaching altogether;
11. Teachers who left special education teaching or transferred to a similar job. (p.41-42)

For purposes of this review, the following terms and definitions will be used as they relate to this study of teacher attrition and retention:

Attrition--the transfer of special education teachers to general education teaching positions, or leaving teaching altogether.

Retention-- teachers who remained in a special education teaching position including the same position as the previous year or to another position within the special education field.

Special Education--specially designed instruction to meet the unique needs of students with disabilities, as defined in Individuals with Disabilities Education Act (IDEA; 2004).

Current Issues Influencing the Attrition and Retention of Special Education Teachers

Education for students with disabilities may require efforts to ensure that students with disabilities have a chance to benefit from special education (SPeNSE, 2005). Educators and policymakers work to secure favorable results for students by reaching to attain the goals of special education. The goals of special education reflect on the following areas: (a) equality of opportunity; (b) full participation; (c) independent living; and (d) economic self-sufficiency (SPeNSE, 2005).

These goals and the magnitude of their attainment can be influenced by the shortage of fully-certified special education teachers. The shortage of special education teachers is not a new concept (SPeNSE, 2005). However, this shortage has received significant attention since the mandate of No Child Left Behind (NCLB; U.S. Department of Education, 2002).

Role and Responsibility Dilemmas

McLeskey, Tyler & Saunders (2002) suggested three factors as the primary determinants of the demand for special education teachers: (a) student enrollment, (b) teacher caseload, and (c) teacher attrition. The idea of attrition as the focus of this study prompts further reflection into the research into teacher attrition as one primary factor of the demand for special education teachers. Boe, Bobbitt & Cook, (1997); Ingersoll, (2001); and McLeskey (2004) argued that teacher shortages are primarily the result of a revolving door where large numbers of teachers depart from their jobs for reasons others than retirement. Ingersoll, using data from the Schools and Staffing Survey (SASS) reported that special education teachers were more likely to either leave

the profession or migrate to another position than general education teachers (as cited in McLeskey et al. 2002). Researchers over the last two decades have concluded that attrition in the field of education has been a continuous problem but that the percent of attrition has remained higher for special education teachers than general education teachers.

Miller, Brownell & Smith (1999) indicated that teachers left special education due primarily to insufficient certification, perceptions of high stress, and perception of poor school climate. Gersten, Keating, Yovanoff, & Harniss (2001) suggested that the leading negative factor contributing to attrition of special education teachers was stress due to job design.

Theoretical Foundations for Teacher Attrition, Retention, and Issues of Stress

Thus far in this review, the need for understanding the factors that contribute to teacher attrition and retention has been discussed. In this section, the theoretical basis for factors contributing to special education teacher retention and attrition will be addressed. The history of factors leading to attrition and retention will be briefly described and then current models that describe the factors that influence special education teachers' intent to leave will be presented.

History of Attrition and Retention

Most accounts of history of attrition and retention refer back as early as 1976-1977 when states were required to report data on personnel of students with disabilities and report the data to the Department of Education (United States Department of Education, 2002). Data reported for its Annual Reports to Congress provided valuable information regarding personnel in special education. Currently each state is required to provide this data on December 1 of each year. The data collected includes age groups of students served, and personnel classifications including: (a) employed and fully-certified, and (b) employed but not fully-certified. It is important to note that changes have been made to the data that states were required to collect, and this resulted in a lack of compatibility of much of the data collected between the years 1976 and 1982. However, the data from the Annual Reports to Congress provide valuable information regarding the shortage of certified teachers in the United States.

The National Center for Educational Statistics has collected data on the representative samples of teachers nationally. The SASS and the Teacher Follow-up Survey (TFS) were administered from the years 1987 to 2001. In spite of some limitations, the SASS and the TFS provide a comprehensive data base on staffing and occupational and organizational aspects of schools.

Data available from professional organizations, the U.S. Department of Education and the professional literature indicate a chronic shortage of special education teachers in the U.S. Ninety-eight percent of the nation's school districts reported special education teacher shortages in 1999-2000 (as cited in McLeskey, Tyler, & Saunders, 2002).

According to the U.S. Department of Education (2003), 47,532 individuals employed to teach special education (approximately 11.4% of all teachers) during the 1999-2000 and 2000-2001 school years were not fully-certified special education teachers. This represented a 23% increase from the prior year. The data from Annual Reports to Congress indicated that this shortage of 47,532 teachers resulted in approximately 808,000 students being taught by personnel who were not fully-certified (McLeskey, Tyler & Saunders, 2002).

Current Models of Attrition and Retention Awareness

Billingsley suggested that whether teachers leave their jobs depends on personal, social, and, economic factors (Billingsley, 2005). Billingsley hypothesized that when "professional qualifications and work conditions are not favorable; teachers are likely to experience fewer rewards, and thus, reduced commitment" (p.40).

The second model was proposed by Brownell and Smith (1993) and incorporated Brofenbrenner's ecological model which views individual teachers within larger contexts and suggests how variables within those contexts interact with the individual teacher's characteristics. Brownell and Smith extended the model and included factors such as age, and teacher preparation and their possible interaction with the educational environment and affect on career choice.

Research Studies Addressing Teacher Attrition and Retention

This section of the review analyzes the variables that may interact with the educational environment to affect career decisions. First, the rationale for including studies for review is discussed. Next, a brief synthesis of the studies' purposes, methodologies, and samples is provided to give the reader an overview. The review addresses two general conceptual areas: (1) What are the factors that may interact with educational environments which affect career decisions to leave special education; and (2) What are the factors that may interact with educational environments which affect career decisions to leave the field of special education? These areas serve as the organizational structure for the analysis and synthesis of studies in this section.

Research Studies Included for Review

Specific parameters for selection of studies for the review were set prior to searching the literature. First, studies were to look at factors contributing to retention and attrition of teachers in general. Second, studies were to be conducted with factors contributing to retention and attrition of special education teachers. Third, studies were conducted after the implementation of Education for All Handicapped Children Act (EAHCA; 1975). This was done to account for the changes in the educational system in the efforts to educate children with disabilities. The provisions for educating children with disabilities changed greatly after the implementation of this landmark legislation and therefore data following 1975 provided more valuable information.

An Overview of Studies Included

Descriptions of the studies included for review appear in the body of this text and in Table 1. These studies are summarized by the following elements: (a) author and year of publication; (b) methodology and sample used; and (e) results related to the interactional affect of specific variables with the educational environment and the affect on career decisions.

Purposes. Researchers have studied various aspects of attrition and retention. Some looked at teacher characteristics, personal factors, teacher qualifications, work environments, and teachers' affective reactions to work (Billingsley, 2005; Billingsley & Cross, 1994). Others attempted to look at historical factors such as age, race, sex, level of preparation, commitment, and perception of ability (Brownell, Smith, McNellis & Miller, 1997). Some investigated job satisfaction, job design, and stress (Gersten, Keating, Yovanoff & Harniss, 2001).

What are the Factors that Contribute to Teacher Attrition and Retention?

Billingsley (2005) suggested a range of factors that influence attrition. She suggested that personal circumstances and priorities play a role. In her analysis of the literature on teacher retention she suggested that work environment factors can lead to negative affective reactions and that these reactions can lead to attrition. She pointed out that a national study of teachers indicated that low salaries, inadequate school administrative support, discipline problems, and limited decision-making input all contribute to higher turnover of teachers.

Attrition and Retention in Special Education

Gersten, Keating, Yovanoff, and Harniss (2001) investigated factors that lead to special education teacher attrition and retention. They focused on the relationship between intent to stay in the field and factors such as job satisfaction, commitment to the field, and aspects of job

design. A path analysis was used to study the complexity of teacher attrition and retention as mediated by other variables labeled as: (a) Teacher/Administrative Support; (b) Role Dissonance; (c) Professional Development; (d) Strain; (e) Satisfaction with Job; and (e) Commitment to the Profession. This method allows the researcher to examine multiple hypothetical, causal relationships. The path analysis was used to evaluate the relationship while permitting the researchers to assess the contribution of other variables as they directly or indirectly influence teacher attrition.

Gersten et al. (2001) chose their criterion variable in this causal model to be the intent to stay in special education. They were also interested in factors that led to higher commitment and job satisfaction and used breakouts of their path diagram to look at these dimensions. The conceptual framework used to develop their survey instrument was extant literature on attrition in special education, and research on sources of stress and burnout.

The results suggested that building level support had strong direct and indirect effects on working conditions. Gersten et al. (2001) suggested that when special education teachers engage in meaningful conversations with administrators and staff about their jobs, that role dissonance and stress is reduced. They also suggested that the building principals need to demonstrate support for special education teachers by providing relevant professional development activities, helping special education teachers think through conflicts in the demand of their jobs, and encouraging a supportive school culture.

As Gersten et al. separated the direct paths for professional development opportunities, they found that teachers who participated in strong professional communities tended to exhibit higher levels of commitment and "service ethic" than those who did not participate in strong professional communities. They also reported in their findings that perceived lack of building support and on-the-job learning can reflect negatively on role dissonance.

Accordingly, Gersten et al. defined stress due to job design as the discrepancy between what teachers believe about their jobs and the realities of their jobs. The authors suggested that the concept of discrepancy has limited use in its application to special education but appears to have "high utility" and has greatly influenced our approach to understanding retention and job satisfaction (p. 562). The data represented that stress due to job design played a pivotal mediating role in determining the extent to which different aspects of teachers' working conditions influence the decision to stay or leave the field of special education. The information

provided by Gersten et al. suggests that building meaningful, collegial support as schools develop plans for the retention of special education teachers is important.

A second study, (Miller & Brownell, 1999) explained factors that predict teachers' staying, leaving, or transferring from special education classrooms. The results of this study identified the variables that are related to attrition. Miller et al. identified demographics, certification status, collegiality, and building support as those variables related to attrition when considered with bivariate statistics. The authors of this study were able to establish critical variables not identified in earlier studies. Miller et al. (1999) concluded that the most significant variables differentiating who will stay, leave, or transfer are not identical to those identified as the best predictors of intention. The authors determined that specific environmental variables are more powerful predictors of career decisions than most teacher and demographic variables.

Miller et al. (1999) suggested that the retention rates of special education teachers can be improved through district and state policies and programs that use strategic hiring of certified teachers and that work to support uncertified teachers. They also suggested that individual teacher stress be mediated in order to increase the retention rates of special education teachers. They suggested that school district professionals through professional development teacher training activities can educate preservice and inservice teachers to better manage stress through specific coping strategies and collaborative skills.

Miller et al. (1999) cited Cooley and Yovanoff's stress management training process of collegial dialogue as a way to improve the ability to identify and solve problems collaboratively. The process taught techniques for changing a specific situation by analyzing physiological responses, or changing destructive thinking associated with a situation. Miller et al. (1999) also cited the approaches of Pines and Aronson, and Hargreaves for managing teacher stress and improving collegiality, as well as several others that emphasize the importance of stress reduction in maintaining teachers in the field of special education. Miller et al. (1999) stated that environmental factors that contribute to the reduction of teacher stress, strong school leadership, shared visions, a collaborative culture, and shared decision-making will in turn facilitate positive school climate. Miller et al. also concluded that the employment of properly certified teachers is necessary to build a stable work force, and professional development opportunities that provide support and other resources; such as training specific to identified needs are necessary when uncertified special educators must be hired.

Attrition and Retention of Special Education Teachers

A third study looked at general educators and special educators and the variables that influenced teachers' commitment and job satisfaction, with a secondary purpose of determining the extent to which these commitment and satisfaction variables influenced teachers' intent to stay. Billingsley and Cross (1992) reported that the study of commitment and job satisfaction was important in retaining a strong teaching force. They felt that by exploring the data of the correlates of commitment and job satisfaction that a greater understanding of these factors would help to strengthen commitment and job satisfaction among teachers. Hypotheses were developed for the four key points below:

1. Commitment and job satisfaction will be higher among older teachers, women, and those with more teaching experience;
2. Commitment and job satisfaction will be higher among teachers with higher levels of work involvement and leadership support;
3. Commitment and job satisfaction will be higher among those with lower levels of role conflict, role ambiguity, and job stress; and
4. Intention to remain in the profession will be higher among those with higher levels of job satisfaction and commitment.

Billingsley and Cross (1992) reported that across special educators and general educators, job satisfaction is influenced by the following:

1. Leadership support, work involvement, and lower levels of role conflict;
2. For special educators, lower levels of stress and role ambiguity were associated with greater job satisfaction;
3. Professional commitment was negatively related to stress and positively associated to job involvement across both fields of education;
4. School commitment was significantly correlated with higher levels of leadership support and lower levels of role conflict across both fields;
5. Role conflict was a significant predictor of job satisfaction across both fields, suggesting that the higher the role conflict, the lower the job satisfaction;
6. Special educators reported significantly greater levels of role conflict and ambiguity than general educators.

In earlier studies to which Billingsley and Cross (1992) referred, high levels of role conflict and role ambiguity were linked with increased stress.

The studies cited convey the message that teacher retention continues to be a growing concern in special education. Reducing attrition and maintaining a committed workforce is of critical importance. To prevent attrition, it is important to identify the factors that influence teachers' intent to stay in the field. The provision of a free and appropriate education to students with disabilities is dependent upon school districts retaining qualified special education teachers.

Summary

The studies reviewed in this section revealed some conflicting findings about special education teacher retention and attrition. The shortage of special education teachers results partially from a long-term supply and demand imbalance (SPeNSE, 2005). Teacher preparation programs have not produced the supply necessary to ensure quality special education programs for the increasing number of students with disabilities (SPeNSE, 2005). The studies reviewed in the literature reveal that the shortage of special education teachers is chronic, long-term and will worsen (USDOE, 2002). The shortage of special education teachers is greater than teacher shortages in any other area (AAEE, 1999). Shortages vary by location and type, and in poor urban and rural schools, shortages are most severe (AAEE, 1999). Attrition is a critical problem leading to shortage problems, with multiple factors contributing to attrition: (a) working conditions and school climate; (b) administrative support; (c) salary; (d) job design; (e) role overload; and (f) characteristics of students with disabilities (Billingsley, 2002). Demographic variables including age, certification status, and teaching experience make some teachers more vulnerable to attrition than others (Gersten, Keating, Yovanoff, & Harniss, 2001).

Conclusions

The research studies reviewed for this study represent a diversity of approaches to factors related to the retention and attrition of special educators. A number of conclusions may be drawn. Most of the research to date is based on the use of questionnaires and surveys that explore variables associated with attrition (Table 1). The findings of the studies cited information on teacher characteristics and personal factors, teacher qualifications, work environment factors, and affective reactions to work. Of the variables considered in special education teacher attrition, age has been the only demographic variable linked to attrition (Boe, Bobbitt & Cook 1997). The relationship between gender and attrition has had limited review. Differences in race and ethnic

origin were uneventful predictors of attrition behavior (Singer, 1992). Personal behaviors such as personal finances and perceived opportunities influenced intent to stay (Westling & Whitten, 1996). Teacher qualifications such as certification, academic ability, degrees earned, and teacher preparation were reviewed in several studies.

Overall, special education attrition and retention research has examined work environments as important predictors of job satisfaction and career decisions. The studies included in this review reflect the relationship of attrition to specific work environment variables, including salary, school climate, administrative support, colleague support, support through induction and mentoring, professional development, teacher roles, and caseload issues (Billingsley, 2005).

The studies provide additional support for the idea that excessive and prolonged work problems lead to negative affective reactions, such as increased stress, lower job satisfaction, and reduced organizational and professional commitment (Billingsley et al., 1995). The interaction of specific work problems weakens teacher effectiveness. Billingsley et al. identified the number of students, the amount of paperwork, the lack of support, and the lack of needed resources as those work problems that interfere with teacher effectiveness and job satisfaction. This weakening of effectiveness reduces opportunities for rewards that are important to teachers.

Miller et al. (1999) identified stress as one of the most powerful predictors of special educators' attrition. Billingsley and Cross (1994) supported this claim and stated that perceived stress is related to intent to leave. Other research studies support stress as a variable that influences the intent to stay. Morvant et al. (1995) determined that almost 80% of those who planned to leave indicated stress was related to their intent to leave as compared to just over one-half of those who planned to stay. Leavers identified more frequent stress than stayers' in the following areas: (a) the range of students' needs and abilities; (b) bureaucratic requirements; and (c) conflicting expectations, goals, and directives. Additional research supports the effects of stress among special educators. Maslach (1982) defined exhaustion, powerlessness, and depersonalization as variables that lead to teacher burnout. Job satisfaction and commitment are strongly linked to studies of career intentions (Billingsley & Cross, 1992). Teachers with higher levels of professional and organizational commitment are more likely to stay (Singh & Billingsley, 1996).

The implications of these studies provide support for the idea that stress as a powerful predictor of special educators' attrition needs further investigation. This idea was supported by Billingsley et al., (1995) and Miller et al., (1999) and as well as by Morvant et al., (1995) and Maslach (1982). Stress as a variable that influences the intent to stay, when defined in terms of exhaustion, powerlessness, and depersonalization is worth further investigation.

Table 2.1

Factors that Influence Retention and Attrition

Author/Year	Methodology/Sample	Results
Gersten, Keating, Yovanoff, Harniss (2001)	887 special education teachers from Silver City, Arizona, Wishbone, Washington, and Sofia Texas were given a questionnaire.	Teachers left special education due to stress due to job design, learning on the job, and support by principals and other teachers.
Russ, Chiang, Rylance, Bingers (2001)	139 students and 54 teachers in Virginia were given questionnaires and interviewed.	Higher caseloads appear correlated to teachers leaving special education.
Whitaker (2000)	156 special education teachers in South Carolina were given a questionnaire.	Perceived effectiveness of mentoring was significantly correlated with intent to stay in special education.
Miller, Brownell, Smith (1999)	1,576 special education teachers in Florida were given a questionnaire.	Teachers left special education due to insufficient certification, perceptions of high stress, and perceptions of poor school climate. Special education teachers who transferred to general education had perceptions of high stress, and perceptions of poor school climate, and were significantly younger than teachers remaining in special education.
Boe, Bobbitt, Cook, Whitener, Weber (1997)	4,798 general education and special education teachers from a 1998 national teacher follow-up survey.	Teacher turnover decreased as the following increased: age, number of dependents, level of certification, number of degrees since last degree was earned.
Boe, Bobbitt, Cook (1997)	4,798 general education and special education teachers were given a survey in a national sample	Higher turnover for special education teachers (20%) as compared to general education teachers (13%).
Brownell, Smith, McNellis, Miller (1997)	93 randomly selected previous special education teachers were interviewed by telephone in Florida.	Largest number of teachers leave special education due to dissatisfaction with working conditions.
Singh, Billingsley (1996)	658 special education teachers (159 EDB teachers) and 499 other special education teachers in Virginia: Mail questionnaires.	For both groups, the intent to stay was related to: working conditions, job satisfaction, role-related problems, and stress.
Schnorr (1995)	1500 special education teachers in Alaska were given a questionnaire.	Administrative support was cited by 88% of participants as incentive to continue. Reasons for leaving were: paperwork, high caseloads, number of required meetings, and job stress.
Cooley, Yovanoff (1986)	92 special education teachers along with service providers participated in a controlled study that evaluated the effects of two interventions: a series of stress management workshops and peer collaboration programs.	The results indicated that stress management and peer collaboration programs show support in providing job support for professionals at risk for burnout.

The Concept of Stress in Special Education

This section will address the usefulness of understanding stress, strain, and coping resources in the retention of special education teachers. I will first address definitions of stress. Then I will discuss the concept of stress and finally the construct of psychological resilience.

Definitions

Stress may have different meanings for each individual, and even scientists have developed widely varying definitions. Selye (1974) defined stress as a function of elevated corticosteroid levels and uses the term to refer to the effects of any agent that threatens the homeostasis of the organism. Seyle defined a stressor as anything that throws the body out of homeostatic balance. He suggested that prolonged pleasant stimulation could be stressful if it involves deviation from homeostasis. Toates (1995) defines stress as a more chronic state that arises only when defense mechanisms are either being chronically stretched or actually failing. Schuler (1980) defined stress as a dynamic condition, in which an individual is confronted with an opportunity, constraint, or demand on being, having, and or doing what he or she desires. Beehr and Newman (1978) define job stress as a condition wherein job-related factors interact with the worker to change his or her psychological or physiological condition such that she or he is forced to deviate from normal functioning. This definition is useful for the study proposed because it describes stress as a person-environment interaction which incorporates both individual and workplace stressors.

The Impact of Stress on Teachers

Research from decades past brings forward issues cited in current research. Hans Selye (1974) reported that there are different kinds of stress and that stress is inevitable in the everyday world, and stated that some degree of stress is necessary for individuals to mobilize. He defined "mobilize: as the ability to galvanize individuals to accept challenges and deal effectively with situations that are sometime uncertain or discrepant. He noted that when individuals feel that a situation or event is within their range of capability, but not achievable without a certain degree of effort, they face "challenge."

Many have realized that individuals differ in their ability to handle stressful events (Tugade & Fredrickson, 2004). Some can overcome stress while others become incapacitated (Flett, Biggs & Alpass, 1995). Special educators work with students who present a number of social, physical, and academic challenges that have been reported to lead to stress. Consistent

with more current research, D'Alonzo and Wiseman (1978) reported that many special educators feel their professional roles are unclear or in conflict. Rizzo, House, and Lirtzman (1970) identified role conflict and role ambiguity as two unique problem areas for special educators. Role conflict referred to the occurrence of two or more sets of inconsistent role behaviors and role ambiguity as the lack of clear information regarding one's duties and responsibilities. Lawrenson and McKinnon (1982) identified hassles with administrators as the main reason special educators resign from their positions. Bradfield and Fones (1985) found that special education teachers reported the greatest job stress in relationships with parents, as well as time management issues, poor stress management techniques, unrealistic expectations for teacher performance, and inappropriate student behavior. D'Alonzo and Wiseman (1979) reported that areas related to job stress were cooperation, planning, and interactions with regular education teachers.

Teachers who remain in special education for a considerable number of years may have become very adept at managing job-related stress (Brownell & Smith, 1993; and Fogarty, Machlin, Albion, Sutherland, Lalor & Revitt, 1999). It is reasonable to suggest that these experienced teachers have found ways to defuse the frustrations of the everyday world of work (Holt, Fine and Tollefson, 1987).

Investigating why some teachers burn out and others do not, Holt, Fine and Tollefson, (1987) found that teachers experiencing high stress and high burnout tended to cope with stress by using passive strategies such as venting on others. Teachers in this group tended to be in poor physical health, alienated themselves from others, and demonstrated an external locus of control. Teachers in the high stress, low burnout group used more active coping strategies such as humor and hobbies. They were generally healthier as a group and had a more internal locus of control.

Holt et al. highlighted three overall factors that seem to contribute to the ability to handle stress: (1) commitment and involvement in many aspects of one's life, (2) the acceptance of change as a reality of life, and (3) the belief that one can control the course of events in one's life. These three factors seem to be integral aspects of personality that may be significantly shaped by events experienced in the formative years of life. Many of these characteristics could be representative of the individual's philosophy toward life in general (Tugade & Fredrickson, 2004). If the areas of commitment, challenge, and control are critical for handling high-stress days then consideration for stress training at the pre-professional level and the professional level

could be designed to help special educators endure job stress (Brownell & Smith, 1992; Cooley & Yovanoff, 1986; Holt, Fine & Tollefson, 1987; Koeske & Koeske, 1993).

Individual Differences in Reactions to Stress

Individual differences are important in the study of stress. Identical stimuli may be evaluated as anxiety-provoking, neutral, or even pleasant by different persons (Strelau, 1996). The same situation can evoke different responses inter-individually (between-subjects) or intra-individually (within-subject) Stress reactions may be influenced by temperament (Strelau, 1996). Temperament takes part in regulating the relationship between a person and his/her external work (Strelau, 1996). Temperament has been considered to be a moderator of what one identifies as a stressor, a state of stress, efforts to cope with stress, and the psychophysiological costs of the states of stress (Strelau, 1996).

The Construct of Psychological Resilience

This section describes theory that indicates that resilient individuals "bounce back" from stressful experiences quickly and effectively (Tugade & Fredrickson, 2002, p. 2). Tugade and Fredrickson noted that few studies provided empirical evidence for this and devised "the broaden-and build theory of positive emotions." They predicted that resilient people use positive emotions to rebound from, and find positive meaning in, stressful encounters. Their work explained that mediational analysis revealed that the experience of positive emotions contributed, in part to the ability to achieve efficient emotion regulation.

Tugade and Fredrickson (2002) reported that people who are able to move on despite negative stressors do not demonstrate "luck" on the part of those successful individuals, but demonstrates a concept known as "resilience." Tugade and Fredrickson defined psychological resilience as "effective coping and adaptation although faced with loss, hardship, or adversity."

Tugage and Fredrickson used a metaphor by Lazarus (1993) to describe psychological resilience: "Resilience to certain events has been likened to elasticity in metals. For example, cast iron is hard, brittle, and breaks easily (not resilient), while wrought iron is soft, malleable, and bends without breaking (resilient)" This metaphor parallels psychological resilience in that there is a resistance to the psychological strain associated with negative experiences.

Psychological resilience has been characterized by the ability to bounce back from negative emotional experiences and by flexible adaptation to the changing demands of stressful experiences (Block & Kremen, 1996; Lazarus, 1993). Research indicates that resilient

individuals have optimistic, zestful, and energetic approaches to life, are curious and open to new experiences, and are characterized by high positive emotionality (Block & Kremen, 1996, Klohnen, 1996). Additional evidence suggests that highly resilient people proactively cultivate their positive emotionality, by strategically eliciting positive emotions through the use of humor, relaxation techniques (Demos, 1989; Wolin & Wolin, 1996), and optimistic thinking (Kumpfer, 1999). Positive emotionality, then, emerges as an important element in psychological resilience. (Tugade and Fredrickson, 2002, p. 4)

Recent reviews have indicated that positive emotions help buffer against stress (Folkman & Moskowitz, 2000). Positive coping strategies, such as positive reappraisal, problem-focused coping, and infusing ordinary events with positive meaning are related to the occurrence and maintenance of positive affect (Folkman & Moskowitz, 2000), and predict increases in psychological well-being and health (Affleck and Tennen, 1987).

The Broaden-and Build Theory of positive emotions is a framework used to understand why and how positive emotions may be useful in the coping process. This theory (Tugade and Fredrickson, 2002), corroborates with research demonstrating the cognitive and social benefits associated with positive emotions (Isen, 1999).

According to Tugade and Fredrickson, positive and negative emotion has distinct and complementary adaptive functions and cognitive and psychological effects. This theory looks at negative emotions as momentary thought-action repertoires that prepare one to behave in a specific way. In contrast, distinct positive emotions broaden one's thought-action repertoire, expanding the range of cognitions and behaviors that come to mind. This broadened mindset builds an individual's physical, intellectual, and social resources (Tugade and Fredrickson, 2002).

Resilience pertains to the ability of adults in otherwise normal circumstances, when exposed to an isolated and potentially highly disruptive event, to maintain relatively stable, healthy levels of psychological and physical functioning (Masten, 1995; and Masten & Coatsworth, 1995). Resilience research is an ordinary phenomenon (Masten, Best & Garmezy, 1991; Tugade and Fredrickson, 2001). It appears to be a common phenomenon that results from the basic human adaptation system (Masten, 1995). When the adaptation system is working, personal development continues positively even in the face of severe adversity. If the major systems are impaired, then the risk for developmental problems is much greater (Masten, 1995).

Resilience refers to a class of phenomena characterized by good outcomes in spite of serious threats to adaptations or development. Resilience is an inferential and contextual construct that requires two major kinds of judgments (Masten & Coatsworth, 1995). The first judgment addresses the threat side of the inference, a demonstrable risk. The second judgment involved in an inference about resilience is the criteria by which the quality of adaptation or developmental outcome is assesses as evaluated as good or okay. (Luthar et al., 2000, Masten, 1995).

Resilience appears to be a common phenomena arising from ordinary human adaptive processes (Masten, 1995). The great threats to human development are those that endanger the underlying adaptive processes, including brain development and cognition, regulation of emotion and behavior, and the motivation for learning and engaging in the environment. Resilience does not come from rare and special qualities, but from our minds, brains, and bodies (Masten, 1995; and Masten & Coatsworth, 1995).

Psychological resilience has been defined by various theorists and researchers, operationally as developing a strengthened perspective which focuses on the capabilities, assets, and positive attributes of human beings rather than their weaknesses or pathologies (Maluccio, Pine, & Tracy, 2002). They regard resilience as a general frame of reference or belief system that guides human beings in coping with environmental challenges. Resilient people are characterized by attributes of social competence, problem-solving skills, autonomy and self-esteem, a sense of purpose, and an orientation to the future.

Others have defined psychological resilience as the capacity to rebound from adversity, strengthened and more resourceful (Walsh, 1979), and as efforts to restore or maintain internal or external equilibrium under significant threat (Masten, Best & Garmezy, 1991). Resilience represents good developmental outcomes and sustained competence despite the presence of stress and risk (Werner & Smith 1992). Resilience has been related to other constructs, particularly coping and adaptation (Masten, Best & Garmezy, 1991). Coping addresses the person's cognitive and behavioral strivings to deal with new and different demands while adaptation is the process through which each person's potentials develop in response to environmental challenges and opportunities (Werner & Smith, 1982).

Theoretical Aspects of Resilience

Psychological resilience consists of a balance between stress and the ability to cope (Greene, 1986). Resilience is dynamic, and it depends on life context. Resilience is developmental and when it is successfully demonstrated, it strengthens a person's competence (Greene, 1986). Greene concedes that resilience is a "fluid, dynamic, and not fully understood process and a concept with various shortcomings, including the following: It is a vague term; it is not a single construct; it leads to linear, simplistic predictions about risk and human behavior; and it perpetuates an individual image of success, along with emphasis on the person's own responsibility to get ahead. Resilience is most important at life transitions (Greene, 1986). Whether the positive outcomes in life transitions are to be attributed to something called "resilience" or to some more complex combination of factors, resilience is a promising construct (Maluccio, 2002).

Lazarus (1993) portrayed resilience as the capacity of individuals to withstand hardship, to bounce back from adversity, and to move forward with functional lives characterized by well-being. Vaillant (1993) used a metaphorical description of resilience as "the capacity to be bent without breaking and the capacity, once bent, to spring back." Lazarus (1993) and Luthar, Cicchetti, and Becker (2000) referred to resilience as "a dynamic process encompassing positive adaptation within the context of significant adversity" (p. 575).

Conclusions

Series of studies have documented high levels of stress experienced by special education teachers in relation to their job responsibilities and to teacher attrition in special education (Gersten, Keating, Yovanoff, & Harris, 2001; Cross & Billingsley, 1994; Billingsley & Cross, 1992; Miller & Brownell, 1999).The studies reviewed in this chapter indicate that stress in job design greatly affected teachers' perception of their responsibilities (Gersten, Keating, Yovanoff, & Harris, 2001; Cross & Billingsley, 1994; Billingsley & Cross, 1992; Miller & Brownell, 1999). The stressors identified were working conditions (Cross & Billingsley, 1994); building-level support, administrative support, role dissonance, and role ambiguity (Gersten, Keating, Yovanoff, & Harris, 2001). Various studies have determined that a relationship exists between stress and special education teacher burnout (Schnorr, 1995, and Wisniewski & Gargiulo, 1997). They support the interrelationship of strain, stress, and coping resources on special education teachers' intent to stay in the profession. Wisniewski and Gargiulo, (1997) suggested that the

research to date provides insights on variables that mediate the relationship between the task demands that teachers face in the performance of their duties and job satisfaction, but it has not produced an understanding of those variables that moderate effects on teacher's well-being. The information in this review of the literature provides similar insights.

This study uses a reconceptualized model that permits a more comprehensive understanding of moderating variables that affect special educators' intent to stay in special education. The exact relationship between teacher burnout and attrition is unclear. Research has shown that some educators experiencing stress remain in the classroom while others decide to leave teaching (Wisniewski & Gargiulo, 1997).

Stress is not the sole reason why special education teachers decide to leave. The literature supports this as one factor in teacher attrition (Wisniewski & Gargiulo, 1997). A decision to remain in or leave the classroom is most likely due to the dynamic interaction of several factors, one of which is burnout (Brownell & Smith, 1993). It would seem, therefore that we need to better understand the mediating and the moderating variables that influence special education teachers' intent to stay or to leave the profession.

The following chapters detail the methodology and findings of this study with attention given to the interaction of several factors that may serve as moderating and mediating variables that influence special education teachers' intent to stay or leave the profession. The following variables will be considered: (a) Teacher/Administrative Support; (b) Role Dissonance (c) Psychological Strain; (d) Satisfaction with Job; (e) Commitment to the Profession; (f) Age; and (g) Psychological Resilience.

Chapter Three

Methodology

This chapter describes the methodology of the study in terms of the purpose of the study, the research questions, the type of design, the procedures for instrument development, the data collection procedures, and the procedures for data analysis.

Purpose of the Study

The purpose of this study was to test a hypothesized model of the relationships between Teacher/Administrative Support, Role Dissonance, Professional Development, Strain, Satisfaction with Job, Commitment to the Profession, Age, Psychological Resilience, and Intent to Leave Special Education. Structural equation modeling was used to test the hypothesized model. The model, based on prior research (Gersten, Keating, Yovanoff, & Harris, 2001; Cross & Billingsley, 1994) and illustrated in Figure 3.1, hypothesized that: (a) Teacher/Administrative Support has a direct effect on Role Dissonance, Professional Development, Strain, and Satisfaction with Job, and has an indirect effect on Commitment to the Profession and on the Intent to Leave; (b) Role Dissonance has a direct effect on Satisfaction with Job and Strain, and has an indirect effect on Commitment to the Profession and Intent to Leave; (c) Professional Development has a direct effect on Role Dissonance and Commitment to the Profession, and has an indirect effect on Intent to Leave; (d) Satisfaction with Job has a direct effect on Commitment to the Profession, and has both a direct and indirect effect on Intent to Leave; (e) Strain, with the operational definition of "stress due to job design" (Gersten et al., 2001), has a direct effect on Satisfaction with Job and Commitment to the Profession, and has an indirect effect on Intent to Leave; (f) Commitment to the Profession has a direct effect on Intent to Leave; (g) Age has a direct effect on Intent to Leave; and (h) Psychological Resilience, as a moderator variable interacting with Commitment, has a direct effect on Intent to Leave.

Research Questions

The over-all guiding question for this study was: Is the hypothesized model of relationships between Teacher/Administrative Support, Role Dissonance, Professional Development, Strain, Satisfaction with Job, Commitment to the Profession, Age, Psychological Resilience, and Intent to Leave special education confirmed by data from a sample of special education teachers in Virginia? A secondary question was whether Psychological Resilience

plays a moderating role in the relationship between the variables and intent to leave in the profession.

Procedures

The sections that follow describe the design of the study, instrument selection, data collection procedures, and data analysis procedures.

The Type of Design

The method utilized was path analysis. Path analysis can be viewed as a straightforward extension of multiple regression, with its aim to provide estimates of the magnitude and significance of hypothesized causal connections between sets of variables. Path analysis goes beyond the multiple regression goal of determining the multiple correlation (R) between predictor variables and a criterion variable along with the corresponding regression coefficients based on data from a particular sample. Path analysis allows the researcher to first hypothesize a model representing the relationships among all the variables and then to test how well data from a particular sample fits (confirms) that model. In addition path analysis allows the researcher to specify and examine relationships among the independent variables to determine both the direct and indirect effects on the dependent variables (Pedhazur, 1997).

In path analysis, variables in the model are identified as independent variables, dependent variables, or both. Independent variables in this model which are not influenced by another variable are called exogenous variables. These variables have no arrows pointing to them in the path diagram. Any variable in the model which is influenced by another variable is called an endogenous variable. Variables which are both dependent and independent are referred to as mediating variables because they mediate the relationship between one variable and another.

The term path coefficient designates the degree of association between two identified variables (Pedhazur, 1997). The path coefficient is comparable to a regression coefficient in multiple regression and can be expressed in standardized form (β's) or in unstandardized form (b's). Path coefficients are commonly designated by (p) with subscripts where the first subscript is the dependent variable and the second subscript is the variable which influences it.

Since a path coefficient is the same as the regression coefficient, the interpretation is the same. Both are partial correlations expressing the expected amount of change in the dependent variable based on change in the first variable when all other variables in the relationship are held constant (partialled out). For example, if the path coefficient is expressed in standardized form

(β's), the scores for each variable are z scores and the unit for interpretation is standard deviations, then a standardized path coefficient of .40 means that a 1 standard deviation increase of one variable is expected to result in an increase of .4 standard deviations on the dependent variable when the other variables are held constant. It is for the reason of comparability that standardized path coefficients (β's) are used in this model. The units (standard deviations) are comparable across variables and the values can be compared as to the contributing influence on the relationships hypothesized (Pedhazur, 1997). This understanding will be used in the data analysis procedures for this study.

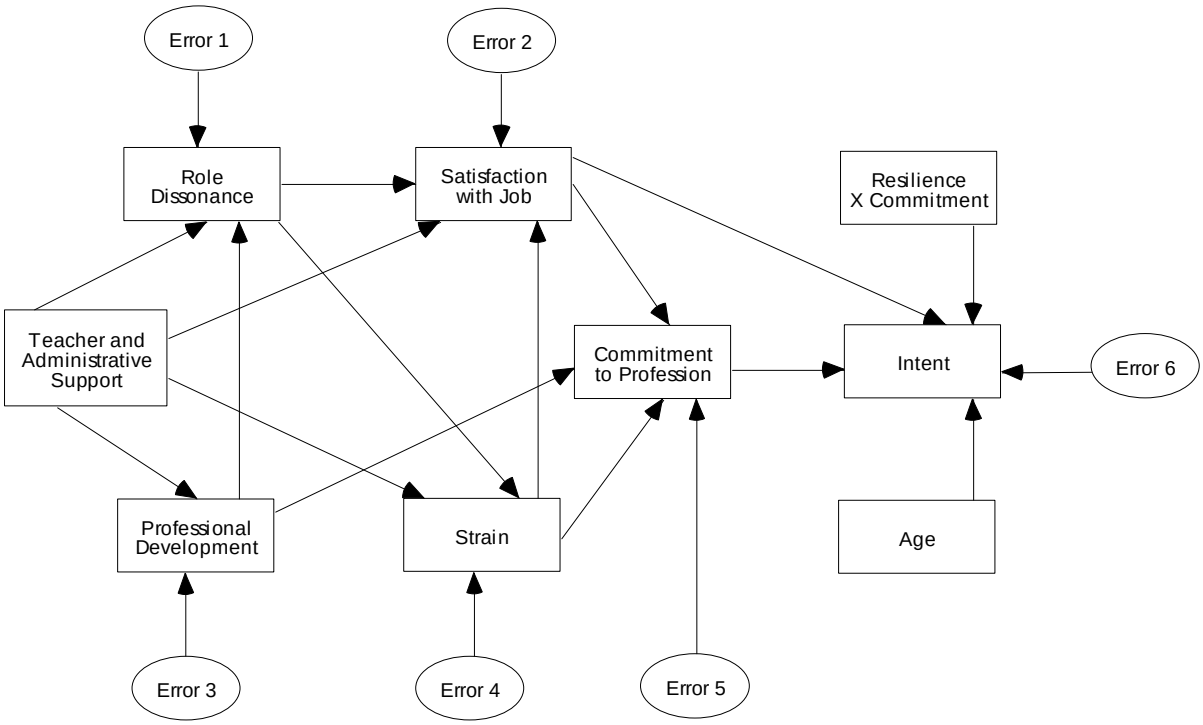

Figure 3.1. Specified Model: Path Diagram of Hypothesized Relationships. The Relationship between Occupational Stress, Psychological Strain, Satisfaction with Job, Commitment to the Profession, Age, and Resilience to the Turnover Intentions of Special Education Teachers.

Pedhazur (1982) reminds us that it is essential to understand that explanations of causes do not come from a path analysis; rather they come from the theory that gave rise to the path diagram. The path analysis will merely confirm or disconfirm the theory. If the theory represented by the path diagram is confirmed, that provides some additional evidence for the causal relationships hypothesized by the theory. If the theory represented by the path diagram is not confirmed by the path analysis, this indicates that the theory may need revision. As Pedhazur notes, "an exploratory (causal) scheme is not arrived at on the basis of the data, but rather on the basis of knowledge, theoretical formulations and assumptions, and logical analysis" (p. 579). In other words, path analysis cannot identify causes; it merely confirms or fails to confirm a theory that describes causal relationships.

In understanding that path analysis merely confirms or disconfirms a particular theory, the development and specification of the theory is critical (Pedhazur, 1997). In this context the *theory* presented in this study consists of the following:

1. The variables that are believed to be interrelated;
2. The operational definition of each variable; identifying how each variable will be measured;
3. The specification of relationships among the variables; which variables are related to other variables directly and indirectly as described in the path diagram; and
4. A logical explanation of why those particular variables were chosen and why their relationships were specified as they were. This explanation must be based on previous research and other relevant theories.

Instrument validity is important in path analysis (Pedhazur, 1997). Since the theory is tested based on measures used, the results are meaningful only if the measure of each variable conforms to exactly what the researcher means by that variable (Pedhazur, 1997). One assumption of path analysis is that the variables are measured without error. This assumption is difficult to achieve in practice since all measures contain some error. It is essential therefore, that the measurement error be minimized (Pedhazur, 1997). Accordingly, only instruments with high reliabilities will be used in this path analysis. Otherwise, the size of the relationships between the variables will be lower than their true values and the test of the model's fit to the data may fail, not because the theory is wrong but because measurement error in the data is large.

Instrument Construction

After an extensive review of the literature for instruments used in previous studies of the relationships between the variables included in this study, a questionnaire was developed which consists of ten sections. The primary sources of possible items to include in this questionnaire were the *OSI-R* (Osipow, 1998), *Working in Special Education* (Morvant, Gersten, Blake, & Howard, 1992), and *The Adversity Profile*, (Stoltz, 2000). Table 3.1 provides information on the relationships between the sections of the questionnaire and the variables in this study. After data collection, factor analyses and reliability analyses were conducted to identify those items that best contributed to measuring each variable as described in Chapter Four.

In addition to the instrument, an individual data form was developed to obtain demographic information and perceptions of participants regarding the role that stress and adversity has played in their lives. Also included in this data form were questions regarding their intent to stay in or to leave their current job.

A copy of the questionnaire, *Special Education Teacher Survey*, is given in Appendix A.

Table 3.1

Questionnaire Development

Questionnaire section	Variable in model
1. Role Overload	Role Dissonance
2. Role Ambiguity	Role Dissonance
3. Rational/Cognitive Coping	Resilience
4. Job Satisfaction	Satisfaction with Job
5. Relationships with Principals	Teacher and Administrative Support
6. Relationships with Teachers	Teacher and Administrative Support
7. Stress Related to Job Design	Strain
8. Commitment to Profession	Commitment to Profession
9. Role Conflict	Role Dissonance
10. Professional Growth	Professional Development
11. Resilience	Resilience
Data Form item 1	Age
Data Form items 12-14	Intent to Leave

Data Collection Procedures

Setting and Participant Selection

Eleven school divisions were randomly selected by geographic area from all of the school divisions in the Commonwealth of Virginia. The superintendent and the director of special education of each of these school divisions were sent a letter of request to participate describing the purposes and procedures of the study along with copies of the questionnaire and the informed consent form. A copy of this letter requesting participation is given in Appendix B.

Special education teachers were then randomly selected within these eleven school divisions. If a division employed thirty or fewer special education teachers, then all of them were asked to participate in the study. If a division employed more than thirty special education teachers, then twenty teachers were randomly selected and asked to participate. A total of 256 special education teachers were selected for participation.

Assurance of Confidentiality

Each individual and school division was assured confidentiality at the outset of the study. Prior to completing the survey, each teacher signed a written consent form which had been approved by the university's Institutional Review Board. A copy of the consent form is given in Appendix C.

Data Analysis Procedures

As noted, the data were analyzed using a path analysis (structural equation modeling) program, AMOS (Analysis of Moment Structures) version 5. The analyses consisted of three components:

1. Estimation of the path coefficients based on the hypothesized model and data.
2. Analysis of the effects to distinguish direct effects, indirect effects, spurious sources, and unanalyzed sources of the relationships.
3. Evaluation of the fit of the model to the data.

In the estimation procedure, the path analysis program used the relationships specified in the path diagram and the covariances among the variables in the sample data to calculate initial estimates of the path coefficients. The actual covariances among the variables in the sample data provided what is referred to as the *observed covariance matrix.* The path coefficients from the initial estimates were analyzed to generate an implied covariance matrix, one that would result from the path coefficients as they were first estimated. The program then compared these two

matrices using a discrepancy function. This process continued using maximum likelihood estimation until it was not possible to generate an *implied covariance matrix* any closer to the *observed covariance matrix* given the relationships in the path diagram. The results of the estimation procedure provided the estimated path coefficients and the final value of the discrepancy function. The final value of the discrepancy function was used for hypothesis testing (Byrne, 2001).

Path analysis provides the ability to decompose correlations into components: (a) direct effect of the other variables; (b) indirect effect of the other variable; (c) spurious sources such as common causes; and (d) unanalyzed sources (Pedhazur, 1997). In using the specified model, the direct effect of one variable on another is the magnitude of the direct path coefficient. The indirect effect of one variable on another that is mediated by a third variable was computed from the product of their standardized path coefficients (Pedhazur, 1997). When decomposing correlations a spurious contribution may become evident. If the direct and indirect effects of one variable on another are lower than the bivariate correlation is, the reason may be that a common cause is shared between the variables. In other words, if one variable influences the other two by inflating the size of the bivariate correlation, then part of the bivariate correlation will be attributed to the direct effect of one variable on the other, but the remainder is simply due to a shared common cause (Pedhazur, 1997). An unanalyzed component becomes evident if there are correlations between exogenous variables. The size of the unanalyzed component is equal to the bivariate correlation minus the other effects (Pedhazur, 1997). This study examined the sum of the direct effect and the indirect as the *total effect* or the *effect coefficient.* The sum of the spurious component and the unanalyzed component is referred to as the *non-causal part of the correlation coefficient* (Pedhazur, 1997). The ability to decompose bivariate correlations helps in understanding the associations between variables and particularly the ability to distinguish direct and indirect effects from spurious effects and unanalyzed effects.

A number of statistics were used to evaluate the fit of the model to the data. The Chi-square goodness-of-fit statistic compared the implied correlational matrix to the observed correlation matrix using the discrepancy function (Pedhazur, 1997). The product of the discrepancy function times the sample size minus 1 has a Chi-square distribution and was used to test the hypothesis of fit. The smaller the Chi-square value, the closer the fit of the model to the collected data. The null hypothesis for the Chi-square test is the same as the research hypothesis:

there is no difference between the observed and the implied correlational matrix. Therefore small values of Chi-square and corresponding large p values are desirable (Pedhazur, 1997). One must be cautious, however, in using the Chi-square goodness-of-fit statistic in testing path analysis hypotheses due to the effect of sample size and model complexity (Byrne, 2001).

Other indices provided, such as the Tucker-Lewis Index and the Root Mean Square Error of Approximation (Byrne, 2001) were used for interpreting the fit between model and the data. The Tucker-Lewis Index compares the results from the model with the results from an *independence model* (path coefficients were fixed at 0 and only variances were estimated). The larger the value of this index, the better the hypothesized model fit the data. Tucker-Lewis Index values of .95 or greater are evidence of good-fit between the hypothesized model and the data. The Root Means Square Error of Approximation (RMSEA) is based on the fit between the implied covariance matrix and the estimated population covariance matrix, rather than the sample covariance matrix (Byrne, 2001). The smaller this index the better the fit. Values less than .06 indicate good fit and values as high as .08 represent reasonable error in approximation (Byrne, 2001).

Summary of Hypothesized Relationships

The specified path diagram of hypothesized relationships is presented in Figure 3.2. The diagram presents all of the variables, the identified paths for direct and indirect relationships and the error terms for each endogenous variable. Table 3.2, given on the page following the path diagram, identifies the previous research supporting the hypothesized relationships.

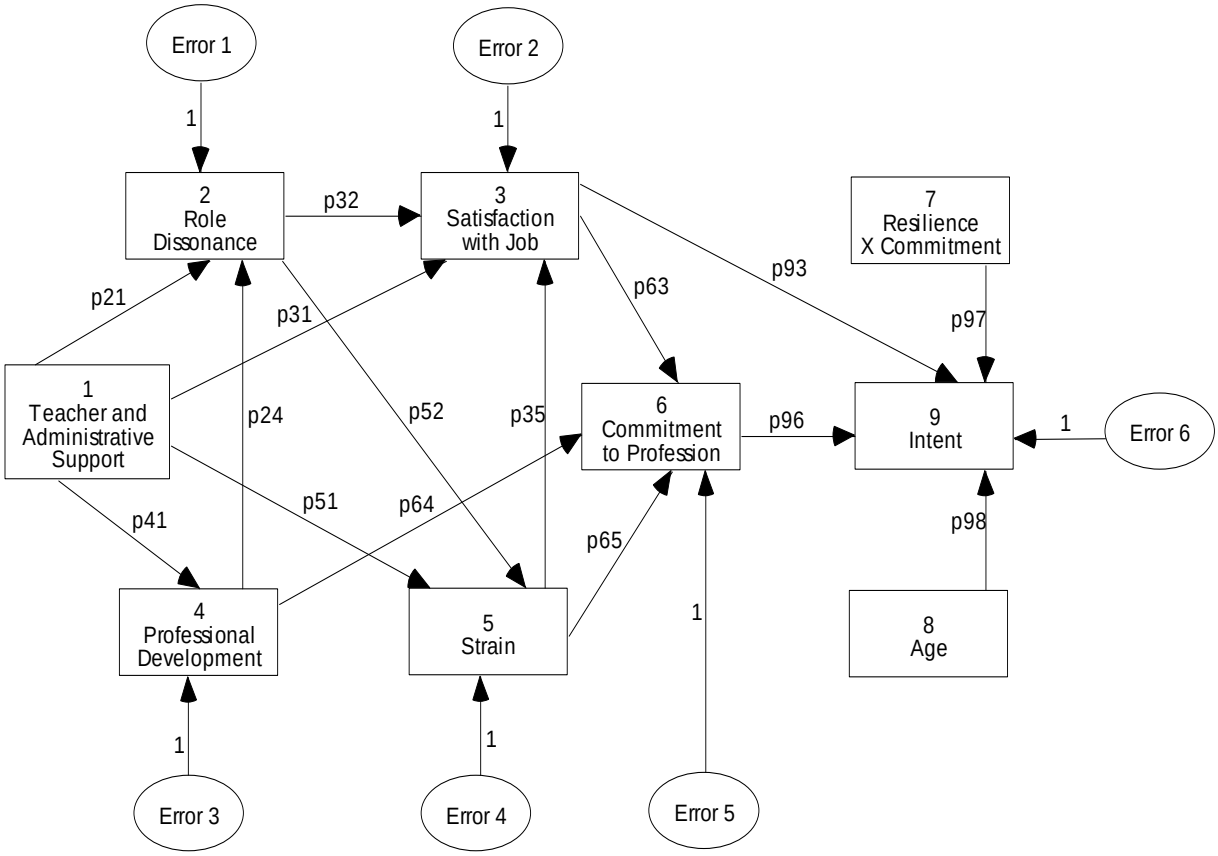

Figure 3.2. Specified Model: Hypothesized Relationships with Path Coefficients. The Relationship between Occupational Stress, Psychological Strain, Satisfaction with Job, Commitment to the Profession, Age, and Resilience to the Turnover Intentions of Special Education Teachers.

Table 3.2

Path Coefficients from Previous Studies

Variable/Path	Gersten et al. (2001)	Cross & Billingsley (1994)
Teacher/Administrator Support		
- Role Dissonance	-.23	-.49
- Satisfaction with Job	.23	.28
- Professional Development	.37	(not included)
- Commitment to Job	-	.08
- Strain	-	-.24
Role Dissonance		
- Satisfaction with Job	-.28	-.32
- Strain	.42	-
- Commitment	-	-.17
Professional Development Activities		
- Commitment to Profession	.24	-
- Role Dissonance	-.32	-
Satisfaction with Job		
- Commitment to Profession	.30	.32
- Intent to Stay	.24	.21
Strain		
- Satisfaction with Job	-.18	-.25
- Commitment to Profession	-.21	-.17
Commitment to Profession		
- Intent to Stay	.32	- *
Age		
- Intent to Stay	.14	.14

*Note that Cross & Billingsley (1994) suggest that this result seems to be an artifact of multicollinearity.

Chapter Four

Results

The first section of this chapter section focuses on the responses of randomly selected special education teachers from the Commonwealth of Virginia to the questionnaire, *Special Education Teacher Survey*, administered in fall 2005. The sections following present a brief description of the items in the questionnaire, followed by the procedures used for analyses, and a presentation of results.

Participants

Sample

Eleven school divisions were randomly selected by geographic area from all school divisions in the Commonwealth of Virginia. A total of 256 special education teachers were then randomly selected within these eleven divisions. The questionnaire was then administered on the school site in order to acquire a response rate of at least 80 percent. This method of collecting the data yielded a total of 217 responses and a response rate of 84 percent. Tables 4.1 to 4.3 describe the demographic characteristics of the random sample of special education teachers across Virginia.

The final sample included 186 women and 31 men. They ranged in age from 22 to 67 years, with an average of 42 years. Teaching experience represented by this sample were as follows: total years experience in the teaching field yielded a mean of 43 years and a range of 1 to 34 years; total years experience teaching in special education yielded a mean of 14 years and a range of 1 to 30 years; and total years experience teaching in general education yielded a mean of 2 years and a range of 0 to 23 years..

This final sample represented special education teachers teaching at various levels. The highest percentage of participants reported currently teaching at the elementary level (44%), while 25% of the participants reported teaching at the middle school level and 22% teaching at the high school level. Nine percent (9%) reported teaching in a combination of levels within their school division.

Table 4.1

Age and Experience

Variable	N	Minimum	Maximum	Mean	Std. deviation
Age	216	22	67	42.91	10.673
Experience	217	1	34	14.43	9.205
Special Education Experience	216	1	30	12.37	8.925
General Education Experience	216	0	23	1.98	4.586
Valid N (listwise)	215				

Table 4.2

Gender

Gender		Frequency	Percent	Valid percent	Cumulative percent
Valid	Female	186	85.7	85.7	85.7
	Male	31	14.3	14.3	100.0
	Total	217	100.0	100.0	

Table 4.3

Teaching Level

Grade level		Frequency	Percent	Valid percent	Cumulative percent
Valid	Elementary	96	44.2	44.2	44.2
	Middle	55	25.3	25.3	69.6
	High	47	21.7	21.7	91.2
	Combination	19	8.8	8.8	100.0
	Total	217	100.0	100.0	

Results from the Individual Data Form

An "Individual Data Form" was included as part of the questionnaire. Tables 4.4 to 4.22 summarize the means and standard deviations for Questions 5-7 and the frequencies and percentages by categories for Questions 8-15.

Items 5, 6 and 7 asked respondents to rate their stress as a special education teacher, the total stress in their lives now, and the total stress throughout their lives on a scale of 1 to 10, with 10 indicating extreme stress. A summary of their responses to these items is given in Table 4.4.

Items 8 and 9 asked respondents whether they believed they had benefited from adversity in their lives and whether they believed they had been strengthened by hard times in their lives on a scale from 'strongly agree' to 'strongly disagree'. A summary of their responses to these items is given in Table 4.5 and 4.6.

Items 10A through 10G were optional and asked respondents to indicate whether any of a number of types of adversity had an effect on their lives by using a scale ranging from 'strongly disagree' to 'strongly agree'. The results of their responses regarding the effects of these types of adversity are given in Tables 4.7 through 4.13. As also shown in these tables, almost all respondents answered all of these questions.

Items 11 through 14 asked about their likelihood to leave their current job. The results of their responses to these items are given in Tables 4.14 to 4.17. Finally, item 15 asked about the type of job they would look for if they were to leave their current job. These results are given in Tables 4.18 to 4.21.

Table 4.4

Perceived Stress

Perceived stress	N	Minimum	Maximum	Mean	Std. deviation
Job stress as a special education teacher	217	1	10	7.01	1.890
Total Stress in your life now	217	1	10	6.07	2.219
Stress throughout your life	215	1	10	7.07	2.248
Valid N (listwise)	215				

Table 4.5

Benefited from Adversity

Response		Frequency	Percent	Valid percent	Cumulative percent
Valid	Strongly agree	94	43.3	43.3	43.3
	Agree	99	45.6	45.6	88.9
	Neutral	19	8.8	8.8	97.7
	Disagree	4	1.8	1.8	99.5
	Strongly disagree	1	.5	.5	100.0
	Total	217	100.0	100.0	

Table 4.6

Strengthened by Hard Times

Response		Frequency	Percent	Valid percent	Cumulative percent
Valid	Strongly agree	82	37.8	37.8	37.8
	Agree	111	51.2	51.2	88.9
	Neutral	21	9.7	9.7	98.6
	Disagree	2	.9	.9	99.5
	Strongly disagree	1	.5	.5	100.0
	Total	217	100.0	100.0	

Table 4.7

Adversity due to Family Loss

Response		Frequency	Percent	Valid percent	Cumulative percent
Valid	Strongly disagree	18	8.3	8.4	8.4
	Disagree	11	5.1	5.1	13.6
	Neutral	36	16.6	16.8	30.4
	Agree	71	32.7	33.2	63.6
	Strongly agree	78	35.9	36.4	100.0
	Total	214	98.6	100.0	
Missing	System	3	1.4		
Total		217	100.0		

Table 4.8

Adversity due to Lack of Support

Response		Frequency	Percent	Valid percent	Cumulative percent
Valid	Strongly disagree	25	11.5	11.6	11.6
	Disagree	37	17.1	17.2	28.8
	Neutral	42	19.4	19.5	48.4
	Agree	78	35.9	36.3	84.7
	Strongly agree	33	15.2	15.3	100.0
	Total	215	99.1	100.0	
Missing	System	2	.9		
Total		217	100.0		

Table 4.9

Adversity due to Illness

Response		Frequency	Percent	Valid percent	Cumulative percent
Valid	Strongly disagree	37	17.1	17.2	17.2
	Disagree	38	17.5	17.7	34.9
	Neutral	56	25.8	26.0	60.9
	Agree	57	26.3	26.5	87.4
	Strongly agree	27	12.4	12.6	100.0
	Total	215	99.1	100.0	
Missing	System	2	.9		
Total		217	100.0		

Table 4.10

Adversity due to Sexual Abuse

Response		Frequency	Percent	Valid percent	Cumulative percent
Valid	Strongly disagree	149	68.7	71.0	71.0
	Disagree	14	6.5	6.7	77.6
	Neutral	24	11.1	11.4	89.0
	Agree	14	6.5	6.7	95.7
	Strongly agree	9	4.1	4.3	100.0
	Total	210	96.8	100.0	
Missing	System	7	3.2		
Total		217	100.0		

Table 4.11

Adversity due to Emotional Abuse

Response		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	96	44.2	45.3	45.3
	Disagree	29	13.4	13.7	59.0
	Neutral	33	15.2	15.6	74.5
	Agree	35	16.1	16.5	91.0
	Strongly agree	19	8.8	9.0	100.0
	Total	212	97.7	100.0	
Missing	System	5	2.3		
Total		217	100.0		

Table 4.12

Adversity due to Physical Abuse

Response		Frequency	Percent	Valid percent	Cumulative percent
Valid	Strongly disagree	152	70.0	71.7	71.7
	Disagree	17	7.8	8.0	79.7
	Neutral	25	11.5	11.8	91.5
	Agree	12	5.5	5.7	97.2
	Strongly agree	6	2.8	2.8	100.0
	Total	212	97.7	100.0	
Missing	System	5	2.3		
Total		217	100.0		

Table 4.13

Adversity due to Other

Response		Frequency	Percent	Valid percent	Cumulative percent
Valid	Strongly disagree	111	51.2	65.7	65.7
	Disagree	2	.9	1.2	66.9
	Neutral	17	7.8	10.1	76.9
	Agree	18	8.3	10.7	87.6
	Strongly agree	21	9.7	12.4	100.0
	Total	169	77.9	100.0	
Missing	System	48	22.1		
Total		217	100.0		

Table 4.14

Thinking about Quitting

Response		Frequency	Percent	Valid percent	Cumulative percent
Valid	Agree	29	13.4	13.4	13.4
	Tend to agree	51	23.5	23.5	36.9
	Tend to disagree	52	24.0	24.0	60.8
	Disagree	85	39.2	39.2	100.0
	Total	217	100.0	100.0	

Table 4.15

Likely to Actively Look in the Next Year

Response		Frequency	Percent	Valid percent	Cumulative percent
Valid	Agree	25	11.5	11.5	11.5
	Tend to agree	29	13.4	13.4	24.9
	Tend to disagree	42	19.4	19.4	44.2
	Disagree	121	55.8	55.8	100.0
	Total	217	100.0	100.0	

Table 4.16

Leaving this Job in the Next Year

Response		Frequency	Percent	Valid percent	Cumulative percent
Valid	Agree	8	3.7	3.7	3.7
	Tend to agree	31	14.3	14.3	18.0
	Tend to disagree	56	25.8	25.8	43.8
	Disagree	122	56.2	56.2	100.0
	Total	217	100.0	100.0	

Table 4.17

Leaving as Soon as Finding Another Job

Response		Frequency	Percent	Valid percent	Cumulative percent
Valid	Agree	15	6.9	7.0	7.0
	Tend to agree	27	12.4	12.6	19.5
	Tend to disagree	49	22.6	22.8	42.3
	Disagree	124	57.1	57.7	100.0
	Total	215	99.1	100.0	
Missing	System	2	.9		
Total		217	100.0		

Table 4.18

Special Education in Different School System

Response		Frequency	Percent	Valid percent	Cumulative percent
Valid	No	115	53.0	53.0	53.0
	Yes	102	47.0	47.0	100.0
	Total	217	100.0	100.0	

Table 4.19

General Education Field

Response		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	176	81.1	81.1	81.1
	Yes	41	18.9	18.9	100.0
	Total	217	100.0	100.0	

Table 4.20

Human Service Field other than Education

Response		Frequency	Percent	Valid percent	Cumulative percent
Valid	No	152	70.0	70.0	70.0
	Yes	65	30.0	30.0	100.0
	Total	217	100.0	100.0	

Table 4.21

Not Human-Service Related Field

Response		Frequency	Percent	Valid percent	Cumulative percent
Valid	No	189	87.1	87.1	87.1
	Yes	28	12.9	12.9	100.0
	Total	217	100.0	100.0	

Instrument Development

Questionnaire items were identified through a multi-step process. The first consisted of a literature review and synthesis discussed in Chapter Two. Variables found to have a significant relationship to retention and attrition of special education teachers were identified through this review of literature and existing instruments were examined. Relevant items were identified and item wordings were modified for use with special education teachers when needed. Items were then grouped into sections on the instrument.

Copies of the draft questionnaire were field tested by a group of graduate level students at a university in southwest Virginia. Students were asked to complete the questionnaire and to make suggestions regarding the following: (1) item clarity; (2) clarity of directions; (3) ranking scale; and (4) other suggestions. All suggestions were evaluated by the project committee and appropriate changes were made to the questionnaire. Prior to distribution of the questionnaire, the project committee agreed on the final version.

Data Analysis

Data were entered and analyzed using SPSS and Amos version 5. Descriptive statistics were run first to identify frequency distributions as well as means and standard deviations for the items on the questionnaire and to provide further information for later analysis.

Scoring and Reverse Coded Items

Scaling of items in the response categories utilized a 5-point scale. The 1 to 5 points on the Likert scale corresponded to different categories in different sections of the instrument. For one Likert format, responses reflected a continuum of agreement to disagreement. A second

Likert format sought to measure respondents' perception of adequacy of resources. The third format provided a range of frequencies with which respondents have experienced an event.

Items were reverse coded if the wording of items resulted in responses where initial point values were conceptually in the opposite direction from the other items.

Extraction of Factors

Factor analyses were conducted for two purposes: (1) to identify which questionnaire items best defined each variable scale; and (2) to remove any items which did not contribute to a particular variable scale. Separate factor analyses were conducted using the following sections of the questionnaire: (1) Sections 5 & 6, Items 26-44, Teacher/Administrative Support; (2) Sections 1, 2, & 9, Items 1-16 & 57-60, Role Dissonance; (3) Sections 3 & 11, Items 17-23 & 64-81, Resilience; (4) Section 7, Items 45-51, Strain; and (5) Section 8, Items 52-56, Commitment to Profession. For each separate factor analysis, the number of factors was set to one. Factor loadings were used to determine which items had the highest contributions to each factor.

After the factor analyses identified which items best defined each scale, reliability analyses were run for each scale using those items identified by the factor analyses. In addition, separate reliability analyses were run for the scales on Satisfaction (Questionnaire Section 4, items 24 and 25) and Professional Development (Questionnaire Section 10, items 61-63) which had too few items for meaningful factor analyses. The output from each reliability analysis was examined to identify any items that reduced the scale reliability. Any such items were removed from the scale.

Table 4.22 lists the seven scales and the final items used for each. A coefficient alpha reliability was computed for each scale, which ranged from .75 to .94, which is also reported in Table 4.22. Following this, Table 4.23 provides an example of the factor analysis output for the Resilience scale. As can be seen, the factor loadings for items 17, 18, 65, 66, and 73 were below the criterion of .40 and were therefore dropped. Table 4.24 provides the results of the reliability analyses of the remaining items for this scale. Since deleting none of these items would result in improving the scale reliability, all of these items were retained. Table 4.25 shows the final scale reliability computed using Cronbach's alpha to be .881.

Table 4.22

Final Scale Descriptions

Scale name	Items	Reliability
Teacher Administrative Support	Items 26-37	.94
Role Dissonance	Items 12, 14, 15, 16	.77
Satisfaction with Job	Item 25	NA
Professional Development	Items 61, 63	.85
Strain	Items 46, 47, 48, 50, 51	.75
Commitment to Profession	Items 52-56	.77
Resilience	Items 19-23, 64, 67-72, 74-81	.88

Table 4.23

Factor Loadings

Item	Factor loading (a)
V17	.281
V18	.216
V19	.566
V20	.593
V21	.620
V22	.638
V23	.594
V64	.439
V65	.373
V66	.169
V67	.446
V68	.490
V69	.636
V70	.670
V71	.513
V72	.666
V73	.395
V74	.561
V75	.470
V76	.581
V77	.655
V78	.533
V79	.685
V80	.428
V81	.605

Extraction Method: Principal Component Analysis.
a 1 components extracted.

Table 4.24

Reliability Item-Total Statistics

Variable	Scale mean if item deleted	Scale variance if item deleted	Corrected item-total correlation	Squared multiple correlation	Cronbach's Alpha if item deleted
V19	77.43	99.677	.512	.579	.875
V20	77.65	98.884	.545	.601	.874
V21	77.76	97.434	.565	.542	.873
V22	77.24	100.857	.558	.554	.874
V23	77.44	100.313	.532	.486	.875
V64	77.40	99.998	.406	.371	.880
V67	76.68	105.191	.355	.308	.880
V68	76.58	105.263	.397	.300	.879
V69	77.13	99.482	.577	.458	.873
V70	76.80	100.684	.609	.508	.873
V71	77.79	97.300	.473	.318	.878
V72	76.67	101.819	.588	.540	.874
V74	77.64	96.513	.491	.382	.877
V75	77.11	102.554	.388	.319	.879
V76	77.00	101.425	.529	.435	.875
V77	76.78	101.274	.589	.494	.874
V78	76.77	103.273	.459	.350	.877
V79	76.83	101.835	.599	.528	.874
V80	78.13	98.811	.400	.301	.881
V81	76.95	102.484	.529	.449	.875

Table 4.25

Scale Reliability

Cronbach's Alpha	Number of items
.881	20

Creating Computed Variables

Based on the results of the factor and reliability analyses, non-contributing items were removed. Using the remaining items, compute statements were created for the following model variables: (1) Teacher/Administrative Support; (2) Role Dissonance; (3) Satisfaction with Job; (4) Professional Development; (5) Strain (Stress due to Job Design); and (6) Commitment to Profession. A compute statement for the variable "Intent" was created using items 12-14 from the Individual Data Form by averaging each individual's responses to these three items and then coding average responses less than 2.5 as 1 ("leaving") and average responses greater than 2.5 as 0 ("staying").

Bivariate (Pearson) Correlations

The bivariate correlations between the nine variables in the model, reported in Table 4.26, indicate that many of the relationships between Teacher/Administrative Support, Role Dissonance, Professional Development, Strain due to Job Design, Satisfaction with Job, Commitment to the Profession, Resilience, and turnover intentions of special education teachers are statistically significant at $p<.05$. Turnover intentions are negatively correlated with Administrative Support, Satisfaction with Job, Commitment, and Resilience and they are positively correlated with Role Dissonance. Therefore as individual resilience decreases, there is a greater likelihood to leave one's job. In addition, as teachers' level of role dissonance increases, they are more likely to leave their jobs. Commitment is positively correlated with Administrative Support, Satisfaction with Job, Professional Development, and Resilience and it is negatively correlated with Role Dissonance.

The following summarizes findings from the bivariate (Pearson) correlations regarding intent to leave: (1) as Administrative Support increases, the intent to leave decreases; (2) as Role Dissonance increases, the intent to leave increases; (3) as Satisfaction with Job increases, the

intent to leave decreases; (4) as Commitment to Profession increases, the intent to leave decreases; and (5) as Resilience increases, the intent to leave decreases. One must keep in mind, however, that these are correlational findings which only describe associations and not causal relationships. To investigate hypothesized causal relationships, path analysis was used. The results of those analyses are given in the next section.

Table 4.26
Bivariate Correlations

Variable	Statistic	AS	RD	SJ	PD	Strain	CP	Res	Age	Intent
Administrative	r =	1	-.448(**)	.433(**)	.219(**)	-.211(**)	.345(**)	.207(**)	-.036	-.277(**)
support	Sig.		.000	.000	.001	.002	.000	.002	.602	.000
	N	216	216	216	216	216	216	215	215	214
Role	r =	-.448(**)	1	-.286(**)	-.267(**)	.076	-.422(**)	-.555(**)	-.093	.140(*)
dissonance	Sig.	.000		.000	.000	.264	.000	.000	.173	.041
	N	216	216	216	216	216	216	215	215	214
Satisfaction	r =	.433(**)	-.286(**)	1	.102	-.296(**)	.432(**)	.144(*)	-.092	-.380(**)
with job	Sig.	.000	.000		.134	.000	.000	.035	.181	.000
	N	216	216	216	216	216	216	215	215	214
Professional	r =	.219(**)	-.267(**)	.102	1	.020	.178(**)	.176(**)	.142(*)	-.126
development	Sig.	.001	.000	.134		.773	.009	.010	.038	.066
	N	216	216	216	216	216	216	215	215	214
Strain	r =	-.211(**)	.076	-.296(**)	.020	1	-.160(*)	-.084	.023	.065
	Sig.	.002	.264	.000	.773		.019	.222	.734	.346
	N	216	216	216	216	217	216	215	216	215
Commitment	r =	.345(**)	-.422(**)	.432(**)	.178(**)	-.160(*)	1	.385(**)	-.093	-.287(**)
to profession	Sig.	.000	.000	.000	.009	.019		.000	.173	.000
	N	216	216	216	216	216	216	215	215	214
Resilience	r =	.207(**)	-.555(**)	.144(*)	.176(**)	-.084	.385(**)	1	.081	-.160(*)
	Sig.	.002	.000	.035	.010	.222	.000		.236	.019
	N	215	215	215	215	215	215	215	214	213
Age	r =	-.036	-.093	-.092	.142(*)	.023	-.093	.081	1	-.029
	Sig.	.602	.173	.181	.038	.734	.173	.236		.673
	N	215	215	215	215	216	215	214	216	214
Intent	r =	-.277(**)	.140(*)	-.380(**)	-.126	.065	-.287(**)	-.160(*)	-.029	1
	Sig.	.000	.041	.000	.066	.346	.000	.019	.673	
	N	214	214	214	214	215	214	213	214	215

Path Analysis

Path analyses of the data were performed using the AMOS version 5 software. As Byrne (2001) points out, one critically important assumption of path analysis is that the data in the analysis have a multivariate normal distribution. This critical assumption requires that each variable is normally distributed and that the joint distribution of all the variables is also normal. If this critical assumption is not met by the data, then the tests of model fit and the estimation of path coefficients will not be accurate. Consequently, before proceeding with the path analysis, the variables in the model were tested for univariate and multivariate normality.

The results of these tests are given in Table 4.27 which reports the skew and kurtosis of each univariate distribution and also provides Mardia's test for multivariate normality. For each value, a critical ratio test (listed as "c.r." in the table) is conducted to test the hypothesis that the value is not significantly different from zero. The critical values for this test are 1.96 and -1.96; values greater than these indicate a departure from normality. As can be seen in Table 4.27, the distribution of every variable is highly skewed (non-normal) and the test of multivariate normality was not met (c.r. = 2.553).

The standard method to correct for non-normality is the use of bootstrapping (Byrne, 2001). In bootstrapping, the sample data are treated as a population and repeated samples are taken from it with replacement. The logic behind bootstrapping rests on the principle that the means of sampling distributions are normally distributed even if the variable is not normally distributed in the population. AMOS provides the option for bootstrapping procedures as a part of path analyses. This was used in each of the three path analyses reported here.

Table 4.27

Assessment of Normality

Variable	min	max	skew	c.r.	kurtosis	c.r.
Resilience	2.500	5.000	-.570	-3.386	-.021	-.064
Administative support	1.083	5.000	-.637	-3.784	-.146	-.433
Professional development	1.000	5.000	-.535	-3.180	-.404	-1.201
Strain	1.000	4.600	1.232	7.321	1.753	5.211
Role dissonance	1.000	4.200	.858	5.102	.255	.759
Satisfaction with job	1.000	5.000	-.837	-4.972	-.191	-.568
Commitment to profession	1.200	5.000	-.451	-2.682	-.548	-1.630
Intent to leave	.000	1.000	1.553	9.229	.410	1.220
Multivariate					4.435	2.553

Path analysis in the AMOS program also requires that each case have no missing values for any of the variables included in a model. Since 5 of the 217 cases had missing values for one or more of the variables, these cases were not included in the analysis.

The output from the path analyses of the data are explained in the following sections for each of three models and include: (a) Notes for the Model (sample moments, parameters, and degrees of freedom); (b) Sample Covariances; (c) Implied Covariances; (d) Unstandardized Regression Weights; (e) Effects: Total, Direct, and Indirect (standardized values); (f) Squared Multiple Correlations; (g) Path Diagram with Standardized Path Coefficients; and (h) Goodness of Fit Tests.

Notes for Model One

Model One is the original hypothesized model based on prior research and theory as described and presented in Chapter Three. The hypothesized path diagram is given here in Figure 4.1. The purpose of the path analysis is first to determine whether the data confirm the

model and, if so, to determine the path coefficients, direct effects, indirect effects, and total effects of the variables within the model. Table 4.28 gives the number of sample moments (variances and covariances) used in the estimation procedure, the number of parameters to be estimated given the path diagram, the number of degrees of freedom, and the Chi-square results at the end of the analysis. In the hypothesized model there are 45 distinct sample moments.

The number of distinct parameters to be estimated came from the path diagram. There are a total of 23 parameters to be estimated. The degrees of freedom for testing the model are equal to the number of sample moments minus the number of parameters to be estimated. In this case, 45 minus 23 yields 22 degrees of freedom.

The value of Chi-square (52.876) comes from the final value of the discrepancy function. With 22 degrees of freedom, the associated p value for that Chi-square is p=.000. Since the research hypothesis is that there is no difference between the implied covariance matrix and the observed covariance matrix, a significant Chi-square indicated poor fit. Based on this test, this hypothesized model was disconfirmed. Other Model Fit Indices were also considered. Research suggests that the Goodness-of fit index (GFI) should be equal to or greater than .90 to accept the model, the Adjusted goodness-of fit (AGFI) should be at least .90, the comparative fit index (CFI) should be equal to or greater than .90 to accept the model, and that the Root mean square error of approximation (RMSEA) should be less than or equal to .05. The hypothesized model yielded the following: (1) GFI of .952 (Table 4.29); (2) AGFI of .902 (Table 4.29); (3) CFI of .870 (Table 4.30); and (4) RMSEA of .082 (Table 4.31). More importantly, Pclose tests the null hypothesis that RMSEA is no greater than .05. If Pclose is less than .05, we reject the null hypothesis and conclude that the computed RMSEA is greater than .05, indicating lack of a close fit. Although two of these tests could be used to support confirmation of the Model (GFI > .90, AGFI >.90), three of the tests failed to support the conclusion (Chi-square, CFI, and RMSEA). Consequently, this hypothesized model was considered disconfirmed.

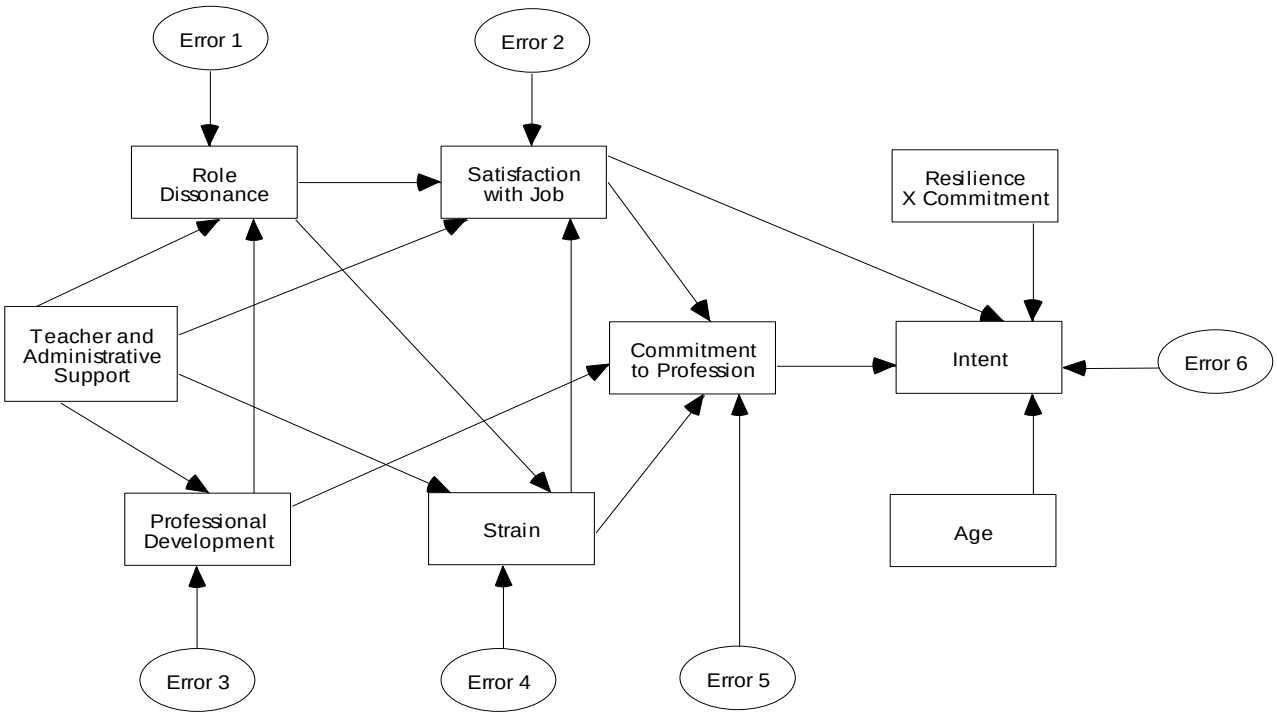

Figure 4.1. Model One: Hypothesized Relationships. The Relationship between Occupational Stress, Psychological Strain, Satisfaction with Job, Commitment to the Profession, Age, and Resilience to the Turnover Intentions of Special Education Teachers.

Moderating Variables

Model One, the hypothesized model, included a moderator variable, the interaction of Psychological Resilience with Commitment. It was hypothesized that Resilience moderates the effects of the other variables in their relationship with Intent to Leave. While Resilience and Commitment were both measured variables appearing in the data set, the interaction of the two was not a variable in the data set and had to be created. Although this model was disconfirmed, information explaining the process of creating and testing the moderator variable is worth including in this section.

If the variable representing the interaction RESXCOM were created by multiplying the scores on Resilience times the scores on Commitment for each subject, the resulting interaction scores would be highly correlated with the original scores, resulting in multicollinearity in the data. To avoid this, centered variables were created, which are simple transformations of the original scores obtained by subtracting the mean of that variable from each subject's original score. In this analysis, the Resilience scores were transformed into a new centered variable called CenRes by subtracting the mean Resilience score from each subject's original Resilience score. Similarly, the Commitment scores were transformed into a new centered variable called CenCom by subtracting the mean Commitment score from each subject's original score. Finally, for each subject, a new variable called ResXCom was created by multiplying the CenRes score times the CenCom score. This variable, ResXCom, is the interaction term that is used in the analysis to represent the moderating effect of Resilience.

Testing Moderator Variables

Testing the effects of a moderator variable in a path analysis is accomplished by a combination of two methods. First, the significance of the regression coefficient between the moderator variable and the criterion variable is checked. A regression weight between ResXCom and Intent approaching significance at the $p = .05$ level would identify a possible moderating effect. Non-significant regression weights for a moderator variable indicate that there is no moderator effect.

Second, comparing the results from testing alternative models is recommended; one in which the supposed moderator variable is included in the path diagram as just another independent variable (using the variable Resilience rather than the interaction ResXCom) and another in which the variable is not included at all in the path diagram. If the tests of model fit

for the hypothesized model are better than the tests of model fit for these two alternatives, this provides additional evidence that the hypothesized moderator effect is validated.

In the results for Model One, the regression weight between the ResXCom and Intent was not significant (p = .35). Subsequent tests to determine whether using Resilience as an independent variable acting on Intent (rather than as a moderator variable) or omitting this variable completely from the hypothesized model would improve the model led to results showing no improvement from either alternative.

Hoelter's Critical N

Hoelter's Critical N tests the adequacy of the sample size. Given the data and the specified model, it estimates the sample size needed to determine adequate model fit. The output given in Table 4.32 shows that the estimated sample size needed to be 136 for adequate fit at the .05 level and 161 for adequate fit at the .01 level. This confirms that the sample size in this study (N=212) was adequate.

Table 4.28

Notes for Model (Default model)

Number of distinct sample moments:	45
Number of distinct parameters to be estimated:	23
Degrees of freedom (45 - 23):	22
Chi-square	52.876
Degrees of freedom	22
Probability level	.000

Table 4.29

RMR, GFI

Model	RMR	GFI	AGFI	PGFI
Default model	.323	.952	.902	.465
Saturated model	.000	1.000		
Independence model	.351	.723	.654	.578

Table 4.30

Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.807	.684	.877	.787	.870
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

Table 4.31

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.082	.054	.110	.033
Independence model	.177	.158	.197	.000

Table 4.32

HOELTER

Model	HOELTER .05	HOELTER .01
Default model	136	161
Independence model	40	46

Model Two

Model Two represents an exploratory model rather than a confirmatory because it was developed in part from the data rather than exclusively from prior research and theory. Three considerations were the bases for developing Model Two. First, the analysis of Model One showed that Resilience is not acting as a moderator variable interacting with Commitment and is not an independent variable directly affecting Intent to Leave. However, bivariate correlations showed significant associations between Psychological Resilience and four other variables in the model: Commitment, Professional Development, Role Dissonance, and Teacher Administrative Support. Therefore, Psychological Resilience was placed in Model Two as an independent variable directly affecting these four variables and indirectly affecting Intent to Leave through them.

Second, the results of the path analysis of Model One, shown in Table 4.33, identified three other hypothesized relationships to be non-significant: the relationship between Role Dissonance and Strain, the relationship between Strain and Commitment, and the relationship between Age and Intent to Leave. Therefore, these paths were dropped from the path diagram in creating Model Two.

Third, the modification indices resulting from the AMOS analysis of Model One, given in Table 4.34, indicated that the data showed a significant direct influence of Role Dissonance on Commitment. Therefore, this path was added to the path diagram in creating Model Two.

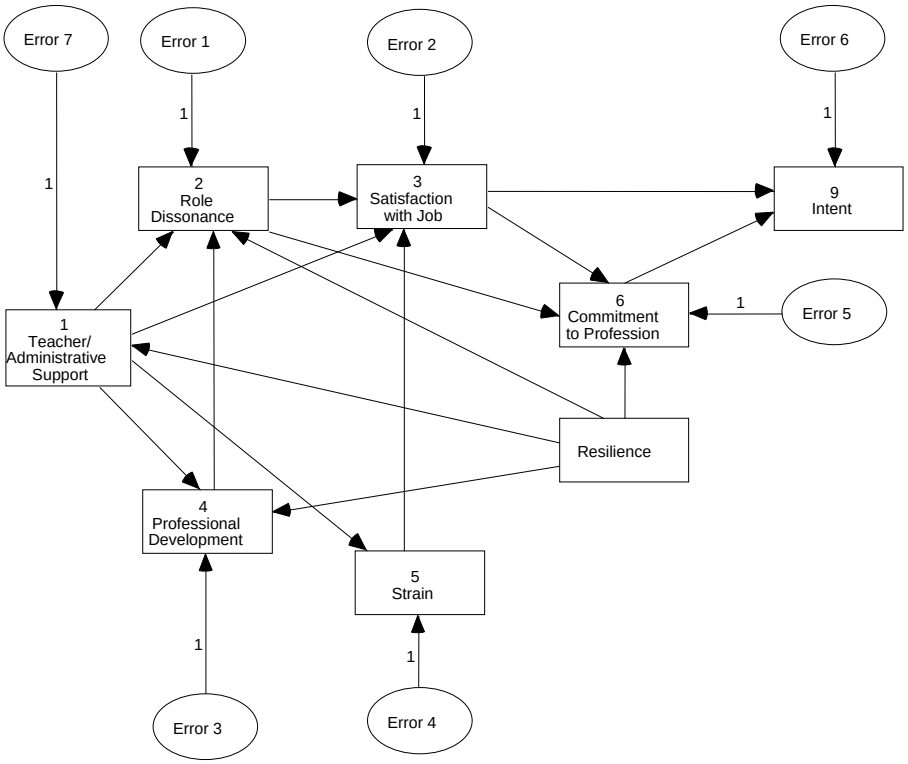

Figure 4.2: Model Two: Hypothesized Relationships

Table 4.33

Regression Weights from Model One

Dependent variables		Independent variables	Estimate	S.E.	C.R.	P
Professional development	<---	Administrative support	.248	.075	3.313	***
Role dissonance	<---	Administrative support	-.359	.053	-6.801	***
Role dissonance	<---	Professional development	-.141	.047	-2.987	.003
Strain	<---	Administrative support	-.170	.058	-2.956	.003
Strain	<---	Role dissonance	-.029	.067	-.431	.667
Satisfaction with job	<---	Administrative support	.399	.086	4.615	***
Satisfaction with job	<---	Role dissonance	-.195	.099	-1.978	.048
Satisfaction with job	<---	Strain	-.367	.101	-3.622	***
Commitment to profession	<---	Strain	-.029	.077	-.370	.711
Commitment to profession	<---	Satisfaction with job	.304	.047	6.490	***
Intent to leave	<---	Resilience interaction with commitment	.055	.059	.931	.352
Intent to leave	<---	Age	-.002	.002	-1.018	.309
Intent to leave	<---	Commitment to profession	-.083	.033	-2.480	.013
Intent to leave	<---	Satisfaction with job	-.110	.024	-4.564	***

Table 4.34

Modification Indices from Model One

Dependent variable		Independent variable	M.I.	Par Change
Professional development	<---	Age	4.711	.014
Commitment to profession	<---	Administrative support	6.778	.146
Commitment to profession	<---	Professional development	5.406	.117
Commitment to profession	<---	Role dissonance	22.483	-.309

Notes for Model Two

Model Two involved 36 distinct sample moments with a total of 23 parameters to be estimated based on 13 degrees of freedom, as shown in Table 4.35. The value of Chi-square comes from the final value of the discrepancy function. With 13 degrees of freedom, the associated p value for that Chi-square is p=.506. This confirms that Chi-square is not significant and that there is no difference between the implied covariance matrix and the observed covariance matrix. This provides some evidence that this exploratory model fit the data.

Sample Moments for Model Two

The path analysis procedure compares the implied covariance matrix based on the path diagram to the observed covariance matrix. The observed covariance matrix that is used in this comparison is given in Table 4.36 and its corresponding correlation matrix is given in Table 4.37. The first table (Table 4.36) gives the covariance matrix which lists variances for each variable in the diagonal elements and covariances between variables in the off diagonal covariances.

The second table (Table 4.37) is the correlation matrix from the data (standardized covariance). The values given in the correlation matrix are the simple bivariate Pearson correlations (r's) between each of the variables. Since the correlation of any variable with itself is by definition 1.0, this is shown for all the diagonal elements.

Estimates

The next section of the results provides all of the estimated values based on the path diagram and the data. This includes the estimated path coefficients, the estimated variances of each exogenous variable, the squared multiple correlations for each endogenous variable, the implied covariance matrix, and the estimates of effects (total, direct, and indirect).

Estimated Path Coefficients

Tables 4.38 and 4.39 list the unstandardized path coefficients and the standardized path coefficients (Betas) for each specified path in the diagram. Figure 4.3, given on the next page, shows the AMOS output with standardized path coefficients. The first table (Table 4.38) includes a test of the significance of each path coefficient, a test of whether the path coefficient is significantly different from 0. A non-significant path coefficient (one with a p value greater than .05) may indicate that there is no direct causal relationship between the two variables as hypothesized or it may indicate that the sample size was too small to identify it as significant.

If a standardized regression coefficient is 2.0, then the dependent variable will increase by 2.0 standard units for each standard deviation increase in the independent variable. Model Two results show the regression weights for the following endogenous variables: (1) A unit increase in Resilience score would increase scores in Teacher/Administrative Support by 20% of a standard deviation; (2) A unit increase in Teacher/Administrative Support score would increase scores in Professional Development by 19% of a standard deviation; (3) A unit increase in Resilience score would increase scores in Professional Development by 15% of a standard deviation; (4) A unit increase in Teacher/Administrative Support score would decrease scores in Strain by 21% of a standard deviation; (5) A unit increase in Teacher/Administrative Support score would decrease scores in Role Dissonance by 34% of a standard deviation; (6) A unit increase in Professional Development score would decrease scores in Role Dissonance by 12% of a standard deviation; (7) A unit increase in Psychological Resilience score would decrease scores in Role Dissonance by 45% of a standard deviation; (8) A unit increase in Teacher/Administrative Support score would increase scores in Satisfaction by 32% of a standard deviation; (9) A unit increase in Role Dissonance score would decrease scores in Satisfaction by 13% of a standard deviation; (10) A unit increase in Strain score would decrease scores in Satisfaction by 22% of a standard deviation; (11) A unit increase in Psychological Resilience score would increase scores in Commitment by 24% of a standard deviation; (12) A

unit increase in Satisfaction would increase scores in Commitment by 34% of a standard deviation; (13) A unit increase in Role Dissonance score would decrease scores in Commitment by 31% of a standard deviation; and (14) A unit increase in Satisfaction score would decrease scores in Intent to Leave by 16% of a standard deviation.

Squared Multiple Correlations and Implied Matrices

Table (4.40) provides the squared multiple correlation (R^2) for the seven endogenous variables. This is interpreted as in multiple regression. Thus, for example, 44% of the total variance for the variable Role Dissonance is explained by the other variables in the model associated with it directly or indirectly.

The estimation procedure uses maximum likelihood methods to generate an implied covariance matrix based on the data and on the relationships represented in the path diagram. Table 4.41 displays the final implied covariance matrix. Note that the observed covariance matrix was displayed in the previous section called *sample moments.*

The implied correlation matrix given can be compared to the observed correlation matrix which was also reported in the section called *sample moments.* When comparing the implied correlation matrix in Table 4.42 with the observed (sample) correlation matrix shown in Table 4.37, the match is close. This close match is what led to a small discrepancy function value which reflects little discrepancy between the observed matrix and the matrix implied by the path diagram.

Effects: Total, Direct, and Indirect

Tables 4.43 to 4.45 report the direct, indirect, and total effects of each independent variable (listed in the column headings) on the dependent variables (listed in the rows). Table 4.43 reports the standardized direct effects for Model Two. The following identifies variables which have a significant direct effect of .20 or above: (1) as the Psychological Resilience score increases by one standard deviation, the score for perceived Teacher/ Administrative Support would increase by 20 % of one standard deviation; (2) as the Psychological Resilience score increases by one standard deviation, the score for perceived Role Dissonance would decrease by 46 % of one standard deviation; and (4) as the Psychological Resilience score increases by one standard deviation, the score for perceived Commitment would increase by 24% of one standard deviation. The results also indicate that as the score for Teacher/Administrative Support increases by 1 standard deviation, Role Dissonance would decrease by 34% of a standard

deviation; and Satisfaction with Job would increase by 32% of a standard deviation. The Standardized Direct Effects of Satisfaction with Job reports that as Satisfaction increases by one standard deviation, the score for Commitment increases by 34% of a standard deviation; and as the score for Satisfaction with Job increases by one standard deviation, the intent to leave decreases by 31% of a standard deviation. The Standardized Direct Effects of Strain on Satisfaction with Job reports that as Strain increases by one standard deviation, the score for Satisfaction with Job decreases by 22% of a standard deviation. The results also suggest that there are no direct effects between the resilience variable and the strain variable, or the resilience variable and the intent variable.

Table 4.44 provides the standardized indirect effect, for Model Two and identifies significant indirect effects in the following: (1) Psychological Resilience has an indirect effect on Satisfaction with Job (.147), Commitment to Profession (.153), and Intent to Leave (-.110); (2) Teacher/Administrative Support has an indirect effect on Satisfaction with Job (.095), Commitment to Profession (.208), and Intent to Leave (-.162); (3) Strain has an indirect effect on Intent to Leave (.081) and on Commitment to Profession (-.076); and (4) Role Dissonance has an indirect effect on Intent to Leave (.079).

Table 4.45 reports the standardized total effects, which are the sum of the direct and indirect effects. The following indicates which variables have sizable Total Effects on other variables: (1) The total effect of Psychological Resilience on Teacher/Administrative Support (.201); (2) Strain on Satisfaction with Job (-.222); (3) Psychological Resilience on Role Dissonance (-.550); (4) Psychological Resilience on Commitment (.395); (5) Teacher Administrative Support on Role Dissonance (-.364); (6) Teacher/Administrative Support on Satisfaction (.412); (7) Satisfaction on Commitment (.341); and (8) Satisfaction on Intent to Leave (-.366).

Model Fit

Tables 4.46 to 4.49 provide a number of indices of fit between the model and the data. The most commonly used indices are reported in this section. In all cases, three values are reported: (1) values for the default model (the researcher's hypothesized model), (2) the saturated model (a just-identified model), and (3) the independent model (a model in which all path coefficients are assumed to be 0). The interest is in the values for the default model when interpreting model fit.

CMIN. This model fit index provides the Chi-square test under a different name. Table 4.46 reports a value of Chi-square (called CMIN) of 12.261 with 13 degrees of freedom resulting in a p value of .506. Good model fit is indicated by p values that are greater than .05 (the larger the better), so the value of p= .506 as reported is one indicator of good model fit.

GFI and AGFI. The next table (Table 4.47) provides two indices commonly reported-GFI (Goodness of Fit) and AGFI (Adjusted Goodness of Fit). Acceptable values for these indices are those over .90. The closer the value is to 1.0, the better the fit of the model. Model Two yielded a GFI of .986, and a AGFI of .962. Both of these are indicators of a good model fit.

TLI and CFI. This set of model indices, (Table 4.48) labeled "Baseline Comparisons" provide the TLI (Tucker-Lewis Index) and CFI (Comparative Fit Index). Values above .90 are indicative of good fit. Model two yielded a TLI of 1.005, and a CFI of 1.000. Both provide indicators of a good fit.

RMSEA. The most respected index of model fit (Table 4.49) is the Root Mean Square Error of Approximation (RMSEA) index. This index provides a point estimate (the RMSEA value) as well as a confidence interval around that value. RMSEA values less than .05 indicate good fit and RMSEA values as high as .08 represent reasonable errors of approximation. Model Two yielded a RMSEA value of .000. This RMSEA point estimate of .000 indicates excellent model fit. In addition to the point estimate, the RMSEA output provides a p "closeness of fit" value called "Pclose" in the output. This tests the hypothesis that the population value of RMSEA is less than .05. Since RMSEA values that are less than .05 indicate good model fit, high Pclose values are desirable. Pclose values greater than .50 indicate good model fit (Byrne, 2001). Model Two yielded a Pclose value of .859.

Table 4.35

Notes for Model

Number of distinct sample moments:	36
Number of distinct parameters to be estimated:	23
Degrees of freedom (36 - 23):	13
Chi-square	12.261
Degrees of freedom	13
Probability level	.506

Table 4.36

Sample Covariances

Variables	Resilience	Administrative	Professional	Strain	Role	Satisfaction	Commitment	Intent
Resilience	.269							
Administrative	.095	.823						
Professional	.098	.204	1.024					
Strain	-.031	-.131	.016	.476				
Role	-.222	-.324	-.218	.038	.607			
Satisfaction	.081	.439	.130	-.234	-.262	1.295		
Commitment	.166	.257	.159	-.085	-.268	.400	.668	
Intent	-.033	-.098	-.050	.018	.045	-.171	-.096	.156

Table 4.37

Sample Correlations

Variable	Resilience	Administrative	Professional	Strain	Role	Satisfaction	Commitment	Intent
Resilience	1.000							
Administrative	.201	1.000						
Professional	.188	.222	1.000					
Strain	-.087	-.209	.023	1.000				
Role	-.550	-.459	-.276	.070	1.000			
Satisfaction	.137	.426	.113	-.298	-.295	1.000		
Commitment	.392	.347	.192	-.150	-.421	.430	1.000	
Intent	-.159	-.275	-.125	.068	.145	-.381	-.296	1.000

Table 4.38

Regression Weights

Dependent variable		Independent variable	Estimate	S.E.	C.R.	P
Administrative	<---	Resilience	.352	.118	2.986	.003
Professional	<---	Administrative	.215	.076	2.840	.005
Professional	<---	Resilience	.290	.132	2.196	.028
Strain	<---	Administrative	-.159	.051	-3.103	.002
Role dissonance	<---	Administrative	-.293	.046	-6.362	***
Role dissonance	<---	Professional	-.088	.041	-2.144	.032
Role dissonance	<---	Resilience	-.690	.080	-8.643	***
Satisfaction	<---	Administrative	.399	.086	4.627	***
Satisfaction	<---	Role dissonance	-.195	.099	-1.979	.048
Satisfaction	<---	Strain	-.367	.101	-3.623	***
Commitment	<---	Resilience	.383	.107	3.576	***
Commitment	<---	Satisfaction	.245	.043	5.740	***
Commitment	<---	Role dissonance	-.196	.074	-2.651	.008
Intent	<---	Satisfaction	-.108	.024	-4.459	***
Intent	<---	Commitment	-.079	.034	-2.341	.019

Table 4.39

Standardized Regression Weights

Dependent variable		Independent variable	Estimate
Administrative	<---	Resilience	.201
Professional	<---	Administrative	.192
Professional	<---	Resilience	.149
Strain	<---	Administrative	-.209
Role dissonance	<---	Administrative	-.341
Role dissonance	<---	Professional	-.115
Role dissonance	<---	Resilience	-.459
Satisfaction	<---	Administrative	.318
Satisfaction	<---	Role dissonance	-.133
Satisfaction	<---	Strain	-.222
Commitment	<---	Resilience	.243
Commitment	<---	Satisfaction	.341
Commitment	<---	Role dissonance	-.187
Intent	<---	Satisfaction	-.311
Intent	<---	Commitment	-.163

Table 4.40

Squared Multiple Correlations

Variable	Estimate
Administrative	.041
Professional	.071
Strain	.044
Role dissonance	.441
Satisfaction	.242
Commitment	.322
Intent	.167

Table 4.41

Implied Covariances

Variable	Resilience	Administrative	Professional	Strain	Role	Satisfaction	Commitment	Intent
Resilience	.269							
Administrative	.095	.823						
Professional	.098	.204	1.024					
Strain	-.015	-.131	-.032	.476				
Role	-.222	-.324	-.218	.052	.607			
Satisfaction	.087	.439	.136	-.237	-.267	1.297		
Commitment	.168	.208	.114	-.074	-.269	.403	.670	
Intent	-.023	-.064	-.024	.031	.050	-.172	-.096	.156

Table 4.42

Implied Correlations

Variable	Resilience	Administrative	Professional	Strain	Role	Satisfaction	Commitment	Intent
Resilience	1.000							
Administrative	.201	1.000						
Professional	.188	.222	1.000					
Strain	-.042	-.209	-.046	1.000				
Role	-.550	-.459	-.276	.096	1.000			
Satisfaction	.147	.425	.118	-.301	-.301	1.000		
Commitment	.395	.280	.137	-.131	-.422	.433	1.000	
Intent	-.110	-.178	-.059	.115	.162	-.381	-.298	1.000

Table 4.43

Standardized Direct Effects

Variable	Resilience	Administrative	Professional	Strain	Role	Satisfaction	Commitment
Administrative	.201	.000	.000	.000	.000	.000	.000
Professional	.149	.192	.000	.000	.000	.000	.000
Strain	.000	-.209	.000	.000	.000	.000	.000
Role	-.459	-.341	-.115	.000	.000	.000	.000
Satisfaction	.000	.318	.000	-.222	-.133	.000	.000
Commitment	.243	.000	.000	.000	-.187	.341	.000
Intent	.000	.000	.000	.000	.000	-.311	-.163

Table 4.44

Standardized Indirect Effects

Variable	Resilience	Administrative	Professional	Strain	Role	Satisfaction	Commitment
Administrative	.000	.000	.000	.000	.000	.000	.000
Professional	.039	.000	.000	.000	.000	.000	.000
Strain	-.042	.000	.000	.000	.000	.000	.000
Role	-.090	-.022	.000	.000	.000	.000	.000
Satisfaction	.147	.095	.015	.000	.000	.000	.000
Commitment	.153	.208	.027	-.076	-.046	.000	.000
Intent	-.110	-.162	-.009	.081	.079	-.056	.000

Table 4.45

Standardized Total Effects

Variable	Resilience	Administration	Professional	Strain	Role	Satisfaction	Commitment
Administrative	.201	.000	.000	.000	.000	.000	.000
Professional	.188	.192	.000	.000	.000	.000	.000
Strain	-.042	-.209	.000	.000	.000	.000	.000
Role	-.550	-.363	-.115	.000	.000	.000	.000
Satisfaction	.147	.412	.015	-.222	-.133	.000	.000
Commitment	.395	.208	.027	-.076	-.232	.341	.000
Intent	-.110	-.162	-.009	.081	.079	-.366	-.163

Table 4.46

CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	23	12.261	13	.506	.943
Saturated model	36	.000	0		
Independence model	8	346.600	28	.000	12.379

Table 4.47

RMR, GFI

Model	RMR	GFI	AGFI	PGFI
Default model	.016	.986	.962	.356
Saturated model	.000	1.000		
Independence model	.169	.642	.540	.499

Table 4.48

Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.965	.924	1.002	1.005	1.000
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

Table 4.49

RMSEA

Model	RMSEA	LO 90	HI 90	Pclose
Default model	.000	.000	.065	.859
Independence model	.232	.211	.254	.000

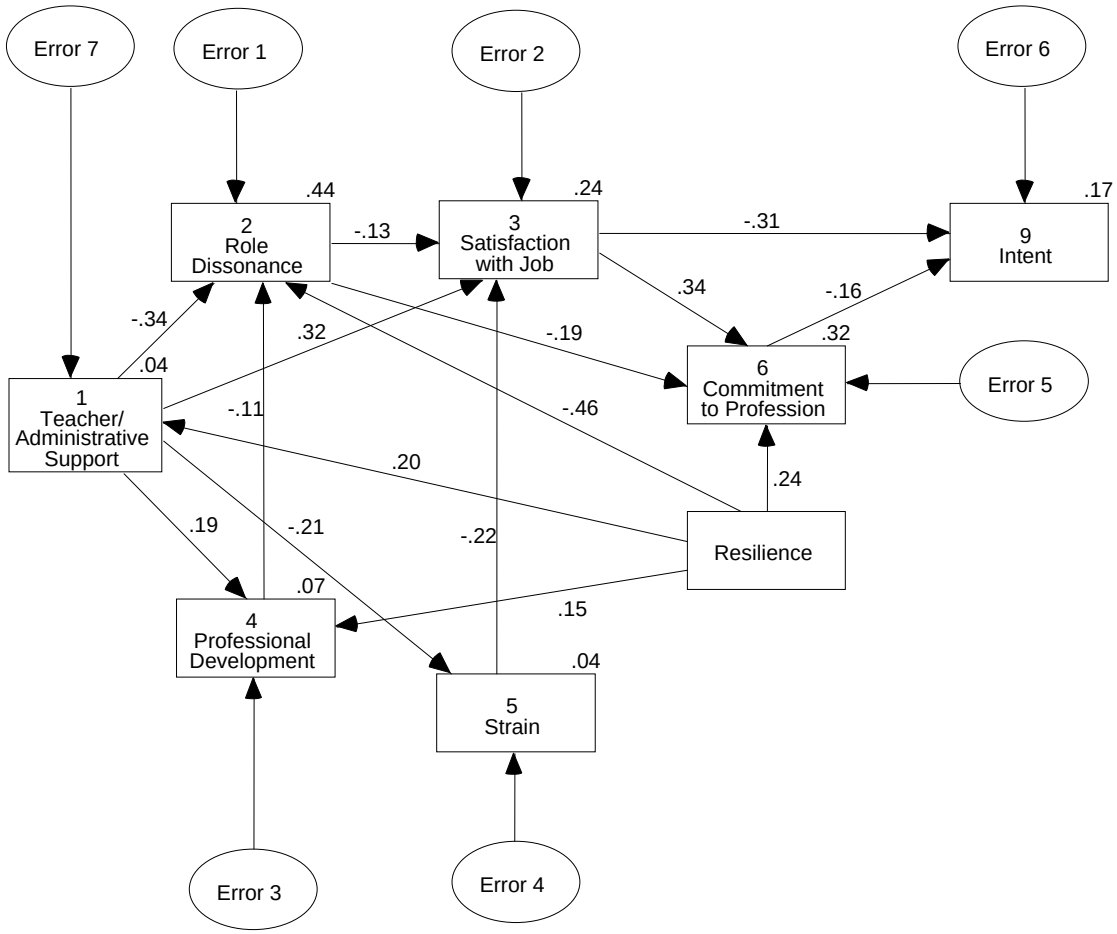

Figure 4.3. Model Two: Output Diagram. Direct and Indirect Relationships.

Model Three

While the results from the path analysis of Model Two indicated that it may provide a very strong model to explain the relationships among these variables, an attempt was made to determine if the addition of the adversity variables could improve the model further. The bivariate correlations between the seven adversity variables from items 10A through 10G on the "Individual Data Form" and Psychological Resilience were examined. As shown in Table 4.50, three adversity variables were found to have a significant relationship with Psychological Resilience: Adversity due to family loss, Adversity due to physical abuse, and Adversity due to sexual abuse.

Further examination showed that Adversity due to physical abuse and Adversity due to sexual abuse were themselves highly correlated which would result in multicollinearity if both were included. To avoid this, the two were combined by summing the responses to each of these items in order to create a composite variable, Adversity due to physical/sexual abuse. This composite variable was found to also be significantly related to the Psychological Resilience, the Commitment, and the Satisfaction variables. As a result, two additional variables were added to the path diagram for Model Three as shown in Figure 4.4: Adversity due to family loss and the composite variable Adversity due to physical/sexual abuse.

Results of the path analysis based on Model Three are given in the sections that follow the path diagram.

Table 4.50

Bivariate Correlations

Variables	Statistic	Res	Intent	Benefit from	Strength by	Adv-FL	Adv-LS	Adv-Ill	Adv-SA	Adv-EA	Adv-PA	Adv-O
Resilience	r =	1	-.159(*)	.226(**)	.174(*)	.217(**)	.021	.074	.252(**)	.109	.255(**)	.062
	Sig		.020	.001	.011	.002	.764	.287	.000	.119	.000	.428
	N	212	212	212	212	209	210	210	205	207	207	165
Intent	r =	-.159(*)	1	-.103	-.031	-.047	.168(*)	-.081	-.049	.118	.055	-.118
	Sig	.020		.136	.650	.497	.015	.243	.486	.089	.432	.131
	N	212	212	212	212	209	210	210	205	207	207	165
Benefited from adversity	r =	.226(**)	-.103	1	.775(**)	.192(**)	.010	.102	.083	.060	.111	.235(**)
	Sig	.001	.136		.000	.005	.887	.140	.238	.387	.111	.002
	N	212	212	212	212	209	210	210	205	207	207	165
Strengthened by hard times	r =	.174(*)	-.031	.775(**)	1	.157(*)	.071	.103	.049	.159(*)	.092	.092
	Sig	.011	.650	.000		.023	.305	.137	.484	.022	.189	.241
	N	212	212	212	212	209	210	210	205	207	207	165
Adversity due to family loss	r =	.217(**)	-.047	.192(**)	.157(*)	1	.212(**)	.210(**)	.060	.132	.087	-.033
	Sig	.002	.497	.005	.023		.002	.002	.390	.058	.213	.674
	N	209	209	209	209	209	209	209	205	207	206	164
Adversity due to lack of support	r =	.021	.168(*)	.010	.071	.212(**)	1	.247(**)	.182(**)	.432(**)	.265(**)	.020
	Sig	.764	.015	.887	.305	.002		.000	.009	.000	.000	.802
	N	210	210	210	210	209	210	210	205	207	206	164
Adversity due to illness	r =	.074	-.081	.102	.103	.210(**)	.247(**)	1	.192(**)	.227(**)	.213(**)	.125
	Sig	.287	.243	.140	.137	.002	.000		.006	.001	.002	.111
	N	210	210	210	210	209	210	210	205	207	206	164
Adversity due to sexual abuse	r =	.252(**)	-.049	.083	.049	.060	.182(**)	.192(**)	1	.521(**)	.740(**)	.303(**)
	Sig	.000	.486	.238	.484	.390	.009	.006		.000	.000	.000
	N	205	205	205	205	205	205	205	205	205	204	163
Adversity due to emotional abuse	r =	.109	.118	.060	.159(*)	.132	.432(**)	.227(**)	.521(**)	1	.552(**)	.100
	Sig	.119	.089	.387	.022	.058	.000	.001	.000		.000	.201
	N	207	207	207	207	207	207	207	205	207	205	164
Adversity due to physical abuse	r =	.255(**)	.055	.111	.092	.087	.265(**)	.213(**)	.740(**)	.552(**)	1	.287(**)
	Sig	.000	.432	.111	.189	.213	.000	.002	.000	.000		.000
	N	207	207	207	207	206	206	206	204	205	207	164
Adversity due to other	r =	.062	-.118	.235(**)	.092	-.033	.020	.125	.303(**)	.100	.287(**)	1
	Sig	.428	.131	.002	.241	.674	.802	.111	.000	.201	.000	
	N	165	165	165	165	164	164	164	163	164	164	165

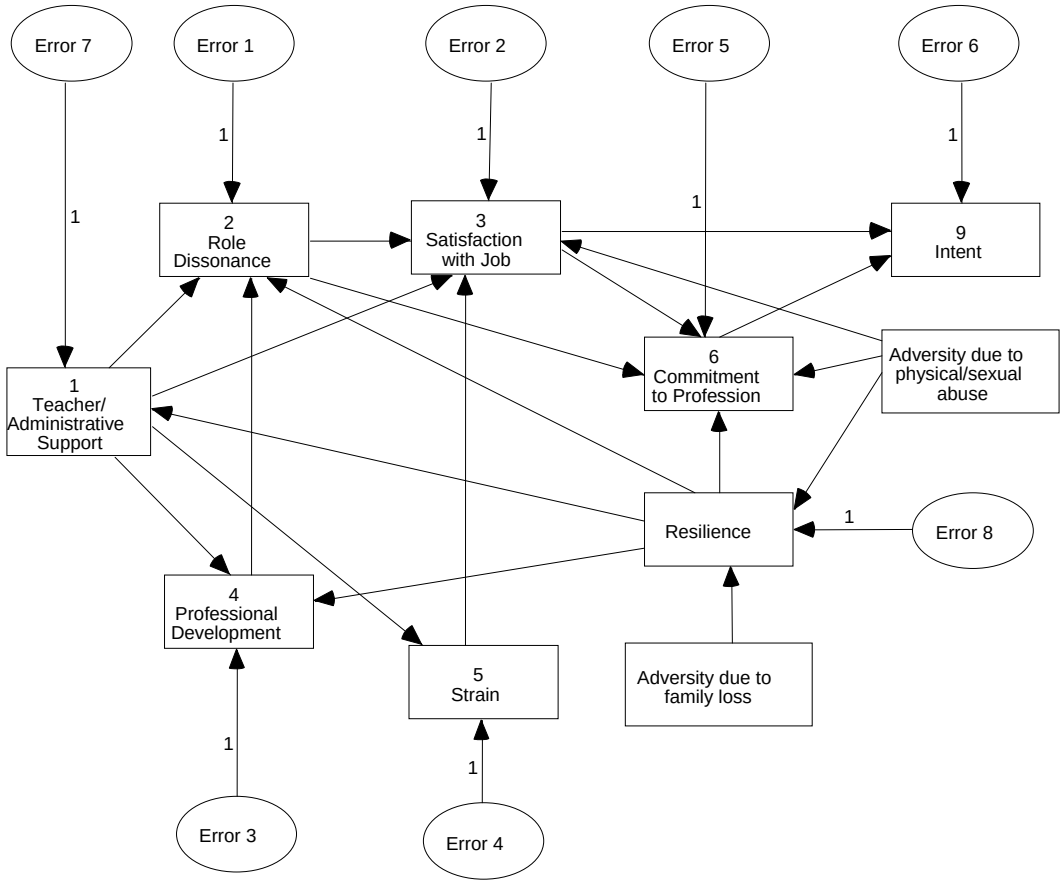

Figure 4.4. Model Three: Hypothesized Relationships. The Relationship between Occupational Stress, Psychological Strain, Satisfaction with Job, Commitment to the Profession, Age, and Resilience to the Turnover Intentions of Special Education Teachers.

Notes for Model Three

As shown in Table 4.51, Model Three involves 55 distinct sample moments with a total of 29 parameters to be estimated and 26 degrees of freedom. The value of Chi-square comes from the final value of the discrepancy function. With 26 degrees of freedom, the associated p value for that Chi-square is p=.803. This confirms that Chi-square in not significant and that there is no difference between the implied covariance matrix and the observed covariance matrix. This provides some evidence that this exploratory model fits the data.

Sample Moments for Model Three

As previous noted, the path analysis procedure compares the implied covariance matrix based on the path diagram to the observed covariance matrix. The observed covariance matrix that is used in the analysis for Model Three is given in Table 4.52 and its corresponding correlation matrix is given in Table 4.53.

Estimated Path Coefficients

Tables 4.54 and 4.55 list the unstandardized path coefficients and the standardized path coefficients (Betas) for each specific path in the diagram. Figure 4.55 shows the AMOS output with the standardized path coefficients. Model Three results show the regression weights for the following endogenous variables: (1) A unit increase in Adversity due to family loss score would increase scores in Psychological Resilience by 19% of a standard deviation; (2) A unit increase in Adversity due to physical/sexual abuse score would increase scores in Psychological Resilience by 27% of a standard deviation; (3) A unit increase in Psychological Resilience score would increase scores in Teacher/Administrative Support by 23% of a standard deviation; (4) A unit increase in Teacher/Administrative Support score would increase scores in Professional Development by 17% of a standard deviation; (5) A unit increase in Psychological Resilience score would increase scores in Professional Development by 17% of a standard deviation; (6) A unit increase in Teacher/Administrative Support would decrease scores in Strain by 21% of a standard deviation; (7) A unit increase in Teacher/Administrative Support score would decrease scores in Role Dissonance by 33% of a standard deviation; (8) A unit increase in Psychological Resilience score would decrease scores in Role Dissonance by 48% of a standard deviation; (9) A unit increase in Teacher/Administrative Support score would increase scores in Satisfaction by 31% of a standard deviation; (10) A unit increase in Role Dissonance score would decrease scores in Satisfaction by 17% of a standard deviation; (11) A unit increase in Strain score would

decrease scores in Satisfaction by 22% of a standard deviation; (12) A unit increase in Adversity due to physical/sexual abuse would decrease scores in Satisfaction by15% of a standard deviation; (13) A unit increase in Psychological Resilience score would increase scores in Commitment by 21% of a standard deviation; and (14) A unit increase in Satisfaction score would increase scores in Commitment by 38% of a standard deviation; (15) A unit increase in Role Dissonance score would decrease scores in Commitment by 16% of a standard deviation; (16) A unit increase in Adversity due to physical/sexual abuse score would increase scores in Commitment by 14% of a standard deviation; (17) A unit increase in Satisfaction score would decrease scores in Intent to Leave by 35% of a standard deviation; and (18) A unit increase in Commitment score would decrease scores in Intent to Leave by 15% of a standard deviation.

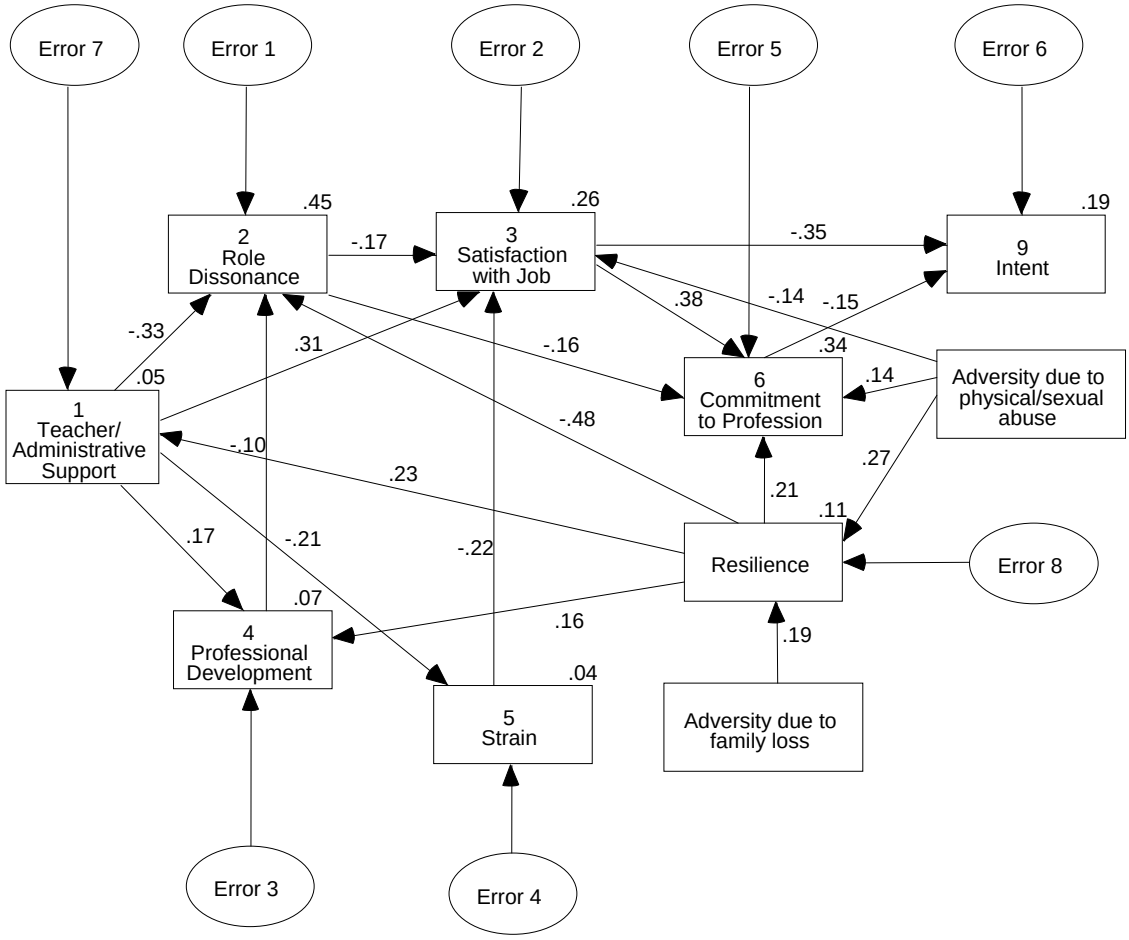

Figure 4.5. Model Three: Output Diagram. The Relationship between Occupational Stress, Psychological Strain, Satisfaction with Job, Commitment to the Profession, Age, and Resilience to the Turnover Intentions of Special Education Teachers.

Squared Multiple Correlations and Implied Matrices

Table 4.56 provides the squared multiple correlations (R^2) for the eight endogenous variables. As noted previously, these are interpreted as in multiple regression. Table 4.57 gives the final implied covariance matrix which is compared by the AMOS program to the observed covariance matrix (Table 4.52) to determine goodness of fit. The corresponding implied correlation matrix is given in Table 4.58.

Effects: Total, Direct, and Indirect

Tables 4.59 to 4.61 report the direct, indirect, and total effects of each independent variable (listed in the column headings) on the dependent variables (listed in the rows).Table 4.59 reports the standardized direct effects for Model Three. This information suggests the following: (1) as the Adversity due to physical/sexual abuse increases by one standard deviation, the score for perceived Psychological Resilience would increase by 27% of one standard deviation; and (2) as the Adversity due to family loss increases by one standard deviation, the score for perceived Psychological Resilience would increase by 19% of one standard deviation. The results also indicate that as the score for Psychological Resilience increases by 1 standard deviation, the perceived Teacher/Administrative Support score would increase by 23% of a standard deviation; the perception of Role Dissonance would decrease by 50% of a standard deviation; and Commitment would increase by 21% of a standard deviation. The standardized direct effects of Teacher/Administrative Support on Role Dissonance suggests that as the Support increases by one standard deviation, Role Dissonance decreases by 33% of a standard deviation, and Satisfaction with Job increases by 31% of a standard deviation. Strain has a direct effect on Satisfaction with Job that suggests that as Strain increases by one standard deviation, Satisfaction with Job decreases by 22% of a standard deviation. Also of interest is the direct relationship between Satisfaction and Commitment (.375), and Satisfaction and Intent to Leave (-.347).

The standardized indirect effect for Model Three, given in Table 4.60 suggests the following: (1) Adversity due to physical/sexual abuse has an indirect effect on Role Dissonance (-.111); (2) Psychological Resilience has an indirect effect on Professional Development (.038), Role Dissonance (-.095), Satisfaction (.180), Commitment (.160), and Intent to Leave (-.116); (3) Teacher/Administrative Support has an indirect effect on Satisfaction (.106), Commitment (.211), and Intent to Leave (-.175); (4) Role Dissonance has an indirect effect on Intent to Leave

(.093); and Strain has an indirect effect on Commitment (-.081), and a positive indirect effect on Intent to Leave (.086).

The standardized total effect, given in Table 4.61 represents the sum of the direct effects and the indirect effects. The following total effects are particularly noteworthy: (1) The total effect of Adversity due to physical/sexual abuse on Psychological Resilience (.268); (2) Psychological Resilience on Role Dissonance (-.575); (3) Psychological Resilience on Commitment (.367); (4) Teacher/Administrative Support on Role Dissonance (-.348); (5) Teacher/Administrative Support on Satisfaction (.414); (6) Strain on Satisfaction with Job (-.215), (6) Satisfaction on Commitment (.375); and (7) Satisfaction on Intent to Leave (-.401).

Model Fit

Tables 4.62 to 4.65 provide a number of indices of fit between the model and the data. Again, when interpreting the results, our interest is in the values for the "Default Model."

CMIN. This model fit index (Table 4.62), yielded a value of Chi-square (called CMIN) at 19.754 with 26 degrees of freedom resulting in a p value of .803. Good model fit is indicated by p values that are greater than .05 (the larger the better), so the value of p= .803 as reported is one indicator of good model fit.

GFI and AGFI. The next table (Table 4.63) provides two indices commonly reported-GFI (Goodness of Fit) and AGFI (Adjusted Goodness of Fit). Acceptable values for these indices are those over .90. The closer the value is to 1.0, the better the fit of the model. Model Three yielded a GFI of .982 and a AGFI of .961 Both of these are indicators of a good model fit.

TLI and CFI. This set of model fit indices, (Table 4.64) labeled "Baseline Comparisons" provide the TLI (Tucker-Lewis Index) and CFI (Comparative Fit Index). Values greater than .90 are indicative of good fit. Model Three yielded a TLI of 1.031, and a CFI of 1.000. Both results are indicators of a good fit.

RMSEA. The most respected index of model fit (Table 4.65) is the Root Mean Square Error of Approximation (RMSEA) index. This index provides a point estimate (the RMSEA value) as well as a confidence interval around the value. RMSEA values less than .05 indicate good fit and RMSEA values as high as .08 represent reasonable errors of approximation. Model Three yielded a RMSEA value of .000.

In the output given in (Table 4.65), the RMSEA point estimate of .000 indicates excellent model fit. In addition to this point estimate, the RMSEA output provides a p "closeness of fit"

value called “Pclose.” This tests the hypothesis that the population value of RMSEA is less than .05. Since RMSEA values that are less than .05 indicate good model fit, high Pclose values are desirable. Pclose values greater than .50 indicate good model fit. Model Two yielded a Pclose value of .987.

Table 4.51

Notes for Model

Number of distinct sample moments:	55
Number of distinct parameters to be estimated:	29
Degrees of freedom (55 - 29):	26
Chi-square	19.754
Degrees of freedom	26
Probability level	.803

Table 4.52

Sample Covariances

Variable	Adv-l	Adv-ps	Resil	Admin	ProfDev	Rolediss	Strain	Satisfac	Commit	Intent
Adv-loss	1.459									
Adv-ps	.083	1.068								
Resil	.132	.151	.271							
Admin	.049	.096	.107	.812						
ProfDev	.168	.019	.106	.184	1.007					
Rolediss	-.073	-.161	-.234	-.324	-.205	.608				
Strain	.048	.013	-.030	-.133	.016	.034	.489			
Satisfac	.138	-.093	.089	.432	.136	-.269	-.235	1.301		
Commit	.079	.168	.169	.257	.161	-.270	-.082	.415	.677	
Intent	-.019	.000	-.030	-.099	-.054	.053	.021	-.182	-.096	.152

Table 4.53

Sample Correlations

Variable	Adv-l	Adv-ps	Resil	Admin	ProfDev	Rolediss	Strain	Satisfac	Commit	Intent
Adv-loss	1.000									
Adv-ps	.067	1.000								
Resilien	.211	.280	1.000							
Administ	.045	.103	.228	1.000						
Professi	.139	.019	.203	.204	1.000					
Rolediss	-.078	-.200	-.576	-.461	-.262	1.000				
Strain	.057	.018	-.082	-.212	.023	.063	1.000			
Satisfac	.100	-.079	.150	.421	.119	-.302	-.295	1.000		
Commit	.079	.197	.395	.347	.194	-.421	-.143	.442	1.000	
Intent	-.040	-.001	-.149	-.281	-.139	.175	.076	-.410	-.299	1.000

Table 4.54

Regression Weights

Dependent Variable		Independent variable	Estimate	S.E.	C.R.	P
Resilience	<---	Adversity-phy./sex.	.135	.033	4.051	***
Resilience	<---	Adversity-loss	.083	.028	2.920	.004
Administrative	<---	Resilience	.394	.119	3.318	***
Professional	<---	Administrative	.185	.078	2.385	.017
Professional	<---	Resilience	.319	.135	2.368	.018
Strain	<---	Administrative	-.164	.053	-3.084	.002
Role dissonance	<---	Administrative	-.287	.047	-6.155	***
Role dissonance	<---	Resilience	-.721	.081	-8.896	***
Role dissonance	<---	Professional	-.075	.042	-1.798	.072
Satisfaction	<---	Administrative	.392	.088	4.458	***
Satisfaction	<---	Role dissonance	-.255	.101	-2.531	.011
Satisfaction	<---	Strain	-.352	.101	-3.487	***
Satisfaction	<---	Adversity-phy./sex.	-.156	.068	-2.314	.021
Commitment	<---	Resilience	.328	.113	2.894	.004
Commitment	<---	Satisfaction	.269	.044	6.167	***
Commitment	<---	Role dissonance	-.170	.077	-2.210	.027
Commitment	<---	Adversity-phy./sex.	.109	.048	2.287	.022
Intent	<---	Satisfaction	-.118	.024	-4.911	***
Intent	<---	Commitment	-.069	.033	-2.066	.039

Table 4.55

Standardized Regression Weights

Dependent variable		Independent variable	Estimate
Resilience	<---	Adversity-phy./sex.	.268
Resilience	<---	Adversity-loss	.193
Administrative	<---	Resilience	.227
Professional	<---	Administrative	.166
Professional	<---	Resilience	.165
Strain	<---	Administrative	-.212
Role dissonance	<---	Administrative	-.332
Role dissonance	<---	Resilience	-.480
Role dissonance	<---	Professional	-.097
Satisfaction	<---	Administrative	.308
Satisfaction	<---	Role dissonance	-.174
Satisfaction	<---	Strain	-.215
Satisfaction	<---	Adversity-phy./sex.	-.141
Commitment	<---	Resilience	.207
Commitment	<---	Satisfaction	.375
Commitment	<---	Role dissonance	-.161
Commitment	<---	Adversity-phy./sex.	.137
Intent	<---	Satisfaction	-.347
Intent	<---	Commitment	-.146

Table 4.56

Squared Multiple Correlations

Variable	Estimate
Resilience	.109
Administrative	.051
Professional	.067
Strain	.045
Role dissonance	.454
Satisfaction	.262
Commitment	.339
Intent	.186

Table 4.57

Implied Covariances

Variable	Adv-l	Adv-ps	Resil	Admin	ProfDev	Rolediss	Strain	Satisfac	Commit	Intent
Adversity-loss	1.459									
Adversity-ps	.000	1.068								
Resilience	.121	.144	.269							
Administrative	.048	.057	.106	.811						
Professional	.047	.056	.105	.184	1.007					
Role dissonance	-.105	-.124	-.232	-.323	-.204	.607				
Strain	-.008	-.009	-.017	-.133	-.030	.053	.489			
Satisfaction	.048	-.110	.084	.438	.126	-.281	-.236	1.309		
Commitment	.070	.155	.166	.214	.109	-.268	-.079	.416	.675	
Intent	-.011	.002	-.021	-.067	-.022	.052	.033	-.183	-.096	.152

Table 4.58

Implied Correlations

Variable	Adv-l	Adv-ps	Resil	Admin	ProfDev	Rolediss	Strain	Satisfac	Commit	Intent
Adversity-l	1.000									
Adversity-ps	.000	1.000								
Resilience	.193	.268	1.000							
Administrative	.044	.061	.227	1.000						
Professional	.039	.054	.202	.203	1.000					
Role dissonance	-.111	-.154	-.575	-.461	-.261	1.000				
Strain	-.009	-.013	-.048	-.212	-.043	.097	1.000			
Satisfaction	.035	-.093	.142	.425	.110	-.315	-.295	1.000		
Commitment	.071	.182	.390	.289	.133	-.419	-.138	.443	1.000	
Intent	-.022	.006	-.106	-.190	-.057	.170	.123	-.411	-.299	1.000

Table 4.59

Standardized Direct Effects

Variable	Adv-loss	Adv-phy/sex	Resil	Admin	ProfDev	Rolediss	Strain	Satisfac	Commit
Resilience	.193	.268	.000	.000	.000	.000	.000	.000	.000
Administrative	.000	.000	.227	.000	.000	.000	.000	.000	.000
Professional	.000	.000	.165	.166	.000	.000	.000	.000	.000
Role dissonance	.000	.000	-.480	-.332	-.097	.000	.000	.000	.000
Strain	.000	.000	.000	-.212	.000	.000	.000	.000	.000
Satisfaction	.000	-.141	.000	.308	.000	-.174	-.215	.000	.000
Commitment	.000	.137	.207	.000	.000	-.161	.000	.375	.000
Intent	.000	.000	.000	.000	.000	.000	.000	-.347	-.146

Table 4.60

Standardized Indirect Effects

Variable	Adv-loss	Adv-phy/sex	Resil	Admin	ProfDev	Rolediss	Strain	Satisfac	Commit
Resilience	.000	.000	.000	.000	.000	.000	.000	.000	.000
Administrative	.044	.061	.000	.000	.000	.000	.000	.000	.000
Professional	.039	.054	.038	.000	.000	.000	.000	.000	.000
Role dissonance	-.111	-.154	-.095	-.016	.000	.000	.000	.000	.000
Strain	-.009	-.013	-.048	.000	.000	.000	.000	.000	.000
Satisfaction	.035	.048	.180	.106	.017	.000	.000	.000	.000
Commitment	.071	.046	.160	.211	.022	-.065	-.081	.000	.000
Intent	-.022	.006	-.116	-.175	-.009	.093	.086	-.055	.000

Table 4.61

Standardized Total Effects

Variable	Adv-loss	Adv-phy/sex	Resil	Admin	ProfDev	Rolediss	Strain	Satisfac	Commit
Resilience	.193	.268	.000	.000	.000	.000	.000	.000	.000
Administrative	.044	.061	.227	.000	.000	.000	.000	.000	.000
Professional	.039	.054	.202	.166	.000	.000	.000	.000	.000
Role dissonance	-.111	-.154	-.575	-.348	-.097	.000	.000	.000	.000
Strain	-.009	-.013	-.048	-.212	.000	.000	.000	.000	.000
Satisfaction	.035	-.093	.180	.414	.017	-.174	-.215	.000	.000
Commitment	.071	.182	.367	.211	.022	-.226	-.081	.375	.000
Intent	-.022	.006	-.116	-.175	-.009	.093	.086	-.401	-.146

Table 4.62

CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	29	19.754	26	.803	.760
Saturated model	55	.000	0		
Independence model	10	389.366	45	.000	8.653

Table 4.63

RMR, GFI

Model	RMR	GFI	AGFI	PGFI
Default model	.030	.982	.961	.464
Saturated model	.000	1.000		
Independence model	.150	.659	.583	.539

Table 4.64

Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.949	.912	1.017	1.031	1.000
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

Table 4.65

RMSEA

Model	RMSEA	LO 90	HI 90	Pclose
Default model	.000	.000	.036	.987
Independence model	.194	.177	.212	.000

Chapter Five

Conclusions

The use of structural equation modeling techniques allowed for testing the conceptual model introduced in Chapter One. Originally, Teacher/Administrative Support, Professional Development, Role Dissonance, Strain, Satisfaction with Job, Commitment to the Profession, Age, and Psychological Resilience, were hypothesized to have direct and indirect influences on Intent to Leave special education, and the interaction between Psychological Resilience and Commitment was conceptualized as a moderator variable. When the structural model was tested and failed to be confirmed, it became necessary to reexamine it to find an alternative explanation for the relationships between the variables. When the structural model was rearranged using Resilience as an independent variable instead of the interaction of Psychological Resilience and Commitment, and with the removal of the following paths: (a) the direct path from Professional Development to Commitment; (b) the direct path from Role Dissonance to Strain; (c) the direct path from Strain to Commitment; (d) the direct path from the interaction term Resilience X Commitment to Intent to Leave and (e) the direct path from Age to Intent, it was then possible to find a defensible model, Model Two, which was given in Figure 4.3. Model Two was confirmed using the structural equation modeling techniques utilized when testing the hypothesized model.

Although Model Two met the criteria of goodness of fit, a third model was considered to see if including the adversity variables would improve the model fit to the data even more. Accordingly, the variables related to Adversity on the questionnaire were added. With this addition and rearrangement to the model, it was possible to find a defensible model with an even better fit than the previous model identified as Model Two.

Model Three was created and tested adding the following: (a) a direct path from Adversity due to physical/sexual abuse to Satisfaction with Job; (b) a direct path from Adversity due to physical/sexual abuse to Commitment to the Profession; (c) a direct path from Adversity due to physical/sexual abuse to Psychological Resilience; (d) a direct path from Adversity due to family loss to Psychological Resilience; and (e) error term 8.

Both Model Two and Model Three provide information on variables that are correlated with turnover intentions of special education teachers. Though systematic examination of equivalent models is still rare in practice, such examination is increasingly recommended (Spirtes, Richardson, Meek, Scheines, and Glymour, 1998: 203). Kline (1998) encourages all

SEM-based articles to included demonstration of superior fit of preferred models over selected, plausible equivalent models. Spirtes notes, "It is important to present all of the simplest alternatives compatible with the background knowledge and data rather than to arbitrarily choose one" (Spirtes, Richardson, Meek, Scheines, and Glymour, 1998: 203).

Model Two and Model Three provide evidence that Psychological Resilience may play a significant role among the set of variables identified from previous research. Although the original hypothesized model (Model One) was not confirmed, the exploratory models presented as Model Two and Model Three, emphasize for the first time the role of Psychological Resilience in the study of variables in special education teacher retention. Furthermore, while Model One was not confirmed, the initial hypothesis that Psychological Resilience is an important variable in understanding factors related to retention was clearly confirmed by the data.

In addition, Model Three suggests that one's perception of the effects of adversity due to physical or sexual abuse plays some role related to Psychological Resilience. Several variables related to adversity were included on the *Individual Data Form* on the questionnaire. These variables were included because information gained during the review of literature on stress and Psychological Resilience suggested the concept of "stress inoculation" (van der Kolk, et al., 1999 & Resnick, et al., 1992). The idea of "stress inoculation" implies that an individual becomes inoculated by stress, and that the struggle to cope with an adverse event can lead to increased coping skills, enhanced self-efficacy, and an increased ability to prevent and cope with future stressors.

Tugade and Fredrickson (2002) reported that people who are able to move on despite negative stressors do not demonstrate "luck" on the part of those successful individuals, but demonstrate a concept known as "resilience." Tugade defined psychological resilience as "effective coping and adaptation although faced with loss, hardship, or adversity. Lazarus (1993) used an analogy to describe psychological resilience; "Resilience to certain events has been linked to elasticity in metals. For example, cast iron is hard, brittle, and breaks easily (not resilient), while wrought iron is soft, malleable, and bends without breaking (resilient)."

The concept of Psychological Resilience in general terms denotes the ability to cope when confronted with stress. Resilience is a "fluid, dynamic, but not fully understood concept" (Maluccio, 2002). Whether the positive effects and the significant paths in Model Three are to be

attributed to something called “resilience” or to some complex combination of factors, Psychological Resilience is a promising construct. Model Three, presented in Figure 4, shows a number of statistically significant paths which are described in the following.

Effects of Variables in Model Three

Teacher/Administrative Support

Teacher/Administrative Support does not have direct effects on turnover intentions but does have direct effects on Role Dissonance (β = -.33), Professional Development (β =.17), Satisfaction with Job (β =.31), and Strain (stress due to job design) (β =-.21). This suggests that as Teacher/Administrative Support increases: (a) Role Dissonance decreases; (b) Satisfaction with Job increases; (c) Professional Development Opportunities increase; and (d) Strain (stress due to job design) decreases. Teacher/Administrative Support was indirectly related to turnover intentions.

Role Dissonance

Due to its placement in the model, Role Dissonance does not have direct effects on turnover intentions. However, Role dissonance does have a significant effect on Satisfaction with Job (β = -.27) and a significant effect on Commitment (β = -.16). This suggests that as Role Dissonance increases: (a) Satisfaction with Job decreases; and (b) Commitment decreases.

Professional Development

This model suggests that Professional Development Opportunities have direct effects on Role Dissonance (β =-.10). The results suggest that as Professional Development Opportunities are increased, Role Dissonance decreases.

Satisfaction with Job

Due to its placement in the model, Satisfaction with Job has a direct effect on turnover intentions of special education teachers (β =-.35). This supports the idea that as Satisfaction with Job increases, the Intent to Leave the field of special education decreases. This Model also shows the direct relationships between Satisfaction with Job and Commitment to the profession (β = .38). This supports the finding that as Job Satisfaction increases: (a) Commitment to the Profession increases; and (b) the Intent to Leave decreases.

Strain (stress due to job design).

Strain did not have direct effects on turnover intention. However, there is a direct effect of Strain on Satisfaction with job (β =-.22). The amount of Strain (stress due to job design) has significant negative effects on Satisfaction with Job and Commitment to the Profession.

Commitment to the Profession

Commitment to the Profession has a direct effect on the turnover intentions of special education teachers. This was supported by the significant positive effect on the turnover intentions (β =-.15). When Commitment to the Profession increases, the Intent to Leave the field decreases.

Adversity due to Family Loss

Due to its placement in the model, Adversity due to family loss does not have a direct effect on Intent to Leave. However, Adversity due to family loss does have a direct effect on Psychological Resilience (β =.19). This suggests that as an individual perceives increased Adversity due to family loss, their Psychological Resilience increases.

Adversity due to Physical/Sexual Abuse

Adversity due to physical/sexual abuse has a direct effect on Commitment (β =.14), Resilience (β =.27), and Satisfaction with Job (β =-.14). This suggests that as an individual perceives increased Adversity due to physical/sexual abuse: (a) Commitment to the Profession increases; (b) Psychological Resilience increases; and (c) Satisfaction with Job decreases.

Psychological Resilience

Due to its placement in the model, Psychological Resilience does not have a direct effect on Intent, but Resilience does have various effects on other variables which affect Intent: (a) Commitment to the Profession (β = .21); (b) Professional Development (β = .21)**;** (c) Teacher Administrative Support (β =.23); (d) Role Dissonance (β =-.48). This suggests that as Resilience increases: (a) Commitment increases; (b) perceived Professional Development Opportunities increase; (c) perceived Teacher/Administrative Support increases; and (d) Role Dissonance decreases.

Recommendations for Professionals

The *Special Education Teacher Survey* was designed to measure the variables presented in the model. Model Three was supported by the data leading to several suggestions for professionals in reducing the turnover intentions of special education teachers. This model

suggests (a) special education teachers need clarity in their roles and responsibilities; (b) increased support from administration and co-workers needs to be investigated and "support" defined by this population of teachers; (c) input by special education teachers in professional development opportunities may help determine needs of this specific groups of teachers; (d) job design needs to be clearly defined to alleviate personal strain imposed by the lack of clarity; and (e) personal resources such as coping skills and psychological resilience building skills should be investigated as a means of reducing stress, strain, and turnover intentions of special education teachers.

Recommendations for Future Research

It is recommended that a national sample of special education teachers should be obtained for greater generalizability of the results. Moreover, the recommendation to extend this to include general education teachers is worth investigation. It is also recommended that triangulation of data obtained from the survey given at different time periods of the school year be investigated. The survey completed for this study was obtained following summer vacation from the school year 2004-2005.

Additional research should also investigate other moderating and mediating variables that affect the turnover intentions of special education teachers. Given the results of this study, it is particularly important for additional studies to investigate the role of psychological resilience further. By understanding the specific mediating and moderating variables that affect turnover intentions, administrators in school divisions would have more information about how to address and subsequently reduce stress inherent in the field of special education. This could better equip administrators with the knowledge needed to implement programs to enable special education teachers to perform their jobs with less stress and more effective coping mechanisms.

Conclusion

Path analysis was used to test a conceptual model of the relationships between Teacher/Administrative Support, Role Dissonance, Professional Development, Strain, Satisfaction with Job, Commitment to the Profession, Age, Psychological Resilience, and Intent to Leave Special Education. The results suggest that the variables in combination explain a significant part of turnover intentions among special education teachers. However, the two variables which mediate the influence of the other variables are Satisfaction with the Job and Commitment to the Profession. As special education teachers' Satisfaction with Job increases,

they are more likely to remain in a position as a special education teacher. Furthermore, as special education teachers' Commitment to the Profession increases, they are more likely to remain in the position as well.

The results of this study suggest that other variables indirectly explain a significant part of turnover intentions among special education teachers. Psychological Resilience not only directly affects Commitment to the Profession but affects a number of other variables as well. This is the first time Psychological Resilience has been examined as contributing to our understanding of the factors that may lead to teachers' staying or leaving the field of special education.

Table 5.1

Comparison of Path Coefficient Results

Variable/Path	Gersten et al. (2001)	Cross & Billingsley (1994)	Elitharp (2005)
Teacher/Administrator Support			
- Role Dissonance	-.23	-.49	-.33
- Satisfaction with Job	.23	.28	.31
- Professional Development	.37	(not included)	.17
- Commitment to Job	--	.08	--
- Strain	--	-.24	-.21
Role Dissonance			
- Satisfaction with Job	-.28	-.32	-.17
- Strain	.42	--	--
- Commitment	--	-.17	-.16
Professional Development Activities			
- Commitment to Profession	.24	--	--
- Role Dissonance	-.32	--	.10
Satisfaction with Job			
- Commitment to Profession	.30	.32	.38
- Intent to Stay	.24	.21	.38
Strain			
- Satisfaction with Job	-.18	-.25	-.22
- Commitment to Profession	-.21	-.17	--
Commitment to Profession			
- Intent to Stay	.32	-- *	.15
Age			
- Intent to Stay	.14	.14	--
Resilience			
- Teacher Administrative Support	(not included)	(not included)	.23
- Professional Development	(not included)	(not included)	.17
- Role Dissonance	(not included)	(not included)	-.48
- Commitment to Profession	(not included)	(not included)	.21
Adversity due to family loss			
- Resilience	(not included)	(not included)	.19
Adversity due to physical/sexual abuse			
- Resilience	(not included)	(not included)	.27
- Commitment to Profession	(not included)	(not included)	.14
- Satisfaction with Job	(not included)	(not included)	-.14

*Note that Cross & Billingsley (1994) suggest that this result seems to be an artifact of multicollinearity.

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APPENDIX A

Special Education Teacher Survey

Individual Data Form

This data form will provide information about yourself and your work setting. Please read each item and respond as indicated. Your participating in this study is entirely voluntary; therefore, by responding to this form, you are agreeing to participate in this study. You answers are confidential and coded by number.

1. Your current age: _____ 2. Gender: Female ___ Male ___

3. What is your current job level: Elementary ____ Middle ____ High____ (Mark all that apply)

4. Total years of experience in teaching: ___ Years teaching in Special Education: ___ Years teaching in general education: ___

Rate each of the following on a scale of 1-10 where 1 is the lowest amount of stress and 10 is the highest amount of stress.

5. The level of your total job-related stress as a special education teacher: ____
6. The level of total stress in your life at this time: ____
7. The level of stress you have encountered throughout your life: ____

8. Do you believe you have benefited from adversities (hard times) in your life?
   Strongly agree ___ Agree ___ Neutral ___ Disagree ___ Strongly disagree ___

9. Do you believe people are strengthened by having endured hard times?
   Strongly agree ___ Agree ___ Neutral ___ Disagree ___ Strongly disagree ___

10. (Optional) Rate each of the following in terms of the effect that it has had on your life using the following scale.
    1= Strongly Disagree 2=Disagree 3= Neutral 4= Agree 5 Strongly Agree

    Adversities due to family loss issues have had an effect on my life. _____
    Adversities due to lack of support issues have had an effect on my life. _____
    Adversities due to illnesses have had an effect on my life. _____
    Adversities due to sexual abuse have had an effect on my life. _____
    Adversities due to emotional abuse have had an effect on my life. _____
    Adversities due to physical abuse have had an effect on my life. _____
    Adversities due to other (Explain) _____

    _____

Following are some questions about your job. Circle one number per statement using the following scale:
1= Agree 2=Tend to Agree 3= Tend to Disagree 4= Disagree

11. I often think about quitting 1 2 3 4
12. It is very likely that I will actively look for a new job in the next year. 1 2 3 4
13. I will leave this job in the next year. 1 2 3 4
14. I will leave this job as soon as I find another job. 1 2 3 4
15. If I leave my current job, I will look for a job:
    _____ In the field of special education in a different school division.
    _____ In a general education field.
    _____ In a field other than education but still in a human-service field.
    _____ In a non-human-service related field.

Thank you so much! I appreciate your time and effort in filling out this form. If you would like to elaborate or make any comments or suggestions, please write them below.

Special Education Teacher Questionnaire

This survey is divided into sections which contain statements about work situations and personal habits. Please respond to all of the statements in each section.

Begin by completing the individual data form on the front page of this survey. Then follow the directions for completing your ratings for the following questions.

Directions

Read each statement carefully. For each statement, fill in the circle with the number that fits you best.

Fill in 1 if the statement is *rarely* or *never* true.
Fill in 2 if the statement is *occasionally* true.
Fill in 3 if the statement is *often* true.
Fill in 4 if the statement is *usually* true.
Fill in 5 if the statement is *true most of the time*.

SECTION ONE

1. At work I am expected to do too many different tasks in too little time.
   ○1 ○2 ○3 ○4 ○5

2. I feel that my job responsibilities are increasing.
   ○1 ○2 ○3 ○4 ○5

3. I am expected to perform tasks on my job for which I have never been trained.
   ○1 ○2 ○3 ○4 ○5

4. I have to take work home with me.
   ○1 ○2 ○3 ○4 ○5

5. I have the resources I need to get my job done.
   ○1 ○2 ○3 ○4 ○5

6. I work under tight deadlines.
   ○1 ○2 ○3 ○4 ○5

7. I wish I had more help to deal with the demands placed upon me at work.
   ○1 ○2 ○3 ○4 ○5

8. My job requires me to work in several equally important areas at once.
   ○1 ○2 ○3 ○4 ○5

9. I am expected to do more work than is reasonable.
   ○1 ○2 ○3 ○4 ○5

For questions 10-21, fill in the circle with the number that fits you best.

Fill in 1 if the statement is *rarely* or *never* true.
Fill in 2 if the statement is *occasionally* true.
Fill in 3 if the statement is *often* true.
Fill in 4 if the statement is *usually* true.
Fill in 5 if the statement is *true most of the time*.

SECTION TWO

10. My supervisor provides me with useful feedback about my performance.
○1 ○2 ○3 ○4 ○5

11. I am uncertain about what I am supposed to accomplish in my work.
○1 ○2 ○3 ○4 ○5

12. When faced with several tasks I know which should be done first.
○1 ○2 ○3 ○4 ○5

13. My supervisor asks for one thing, but really wants another.
○1 ○2 ○3 ○4 ○5

14. The priorities of my job are clear to me.
○1 ○2 ○3 ○4 ○5

15. I have a clear understanding of how my boss wants me to spend my time.
○1 ○2 ○3 ○4 ○5

16. I know the basis on which I am evaluated.
○1 ○2 ○3 ○4 ○5

SECTION THREE

17. I am able to put my job out of my mind when I go home.
○1 ○2 ○3 ○4 ○5

18. I periodically reexamine or reorganize my work style and schedule.
○1 ○2 ○3 ○4 ○5

19. I can establish priorities for the use of my time.
○1 ○2 ○3 ○4 ○5

20. Once they are set, I am able to stick to my priorities.
○1 ○2 ○3 ○4 ○5

21. I have techniques to help avoid being distracted.
○1 ○2 ○3 ○4 ○5

For questions 22-23, fill in the circle with the number that fits you best.

Fill in 1 if the statement is *rarely* or *never* true.
Fill in 2 if the statement is *occasionally* true.
Fill in 3 if the statement is *often* true.
Fill in 4 if the statement is *usually* true.
Fill in 5 if the statement is *true most of the time*.

22. I can identify important elements of problems I encounter.
    ○1 ○2 ○3 ○4 ○5

23. When faced with a problem I use a systematic approach.
    ○1 ○2 ○3 ○4 ○5

For questions 24-25, fill in the circle with the number that fits you best.

Fill in 1 if your answer is *very dissatisfied*.
Fill in 2 if your answer is *somewhat dissatisfied.*
Fill in 3 if your answer is *neutral.*
Fill in 4 if your answer is *somewhat satisfied.*
Fill in 5 if your answer is *very satisfied.*

SECTION FOUR

24. How satisfied are you with your choice of profession?
    ○1 ○2 ○3 ○4 ○5

25. How satisfied are you with your current job?
    ○1 ○2 ○3 ○4 ○5

For questions 26-28, fill in the circle with the number that fits you best.

Fill in 1 if your answer is *disagree.*
Fill in 2 if your answer is *somewhat disagree.*
Fill in 3 if your answer is *neutral.*
Fill in 4 if your answer is *somewhat agree.*
Fill in 5 if your answer is *agree.*

SECTION FIVE

26. I really like the school in which I am currently working.
    ○1 ○2 ○3 ○4 ○5

27. My principal backs me up when I need it.
    ○1 ○2 ○3 ○4 ○5

28. My principal (vice principal) works with me to solve problems.
    ○1 ○2 ○3 ○4 ○5

For questions 29-31, fill in the circle with the number that fits you best.

Fill in 1 if your answer is *disagree.*
Fill in 2 if your answer is *somewhat disagree.*
Fill in 3 if your answer is *neutral.*
Fill in 4 if your answer is *somewhat agree.*
Fill in 5 if your answer is *agree.*

29. My principal (vice principal) actively assists my efforts to integrate students.
    ○1 ○2 ○3 ○4 ○5

30. I can count on my principal to provide appropriate assistance when a student's behavior requires it.
    ○1 ○2 ○3 ○4 ○5

31. I feel included in what goes on in this school.
    ○1 ○2 ○3 ○4 ○5

For questions 32-33, fill in the circle with the number that fits you best.

Fill in 1 if your answer is *very little.*
Fill in 2 if your answer is *little*
Fill in 3 if your answer is *neutral.*
Fill in 4 if your answer is *more than a little.*
Fill in 5 if your answer is *very much.*

32. How helpful is the feedback you receive from your principal or vice-principal?
    ○1 ○2 ○3 ○4 ○5

33. To what extent does your building principal understand what you do?
    ○1 ○2 ○3 ○4 ○5

For question 34, fill in the circle with the number that fits you best.

Fill in 1 if your answer is *very dissatisfied*.
Fill in 2 if your answer is *somewhat dissatisfied.*
Fill in 3 if your answer is *neutral.*
Fill in 4 if your answer is *somewhat satisfied.*
Fill in 5 if your answer is *very satisfied.*

34. Satisfaction with quality of support and encouragement you receive.
    ○1 ○2 ○3 ○4 ○5

For questions 35-37, fill in the circle with the number that fits you best.

Fill in 1 if your answer is *very infrequently.*
Fill in 2 if your answer is *somewhat infrequently.*
Fill in 3 if your answer is *neutral.*
Fill in 4 if your answer is *somewhat frequent.*
Fill in 5 if your answer is *very often.*

35. How often principal recognizes the good teaching you do?
○1 ○2 ○3 ○4 ○5

36. How often do you receive encouragement to try out new ideas?
○1 ○2 ○3 ○4 ○5

37. How often do you receive feedback from your principal or vice principal?
○1 ○2 ○3 ○4 ○5

SECTION SIX

For questions 38-40, fill in the circle with the number that fits you best.

Fill in 1 if your answer is *disagree.*
Fill in 2 if your answer is *somewhat disagree.*
Fill in 3 if your answer is *neutral.*
Fill in 4 if your answer is *somewhat agree.*
Fill in 5 if your answer is *agree.*

38. Most of the other teachers in this school don't know what I do in my classroom.
○1 ○2 ○3 ○4 ○5

39. Teachers at this school come to me for help or advice.
○1 ○2 ○3 ○4 ○5

40. My fellow teachers provide me with feedback about how well I'm doing?
○1 ○2 ○3 ○4 ○5

For question 41, fill in the circle with the number that fits you best.

Fill in 1 if your answer is *very dissatisfied*.
Fill in 2 if your answer is *somewhat dissatisfied.*
Fill in 3 if your answer is *neutral.*
Fill in 4 if your answer is *somewhat satisfied.*
Fill in 5 if your answer is *very satisfied.*

41. Satisfaction with school staff's attitude toward special education.
○1 ○2 ○3 ○4 ○5

For question 42, fill in the circle with the number that fits you best.

Fill in 1 if your answer is *very little.*
Fill in 2 if your answer is *little*
Fill in 3 if your answer is *neutral.*
Fill in 4 if your answer is *more than a little.*
Fill in 5 if your answer is *very much*.

42. To what extent do teachers who are not in special education understand what you do?

○1 ○2 ○3 ○4 ○5

For questions 43-44, fill in the circle with the number that fits you best.

Fill in 1 if your answer is *very infrequently.*
Fill in 2 if your answer is *somewhat infrequently.*
Fill in 3 if your answer is *neutral.*
Fill in 4 if your answer is *somewhat frequent.*
Fill in 5 if your answer is *very often.*

43. How often do you share materials with teachers who are not in special education?

○1 ○2 ○3 ○4 ○5

44. Other teachers recognize the quality of my work.

○1 ○2 ○3 ○4 ○5

SECTION SEVEN

For question 45, fill in the circle with the number that fits you best.

Fill in 1 if your answer is *disagree.*
Fill in 2 if your answer is *somewhat disagree.*
Fill in 3 if your answer is *neutral.*
Fill in 4 if your answer is *somewhat agree.*
Fill in 5 if your answer is *agree.*

45. My workload is manageable.

○1 ○2 ○3 ○4 ○5

For question 46, fill in the circle with the number that fits you best.

Fill in 1 if your answer is *very infrequently.*
Fill in 2 if your answer is *somewhat infrequently.*
Fill in 3 if your answer is *neutral.*
Fill in 4 if your answer is *somewhat frequent.*
Fill in 5 if your answer is *very often.*

46. How often do you feel under a great deal of stress?

○1 ○2 ○3 ○4 ○5

For questions 47-51, fill in the circle with the number that fits you best.

Fill in 1 if your answer is *very infrequently.*
Fill in 2 if your answer is *somewhat infrequently.*
Fill in 3 if your answer is *neutral.*
Fill in 4 if your answer is *somewhat frequent.*
Fill in 5 if your answer is *very often.*

How often do you experience the following sources of stress?

47. Severity of student need.
○1 ○2 ○3 ○4 ○5

48. Too great a range in the needs and abilities of students.
○1 ○2 ○3 ○4 ○5

49. Student behavior and discipline problems.
○1 ○2 ○3 ○4 ○5

50. Bureaucratic requirements-rules, regulations, paperwork.
○1 ○2 ○3 ○4 ○5

51. Too much to do and too little time to do it.
○1 ○2 ○3 ○4 ○5

SECTION EIGHT

For question 52, fill in the circle with the number that fits you best.

Fill in 1 if your answer is *very dissatisfied*.
Fill in 2 if your answer is *somewhat dissatisfied.*
Fill in 3 if your answer is *neutral.*
Fill in 4 if your answer is *somewhat satisfied.*
Fill in 5 if your answer is *very satisfied.*

52. How satisfied are you with your choice of profession?
○1 ○2 ○3 ○4 ○5

For question 53, fill in the circle with the number that fits you best.

Fill in 1 if your answer is *very unlikely.*
Fill in 2 if your answer is *somewhat unlikely.*
Fill in 3 if your answer is *neutral.*
Fill in 4 if your answer is *somewhat likely.*
Fill in 5 if your answer is *very likely.*

53. If you could go back and do it over again, how likely is it that you would become a special education teacher?
○1 ○2 ○3 ○4 ○5

For questions 54-56, fill in the circle with the number that fits you best.

Fill in 1 if your answer is *disagree.*
Fill in 2 if your answer is *somewhat disagree.*
Fill in 3 if your answer is *neutral.*
Fill in 4 if your answer is *somewhat agree.*
Fill in 5 if your answer is *agree.*

54. I think the disappointments involved make special education teaching not worth it.
○1 ○2 ○3 ○4 ○5

55. One of the things I like about this profession is that I'm always learning something new.
○1 ○2 ○3 ○4 ○5

56. There aren't many rewards for being a special educator.
○1 ○2 ○3 ○4 ○5

SECTION NINE

For questions 57-60, fill in the circle with the number that represents the frequency with which you experience conflict in the following areas.

Fill in 1 if your answer is *very infrequently.*
Fill in 2 if your answer is *somewhat infrequently.*
Fill in 3 if your answer is *neutral.*
Fill in 4 if your answer is *somewhat frequent.*
Fill in 5 if your answer is *very often.*

57. Conflict with time spent working directly with students vs. with their classroom teachers.
○1 ○2 ○3 ○4 ○5

58. Conflict with district special education division's expectations vs. building administrators' expectations.
○1 ○2 ○3 ○4 ○5

59. Conflict with the way lessons are taught in the mainstream vs. what is effective with my students.
○1 ○2 ○3 ○4 ○5

60. Conflict with attending to students' academic needs vs. their social./behavioral needs.
○1 ○2 ○3 ○4 ○5

SECTION TEN

For questions 61-63, fill in the circle with the number that fits you best.

Fill in 1 if your answer is *very dissatisfied*.
Fill in 2 if your answer is *somewhat dissatisfied.*
Fill in 3 if your answer is *neutral.*
Fill in 4 if your answer is *somewhat satisfied.*
Fill in 5 if your answer is *very satisfied.*

61. Satisfaction with opportunities for professional learning and growth.
○1 ○2 ○3 ○4 ○5

62. Satisfaction with opportunities for professional advancement and promotion.
○1 ○2 ○3 ○4 ○5

63. Satisfaction with opportunities in this school division to learn new techniques and strategies.
○1 ○2 ○3 ○4 ○5

SECTION ELEVEN

For questions 64-69, fill in the circle with the number that fits you best.

Fill in 1 if your answer is *disagree.*
Fill in 2 if your answer is *somewhat disagree.*
Fill in 3 if your answer is *neutral.*
Fill in 4 if your answer is *somewhat agree.*
Fill in 5 if your answer is *agree.*

64. When I make plans, I have difficulty following through with them.
○1 ○2 ○3 ○4 ○5

65. I usually manage one way or another.
○1 ○2 ○3 ○4 ○5

66. I am able to depend on myself more than anyone else.
○1 ○2 ○3 ○4 ○5

67. Keeping interested in things is important to me.
○1 ○2 ○3 ○4 ○5

68. I feel proud that I have accomplished things in my life.
○1 ○2 ○3 ○4 ○5

69. I usually take things in my stride.
○1 ○2 ○3 ○4 ○5

For questions 70-81, fill in the circle with the number that fits you best.

Fill in 1 if your answer is *disagree.*
Fill in 2 if your answer is *somewhat disagree.*
Fill in 3 if your answer is *neutral.*
Fill in 4 if your answer is *somewhat agree.*
Fill in 5 if your answer is *agree.*

70. I am friends with myself.
○1 ○2 ○3 ○4 ○5

71. I have difficulty handling many things at a time.
○1 ○2 ○3 ○4 ○5

72. I am determined.
○1 ○2 ○3 ○4 ○5

73. I often wonder what the point of it all is.
○1 ○2 ○3 ○4 ○5

74. I have a difficult time taking things one day at a time.
○1 ○2 ○3 ○4 ○5

75. I can get through difficult times because I've experienced difficulty before.
○1 ○2 ○3 ○4 ○5

76. I have self-discipline.
○1 ○2 ○3 ○4 ○5

77. I can usually find something to laugh about.
○1 ○2 ○3 ○4 ○5

78. In an emergency, I'm somebody people generally can rely on.
○1 ○2 ○3 ○4 ○5

79. I can usually look at a situation in a number of ways.
○1 ○2 ○3 ○4 ○5

80. I dwell on things that I can't do anything about.
○1 ○2 ○3 ○4 ○5

81. When I am in a difficult situation, I can usually find my way out of it.
○1 ○2 ○3 ○4 ○5

APPENDIX B

Request for Participation

Toni Elitharp-Martin
Virginia Polytechnic Institute and State University
Doctoral Dissertation Survey Request
September 12, 2005

Superintendent of …
Address

Dear Superintendent:

I am writing to request your assistance in collecting information for my doctoral dissertation: *The Relationship of Occupational Stress, Psychological Strain, Satisfaction with Job, Commitment to the Profession, Age, and Resilience to the Turnover Intentions of Special Education Teachers.* Your school division and the teachers listed on the attached page were randomly selected for this study.

The attached survey, approved by the IRB (Institutional Review Board) is attached for your review. I would like to schedule a convenient time and location to meet with the selected teachers from your school division following the opening of the new school year.

Your assistance in scheduling this time and place would be greatly appreciated. I am hoping to complete data collection by October 1, 2005, and to complete the data analysis and interpretation by November 15, 2005. An overview in the form of a summary report of the results of the study will be provided to your division. My hope that you will find the information from this survey useful and relevant to your district's efforts at maintaining quality special education teachers.

I encourage you to contact me if you have questions about the survey. I will follow up this request with a phone call to schedule a visitation for the purpose of data collection.

Sincerely,

Toni Elitharp-Martin
Dr. Richard G. Salmon (Dissertation Committee Chair)

Cc: Director of Special Education
Phone Number:

APPENDIX C

Informed Consent Form

VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY

Informed Consent for Participants of Investigative Projects

Title of Project: ***The Relationship of Occupational Stress, Psychological Strain, Satisfaction with Job, Commitment to the Profession, Age, and Resilience to the Turnover Intentions of Special Education Teachers***

Investigator(s) Toni Elitharp-Martin, Richard Salmon (faculty advisor)

I. The Purpose of this Research/Project

The purpose of this study is to test a hypothesized model of the relationships between stress, strain, satisfaction with job, commitment to the profession, age, psychological resilience, and intent to stay in special education. Data analysis through structural equation modeling will test the hypothesized model of these relationships.

The model, based on prior research hypothesizes that: (a) teacher/administrative support has a direct effect on role dissonance, professional development, strain, and satisfaction with job, and has an indirect effect on commitment to the profession and on the intent to stay; (b) role dissonance has a direct effect on satisfaction with job and strain, and has an indirect effect on commitment to the profession and intent to stay; (c) professional development has a direct effect on role dissonance and commitment to the profession, and has an indirect effect on intent to stay; (d) satisfaction with job has a direct effect on commitment to the profession, and has both a direct and indirect effect on intent to stay; (e) strain, with the operational definition of "stress due to job design" (Gersten et al., 2001), has a direct effect on satisfaction with job and commitment to the profession, and has an indirect effect on intent to stay; (f) commitment to the profession has a direct effect on intent to stay; (g) age has a direct effect on intent to stay; and (h) psychological resilience, as a moderator variable interacting with commitment, has a direct effect on intent to stay.

II. Procedures

A method called path analysis will be used in this study. Path analysis looks to estimate causes or connections between variables. This method allows the researcher to first hypothesize relationships among all the variables and then to collect data and test how well data from a particular sample fits (confirms) what was hypothesized. This study will examine relationships both the direct and indirect effects special education teachers' intent to stay in the field.

Data will be collected through the use of a survey compiled of questions from: (a) the OSI-R questionnaire regarding occupational stress, psychological strain and coping resources; (b) the *Working in Special Education* questionnaire; (c) the Resilience Scale; and (d) an individual data form of demographics. The survey will explore the problem of how the following variables affect special education teachers' intent to stay: (a) variables of stress; (b) personal strain; (c) job satisfaction; (d) commitment to profession; (e) age, and (f) resilience (Figure 1).

In the Fall of 2005, special education teachers in each of 16 randomly selected public school districts in Virginia will be given the survey to complete on a school site selected by the superintendent of the division. The teachers will see my name and affiliation at least once prior to the initiation of survey. Special education teachers will be asked to respond to the survey. The survey is estimated to takes 20 minutes to complete. Teachers and school divisions who respond will receive a summary report of the survey findings from across all divisions. Anonymity of teachers' names and school division names will be maintained in a secure data file accessible only to the investigators of the study. Surveys will be coded with a letter and number affixed on a label for the investigators' use and understanding. The entry point will be the Superintendent for each school district subsequently being sampled.

Communication will be established with the superintendent through an initial letter contact along with a copy of the consent letter. This will provide a summary of the proposed research study and a copy of the informed consent form for critical understanding of the study. The superintendent will communicate with the director of special education who will then communicate with principals to secure agreement of participation.

School divisions were randomly selected from Superintendent Study Groups across the of faculty listings of the randomly selected school divisions. The Prospective participants will be screened to ensure that all are full time special education teachers.

To ensure a response rate appropriate for this study, the survey will be distributed at a school site selected by the superintendent or the director of special education from that division. The school division along with the participants will be given two copies of the consent form prior to completing the survey. One copy of the consent will be maintained by the investigator of the study. The other copy will be provided to the participant. Surveys will be distributed by the investigator and handed back to the investigator upon completion.

III. Risks

One potential discomfort to subjects in this study is the recall of personal stressors. This discomfort should be relieved by the design of the instrument and by the assurances of confidentiality. Several questions in the survey may pose concern about the risk of a supervisor or colleague knowing the participants' intent of staying or leaving. This potential risk is safeguarded by the anonymity of the results of the16 randomly selected school divisions.

Due to the possible discomfort in recalling personal experiences, a listing of contact information for counseling agencies is provided as an attachment.

IV. Benefits of this Project

The interactional approach to studying stress can be used to suggest ways of reducing turnover intentions of special education teachers. Although many variables may relate to turnover intentions, this approach is designed to identify the variables with the largest effects. An understanding of the occupational stressors that special education teachers are prone to and the related reasons that they voluntarily leave could assist school systems in developing programs to address occupational stress and at the same time increase teacher retention rates.

This topic is important for several reasons. First, it would be of interest to investigate specifically what administrators in school systems could do to address and subsequently reduce stress inherent in the functions of special education teachers. Second, recent educational reform movements and shortage of special education teachers have implications that can affect the educational outcomes for all students. Third, coping resources and strain are useful in examining how people deal with stress, and if occupational stress affects the turnover intentions of special education teachers, this implication addresses the negative affect stress has on job satisfaction .

In addition, the current study goes beyond many previous studies in two important respects. First, while many previous studies have identified variables related to turnover intentions, only a couple have used path analysis to identify the interrelationships among the predictor variables. Understanding these interrelationships, including direct and indirect effects of each variable, is a major advance over simply identifying significant correlations. Second, no previous study has considered the role of resilience as a moderating variable to explain why, under the same conditions of stress, some teachers leave the profession while other teachers remain.

V. Extent of Anonymity and Confidentiality

Each individual participant and school district will be assured confidentiality at the outset of the study. Pseudonyms will be assigned for schools, and school districts in the written report of the study. The information regarding pseudonyms will be stored on a data file with access only to the immediate investigators of this study. Before data collection begins, written consent will be obtained from the school divisions. Prior to surveying the participants, written consent will be obtained from participating individuals after the purposes of the study, procedures to be utilized, and the proposed use of data collected are explained. A consent form, approved for use by the Institutional Review Board from the university will be utilized.

VI. Compensation

No monetary compensation is connected to participation in this study.

VII. Freedom to Withdraw

You are free to withdraw from the study at any time without penalty. You are free not to answer any questions in the survey, or on the individual data form.

VIII. Approval of Research

This research project has been approved, as required, by the Institutional Review Board for Research Involving Human subjects at Virginia Polytechnic Institute and State University, by the Department of Educational Leadership and Policy Studies, and by the school districts.

IX. Subject's Responsibilities

I voluntarily agree to participate in this study. I have the following responsibilities: (a) to participate by completing a written survey, and (b) to participate by completing an individual data form.

X. Subject's Permission

I have read and understand the Informed Consent and conditions of this project. I have had all my questions answered. I hereby acknowledge the above and give my voluntary consent for participation in this project. If I participate, I may withdraw at any time without penalty. I agree to abide by the rules of this project.

Subject Signature: _____ Date: _____

Should I have any questions about this research or its conduct, I may contact:

Toni Elitharp-Martin, Investigator	(540) 312-1004
Richard Salmon, Faculty Advisor	(540) 231-9711
David B. Moore, IRB Research Division	(540) 231-4991/moored@vt.edu Chair, Virginia Tech Institutional Review Board for the Protection of Human Subjects Office of Research Compliance CVM Phase II (0442) Research Division

This Informed Consent is valid from _____ to _____

Subjects must be given a complete copy (or duplicate original) of the signed Informed Consent.