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High-stakes testing and teacher burnout in public high school teachers

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Gail Tucker

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2009

ABSTRACT

High-Stakes Testing and Teacher Burnout in Public High School Teachers

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M.A., St. John's College, 1993
B.S., Virginia Tech, 1985

Doctoral Study Submitted in Partial Fulfillment
of the Requirements for the Degree of
Doctor of Education
Teacher Leadership

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ABSTRACT

Demands associated with the No Child Left Behind Act of 2001 contribute to the risk of teacher burnout; however, the relationship between teacher burnout and specific teaching assignments is unclear. Accordingly, the purpose of this study was to investigate if burnout is greater for high-stakes subject area public high school teachers than for low-stakes subject area public high school teachers and to ascertain teachers' perceptions about difficulties associated with teaching a high-stakes subject area. The job demands-resources model and the multidimensional model of burnout provided the theoretical framework. The concurrent mixed methods design included quantitative tests of differences in burnout scores of 87 Maryland public high school teachers across high-stakes and low-stakes subject areas, and the qualitative research question documented perceptions. The Maslach Burnout Inventory—Educators Survey measured burnout, and although high-stakes teachers reported greater burnout, chi-square and independent sample *t*-test did not confirm statistically significant differences across subject area. Qualitative data underwent coding into emergent burnout-related themes that were reanalyzed and revised to explain teacher perceptions. Analysis of teacher responses yielded 5 domains that affected burnout: workload/time incompatibility, pressure on teachers for students to pass high-stakes tests, need for all stakeholders to take responsibility, diminished teacher autonomy, and lack of resources. Recommendations include addressing teacher workload and sharing educational responsibilities among all stakeholders. Because burnout is an organizational issue, positive social change is achievable if administrators promote positive coping strategies and include teachers in the change process necessary to achieve the goals of No Child Left Behind.

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

CHAPTER 1:

INTRODUCTION TO THE STUDY

Background of the Study

During the past half century, legislation and reports called for the U.S. educational system to increase academic achievement of underperforming students and for schools to be accountable to all stakeholders (Elementary and Secondary School Act of 1965; National Commission on Excellence in Education, 1983; No Child Left Behind Act of 2001, 2002). To meet this call, current tests in the United States have high-stakes purposes such as requiring students to pass certain tests in order to graduate, but tests might not meet such current high-stakes needs (Linn, 2000). High-stakes tests include measurement error and are vulnerable to inflation (Koretz, 2002a), and some researchers (Clarke et al., 2003; Herman, Bakker, & Linn, 2004) argued that important decisions should not be based on a single measure. High-stakes testing affects not only students but also impacts teacher stress and morale (Center on Education Policy, 2006).

Many teachers feel overwhelmed by an ever-increasing workload, and the stress negatively affects both teachers and their students and can lead to teacher burnout (Hanson, 2007; Naylor, 2001; Vandenberghe & Huberman, 1999). As teachers accept new expectations and opportunities, the workload increases, and teachers often experience the loss of a key resource: time (Hord, 2004; Mohr et al., 2004). As a result of the No Child Left Behind Act (NCLB) of 2001 (2002) and the recent emphasis on student data, the only way some teachers' worth is measured, or the only way some teachers feel their worth is measured, is by the test scores of their students (Ball, 2003). Pressures and

expectations associated with high-stakes testing can impact one or more of the dimensions of burnout: emotional exhaustion, depersonalization, and decreased personal accomplishment (Maslach, 1982). Burnout can lead to teacher attrition which contributes to the teacher shortage (Ingersoll & Smith, 2003), and researchers (Hanson, 2007; Miller, Brown-Anderson, Fleming, Peele, & Chen, 1999) identified a need to study burnout of specific types of teachers.

This study included an established quantitative survey to measure burnout and a qualitative survey to identify teacher perceptions. The Maslach Burnout Inventory—Educators Survey (MBI—ES, Maslach, Jackson, & Leiter, 1996) quantitatively measured burnout and helped determine if burnout is greater for public high school teachers who teach a high-stakes subject area that is assessed at the state level compared with teachers who teach a low-stakes subject area that is not assessed at the state level. Open-ended qualitative questions provided insight into public high school teachers' perceptions associated with teaching a high-stakes subject area. The literature review discusses and analyzes research related to burnout and high-stakes testing.

Chapter 1 continues with (a) problem statement, (b) purpose of the study, (c) nature of the study, (d) research questions and hypotheses, (e) theoretical framework, (f) significance of the study, (g) definition of terms, (h) assumptions, and (i) limitations.

Problem Statement

A problem exists in U.S. public high schools as they strive to incorporate standards and assessments (Smylie, 1999) and meet the mandates (Schroeder, 2006) of NCLB. That problem is teacher stress and burnout associated with high-stakes testing. Until now, the impact of high-stakes testing on public high school teacher burnout was

not well understood. Teacher workload is a concern (Brown, 2004; Department for Education and Skills, 2003; Leithwood & Menzies, 1998; Thomas et al., 2004), and the current emphasis on student achievement and adequate yearly progress might add to the workload of teachers. However, while educators routinely measure student achievement, the impact of an increased workload and higher expectations on teachers often goes unmeasured: "Schools 'should be' settings in which the needs of the caregiver (i.e., the teacher) are nurtured as carefully as those of the recipients of these services (i.e., students)" (Farber, 2000, p. 688, parenthetical comments original). While attempting to meet the needs of all students as prescribed by NCLB, teachers can suffer from stress and burnout.

Teacher burnout can impact school districts because teacher attrition is coupled with burnout and workload (Ingersoll & Smith, 2003; Jeanlouis, 2003; Weld, 1998). High costs are associated with both the loss of high quality teachers who give coherence and continuity to schools (National Commission on Teaching and America's Future, 2003) and with financial costs to recruit and train new teachers (Black, 2003). Factors contributing to the problem of teacher burnout include the three dimensions of burnout: emotional exhaustion, depersonalization, and decreased personal accomplishment (Maslach, 1982). This study was needed to better understand the relationship between high-stakes testing and public high school teacher burnout.

Purpose of the Study

The purpose of this study was to investigate if burnout is greater for high-stakes subject area public high school teachers than for low-stakes subject area public high school teachers and to ascertain teachers' perceptions about difficulties associated with

teaching a high-stakes subject area. The quantitative aspect of this study examined the job demands-resources model of burnout (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001) to determine if teaching a high-stakes subject is associated with public high school teacher burnout. The study determined the effect of the independent variable, subject area, on the dependent variable, teacher burnout. The independent variable, subject area, was labeled a high-stakes subject area if the subject is assessed at the state level and was labeled a low-stakes subject area if the subject is not assessed at the state level. The dependent variable, teacher burnout, was defined as a response consisting of emotional exhaustion, depersonalization, and reduced personal accomplishment (Maslach, 1982). The MBI—ES (Maslach et al., 1996) measured teacher burnout quantitatively. The qualitative survey provided data to augment the quantitative data (Creswell, 2008) by analyzing teacher perceptions associated with difficulties of teaching a high-stakes subject area.

Nature of the Study

This study used a concurrent transformative strategy with the design features of a concurrent nested strategy, both of which are mixed methods strategies identified by Creswell (2003). A transformative strategy has a theoretical perspective that guides the study; a concurrent nested strategy has a single data collection phase with both quantitative and qualitative data collected simultaneously. The predominant quantitative method used a static group comparison preexperimental design and determined the effect of the independent variable, high-stakes or low-stakes subject area, on the dependent variable, teacher burnout. The embedded qualitative method used a phenomenological design and discovered how public high school teachers perceived difficulties associated

with teaching a high-stakes subject area. The *t*-test and chi-square test analyzed quantitative data, and qualitative data underwent inductive analysis. When interpreting the findings, teachers' perceptions of difficulties of teaching a high-stakes subject area augmented quantitative findings by helping to explain high levels of emotional exhaustion for high-stakes subject area public high school teachers in this study. Chapter 3 describes the methodology in detail.

Research Questions and Hypotheses

The first research question pertained to the quantitative aspect of this mixed methods study, and the second research question pertained to the qualitative aspect of the study.

Research Question 1: Are burnout scores of high-stakes subject area public high school teachers greater than burnout scores of low-stakes subject area public high school teachers? *Null Hypothesis 1*: There is no significant difference between high-stakes and low-stakes subject area public high school teachers and burnout scores. *Alternative Hypothesis 1:* There is a significant difference between high-stakes and low-stakes subject area public high school teachers and burnout scores. This alternative hypothesis suggested a direct relationship between the independent variable, high-stakes or low-stakes subject area, and the dependent variable, teacher burnout.

Research Question 2: What perceptions do high-stakes subject area public high school teachers have about difficulties of teaching a high-stakes subject area?

Theoretical Framework

Two theoretical models guided this study: the multidimensional model of burnout (Maslach, 1982) and the job demands-resources model of burnout (Demerouti et al.,

2001). The multidimensional model of burnout consists of three dimensions of burnout: exhaustion, depersonalization, and decreased personal accomplishment. Exhaustion is a result of either physical or emotional demands, depersonalization involves negative attitudes, and decreased personal accomplishment includes reduced productivity, low morale, withdrawal, or inability to cope. Based on these three dimensions, Maslach et al. (1996) developed the MBI—ES to measure burnout.

Beyond measuring burnout, Demerouti et al. (2001) developed the job demands-resources model to identify situations that foster and discourage burnout. Based on the job demands-resources model, high job demands are a predictor for exhaustion, and low job resources are a predictor for disengagement. Because job demands could have a larger impact than job resources (Hakanen, Bakker, & Schaufeli, 2006), this study concentrated on the possibility that job demands associated with NCLB could lead to increased burnout for high-stakes subject area public high school teachers.

Significance of the Study

This study is significant for two reasons: (a) This study filled a gap in the scholarly literature on teacher burnout by determining if teaching a high-stakes subject area in a public high school is related to teacher burnout, and (b) social change is achievable as a result of this study.

Filled Gap in Literature

Researchers identified needs and recommended ways to fill gaps in the literature on teacher burnout. Evers, Brouwers, and Tomic (2002) called for evaluating burnout when new strategies are put in place so teachers do not experience work overload. Naylor (2001) suggested focusing on workload and stress factors in an effort to decrease teacher

burnout and to lessen results of burnout: teacher absences, long-term leaves, and attrition due to teachers leaving the teaching profession. Gunzenhauser (2003) specifically called for studying the effects of high-stakes accountability policies. Clarke et al. (2003) recommended "regular monitoring and evaluation of state testing and accountability systems so that unintended negative effects can be identified, and resources and support appropriately targeted" (p. 14). Stecher and Barron (2001) called for studying the "consequences of the testing systems as rigorously as we study the reliability and validity of the test scores" (p. 280). Hanson (2007) and Miller et al. (1999) suggested future stress research examining different types of teachers. Abel and Sewell (2001) recommended that future teacher burnout studies contain a qualitative component. This study addressed these identified research needs by focusing on high-stakes testing and public high school teacher burnout and by containing both quantitative and qualitative components.

Achieves Social Change

Social change is achievable as a result of this study of burnout in public high school teachers. Leiter and Maslach (2001) emphasized that burnout is a sign of dysfunction within an organization and not an individual issue. This study determined that high-stakes subject area teachers experienced high levels of burnout due to emotional exhaustion, so this alerts principals and superintendents to address the issue of potential burnout of teachers who teach in high-stakes subject areas. If educators address difficulties and workload issues associated with teaching a high-stakes subject area, teachers could feel less burnout and might choose to stay in the profession. These experienced teachers would be available to improve instruction and to meet student needs. As Maslach et al. (1996) noted, "Probably the most valuable use of the MBI—ES

is at the school district level to detect potential problems" (p. 4). Additionally, cost savings from recruiting and training fewer new teachers could be directed toward identified student needs.

Additional significance lies in administrators and school districts being better able to support teachers willing to teach a high-stakes subject. Brock and Grady (2000) noted that the principal's challenge is to "motivate and energize according to individual needs" (p. 84), and results of this study provide data to target the needs of different teacher groups. As Byrne (1998) quoted from a teacher survey, "Learning and the joy of learning rarely happen because if a person is drowning herself, she doesn't have the will to teach someone else how to swim" (p. 6). Keeping all teachers and students afloat is critical.

Considering quantitative and qualitative findings in light of existing scholarly literature, social change is possible if educators consider two issues: (a) Teachers might employ coping strategies to the detriment of students, and (b) current practices might inhibit the change necessary to meet the demands of NCLB. First, coping is a concern because high-stakes subject area public high school teachers with an increased workload might cope in negative ways by reducing their goals at the expense of instruction (Hockey, 1997). Second, if educators address the issue of teacher workload and include teachers in the change process by granting teacher autonomy when possible, changes required to increase test scores and to meet the challenges presented by NCLB might be more forthcoming (Goodson, Moore, & Hargreaves, 2006).

Educators at school, district, state, and national levels can gain insight from findings. Implications for social change as a result of this study affect a wide range of players in the educational field: (a) Students benefit from engaged teachers, (b) teachers

benefit by staying in the profession without burning out, (c) administrators and superintendents benefit by better supporting and therefore keeping their teachers, and (d) the community benefits from an improved school system.

Definition of Terms

The following definitions were used in this study:

Adequate progress school: a school that is making adequate yearly progress as defined by NCLB (§1111).

Adequate yearly progress: "continuous and substantial academic improvement for all students" (NCLB, §1111) including improvement for student groups based on gender, race, primary language, and economic status.

Burnout: *"*a syndrome of emotional exhaustion, depersonalization, and reduced personal accomplishment" (Maslach, 2003a, p. 2) and "a prolonged response to chronic emotional and interpersonal stressors on the job" (Maslach, 2003b, p. 189). Burnout has been defined in various ways. Freudenberger (1975) described burn-out of a dedicated and committed worker as resulting from taking on "too much, for too long, and too intensely" (p. 74). Pines, Aronson, and Kafry (1981) defined burnout as "the result of constant or repeated *emotional pressure* associated with an intense involvement with *people* over long periods of time (p. 15, italics original) and stated, "Burnout is the painful realization that they no longer can help people in need, that they have nothing left in them to give" (p. 15). For the purposes of this study, the first definition of burnout given by Maslach is used.

Depersonalization: an "unfeeling and impersonal response toward recipients of one's service, care, treatment, or instruction" (Maslach et al., 1996, p. 4).

Emotional exhaustion: "being emotionally overextended and exhausted by one's work" (Maslach et al., 1996, p. 4).

Engagement: "a positive, fulfilling, work-related state of mind that is characterized by vigor, dedication, and absorption" (Schaufeli, Salanova, Gonzales-Roma, & Bakker, 2002, p.74). Exhaustion-vigor and cynicism-dedication are opposite poles of energy and identification, respectively (Gonzalez-Roma, Schaufeli, Bakker, and Lloret, 2006).

High-stakes subject area: a subject area that is assessed at the state level. For Maryland these subject areas are English, mathematics, science, and social studies (Maryland State Department of Education, n.d.).

High-stakes testing: "the use of standardized testing measures as criteria for determining the quality of schools, promotion of children to the next grade, high school graduation, teacher bonuses, or the governance of a school" (Gunzenhauser, 2003, pp. 52-53); "testing with substantial consequences for educators or students" (Koretz, 2002a, p. 753).

Low-stakes subject area: a subject area that is not assessed at the state level. For Maryland these subject areas are all subjects besides English, mathematics, science, and social studies (Maryland State Department of Education, n.d.).

Personal accomplishment: "competence and successful achievement in one's work with people" (Maslach et al., 1996, p. 4).

Stress: the "nonspecific response of the body to any demand, whether it is caused by, or results in, pleasant or unpleasant conditions" (Selye, 1978, p. 74).

Assumptions

Assumptions were in keeping with survey studies and with recommendations given by Maslach et al. (1996). The first assumption was that administering the survey in a group setting prevented respondents' answers from being influenced by talking with colleagues. The second assumption was that respondents were not sensitized to burnout. The MBI—ES explained the survey statements were about job-related feelings with no mention of burnout. The third assumption was that respondents replied honestly due to assurances of confidentiality. The fourth assumption was that the MBI—ES itself is a reliable measure of burnout. The methodology chapter provides alpha coefficients for each of the three burnout dimensions measured with the MBI—ES. A final assumption was that teachers willingly participated in this study.

Limitations

Limitations of this study involved eight areas:

1. Population. Only public high school teachers in one school in Maryland participated in this study. The school is making adequate yearly progress and has a student population with a high socioeconomic status, thereby helping to eliminate intervening variables associated with failure to make adequate yearly progress and with some special needs student populations. This limited scope was appropriate because research exists on the relationship between high-stakes testing and burnout in elementary teachers (Berger, 2006; Hanson, 2007; Hutter 2004) but is lacking with regard to high school teachers. Also, limiting participants to public school teachers was appropriate because NCLB requires high-stakes testing only for public schools.

2. Definition of high-stakes. High-stakes subject areas, as defined, were limited to subject areas assessed at the state level. Advanced Placement and International Baccalaureate courses have cumulative global exams at the end of the course, but relatively few teachers teach these courses. For the purpose of this study, high-stakes courses were limited to state assessed courses that all students take and that many teachers teach.

3. Theoretical model. The measurement of burnout was limited to the multidimensional model of burnout (Maslach, 1982) that includes emotional exhaustion, depersonalization, and reduced personal accomplishment.

4. Research questions. The quantitative examination of burnout was limited to public high school teacher burnout for high-stakes subject areas compared to low-stakes subject areas. Also, the qualitative examination of burnout was limited to high-stakes subject area public high school teachers' perceptions about difficulties associated with teaching a high-stakes subject area.

5. Data collection. This study relied solely on self-report data. However, this limitation is mitigated because stress is related to participants' perceptions (Selye, 1978).

6. Study design. Threats to validity were possible if some teachers refused to participate, and statistical significance could have been jeopardized if analysis involved an unevenly distributed number of teachers as categorized by subject area taught. This possible limitation did not materialize because the response rate was high.

7. Causation. Due to the cross-sectional nature, this study did not determine if teaching a high-stakes subject area causes burnout; the study only supports whether or not a relationship exists because a longitudinal study is needed to make causal inferences.

8. Generalizability. Generalizing to the entire population of public high school teachers is not possible. This study did not compare teacher burnout scores for teachers teaching in improvement schools, corrective action schools, and restructuring schools to determine how school report card label, as defined by NCLB, is related to public high school teacher burnout. Also, this study did not determine how different student populations impact the relationship between high-stakes testing and teacher burnout.

Summary

U.S. public high school teachers striving to meet the demands of NCLB are at risk of burnout. Job demands associated with preparing students for high-stakes tests could increase the three dimensions of burnout: emotional exhaustion, depersonalization, and reduced personal accomplishment. This mixed methods cross-sectional survey study filled a gap in existing research by determining if burnout is greater for high-stakes subject area public high school teachers than for low-stakes subject area public high school teachers. The embedded qualitative component shed light on teacher perceptions about difficulties associated with teaching a high-stakes subject area.

Upcoming chapters provide a review of literature that inspired this study, specify methodology and analysis plans, provide quantitative and qualitative results, and make conclusions and recommendations. The review of literature, chapter 2, provides current and historical research on both burnout and high-stakes testing. Methodology, chapter 3, justifies the mixed methods design and gives details about the population and the administration of the survey. Results, chapter 4, provide findings from analysis of data that included the *t*-test and chi-square test for quantitative data and inductive analysis for qualitative data. Chapter 5 contains conclusions and recommendations.

CHAPTER 2:

REVIEW OF LITERATURE

Introduction

In 1983, U.S. educators and citizens received a report: "Our Nation is at risk. . . . The educational foundations of our society are presently being eroded by a rising tide of mediocrity that threatens our very future as a Nation and a people" (National Commission on Excellence in Education, 1983, A Nation At Risk section, p. 1). The National Commission on Excellence in Education went on to explain that this was not surprising given the conflicting demands placed on schools including solutions to personal, social, and political problems that parents and other institutions had not resolved. The Commission warned against searching for "scapegoats among the victims, such as the beleaguered teachers" (A Nation At Risk section, p. 5). The Commission also recommended standardized testing at major educational transition points for three purposes: certifying student credentials, identifying remedial intervention needs, and identifying advanced or accelerated work opportunities. So began the era of standards and accountability in U.S. public education.

The National Commission on Excellence in Education (1983) promoted school accountability, yet Koretz (2002b) questioned whether the accountability movement will accomplish all that is expected:

> The standards movement is based on the notion that the biggest impediment is the lack of standards and accountability. I don't think that is true. . . . If, for example, you have kids who are highly transient, who don't speak English, who come from dysfunctional homes, it's hard imagining that a better test is really going to solve the problem. (p. 6)

Nevertheless, assessments as an agent of reform appeal to policymakers for four reasons: They are relatively inexpensive, they can be externally mandated, they can be rapidly implemented, and results are visible (Linn, 2000). However, Linn cautioned, "The unintended negative effects of the high-stakes accountability uses often outweigh the intended positive effects" (p. 14). These and other concerns about high-stakes testing are addressed in this literature review.

In the midst of a demanding educational environment that recently added high-stakes testing to the agenda, many teachers feel overwhelmed by workload and stress (Leiter & Maslach, 2001). Bunting (2000) interviewed teachers who said, "I am now finding the stress of my job too much. The pace of work and the long days are more than I can do" (p. 23) and "My best is not good enough" (p. 23). Mohr et al. (2004) described situations where teachers "often feel numbed by the tasks demanded of them" (p. 36) and where a teacher "placed a high value on both her time with her students and her professional time with colleagues, but the two often seemed incompatible" (p. 56). Furthermore, Ball (2003) argued that education reform with functional tests and monitoring systems "engender what Lyotard (1984) calls the terrors of performativity" (p. 216). Ball defined performativity:

> The performances (of individual subjects or organizations) serve as measures of productivity or output, or displays of 'quality', or 'moments' of promotion or inspection. As such they stand for, encapsulate or represent the worth, quality or value of an individual or organization within a field of judgment. (p. 216)

Placing such emphasis on test scores could lead some teachers to feel this is the only way their contribution to a child's education is measured.

The same teachers that entered the profession excited to meet their students and to apply the teaching and learning strategies they had studied might find that they are required to do much more than teach. Teacher workload is growing (Naylor, 2001), stress and burnout are prevalent (Leiter & Maslach, 2001), time required to do all that is expected of teachers is increasing (Naylor & Malcomson, 2001; Roettger, 2004), and professional development opportunities are not always effective (Guskey, 2003). DeCicco and Allison (1999) described the numerous and growing roles teachers are expected to fulfill as society moves the responsibility of children from parents to the village, to the schools, and finally to the teacher, as mission clutter. DiBara (2007) described public urban high school teachers who are inspired and challenged, but also overwhelmed: "While they found the work noble, they did not find it sustainable" (p. 21). A challenge today is keeping teachers' stress levels in check so they teach most effectively leading to their students learning most effectively.

NCLB and the accompanying high-stakes tests could make reasonable stress levels hard to maintain (Boardman & Woodruff, 2004; Mabry & Margolis, 2006). Furthermore, changes in education associated with implementing high-stakes testing and preparing students for these tests could be difficult to obtain (Goodson et al., 2006). Teacher change is often elusive (Gerla, Gilliam, & Wright, 2006), and teachers sometimes resist change outright (Van Veen & Sleegers, 2006). Impediments to change could impact high-stakes testing.

Standardized testing could have a negative impact on students and teachers. Walker (2002) applied constructivist theory to standards. "If we define standards as a set of discrete skills to be taught uniformly," Walker cautioned, "then we will not have

gained for students a more meaningful and effective learning environment" (p. 6). Raffini (1986) argued that a norm-referenced culture promotes the success of students who perform above average but promotes apathy in those below average. Because many students will not accept mediocrity, if a student does not try, then in that child's mind it is impossible to fail or to be merely average, and self-worth is maintained. Hargreaves (2003) concurred by stating that standardization increases the exclusion of "students at the bottom, who find the standards dispiritingly beyond their grasp" (p. 82). Also, Ames and Archer (1988) studied high school students and compared a performance goal orientation in which value is placed on outcomes relative to the norm and in which success is viewed as dependent on ability, and a mastery goal orientation where importance is placed on developing new skills and where mastery is viewed as dependent on effort. Ames and Archer found that a mastery goal orientation "may foster a way of thinking that is necessary to sustain student involvement in learning as well as increase the likelihood that students will pursue tasks that foster increments in learning" (p. 264). Standardized testing compares students to a norm which could discourage some students.

NCLB has even led writers to use religious analogies as shown in the following examples. Hargreaves (2003) explained, "The rightful pursuit of higher standards has degenerated into a counterproductive obsession with soulless standardization" (p. 82). Bagwell (2007) described how NCLB is forcing administrators and teachers to focus on sometimes forgotten sections of the population, such as students from public housing communities, and stated, "It [NCLB] forces teachers and administrators to battle for kids' souls" (p. A8). Jehlen (2007) wrote about the importance placed on making adequate yearly progress:

> Little Jimmy opens his test booklet and reads . . . Your whole year's work has come down to this. If he gets the right answer, your school is on its way to the modern Holy Grail: Adequate Yearly Progress. If not, you're a failure. (p. 29)

These religious analogies show the depth of feeling, whether positive or negative, that writers and educators have regarding NCLB.

The teachers who burn out while trying to reach every student and meet the mandates of NCLB could be the teachers who are working the hardest. Freudenberger (1977) stated, "One of the first signs of burn-out in a member of an organization is that he or she works harder and harder, longer and longer, yet in reality appears to be accomplishing less and less" (p. 26). Furthermore, Pines (2002) discovered that burnout affects teachers with high expectations of themselves. "While everyone can experience stress," Pines noted, "burnout can happen only to people who entered their careers with high ideals, motivation, and commitment" (p. 14). An awareness of and sensitivity to teacher burnout is critical to keeping such motivated teachers.

To understand burnout more fully, this literature review begins with research on (a) burnout models, (b) factors that impact stress and burnout, (c) effects of stress, (d) ways of dealing with stress, and (e) stress and burnout measurements. To recognize the impact of high-stakes testing, this literature review contains a brief history of assessment in the United States during the last half-century and includes research on (a) the impact of NCLB, (b) issues surrounding high-stakes testing, and (c) challenges associated with teacher change. Strategies for searching the literature included searching online databases using keywords and authors, searching for references cited by published researchers, requesting copies of articles and book chapters from a document delivery service, and

obtaining books through interlibrary loan. Primary sources form the basis of this literature review.

Stress and Burnout

Selye (1978) provided an early definition of stress: "Stress is the nonspecific response of the body to any demand, whether it is caused by, or results in, pleasant or unpleasant conditions" (p. 74). Selye also made a distinction between distress (bad stress) and eustress (good stress) while pointing out that, medically, the body responds the same to both positive and negative stimuli. "However," Selye added, "the fact that eustress causes much less damage than distress graphically demonstrates that it is 'how you take it' that determines, ultimately, whether one can adapt successfully to change" (p. 74). Smylie (1999) summarized later literature and concurred that at moderate levels, stress might motivate performance and promote learning.

Freudenberger (1975), a mental health coordinator, was one of the first to write about burn-out and identified one sign of burnout as a feeling of exhaustion and fatigue. He described burnout of a dedicated and committed worker as resulting from taking on "too much, for too long, and too intensely" (p. 74). That person feels pressure from himself, from the needs of the population being served, and from others such as an administrator in a "three-way squeeze and will come down with a three-level burn-out" (p. 74). Freudenberger wrote about staff working in a free clinic, and statements such as the one below could apply to today's teachers:

> The population which we help is often in extreme need, and because of this they continually take, suck, demand. Let us be honest about it, and admit that the people I am referring to require a continuous giving on our part. And our feeding supplies appear, both to us and to them, to be endless. We soon learn, however,

> that this is a mistaken notion. The supply can—and very quickly does—dry up. (p. 75)

Furthermore, Freudenberger (1977) described people in the throes of burning out: They find fault and complain but also take work home or stay late at work although they achieve minimal results. The proposed progression is work overload, guilt, working harder, frustration, exhaustion, and finally decreased effectiveness (Freudenberger, 1975).

Cherniss (1982) suggested viewing burnout as "a symptom of the loss of social commitment" (p. 13). Cherniss argued that a scientific-technical paradigm emphasizing rational skepticism and professionalism has "undermined the social supports and commitment mechanisms that could protect caregivers in the human services from stress and burnout" (p. 13). From this beginning, many models of stress evolved.

This review of stress and burnout research focuses on five areas: (a) models of stress and burnout developed during the last 30 years; (b) factors that impact stress such as individual and organizational factors; (c) effects of stress including absenteeism, contagion, and attrition; (d) dealing with stress by preventing, treating, and coping; and (e) measurements of stress.

Models of Stress and Burnout

Researchers studied stress and burnout extensively, and as the understanding of stress changed over time, different models of stress surfaced. Ever-evolving understandings of relationships between factors related to stress are evident in the various models of stress reviewed from the past 30 years of research (e.g., Hobfoll, 1989; Karasek, 1979). One model did not necessarily supplant another, and even as a researcher

proposed a new model, the researcher sometimes incorporated pieces of previous models (e.g., Maslach, 1982; Salanova et al., 2005). Researchers investigate different models simultaneously (e.g., Bakker, Demerouti, & Schaufeli, 2006; Llorens, Bakker, Schaufeli, & Salanova, 2006).

Demands-control model. The job strain model (Karasek, 1979), more commonly referred to as the demands-control model, considered psychological strain to be a result of a combination of high demands and low control that leads to an energized state of stress. Karasek explained that an individual can often handle high demands if these demands are accompanied by the power to make decisions about the work situation, thereby relieving stress by turning it into action. Hakanen et al. (2006) noted the narrowness of this model: The demands-control model considers only one job demand, psychological workload, and only one job resource, job control. Yet despite the narrowness, this model is still used. As expected in the job demands-control model, Peeters and Rutte (2005) found that high work demands and low autonomy resulted in emotional exhaustion of elementary teachers. The contribution of this study is that the relationship between demands/autonomy and emotional exhaustion was moderated by time management.

Multidimensional model. Maslach (1982) identified three dimensions of burnout: exhaustion, depersonalization, and decreased personal accomplishment. Although exhaustion is sometimes physical, it is more often caused by emotional demands and can include a loss of interest or spirit. Depersonalization includes negative, inappropriate attitudes toward clients; in the case of teachers, the clients are the students. In addition to reduced productivity, decreased personal accomplishment includes low morale,

withdrawal, or inability to cope. Based on these three dimensions, Maslach developed the MBI, variations of which are commonly used today to measure burnout.

Phase model. Golembiewski, Munzenrider, and Carter (1983) presented a burnout model with Maslach's three burnout dimensions progressing in a specific order: Depersonalization leads to reduced personal accomplishment which leads to emotional exhaustion. This eight-phase model of burnout identifies various combinations of high and low depersonalization, personal accomplishment (reversed), and emotional exhaustion. Golembiewski et al. also suggested three major elements of burnout: job stress, experienced job-derived strain, and coping. Because individuals differ in the number and severity of stressors with which they can comfortably cope and because a stressor that energizes one person could hinder another, this model estimates stress based on an individual's perception: "Are the stressors one *now* experiences *too much*, whatever their number and severity?" (Golembiewski, Boudreau, Sun, & Luo, 1998, p. 59, italics original). Emotional exhaustion is seen as more virulent than inadequate personal accomplishment, and inadequate personal accomplishment is more virulent than depersonalization with respect to promoting burnout. Individuals do not necessarily progress through the phases, but the phases are progressively virulent; the more advanced the phase, the greater the incidence of physical symptoms. By contrast, Van Dierendonck, Schaufeli, and Buunk (2001) found a different progression: Reduced personal accomplishment leads to depersonalization which leads to emotional exhaustion.

Conservation of resources model. Unlike the demands-control model which considered just one resource, job control, the conservation of resources model (Hobfoll, 1989) considers numerous job resources. People endeavor to preserve, guard, and build

resources, and the loss or even possible loss of valued resources is threatening. When not under stress, people try to develop resource surpluses. As Hobfoll (2001) summarized, with the conservation of resources model, stress is viewed as being produced by both perceived loss and actual loss of resources and also by simply a lack of gain of resources. The conservation of resources model includes four resource categories: object resources, conditions, personal characteristics, and energies. When not under stress, people ward off possible future losses by developing surplus resources which is a coping strategy. Wright and Hobfoll (2004) concluded that once emotionally exhausted and performing poorly, individuals might exhibit potentially costly withdrawal behavior. Halbesleben (2006) conducted a meta-analytic test of the conservation of resources model and found that work-related social support is related to exhaustion and that non-work social support is related to depersonalization and personal accomplishment.

Effort-reward imbalance model. The effort-reward imbalance model (Siegrist, 1996) is based on expectations of reciprocity and adequate exchange. Effort can be extrinsic such as work demands or intrinsic such as need for control; rewards come in the form of money, esteem, or status control. According to this model, an imbalance between high effort and low reward is stressful. Nurses with effort-reward imbalance scored higher on emotional exhaustion and depersonalization than those without an imbalance; nurses experiencing effort-reward imbalance and putting high intrinsic effort into their work experienced emotional exhaustion and reduced personal accomplishment (Bakker, Killmer, Siegrist, & Schaufeli, 2000). Van Vegchel, de Jonge, Bosma, and Schaufeli (2005) reviewed 45 studies about the effort-reward imbalance model and identified trends: High efforts with low rewards increases poor health, and high overcommitment

increases poor health. Weyers, Peter, Boggild, Jeppesen, and Siegrist (2006) corroborated this finding from previous studies. Taris, Van Horn, Schaufeli, and Schreurs (2004) related inequity theory specifically to teachers and found that inequity in relationships with students affected burnout and that inequity in relationships with the organization affected organizational commitment.

Job-person fit model. Maslach and Leiter (1997) introduced the job-person fit model that conceptualized burnout as a mismatch between workers and their jobs and identified six areas of mismatch. Maslach and Leiter (1999) stated, "Our research points to six key areas for any employee's happiness: a manageable workload, a sense of control, the opportunity for rewards, a feeling of community, faith in the fairness of the workplace and shared values" (p. 51). Maslach, Schaufeli, and Leiter (2001) presented a new model of job-person fit with those six areas of worklife. The model hypothesized that burnout is a mediator with this progression: Mismatches lead to burnout which leads to various outcomes such as commitment and satisfaction.

Professional self-efficacy discrepancy model. Friedman (2000) presented the professional efficacy discrepancy model as a way to explain the shock new teachers experience that can lead to burnout: "The discrepancy between expected and observed levels of professional self-efficacy (in short, professional self-efficacy discrepancy) is defined as the individual's perception of a significant gap between expectations of successful professional performance and actual, less satisfying reality" (p. 597). This approach suggested stress can be reduced by setting realistic and achievable goals.

Job demands-resources model. The job demands-resources model of burnout (Demerouti et al., 2001) explains burnout based on four components: job demands, job

resources, exhaustion, and disengagement. High job demands are a predictor for exhaustion, and low job resources are a predictor for disengagement; a combination of both exhaustion and disengagement represents the burnout syndrome. Reduced personal accomplishment, which Maslach included, is excluded because it played a less prominent role in some research (Bakker, Demerouti, & Verbeke, 2004). Research by Bakker et al. implied the following sequence: job demands, exhaustion, disengagement, and then (reduced) extra-role performance beyond required duties. Bakker, Demerouti, and Euwema (2005) refined this relationship by discovering that job demands predicted exhaustion and lack of job resources predicted cynicism and professional efficacy. Bakker et al. (2005) explained, "Job demands evoke a stress process, because they lead to energy depletion, whereas a lack of job resources evokes a withdrawal process, because it undermines employee motivation and learning" (p. 176). Realizing whether a stress or withdrawal processes is occurring could help identify whether decreasing job demands or increasing job resources would be more effective.

Hakanen et al. (2006) explored the job-demands resources model and found that the energetical process (i.e., job demands to burnout to ill health) was more prominent than the motivational process (i.e., job resources to engagement to organizational commitment). Llorens et al. (2006) demonstrated the robustness of the job demands-resources model because this model fits to the data even for different nationalities, occupations, measurement instruments, and ways of gathering data.

However, although Halbesleben and Buckley (2004) acknowledged that initial empirical support exists for the job-demands resources model, they are uncertain if this will continue. Because demands tap into resources and because resources are tools to

address demands, Halbesleben and Buckley questioned a model that completely differentiates between demands and resources in predicting outcomes. Conversely, Lewig, Xanthopoulou, Bakker, Dollard, and Metzer (2007) acknowledged empirical support for Karasek's (1979) job demand-control model and for Siegrist's (1996) effort-reward imbalance model, and noted the job demands-resources model "neatly synthesizes the concepts of job demands and job resources . . . into one overarching model" (p. 432).

Four-dimensional model. Salanova et al. (2005) introduced a four-dimensional model of burnout. This model retained emotional exhaustion and reduced personal accomplishment as two of the dimensions of burnout, but whereas Maslach (1982) identified depersonalization as a third dimension, Salanova et al. determined that mental distancing is better distinguished as two traits: depersonalization, a mental distancing from people, and cynicism, a mental distancing from work. This is useful for teachers because it distinguishes between the distancing that can happen between teacher and student and the distancing between a teacher and other aspects of work such as the subject matter or administrative demands.

Mediation model. Leiter and Maslach (2005) extended the job-person fit model (Maslach & Leiter, 1997). Leiter and Maslach considered stress playing a "mediating role between the impact of external job demands (stressors) and work-related outcomes (such as absenteeism or illness)" (p. 455). The goal is to develop a measure applying congruence of personal and organizational characteristics to the assessment of six areas of worklife.

Socially induced burnout model. Bakker et al. (2006) presented the socially induced burnout model in which they proposed that burnout is transmitted from one

colleague to another. Team exhaustion impacted individual exhaustion and individual cynicism. The socially induced burnout effect did not hold for the cynicism dimension of burnout. Models of stress and burnout continue to surface and undergo revision, and aspects of these models reappear in the next section on factors that impact stress.

Factors That Impact Stress

Researchers investigated numerous factors that impact stress. Some researchers (i.e., Pines, 2004) focused on individual characteristics, and others (i.e., Abel & Sewell, 2001) focused on organizational factors. Support exists for both aspects. In this section individual and organizational factors are in one of five groups: personality factors, workload and time factors, work conditions factors, existential factors, and relationship factors. Schamer and Jackson (1996) reported that high school teachers experience more stress than other public service professionals, so factors that impact stress are relevant to this study.

Personality factors. Individual personality characteristics help explain why one teacher burns out and another does not. Pines (2004) related attachment theory (Bowlby, 1977) and burnout. People with a secure attachment style are independent, find positive aspects in situations, and are less likely to burn out compared to those with avoidant and anxious/ambivalent attachment styles, both of which are insecure attachment styles. Pines suggested, “People with secure attachment history and secure working models of attachment enter their career with realistic expectations, appraise the burnout-causing situations they encounter positively and cope with them constructively” (p. 77). Bakker and Schaufeli (2000) also considered the relationship between burnout and personality and found that teachers who are highly susceptible to the emotions of others are more

prone to burnout contagion. Teven (2007) concluded that as teacher caring increased, emotional exhaustion, depersonalization, and loss of personal accomplishment decreased.

Additional personality characteristics affecting burnout include cognitive style and affective disposition. Evers, Tomic, and Brouwers (2005) found that a negative self-oriented cognitive style is significantly related to all three dimensions of burnout. However, a positive self-orientation is significantly related only to personal accomplishment. Evers et al. explained that maladaptive thinking processes of secondary school teachers could prevent them from thinking rationally during their work.

Affective disposition is the tendency to respond either positively or negatively. Kahn, Schneider, Jenkins-Hendelman, and Moyle (2006) found a positive correlation between negative affectivity and burnout. Oginska-Bulik (2006) found that Type D participants, those with a variety of negative emotions, with the non-expression of negative emotions, and with a tendency toward negative affectivity and social inhibition, perceived a more stressful work environment than non-Type D participants.

Workload and time factors. Workload and lack of time to complete the expected workload can lead to stress and burnout as evidenced by the following studies. Drago et al. (1999) reported that on average elementary school teachers worked almost 2 hours more than required by contract each day. Borg and Riding (1991) found that time and resource difficulties have a strong association with job stress. Abel and Sewell (2001) discovered that time pressures are a good predictor for burnout of teachers, particularly in rural areas. Boyle, Borg, Falzon, and Baglioni, Jr. (1995) found that workload predicts teacher stress. Smylie (1999) noted that overload from the development of standards and assessments policies and from teacher leadership initiatives increases the potential for

burnout. Garman, Corrigan, and Morris (2002) studied health care providers, and concerns apply to teachers as well: "There is increased danger of raising staff workloads to a level at which performance suffers" (p. 235). Most recently, Oginska-Bulik (2006) found that work overload is a predictor of the emotional exhaustion dimension of burnout, and Kokkinos (2007) reported that time constraints is a predictor for emotional exhaustion. Workload and time issues also negatively impact teacher change addressed later.

Work conditions. Unpleasant work conditions predicted reduced personal accomplishment while physical burdens predicted depersonalization (Oginska-Bulik, 2006). Poor working conditions were a predictor of burnout for rural and urban school teachers (Abel & Sewell, 2001). A specific unfavorable working condition is lack of autonomy: Constraints on individual autonomy and control contribute to stress (Smylie, 1999), and lack of opportunity to choose inservices contributes to teacher stress (Miller et al., 1999). Pearson and Moomaw (2005) reported that as curriculum autonomy increased, on-the-job stress decreased. In addition to lack of autonomy, two other adverse working conditions are pupil misbehavior and bureaucratic issues, presented next.

Student misbehavior is a specific working condition strongly associated with job stress (Borg & Riding, 1991), and is even a predictor of teacher stress and burnout (Abel & Sewell, 2001; Boyle et al., 1995). Byrne (1998) identified a chief cause of burnout as "uncaring students whose personal problems are sometimes of such magnitude that academic achievement becomes a nugatory item" (p. 5). Also, Malanowski and Wood (1984) found that teachers with more students scored higher on depersonalization.

Recently, Kokkinos (2007) reported that student misbehavior predicted emotional exhaustion and depersonalization.

Administrative and bureaucratic work issues also impact burnout. Byrne (1998) revealed that over 90% of urban teachers ranked difficulties with administration or failure of the bureaucracy as the number one cause of their burnout, perhaps because urban teachers work under greater bureaucratic constraints. Byrne acknowledged, "Virtually all agreed that the chief cause of their low morale was an administration that failed to alleviate their workload while denigrating them at the same time" (p. 4). Friedman (2003) concluded that if a professional cannot rely on the organization for professional support, the person can feel overly burdened. As Hargreaves (2003) described, "Although policymakers should be the wind beneath teachers' wings, they have more usually been an albatross around their necks" (p. 73). Administrators sometimes increase rather than relieve burnout.

However, Pines (2002) found that Israeli managers, who have harder work conditions, reported lower levels of burnout than U.S. managers and concluded that burnout is not the result of stressful work conditions, but rather the result of feeling that one is insignificant and not making a difference. This finding relates to existential factors presented next.

Existential factors. Maslow (1943) identified a hierarchy of basic needs: psychological, safety, love, esteem, and self-actualization. Maslow (1999) redefined self-actualization as an episode where one becomes "more truly himself, more perfectly actualizing his potentialities, closer to the core of his Being, more fully human" (p. 106).

Such existential factors as the need to find satisfaction and to be assured that one's life have meaning relate to burnout.

Borg and Riding (1991) found that professional recognition needs are related to stress and have a strong inverse relationship with career commitment and job satisfaction. Similarly, Friedman & Farber (1992) discovered that professional satisfaction has a strong negative correlation to burnout: "From the teachers' points of view, both parents and principals have an exaggerated sense of teachers' professional satisfaction, discrepancies that in both cases bore significant correlations with burnout" (p. 33). Oginska-Bulik (2006) found that stress was due mainly to lack of rewards and that lack of rewards and physical burdens were predictors of depersonalization. Pearson and Moomaw (2005) reported that on-the-job stress decreased as job satisfaction, perceived empowerment, and professionalism increased. Also, Davis and Wilson (2000) found that teacher motivation was associated with teacher job satisfaction and job stress. Finally, Friedman (2000) suggested that "training should shape the kind of abilities that will ensure that professional-occupational dreams persist over time" (p. 602), a unique way of phrasing satisfaction.

Pines (2002) emphasized that people need to lead meaningful lives. When people fail to achieve such meaning by reaching their goals, burnout results. Pines et al. (1981) described tedium and burnout as "the sense of distress, discontent, and failure in the quest for ideals" (p. 15). Van Dierendonck, Garssen, and Visser (2005b) echoed Pines' idea using transpersonal psychology: People search for meaning and purpose in work, and enhancing personal growth can reduce stress and burnout. Such emphasis on meaning reinforces an earlier finding by Malanowski and Wood (1984) that teachers who are more

self-actualized, who have met the basic needs of safety, belonging, love, respect, and self-esteem and are actualizing their full personal potential are more immune to external pressures that can lead to burnout. In Maslow's hierarchy of needs, Maslow (1943) argued that a satisfied need is not a motivator, so teachers can be motivated by the need for self-actualization.

Relationship factors. Studies relating social support and interpersonal relations to burnout showed mixed results. Some studies found a relationship between relationship factors and burnout: Borg and Riding (1991) related teacher stress to poor relationships, Friedman (2003) identified interpersonal relations as a major factor for ameliorating burnout, and Kahn et al. (2006) discovered that social support is important regardless of affective disposition because as teachers discussed pleasant aspects of the job, burnout decreased. However, some studies were less conclusive about the relationship between relationship factors and burnout: Boyle et al. (1995) determined that poor colleague relationships do not predict stress, and Friedman and Farber (1992) found that social support only decreases burnout if it leads to classroom success and intrinsic rewards. According to Friedman and Farber, in order to prevent burnout, teachers need to credit themselves for partial educational successes.

In conclusion, researchers identified many factors that impact stress. Once a person is stressed, negative effects can result as discussed next.

Effects of Stress

In addition to factors that impact stress, researchers considered the effects of stress and burnout that include absenteeism, contagion, attrition, and cognitive failures. These issues affect organizations as well as individuals.

Absenteeism. Burnout can impact colleagues and the organization by increasing absenteeism (Carmona, Buunk, Peiro, Rodriguez, & Bravo, 2006; Leiter & Maslach, 2005). Bakker, Demerouti, de Boer, and Schaufeli (2003) found that job demands indirectly predicted absence duration and that job resources indirectly predicted absence spells. Bakker et al. (2006) reported that exhaustion positively correlated with absenteeism and that professional efficacy negatively correlated with absenteeism suggesting that burnout is a mediator for predicting sickness absence.

Contagion. Burnout affects not just individuals but also communities because burnout can be contagious. Bakker and Schaufeli (2000) found that high school teacher burnout contagion is likely when teachers are susceptible to emotions of others and when teachers talk about work and student problems with burned out colleagues. Contagion occurred for the dimensions of emotional exhaustion and depersonalization, but not personal accomplishment. This corroborated the social interaction aspect of burnout: Peeters, Buunk, and Schaufeli (1995) found that social interaction such as instrumental support can lessen burnout, and Van Dierendonck, Schaufeli, and Buunk (1998) found that an individual burnout intervention program was more effective when participants could draw on social resources. Bakker, Le Blanc, and Schaufeli (2005) reported that perceived burnout complaints of colleagues predicted emotional exhaustion and depersonalization for individuals and units of nurses. Depending on the social interaction, colleagues can exacerbate or ameliorate burnout.

Attrition. Burnout helps explain the problem of teacher attrition. Ingersoll and Smith (2003) concluded that a primary cause of the teacher shortage is teachers leaving due to poor working conditions, not a commonly given explanation of increasing student

enrollment and teacher retirement. Teacher attrition, especially of new teachers in the first few years, is corroborated by the National Commission on Teaching and America's Future (2003). The Commission reported that almost half of new teachers leave during their first 5 years and that the supply of teachers increased during the 1990s to meet the need, but teacher attrition was increasing faster: "It is as if we were pouring teachers into a bucket with a fist-sized hole in the bottom" (p. 8). Weisberg and Sagie (1999) considered how different types of exhaustion impacted high school teachers' decisions to leave the profession and found that physical exhaustion was the major factor, mental exhaustion was a minor factor, and emotional exhaustion was not significant. Jeanlouis (2003) discovered that an overwhelming workload and limited administrative support were two reasons why first-year teachers left the teaching profession. Brown (1997) identified teacher burnout as a reason that teachers left the profession, and Weld (1998) concurred but noted that burnout does not remove the school system of responsibility:

> When good teachers leave teaching, "burnout" is a convenient label that removes from school administrations and parents any responsibility for their departure. It implies that a weakness within the individual led to the decision. But it might be more fruitful to consider a "burned-out" set of expectations as the reason a teacher "boiled over." (p. 2)

Data for Maryland follow national trends with the Maryland State Department of Education (2006b) reporting a large exodus of teachers with 1 to 5 years of experience.

Cognitive failures. In recent years researchers considered the relationship between cognitive failures such as attentional difficulties and response inhibition. Van der Linden, Keijsers, Eling, and Van Schaijk (2005) found that teachers with severe burnout symptoms exhibited poor performance and did not allocate necessary attention to action. The burned-out teachers were guided by automatic cognitive processes leading to

increased distraction and inhibition errors. These cognitive deficits occurred not just in teachers who were so burned-out that they left the profession, but also in burned-out teachers still on the job. Schmidt, Neubach, and Heuer (2007) further developed the understanding of self-control and cognitive control deficits by studying employees in human services. Schmidt et al. described current work environments requiring employees to be flexible and cope with new situations and noted that such environments require self-control, inhibiting tendencies or emotions that interfere with purposeful behavior. Schmidt et al. found that self-control demands were a source of stress at work and that self-control demands and cognitive control deficits such as attention and memory impairments positively correlated with emotional exhaustion and depersonalization. Schmidt et al. concluded, "It would not be just by chance that burnout is particularly found in professional groups in which self-control belongs to the core demands of the working role (as, for example, teaching, nursing, and counseling), as often described" (p. 151). This new understanding of a job demand is relevant to the job demands-resources model of burnout (Demerouti et al., 2001).

However, not all effects of stress are negative. For Dutch police officers, burnout predicted a decrease in dominant behavior for individuals in conflict situations which contributed to more positive outcomes (Euwema, Kop, and Bakker, 2004). Also, individuals and organizations can deal with stress positively as presented next.

Dealing With Stress

After decades of trying to define stress and determine the relationship between stress and various aspects of stress, more recent research involves ways of dealing with

stress. In doing so there has been a shift from the idea that stress is something that concerns individuals to the idea that stress is a concern of organizations:

> Workers at both white- and blue-collar levels feel stressed out, insecure, misunderstood, undervalued and alienated in their workplaces. Managers must ask themselves what can be done, for they cannot slow down the pace of organizational, technological or societal change. Yet they realize that these changes strain the creative energy of their staff to the limit. . . . Burnout is shown to be a sign of major dysfunction within an organization and says more about the workplace than it does about employees. (Leiter & Maslach, 2001, p. 48)

In seeking ways to deal with stress and burnout, some programs sought to prevent stress from occurring, other programs tried to treat stress once it occurred, and some researchers looked at how teachers cope with stress on their own.

Preventing. The Educational Resource Information Center [ERIC] Development Team (2002) summarized three categories of burnout prevention: Primary prevention aims to prevent teacher burnout, secondary prevention focuses on early detection of problems before they exacerbate, and tertiary prevention deals with ameliorating burnout symptoms. Based on a statistical analysis of surveys from the past 20 years, Leiter and Maslach (2001) concluded that burnout is a problem of organizations, not a problem of people, and presented a step-by-step method to assess engagement and begin the change process: Establish an information flow, involve people in the process, communicate constantly, use the community's problem-solving capacity, and track progress. When describing the life cycle of the career teacher model, a developmental model with six progressive phases, Steffy, Wolfe, Pasch, and Enz (2000) also pointed to the role the organization can play by noting that school communities can identify the beginning of teacher withdrawal when it is amenable to intervention. Steffy et al. suggested responding

to factors that impede growth, establishing key relationships, and providing time for professional development during the workday.

Maslach (2003a) summed up burnout prevention research in one word, balance: "Balance between giving and getting, balance between stress and calm, balance between work and home—these stand in clear contrast to the overload, understaffing, overcommitment, and other imbalances of burnout" (p. 240). Still burnout occurs, and possible treatments follow.

Treating. Different treatment strategies are effective for different types of teacher burnout (Farber, 2000). A worn-out teacher who protects himself by stopping caring needs to realize he was successful and positively impacting students. The frenetic, classically burned-out teacher could strive to avoid perfectionism and self-defeating patterns and to focus on finding a balance in life. The underchallenged teacher could broaden the idea of what it means to be a teacher and to invest more in the work, thereby garnering greater rewards.

Also, different types of burnout can result from different kinds of stress. Adams, Heath-Camp, and Camp (1999) described extended periods of low stress leading to rustout whereas high stress leads to burnout. Adams et al. made four recommendations: Clarify teacher's roles, reduce extraneous tasks such as paperwork and meetings, incorporate programs that encourage support among teachers, and provide teachers with necessary resources.

The life cycle of the career teacher model (Steffy et al., 2000) provided insight into treating burnout. "Withdrawal," explained Steffy et al., "is a form of disengagement. It represents the negative forces that cause educators to remove themselves

psychologically from the reflection-renewal-growth process" (p. 15). If a teacher is provided with appropriate support and progresses through the phases, this teacher remains engaged, the antipode of burned out.

Matching individual and organizational goals, establishing equity, and enhancing personal growth are also ways to reduce burnout. Van Dierendonck et al. (1998) evaluated a burnout intervention program, the objective of which was to increase the fit between the professional's goals and expectations and the actual work situation as a way to reduce perceptions of inequity within the organization. Participants who could draw on social resources benefited the most from the intervention. Van Dierendonck et al. (2001) later found that with regard to equity, feeling either more deprived or more advantaged led to greater emotional exhaustion. Van Dierendonck, Garssen, and Visser (2005a) used transpersonal psychology to enhance personal growth. The intervention group showed decreased exhaustion and increased professional efficacy, but cynicism remained unchanged.

Coping. Dewe and Trenberth (2004) defined coping as "the cognitive and behavioural efforts a person makes to manage demands that tax or exceed his or her personal resources" (p. 145, cited in Lazarus, 1991, p. 5). According to this definition, coping is a conscious process rather than a routine adaptive behavior. Hockey (1997) noted that under stress and high workload, a person might cope by the strain coping mode where extra effort is given at behavioral and physiological costs or by the passive coping mode where performance goals are reduced. Teachers using a direct coping style which employs problem-solving behavior had lower levels of burnout whereas teachers using a palliative coping style such as ignoring or riding the situation out had higher levels of

burnout (Carmona et al., 2006). Also in the study by Carmona et al., teachers who identified themselves with teachers who were doing worse than others and contrasted themselves with teachers who were doing better showed more burnout. Carmona et al. suggested that dealing directly with a problem, rather than alleviating emotional distress through palliative coping, might be an effective way of dealing with stress. In addition, focusing on one's own performance rather than how one compares to colleagues supports a mastery goal orientation rather than a performance goal orientation (Ames & Archer, 1988). Finally, leisure is a means of coping with work related stress because leisure allows people to compete with others, to get exercise, to learn new things, to do something important, to get pleasure, and to contribute to the community (Trenberth & Dewe, 2005).

Hobfoll (2001) described Brandstadter's ideas of accommodative coping: "As costs of resource investment begin to outweigh benefits, *accommodative coping* occurs. This entails downgrading goals, reframing outcomes, and letting old battles rest" (p. 351, italics original). Farber (2000) described the worn-out teacher as one who works less hard, a coping mechanism, in an attempt to avoid burnout. Taris et al. (2004) suggested that depersonalization could be a coping strategy; such psychological withdrawal is a passive coping strategy. Kokkinos (2007) corroborated Taris' description of depersonalization by describing depersonalization as a form of "defensive withdrawal, when insufficient emotional resources are available" (p. 239). Naylor and Malcomson (2001) reported that teachers made adjustments based on workload coping requirements rather then pedagogical factors.

Whether one is developing a burnout model, studying factors that affect burnout, or evaluating ways of dealing with burnout, an instrument for measuring burnout is required. Five such measurement instruments now follow.

Measurement of Burnout

When considering burnout measurements, engagement needs to be considered as well because debate exists in the literature about whether burnout and engagement can be measured with the same instrument. Maslach and Leiter (1997) introduced engagement as the opposite of burnout and identified engagement's three dimensions: energy, involvement, and efficacy. Schaufeli et al. (2002) defined engagement as "a positive, fulfilling, work-related state of mind that is characterized by vigor, dedication, and absorption" (p. 74). Unlike Maslach and Leiter, Schaufeli and Bakker (2004) asserted that burnout and engagement are independent rather than mutually exclusive states.

Burnout and engagement measurements rely on self-report survey data. While this is a well documented method of obtaining data (Creswell, 2008), it is important to recognize that the data obtained are based on subjects' perceptions. However, since stress is related to participants' perceptions (Selye, 1978), this might not necessarily be a weakness. Researchers developed several burnout measurements including the MBI (Maslach et al., 1996), the Burnout Measure (Pines & Aronson, 1988), the Oldenburg Burnout Inventory (Demerouti et al., 2001), the Utrecht Work Engagement Scale (Schaufeli et al, 2002), and My Relationship with Work Test (Leiter & Maslach, 2005). A review of each of these follows with emphasis on the MBI, the modal measurement inventory for burnout (Halbesleben & Buckley, 2004).

Maslach Burnout Inventory. The most recent edition of the MBI Manual (Maslach et al., 1996) contains three versions: The MBI—Human Services Survey is for those who work with people; the MBI—Educators Survey is designed specifically for educators and measures depersonalization between teachers and students; the MBI—General Survey applies to people who work in other occupations.

Bakker, Demerouti, and Schaufeli (2002) validated the three-factor model of the MBI thereby supporting three separate burnout dimensions. Aluja, Blanch, and Garcia (2005) concluded that these burnout dimensions are measured by the MBI regardless of the country and the language used. However, the three factor structure is under debate. Schaufeli et al. (2002) observed that a reduced burnout factor with just exhaustion and cynicism dimensions fit the data best, but Salanova et al. (2005) used both the MBI—General Survey and the MBI—Human Services Survey and found that a four factor model that includes emotional exhaustion, depersonalization, cynicism, and reduced personal accomplishment fit better to the data than the traditional three factor model.

Some researchers identified concerns with the MBI. Barnett, Brennan, and Gareis (1999) identified two flaws: Half of the items to assess feelings did not directly concern feelings, and response categories were not mutually exclusive. Also, exhaustion and depersonalization scale items are worded negatively, and personal accomplishment scale items are worded positively which can lead to acquiescence tendencies (Demerouti et al., 2001). Schaufeli and Bakker (2004) removed one item, and the reliability of the cynicism scale increased. Schaufeli and Bakker noted that this cynicism item is notoriously unsound.

A search on the ERIC database using the keyword *MBI* yielded 132 articles, dissertations, and books using, citing, comparing, and validating the MBI. Within the PsycINFO database, a similar search yielded 963 academic hits, showing how prevalently this measurement is used. Halbesleben and Buckley (2004) noted that the MBI is the common measurement language for burnout.

Burnout Measure. Pines and Aronson (1988) developed the 21-item Burnout Measure, a unidimensional measure correlated with the MBI emotional exhaustion dimension. Malach-Pines (2005) developed a 10-item short version of the Burnout Measure and concluded that this version is a reliable and valid measure of burnout.

Oldenburg Burnout Inventory. Demerouti et al. (2001) devised a burnout instrument, the Oldenburg Burnout Inventory, which measures two dimensions of burnout: exhaustion and disengagement. Demerouti, Bakker, Vardakou, and Kantas (2003) recommended including positively phrased items from the Oldenburg Burnout Inventory in the MBI—General Survey. Schaufeli and Bakker (2004) and Halbesleben and Demerouti (2005) validated the English translation of the Oldenburg Burnout Inventory and suggested this alternative measure to the MBI because the Oldenburg Burnout Inventory can measure engagement, expands the exhaustion dimension of burnout, and has balanced wording by including more positively phrased items.

Utrecht Work Engagement Scale. Schaufeli et al. (2002) developed a 17-item measure of engagement, the Utrecht Work Engagement Scale. Whereas Maslach and Leiter (1997) believed the MBI measures a continuum from burnout to engagement, Schaufeli et al. did not believe the opposite profile of the MBI scores was a good measurement of engagement. Schaufeli et al. included an extended engagement factor

that included efficacy, in addition to the three measured engagement scales, because this fit the data best. Schaufeli and Bakker (2003) randomized the 17 questions for vigor, dedication, and absorption and called the measure the Ultrecht Work Engagement Scale. Although Schaufeli and Bakker (2004) argued against measuring burnout and engagement, which they consider independent states that are not necessarily mutually exclusive, with one instrument, they do agree that burnout and engagement are opposites, particularly for exhaustion/vigor and cynicism/dedication. Schaufeli, Bakker, and Salanova (2006) determined that engagement can be measured by a shortened 9-item version of the Ultrecht Work Engagement Scale.

My Relationship with Work Test. A recently developed measure, My Relationship with Work Test (Leiter & Maslach, 2005), generates a profile of six areas of worklife identified in the job-person fit model of burnout: workload, control, reward, community, fairness, and values.

Improvements to burnout measures and the study of burnout itself are but one half of the issues in this study. The second issue is high-stakes testing. This literature review considers NCLB, concerns about high-stakes testing, and impediments to change necessary to implement new reforms such as standards and high-stakes testing.

High-Stakes Testing

High-stakes testing is really not a new idea (Koretz, 2002b). Throughout the last half-century, educators and policy makers in the United States used tests for many reasons: tracking in the 1950s, program accountability in the 1960s, minimum competency in the 1970s, school and district accountability in the 1980s, and standards accountability in the 1990s (Linn, 2000). Near the beginning of U.S. public education, the

goal was literacy and compliance with moral law (Greene, 2001) whereas now goals include becoming a valuable democratic citizen, making wise choices about the future, and governing individually and with others (Glickman & Alridge, 2001). Expectations are high, and society is sometimes critical when schools cannot be all things to all students. During the 1960s and 1970s leading up to the National Commission on Excellence in Education (1983) report, Deal (1987) noted the high expectations placed on schools:

> Schools were asked to solve the problems of the society, but to make their solutions inexpensive. Schools have been soundly criticized for not accomplishing feats that lie outside the ability of the society to perform. These have been turbulent times for educators, and there is no reason to believe that the turbulence will subside in the near future. Witness the new round of criticism and reform. (p. 9)

Dinham and Scott (2000) similarly described "the increased expectations placed by society on schools and teachers to solve the problems society seemed unwilling or unable to deal with" (p. 5). Indeed, 25 years after the National Commission on Excellence in Education report, schools and educators are striving to meet expectations of the latest reform, NCLB.

Reform often centered on assessment. Eisner (2000) noted the emphasis on test scores:

> In effect, scores become the data used to create league tables through which communities make judgments about the quality of their schools. Alas, although researchers have discovered the limitations of such measures, they have not yet succeeded in developing alternatives that can significantly compete with the testing practices employed since the First World War. . . . In effect, we as educators shape students' conception of what the life of the mind is about by our own emphasis on measured outcomes rather than on the quality of engagement or the character of the journey they have taken. (p. 346)

Yet one key aspect of assessment recently changed: Rather than differentiated standards, one set of standards for a small elite group and another set for the remaining student population, now standards are high for all students (Linn, 2001). Specifics of NCLB, concerns about high-stakes testing, and impediments to the teacher change necessary for educators in an NCLB world follow.

No Child Left Behind Act of 2001

Over 40 years ago the Elementary and Secondary Education Act of 1965 addressed disparities between student groups. The United States is still tackling this disparity issue today as shown by NCLB. On January 8, 2002 the federal government enacted NCLB, the reauthorization of the Elementary and Secondary Education Act of 1965, and addressed the recommendations in the National Commission on Excellence in Education (1983) report. Since the passage of NCLB, positive responses include building capacity, using standards to improve instruction, using assessment results to improve instruction, creating effective incentives, and helping parents make effective choices (Hamilton & Stecher, 2004). Peiffer (2007) acknowledged statewide instructional improvements due to Maryland's high-stakes High School Assessments: aligned instruction, intervention before taking a course, intervention during a course, assistance when students fail tests, and fewer misaligned high school courses. Another positive aspect of assessments is the data received (Johnson, 2002). NCLB is stepping up efforts begun nearly half a century ago.

In the words of NCLB itself, the purpose is to "ensure that all children have a fair, equal, and significant opportunity to obtain a high-quality education" (§1001). To this end, schools are labeled as making adequate yearly progress (§1111) or as being in need

of improvement, corrective action, or restructuring (§1116). Porter, Linn, and Trimble (2005) noted the positive intent of identifying schools that need improvement and then taking corrective action so all students achieve. However, these school label designations, meant to support students, have come to have a very negative connotation for the schools. Furthermore, Orfield (2006) argued that 4 years following the passage of NCLB, "neither a significant rise in achievement, nor closure of the racial achievement gap is being achieved. . . . The reported state successes are artifacts of state testing policies." (p. 5). NCLB could have negative consequences without meeting the goal.

With so much at stake, understanding how state decisions affect adequate yearly progress, why some expectations might be unrealistic, how stress is associated with NCLB, and what alternatives to the current system are possible, in addition to the acknowledged positive aspects of NCLB, is critical.

State decisions about adequate yearly progress. The U.S. Department of Education (2004) identified 37 NCLB issues that fall under state or local control. Porter et al. (2005) determined that decisions states make regarding definition of proficient academic achievement, trajectories for reaching the 100% proficient goal in 2014, minimum number of students required to report disaggregated subgroup results, and whether or not to use confidence intervals to determine attainment of annual objectives affect whether schools qualify as making adequate yearly progress. Because states choose their own proficiency levels and make the above decisions, comparing state performance is not necessarily meaningful.

Porter et al. (2005) analyzed choices states made. Trajectories states chose, from most to least common, are back-loaded, straight with plateaus, and straight. A back-

loaded trajectory anticipates great progress during the last few years prior to 2014, which means that only minimal gains can translate into adequate yearly progress for many years. The minimum number of students tested for subgroup accountability range from none to 100 students with 30 and 40 being the most commonly chosen minimum numbers. Confidence intervals vary with 11 states not using confidence intervals, the highest standard.

The Maryland State Department of Education made rigorous choices. Maryland chose a straight line trajectory (Maryland State Department of Education, 2007b), the most stringent choice, whereby students must make steady progress each year. Maryland selected 5 students as the minimum number for subgroup accountability (Maryland State Department of Education, 2006a), again a stringent choice because this allows for more student groups. The more student groups reported, the more ways possible to fail to make adequate yearly progress (Linn, 2005). Maryland uses confidence intervals that vary depending on the number of students in the student group (Maryland State Department of Education, 2007b). Based on state choices, Maryland schools could have a more difficult time making adequate yearly progress compared to states that made less demanding choices.

Unrealistic expectations. Expectations of NCLB could be unrealistic. Linn (2002) analyzed results from the Colorado Student Assessment Program for fourth grade reading from 1997 through 2000 and found yearly progress difficult to maintain. Even looking at just one test and without disaggregated reporting for student groups, only 1 school in 20 met the increase of one percentage point in students scoring at the proficient level for 3 consecutive years. According to Linn (2005), the rate of improvement required by NCLB

is also unrealistic compared with much smaller improvements on earlier National Assessment of Educational Progress assessments. Linn argued that proficiency levels are set too high when there is no "existence proof" (p. 3), when no evidence exists showing that even the highest performing schools have reached such goals. With the exception of the NCLB safe harbor provision (§1111) whereby a 10% decrease in the number of students failing to make proficient progress could be sufficient, making progress is not enough; performance must meet a fixed target, the annual measurable objective (§1111) in order to make adequate yearly progress. Linn offered three suggestions: set realistic performance targets, consider growth in achievement, and define proficiency in more meaningful and comparable ways.

Stress associated with NCLB. The Center on Education Policy, an independent nonprofit organization, studies federal, state, and local implementation of NCLB and reports annually. Based on surveys, case studies, and national forums, the Center on Education Policy (2006) determined that pressure to improve test scores caused some teacher stress, and that school labels, such as improvement school for failure to make adequate yearly progress, sometimes had a negative effect on morale. New teachers are often assigned to grades with a high-stakes test because experienced teachers want to avoid the pressure (Johnson, 2002). Teachers feel the pressure, and caution is necessary when using test scores to evaluate teachers:

> Unless a test is very narrow in scope, the behavior of a specific teacher will typically control a very modest share of test score variance. There are two reasons for this. One is that much of the variance in test scores in controlled by factors outside of the direct control of schools, such as ethnicity, parental education, and income. The second is that while learning in many subject areas is cumulative, students are generally assigned to a given teacher for at most a single year. (Koretz, 2002a, p. 765)

Clarke et al. (2003) also warned against use of test scores: “Test results should not be used to compare teachers and schools unless student demographics and school resources are equated and the latter are adequate to produce high student performance” (p. 6). As Linn (2003) argued, shared accountability is central but not often attained; with much accountability falling on the teachers, teacher stress and burnout can result.

Most studies illustrate that NCLB and the required high-stakes testing has led to an increase in stress for teachers and students. Hanson (2007) determined that emotional exhaustion, one of three burnout dimensions, is significantly higher for high-stakes subject area teachers than for low-stakes subject area teachers in urban elementary schools, presumably due to increased workload associated with teaching a high-stakes subject area. Hanson also concluded that because burnout can impede job performance, the achievement gap between subgroups of students might widen rather than close as intended by NCLB. Berger (2006) looked specifically at differences between rural and urban elementary teachers and found that urban elementary teachers scored higher on teacher morale, personal stress, and frustration with student effort. Schroeder’s (2006) case study showed that an increase in teacher and student stress resulted from high-stakes testing. Also, Taris et al. (2004) found that inequity in the relationship between students and teachers had a strong effect on burnout, so as teachers invest more in helping their students prepare for high-states tests, if students do not pass, the inequity between investment and benefits could lead to burnout. However, Hutter (2004) found no significant difference between high-stakes and low-stakes subject area elementary teachers, and Hutter acknowledged that this finding contradicted most research. Whereas Hanson used the MBI—ES (Maslach et al., 1996), Hutter used the Job Stress Survey

(Spielberger & Vagg, 1999), so different measures could be one reason for the disparity. Also, Hutter suggested that schools that chose to participate might have been schools with lower stress levels. Guarding against teacher stress that might impede goals of NCLB is important.

Alternatives to current assessment system. Alternatives to meeting an annual fixed target as a way to assess progress do exist. Rather than giving an assessment and determining passing or failing based on cut scores, a value-added assessment system evaluates schools and teachers based on the value added to students' education each year. Tennessee used a value-added system, and rather than ranking schools, the state monitored gain in student achievement from year to year (Kupermintz, Shepard, & Linn, 2001). Yero (2002) also advocated for value-added assessments. According to Yero, "People are discouraged from questioning the presupposition that all students can learn at the same level and in the same amount of time because of claims that this is the 'soft bigotry of low expectations" (p. 7). Another alternative is a system for rapidly assessing student progress that Yeh (2006) developed in an attempt to reduce the pressure of high-stakes testing and NCLB. Maryland offers a bridge plan (Maryland State Department of Education, 2007a) for students who are unable to demonstrate their knowledge on traditional tests. According to the bridge plan, students can pass the High School Assessment, Maryland's high-stakes test, by completing an academic validation project. Maryland introduced this bridge plan in the fall of 2007, so academic validation projects are just beginning.

In conclusion, NCLB gives states latitude, has perhaps unrealistic expectations, contributes to teacher stress, and allows room for alternative assessments. The high-

stakes testing required by NCLB has concerns associated with it as detailed in the next section.

Concerns About High-Stakes Testing

High-stakes testing is a term Gunzenhauser (2003) defined as "the use of standardized testing measures as criteria for determining the quality of schools, promotion of children to the next grade, high school graduation, teacher bonuses, or the governance of a school" (pp. 52-53). However, unlike some other measurements, Gunzenhauser recognized that test scores are approximations:

> Measuring student achievement is much more complex than, for example, taking measurements in chemistry. While 0 ^{o}C is a reliable temperature at which we may expect water to freeze, a certain cut-off score for a graduation exam is much less reliable as an indicator of student achievement. (p. 53)

Gunzenhauser warned that high-stakes tests have limits and that policy which relies heavily on these tests could lead to a default philosophy of education:

> From a scientific standpoint, high-stakes tests cannot do all that policy makers want them to do. Because of the high stakes attached to the tests, policy has had the unintended effect of encouraging a default philosophy of education: a vision of education that values highly what can be measured, and more problematically, it values most highly the measurement itself. (p. 54)

With policy makers placing such emphasis on test scores, assumptions underlying the tests are important.

Koretz (2002a) argued that test-based accountability rests on two assumptions: that scores measure educational output and that holding teachers accountable for those scores will improve teacher performance. Koretz contrasted high-stakes testing, "testing with substantial consequences for educators or students" (p. 753), with standardized testing, "testing with uniform questions, administration, and scoring" (p. 753).

Achievement tests are limited measures and are incomplete because they are fallible in two senses: They include measurement error, and they are vulnerable to inflation. Any error is of concern when assessments are used for high-stakes purposes. In addition to concerns about the reliability of test scores, concerns in the literature discussed below include the form of test questions, need for multiple measures, narrowness of curricula, variability of performance standards, and disparate accountability.

Reliability of test scores. Twenty years ago Cannell (1989) found some of the worst school systems in the nation reporting inflated achievement scores above the national average. Cannell conducted a state-by-state survey of test security and discovered that high scores were "often caused by lax test security, nonstandard testing practices, deceptive statistics, and misleading impressions, not improved achievement. Most upsetting, the report concludes that outright cheating by U.S.

educators on 'Lake Wobegon' tests of school achievement is common" (p. 5). Even when educators eliminate such crass practices, fallibility through measurement error or score inflation is a concern with high-stakes tests.

According to the sampling principle of testing, educators generalize and draw conclusions about performance on a large domain from performance on just a small sample of questions (Koretz, 2005). When results differ from test to test that supposedly measure the same thing, measurement error has occurred. Measurement error is more likely when the domain is broad because broader domains require more severe sampling (Koretz, 2002a). When performance on the tested sample increases more than proficiency in the entire domain, the result is score inflation (Koretz, 2005).

Some forms of test preparation such as working harder, teaching more effectively, and teaching more outside of regular school hours produce meaningful gains (Koretz, 2005). However, some forms of test preparation such as reallocating instructional time, aligning tests, standards, and instruction, and coaching about test items, lead to increases in particular elements but gains are not generalizable to the entire domain (Koretz). Gains in the first few years following the introduction of a new testing requirement are generally much larger than those achieved after the program has been in place for several years (Koretz, 2002a; Linn, 2000). Rapid initial score increases are a result of increased familiarity with the test rather than increased achievement (Koretz, 2002a). Teaching to the test can distort instruction and produce inflated notions of achievement—achievement that is not seen on comparable national tests (Linn, 2000). Lee (2006) reported that state-administered tests often inflate proficiency gains and deflate racial and social achievement gaps. The higher the stakes for the state assessments, the greater the discrepancies Lee found between results on National Assessment of Educational Progress assessments and state assessments.

Form of test questions. Another concern is that practices that are useful in the classroom may not be appropriate on high-stakes tests. Boaler (2003) told a narrative about a school famous for its mathematics department serving low income students from many ethnicities that received an underperforming state label because the teacher designed tests and the state tests contained different types of questions. Long sentences, contexts, and words on the state test were unfamiliar to English language learners. Boaler noted that providing context motivates students in the classroom, but most other countries

minimize such context on standardized assessments because the context can present barriers to some student groups and can introduce inequalities.

Need for multiple measures. Concerns exist regarding placing too much emphasis on a single test. Error in measurement is one reason for multiple measures (Herman et al., 2004; Linn, 2000). Linn noted that relatively inexpensive tests previously used for low-stakes purposes cannot meet the demands of current high-stakes accountability systems. Herman et al. argued that just as students learn in different ways, students also demonstrate proficiency in different ways and pointed out, "Professional testing standards are clear on this issue: A single test should never be used as the sole determinant of any important decision" (p. 2). Clarke et al. (2003) argued, "States should be flexible in the options available to students for demonstrating achievement so that all have a chance to be successful" (p. 6). In spite of these concerns and although not required by NCLB, Maryland along with other states chose to use tests, initially meant to assess the schools, as a graduation requirement (Maryland State Department of Education, n.d.), and even reaffirmed this decision in October 2007: Beginning with the class of 2009, the high-stakes High School Assessment program is a graduation requirement (Maryland State Department of Education, 2007, October).

Narrowing of curriculum. Because states often assess different subjects in different grades, teachers might emphasize a tested subject at the expense of other subjects. Stecher and Barron (2001) studied high-stakes testing in milepost grades, grades when students take specific subject tests, and found that teachers focused on the subjects measured at their grade level rather than on overall educational goals. Gunzenhauser (2003) also noted curriculum narrowing where untested areas received less time and

where a narrow bundle of knowledge that was tested was highly regarded. “Don’t allow,” Hamilton and Stecher (2004) warned, “the standards that are tested to overshadow the standards that are not tested” (pp. 581-582). Narrowing of curriculum appears to be a temptation.

Narrowing of curriculum includes not only what is taught but how it is taught because high-stakes testing impacts teacher implementation of new instructional strategies. According to Johnson (2002), teachers felt the pressure of assessments and gave up units or approaches to cover required material. Boardman and Woodruff (2004) determined that high-stakes testing took time away from implementing a new strategy and that pressures surrounding high-stakes testing left teachers with little energy for learning and implementing a new strategy. Many of the fourth grade teachers changed grade levels the next year to avoid test pressures, and this could impact sustained use of a new procedure. Clarke et al. (2003) also warned, “Increasing the stakes attached to the test results does not necessarily bring about improvements in teaching and learning, but can adversely affect the quality of classroom practice and have a negative impact on at-risk student populations” (p. 13). These results demonstrate the narrowing phenomenon that high-stakes tests can have on teaching practices and curricula.

Variability of performance standards. Linn (2000) identified four characteristics of performance standards: Performance standards are absolute rather than normative; they are set at high, “world class” levels; there are a small number of levels such as basic, proficient, and advanced; and performance standards apply to all students. “A reasonable question that generally goes unanswered,” Linn stated, “is whether the intent is to aspire not just to high standards for all students, but to the *same* high standards for *all* students”

(p. 10, italics original). Linn gathered data showing that the percent of students performing proficiently on National Assessment of Educational Progress is less than on states' own assessments, but the purposes are different. Linn pointed out that proficient on the National Assessment of Educational Progress signifies solid academic performance (National Assessment Governing Board, 2007) whereas the purpose of many state tests is to identify "marginal students who may need remediation" (Linn, p. 10). Linn argued that high standards are different than common standards.

Disparate accountability. Linn (2003) believed that accountability for student achievement should not rest primarily with teachers: "Accountability must entail broadly shared responsibility if it is going to have the positive effects that it is expected to have without having unintended negative effects" (p. 3). The National Commission on Excellence in Education (1983) addressed parents, noting that children must possess a deep respect for learning, setting goals, and disciplined work: "That respect must be accompanied by an intolerance for the shoddy and second-rate masquerading as 'good enough'" (Recommendations section, p. 7). But parents do not appear to be feeling the pressure. Mulvenson, Stegman, and Ritter (2005) found that of all the players in the educational system, teachers reported the most anxiety associated with high-stakes testing. Linn, too, found that while shared responsibility should include students, teachers, school administrators, parents, and policymakers, recent state and federal laws and most current accountability systems focus on educators and students.

In an attempt to meet the requirements of NCLB, many changes are occurring, or are expected to occur, so looking at possible impediments to change is important.

Impediments to Change

High-stakes testing mandated by NCLB required changes in education; however, change does not come easily and intended changes do not always occur (Smylie, 1999). Sometimes teachers develop and change, and sometimes teachers resist or find themselves unable to change (Gerla et al., 2006). Change can mean relinquishing methods that a teacher found personally effective as a student:

> The teachers and administrators leading schools today generally had a positive experience in school. That is one reason education is their chosen career. This makes change doubly difficult because it asks for a change in beliefs, attitudes, and behaviors that were positive and engrained in the individual as good. (Roettger, 2006, p. 19)

Teachers can be so attached to previous methods that moving on to new methods is difficult (Glickman & Alridge, 2001). Hargreaves (2003) offered an extreme position: "Teachers wait in fear of the next capricious reform initiative, suffer unending performance anxiety in the face of constant evaluation and inspection, and feel neither trusting of nor trusted by their superiors" (p. 81). In the midst of the difficulty of change itself, teachers also find themselves facing new professional expectations which often involve additional work (Wexler, 2002). This section includes three factors that impede change: additional work, identity change, and exclusion from the change process.

Additional work. Part of what makes change in the case of school reform difficult is that it often is simply more work. Naylor (2001) acknowledged that teacher workload and stress are international issues and concluded that teachers are overworked yet "individually motivated to do more than the minimum required" (p. 12). For many teachers the workload is growing without an increase in time to accomplish the additional work (Leithwood & Menzies, 1998) and without a reduced teaching load (Little, 2001). Leiter and Maslach (2001) acknowledged that excessive workload is not a new

occurrence, but the current pace of life and modern technology increase the intensity of work. This additional work becomes part of what administrators expect of teachers:

> Incorporating school reform into the working day of teaching requires not only expertise and sagacity. It is an enormous amount of often-frustrating additional work that is taken on by teachers, sometimes as an organic, professional innovation and, at other times, as a no-less professional adaptation to an external imposition, which becomes part of a changing definition of "good" professional performance. (Wexler, 2002, p. 471)

Wexler identified two aspects of change that are difficult for teachers: additional work in the form of time and energy, and more challenging expectations of professional performance. Furthermore, Evers et al. (2002) found that stress often accompanied educational innovations and that intervening strategies could burden teachers by adding to work overload.

Additional professional expectations and reforms can impinge on teachers' personal time and interfere with family relationships, and teachers can be protective of time to prepare for their students (Little, 2001). England realized the importance of meeting the needs of teachers when the Department for Education and Skills (2003) published a national agreement about raising standards and tackling workload and stated, "All teachers should enjoy a reasonable work/life balance" (p. 6). Teachers need time to interact with students outside of class time and with family outside of work time.

Nolan and Meister (2000) sought to give readers an understanding of teacher change by immersing themselves in the lives of a 5-teacher team for a year. The teachers created units, positively impacted students, and built collegiality in their new interdepartmental team. "They did so, however," Nolan and Meister acknowledged, "at the price of constant mental fatigue, continuing self-doubt, inner turmoil over loyalties

and obligations, and an overriding sense of guilt at not being able to do more" (p. 223). Kutey (2004) corroborated the high cost of teaching in a study of second-year teachers and concluded that the "limited time available to complete all the requirements of teaching, yet still have a life outside the school, is a major concern for these participants" (p. 67). Sometimes teachers decided which tasks were more important which is reminiscent of a coping strategy and Farber's (2000) description of a worn-out teacher as one who works less hard to avoid burnout. Giving of teachers' personal time drains teachers.

Change requires time—time for the daily effort and time for results to show. As described more than once, "Change is a process, not an event" (Cowan & Pankake, 2004, p. 70; Loucks-Horsley & Stiegelbauer, 1991, p. 17). Roettger (2004) found that in every interview, teachers mentioned time problems, and Roettger concluded that the biggest deterrent to change is a lack of time. But even if teachers receive additional time, all time is not created equal. Lieberman and DuFour (2005) claimed that effective professional development provides enough time during good time. Lieberman and DuFour gave the example that a delayed opening allowing for professional development between 7:30 and 9:30 am is good time, whereas after school between 3:00 and 5:00 pm when teachers are tired is not a good time.

Yet workload is not always a negative factor. Brown (2004) analyzed the 1999-2000 data from the National Center for Education Statistics (2002) and found that for charter and urban public school first-year teachers, those with relatively higher non-teaching workloads were associated with greater perceived competence.

Identity change. Reform can be an emotional, even a threatening, process with teachers' actual identities at stake, and teachers could react in terms of self- or identity-preservation (Van Veen & Sleegers, 2006). "The focus is no longer on teaching," Geijsel and Meijers (2005) explained, "but rather on the learning and development of students. For teachers, this means a fundamental change in their work: from primarily teaching to primarily coaching" (p. 419). How teachers react to educational reforms largely depends on whether teachers view their professional identities as being threatened or reinforced by those reforms (Van Veen & Sleegers, 2006). Because reform involves teachers taking risks, if support for teacher development is lacking, teachers could experience conflict, frustration, and personal failure (Olson, 2002). Beijaard, Meijer, and Verloop (2004) found that a teacher's professional identity consists of well-balanced and harmonious sub-identities and that changing or losing a central sub-identity is costly. Professional identity is actually a way of understanding oneself: "Professional identity is not something teachers have, but something they use in order to make sense of themselves as teachers" (Beijaard et al., p. 123). So the degree to which teachers embrace reform depends, in part, on whether teachers can keep or need to change their identities.

Ancess (2001) evaluated the teacher inquiry process at three high performing high schools and recognized that such a process is risky:

> Risky because the trial and error of discovery learning gives no guarantee of what results will occur from this labor-intensive, time-consuming journey. In an era of narrowly defined, standardized-test-driven accountability, such risks can be dangerous to a teacher's career and to a school's existence, but as shown here, they can also break open a future for children. (p. 77)

Providing an environment where teachers can inquire without experiencing stress is a challenge.

Professional orientations also help explain why teachers view reforms positively or negatively. Van Veen, Sleegers, Bergen, and Klaassen (2001) considered possibilities within three orientation categories: (a) instructional orientations (transmission of knowledge orientation versus student- or learning-oriented orientation), (b) goals of education orientations (qualification and schooling orientation versus personal and moral development orientation), and (c) school organization orientations (restricted orientation focusing on content and the teacher's own teaching versus extended orientation involving the school and matters outside the classroom). Furthermore, Van Veen et al. pointed out that teachers experienced contradictory expectations such as focusing on metacognitive skills while facing nationally mandated testing of measurable knowledge and participating in school decision-making while facing mandated curricula that reduced their autonomy in the classroom. Although contradictory expectations and teachers' views of their job need not stand in the way of reforms, "understanding teachers' professional orientations is relevant for the successful implementation of educational reforms" (Van Veen et al., p. 191). As for time and workload issues, Van Veen and Sleegers (2006) found that teachers without an extended school organizational orientation cited lack of time and increased workload as reasons.

Yet some teachers adjust easier than others, in part due to how effective they see themselves. According to Bandura's (1977) self-efficacy theory, in order for people to change their behavior, they need to expect two things: that a behavior will yield a specific outcome and that one is able to perform the required behavior. "People fear and tend to avoid threatening situations they believe exceed their coping skills," Bandura explained, "whereas they get involved in activities and behave assuredly when they judge

themselves capable of handling situations that would otherwise be intimidating" (p. 194). Evers et al. (2002) related self-efficacy theory specifically to teachers: "Teachers with strong self-efficacy beliefs show a greater readiness to adopt innovative educational practices and are less susceptible to burnout than their counterparts with weak self-efficacy beliefs" (p. 238). So teachers with strong self-efficacy beliefs could be receptive to change because they believe they will be successful.

Exclusion from change process. For professional development to be effective, teachers need to have a role in shaping it (Eisner, 2000). Eisner contrasted this current understanding of professional development with an outdated view—the idea that professors and administrators "could 'inservice' teachers every few months, a practice that is eerily similar to having automobiles serviced every 15,000 miles" (p. 347). However, this outdated view is still seen in practice. In most change models, Olson (2002) saw supervisors managing teachers rather than involving them:

> While governments and the educational systems they control will continue to be concerned about the outcomes of schooling and their political consequences, and thus call for reform, little will be accomplished if teachers do not understand and support these reforms. (p. 135)

Kincheloe (2002) also issued a caution that paints a harsh picture of what can happen when supervisors control teachers:

> In the quest for enhanced educational productivity, teachers' work has become increasingly controlled from above. . . . Thus teachers relinquish control of the teaching act—teaching is rendered bad work. . . . Like their third world counterparts, teachers are preoccupied with daily survival—time for reflection and analysis seems remote and even quite fatuous given the crisis management atmosphere and the immediate attention survival necessitates. In such a climate those who would suggest that more time and resources be delegated to reflective and growth-inducing pursuits are viewed as impractical visionaries devoid of common sense. Thus, the status quo is perpetuated, the endless cycle of

> underdevelopment rolls on with its peasant culture of low morale and teachers as "reactors" to daily emergencies. (p. 34)

Burdening teachers with many dictates does not enable teachers to grow professionally.

The educational system stands to gain much by breaking this negative cycle and including teachers. Teachers could apply practical experiences to change situations to the benefit of teachers and students alike (Olson, 2002). If teachers are included in the professional development process, teachers will understand the reason behind the changes they are facing. Little (2001) explained, "We will enhance our understanding of reform trajectories and outcomes by considering not only teachers' *capacity* for reform, but also the *meaning or significance* that teachers attach to specific reform initiatives" (p. 41, italics original). Also, Goodson et al. (2006) found that teachers felt demeaned by standardized reform and that teachers expressed nostalgia for working conditions that empowered them: "Only when change initiatives achieve more meaningful engagement with teachers' missions and memory might we expect change to move from transient government rhetoric to sustainable school reality" (pp. 56-57). Involving people is one of the five steps previously identified by Leiter and Maslach (2001) to engage people and begin the change process.

In summary, additional work, identity change, and exclusion from the change process can reduce the chance that teacher change will occur. However, an increased use of data, which is one of the results of NCLB, is a teacher behavior that leads to change or improvement (Flecknoe, 2005).

Conclusion

Quick et al. (2006) noted, “Stress can be the spice of life . . . or the kiss of death” (p. 217). But since stress is linked with some leading causes of death, Quick et al. questioned whether stress is worth dying for. Stress, high-stakes testing pressures, and changes associated with NCLB might not lead to death, but testing does seem to have become more important than intended:

> Nobody ever thought that testing—weighing the cow—was going to grow a healthy cow. But because of the consequences associated with the testing, the testing has garnered so much attention that the testing is now mistaken for the reform as a whole. (Reville, 2002, p. 2)

Reville believed that changing the nature of instruction is more important than standards, assessment, and accountability. According to Eisner (2000), high-stakes criteria have a counterproductive consequence: "Consummatory experiences derived from deep engagement with a subject matter fly out the window when the aim of school practice is to be able to meet a standard or pass a test” (p. 349). Costa (2005) similarly stated, “It’s not only being able to meet and succeed in a life of tests, but also for the tests of life” (speaking on DVD). Colleges do not base acceptance on standardized test scores alone; high school transcript, extracurricular activities, and letters of recommendation contribute to the information college admissions officers use to make such an important decision as acceptance to college.

Summary

The scholarly literature abounds with studies about burnout and high-stakes testing. Burnout research includes ever-developing models of burnout, factors that impact burnout, effects of burnout, ways of dealing with burnout, and instruments to measure

burnout. High-stakes testing research incorporates analysis of NCLB, concerns about high-stakes testing, and impediments to change necessary to meet the mandates of NCLB. This literature review on burnout and high-stakes testing provided the basis for this study. Chapter 3 describes the methodology, chapter 4 provides results, and chapter 5 gives conclusions and recommendations.

CHAPTER 3:

METHODOLOGY

Introduction

The purpose of this study was to investigate if burnout is greater for high-stakes subject area public high school teachers than for low-stakes subject area public high school teachers and to ascertain teachers' perceptions about difficulties associated with teaching a high-stakes subject area. The quantitative aspect of this survey study examined the job demands-resources model of burnout (Demerouti et al., 2001) to determine if teaching a high-stakes subject is associated with public high school teacher burnout. The study determined the effect of the independent variable, subject area, on the dependent variable, teacher burnout. The independent variable, subject area, was labeled a high-stakes subject area if the subject is assessed at the state level and was labeled a low-stakes subject area if the subject is not assessed at the state level. The dependent variable, teacher burnout, was defined as a response consisting of emotional exhaustion, depersonalization, and reduced personal accomplishment (Maslach, 1982). The MBI—ES (Maslach et al., 1996) quantitatively measured teacher burnout. The qualitative portion of the study provided data to augment the quantitative data (Creswell, 2008). Teachers expressed their perceptions about difficulties associated with teaching a high-stakes subject area. Teachers from a Maryland public high school that is making adequate yearly progress and has a high socioeconomic status participated.

This study addressed two research questions:

Research Question 1: Are burnout scores of high-stakes subject area public high school teachers greater than burnout scores of low-stakes subject area public high school teachers? *Null Hypothesis 1*: There is no significant difference between high-stakes and low-stakes subject area public high school teachers and burnout scores. *Alternative Hypothesis 1:* There is a significant difference between high-stakes and low-stakes subject area public high school teachers and burnout scores. This alternative hypothesis suggests a direct relationship between the independent variable, teaching a high-stakes subject area, and the dependent variable, teacher burnout.

Research Question 2: What do high-stakes subject area public high school teachers perceive is difficult about teaching a high-stakes subject area?

This study used a concurrent transformative strategy, which is guided by a theoretical framework, and had the design features of a concurrent nested strategy, which has a predominant quantitative method, both of which are mixed methods strategies identified by Creswell (2003). Using the uppercase and lowercase notation system developed by Morse (1991) and the box notation system developed by Creswell (2008), the embedded (or nested) mixed methods design is represented in Figure 1.

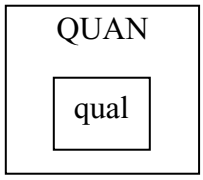

Figure 1. Embedded mixed methods design notation system.

Note. From *Educational Research: Planning, Conducting, and Evaluating Quantitative and Qualitative Research, 3/e* (p. 557), by J. W. Creswell, 2008. Published by Allyn and Bacon/Merrill Education, Boston, MA. Copyright 2008 by Pearson Education. Adapted with permission of the publisher.

The predominant quantitative method represented by QUAN used a static group comparison preexperimental design and determined the effect of the independent variable, high-stakes or low-stakes subject area, on the dependent variable, teacher burnout. A cross-sectional design was suitable for comparing two educational groups (Creswell, 2008). Campbell and Stanley (1963) developed a notation system using X to represent an experimental variable and O to represent a measurement. Creswell (2003) developed a cross-sectional design notation used in Figure 2.

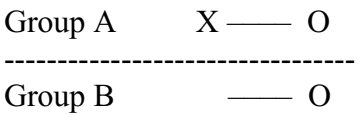

Figure 2. Cross-sectional design notation system with X representing an experimental variable and O representing a measurement.

Note. From *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches* (p. 168), by J. W. Creswell, 2003, Thousand Oaks, CA: Sage. Copyright 2003 by Sage Publications Inc Books. Adapted with permission of Sage Publication Inc Books in the format Dissertation via Copyright Clearance Center.

The experimental group, Group A, taught a high-stakes subject area, and the comparison group, Group B, taught a low-stakes subject area. The experimental treatment, represented by X, is a lived experience, teaching a high-stakes subject area, rather than a treatment implemented by the researcher. The measured burnout scores are represented by O, and the dashed line indicates the groups were not randomly assigned.

The embedded qualitative method, which provided a supportive form of data and is represented by qual, used a phenomenological design in which the researcher "identifies the 'essence' of human experiences concerning a phenomenon" (Creswell, 2003, p. 15). This study considered the phenomenon of what high-stakes subject area

public high school teachers perceive is difficult about teaching a high-stakes subject area. This methodology chapter describes (a) mixed methods research, (b) research design, (c) setting and sample, (d) instrumentation, (e) data collection procedures, (f) data analysis, (g) reliability, (h) validity, and (i) interpretation.

Mixed Methods Research

This section considers mixed methods research from two perspectives: (a) foundations of mixed methods research from the literature and (b) justification of mixed methods in this study.

Foundations of Mixed Methods Research

Aspects of mixed methods research discussed in this section include goals, the need for a typology, evolution of mixed methods, pragmatism, bias, and relationship to education.

Goals. A commonly stated goal of mixed methods research is that the strengths of qualitative and quantitative research complement each other and the weaknesses do not overlap (e.g., Creswell, 2008; Onwuegbuzie & Johnson, 2006; Teddlie & Tashakkori, 2003). Johnson and Turner (2003) even identified complementary strengths as a fundamental principle of mixed methods research. Collins, Onwuegbuzie, and Sutton (2006) analyzed articles and identified four themes or rationales for conducting mixed methods research: participant enrichment, instrument fidelity, treatment integrity, and significance enhancement.

Need for typology. Mixed methods research is awash in inconsistencies, even controversies, to the extent that debate exists as to whether mixed methods research is even possible or impossible (Teddlie & Tashakkori, 2003). Miller (2003) noted that

researchers often use terms which lack a conventional understanding and use terms in loose ways. Chen (2006) advocated mixed methods not as a method paradigm but as a method *use* paradigm because the mixed methods tradition currently lacks unique research methods. In this state of uncertainty, Teddlie and Tashakkori summarized reasons why researchers have tried to develop a typology of mixed methods research: to provide organizational structure, to legitimize the field, to establish a common language, to help researchers decide how to proceed, and to provide a pedagogical tool.

Evolution. While the above makes mixed methods research sound like a recent development, Maxwell and Loomis (2003) questioned the idea that mixed methods research is in its infancy: "Indeed, a case could be made that mixed methods research was *more* common in earlier times, when methods were less specialized and compartmentalized and the paradigm wars were less heated" (p. 242, italics original). Sandelowski (2003) argued that the true test of whether research is qualitative, quantitative, or mixed depends on how the researcher interprets data: "What distinguishes research entities and researchers is not whether they are qualitative or quantitative per se . . . but rather the overall attitude toward and interpretive treatment of the data collected in those studies" (p. 324). Whether young or old, mixed methods research is evolving.

Even the reason for conducting mixed methods research is disputed. Sandelowski (2003) challenged the commonly stated reason for conducting mixed methods research, that of complimentary strengths without overlapping weaknesses. Sandelowski asserted that what some researchers consider weaknesses are not weaknesses at all:

> It is not a weakness or a limitation of any qualitative study that nomothetic generalizations cannot be drawn or that samples are not statistically representative, just as it is neither a weakness nor a limitation of any quantitative

> study that case-bound generalizations cannot be drawn or that samples are not information rich. Rather, it is the researcher who is weak or limited who chooses inquiry approaches for the wrong reasons, executes them in the wrong way, or apologizes for method characteristics that require no apology. (p. 329)

Researchers debate the reasons for selecting a mixed methods study, and the reasons could continue to evolve.

Pragmatism. Pragmatism is a popular paradigm in mixed methods literature (Tashakkori & Teddlie, 2003b). Tashakkori and Teddlie (2003a) defined pragmatism as a "deconstructive paradigm that debunks concepts such as 'truth' and 'reality' and focuses instead on 'what works' as the truth regarding the research questions under investigation" (p. 713). Onwuegbuzie and Johnson (2006) also described mixed methods research as a pragmatic approach "to search for workable solutions through the practice of research . . . to help answer questions that we value and to provide workable improvements in our world" (p. 54). As previously noted, a current challenge with mixed methods research is agreeing on research processes to achieve pragmatic purposes.

Bias. An aspect of mixed methods research is the juxtaposition of researcher bias in qualitative and quantitative research. Although objectivity is sought in quantitative studies, bias is embraced in qualitative studies: "Instead of pretending to be objective, the stance of qualitative researchers is to concentrate on reflexively applying their own subjectivities in ways that make it possible to understand the tacit motives and assumptions of their participants" (Hatch, 2002, p. 9). Mixed methods researchers need to determine the right combination of objectivity and subjectivity.

Relationship to education. Teddlie and Tashakkori (2003) called mixed methods research the "third methodological movement" (p. 45). This movement could prove

particularly important in the field of education since Demerath (2006), who considered educational research in particular, believes qualitative educational research is on trial because current legislation privileges experimental designs with randomized trials when evaluating educational programs. Mixed methods research could provide a bridge between the quantitative data required by some educational programs and the understanding educators can gain by "learning how individuals experience and interact with their social world" (Merriam, 2002, p. 4) from qualitative research.

Justification of Mixed Methods in This Study

This study used mixed methods not to compensate for any weakness in the qualitative or quantitative method, but to realize the significance enhancement rationale set forth by Collins et al. (2006): to "facilitate thickness and richness of data; augment interpretation of findings" (p. 76) and to "clarify why outcomes did or did not occur" (p. 79). This study also was in keeping with the proposal by Miller (2003) that mixed methods research gives primacy to the quantitative perspective, and the rationale for this study followed the argument put forth by Miller:

> In a very basic sense, the qualitative analysis must be directed to some part of the quantitative analysis so that something more, different, or novel may be discovered and analyzed. That is, there must be the presumption that there is something more to the "story" than what is given by the quantitative portion of the study. . . . What is desired through the qualitative analysis is a deeper understanding of how and why the variables indicate what they do. (pp. 441-443)

For such reasons as those stated above, a mixed method design was appropriate for this study.

Statistical analysis identified any significant differences between burnout scores for high-stakes subject area public high school teachers compared to low-stakes subject

area public high school teachers. Analysis of responses to qualitative survey questions helped explain any significant differences revealed by the quantitative analysis. A pragmatic purpose of this mixed methods study was to clarify why high-stakes subject area public high school teachers experience more (or do not experience more) burnout than low-stakes subject area public high school teachers. Admitted researcher bias existed in the qualitative question itself, "What do high-stakes subject area public high school teachers perceive is difficult about teaching a high-stakes subject area?" The question presupposed that high-stakes subject area public high school teachers experience difficulties and stress, and this study sought an answer to that question that could lead to social change.

Research Design

This research design section includes a literature perspective followed by the research design for the study.

Literature Perspective

Teddlie and Tashakkori (2006) suggested that mixed method designs be based on number of methodological approaches, number of phases, and type of implementation process. Teddlie and Tashakkori did not include methodological components: importance of quantitative or qualitative component because the researcher determines this after the study; function such as triangulation or complementarity because this is a function that the results serve; or theoretical perspective because this is a purpose, not a design component.

Where mixing occurs in mixed methods research and what qualifies as a mixed methods design are topics of debate. "A continuing challenge," stated Yin (2006), "is to

maintain the integrity of the single study, compared to inadvertently permitting the study to decompose into two or more parallel studies" (p. 41). For research to truly be mixed methods, Yin argued that integration needs to occur for five procedures: research questions, units of analysis, samples, instrumentation and data collection, and analytic strategies. A design is less rightly labeled mixed methods if different research questions address qualitative and quantitative portions, if units of analysis are isolated, such as a school and a board of education, if samples are not nested within each other, if qualitative and quantitative instruments contain no analogous items, and if dependent and independent variables are different for the qualitative and quantitative portions (Yin). Under the previous circumstances, the degree of integration is less than optimal, and the methods, rather than genuinely integrated, could be merely parallel. Teddlie and Tashakkori (2006) also argued that if the design does not include deliberate integration and is mixed only in the analytical stage, the label of quasi-mixed design should be used.

Other researchers take a more lenient stance toward mixed methods research. Collins et al. (2006) provided ways to "convert a mono-method study to a mixed-methods inquiry" (p. 89) by changing some aspect of the study. Johnson and Turner (2003) distinguished between intramethod and intermethod mixing. Johnson and Turner defined intramethod mixing as the "concurrent or sequential use of a *single* method that includes both qualitative and quantitative components" (p. 298, italics original). Method here refers to method of collecting data; for example, including both open and closed questions on a questionnaire would yield both quantitative and qualitative data from a single method. Intermethod mixing includes the use of two different methods such as interviews and observations. Johnson and Turner advocated intramethod and intermethod

mixing because “the use of intramethod and intermethod mixing in a single research study often results in more thorough information, corroboration of findings, and overall a much more trustworthy research study” (p. 316). Miller (2003) even included parallel/simultaneous mixed method as one of three taxonomic classifications of mixed methods (the other two being sequential mixed method and equal status mixed method), contradicting the position of Yin (2006) that parallel studies do not qualify as mixed method.

A challenging issue for mixed methods research, as identified by Chen (2006), is whether to use pure form or modified form mixed methods. Applying pure forms of qualitative and quantitative methods maintains the integrity of each method; using modified forms can help meet timelines or save money, but at the expense of rigorous applications (Chen).

Research Design

This study used a concurrent transformative strategy, which is guided by a theoretical framework, and had the design features of a concurrent nested strategy, which has a predominant quantitative method, both of which are mixed methods strategies identified by Creswell (2003). The predominant quantitative method used a static group comparison preexperimental design and determined the effect of the independent variable, high-stakes or low-stakes subject area, on the dependent variable, teacher burnout. The embedded qualitative method, which provided a supportive form of data, used a phenomenological design in which the researcher identified the essence of how high-stakes public high school teachers perceive the difficulties associated with teaching a high-stakes subject area.

Participants provided qualitative and quantitative data in separate parts of a survey packet; this is a form of intramethod mixing as defined by Johnson and Turner (2003). Also, mixing occurred for two procedures identified by Yen (2006), units of analysis and samples, because both of these procedures are identical for the quantitative and qualitative components. Quantitative and qualitative data analyses were independent of each other. Integration occurred particularly during the interpretation phase with teachers' perceptions about difficulties of teaching a high-stakes subject area shedding light on differences between burnout scores of high-stakes subject area public high school teachers and low-stakes subject area public high school teachers. Miller (2003) identified this form of inference as addressing the inspected category and suggested the following phrase: "Given the qualitative methods that I have used, I will infer that such-and-such is the interpretation of . . ." (p. 447). The qualitative data helped interpret the burnout scores.

Setting and Sample

Kemper, Stringfield, and Teddlie (2003) noted that the sampling aspect of a research study is the place where "theory meets the hard realities of time and resources" (p. 273). Kemper et al. acknowledged that sampling is an inherently practical issue that forces pragmatic choices.

The research population for this study was public high school teachers in a Maryland county school district who teach in adequate progress schools with less than 10% of students eligible for free or reduced meals. The population of about 350 public high school teachers is listed in the district website.

A convenience sample consisted of 87 teachers at one of the three public high schools in the population who returned fully completed surveys. Convenience sampling in this study removed the possibility of intervening variables such as the impact that different school principals and different work environments might have on burnout scores. Of the total sample, 56 teachers taught high-stakes subject areas, and 31 teachers taught low-stakes subject areas. This sample size, based on a sample size calculator (Pearson's Assessments, 2007), involved 9% error and a 95% confidence interval.

The researcher discussed this research with the school district and a school principal and obtained permission in writing to conduct research with teachers. Appendix A contains the text of the letter from the district, and Appendix B contains the letter from a principal granting permission; identifying information was removed to ensure confidentiality. In an effort to increase the number of teachers participating, the researcher personally invited teachers. Appendix C contains the script for invitation to participate in research. Aside from the personal invitation to participate in research and the survey distribution, the researcher did not interact with the participants. The researcher did not teach at the participating school, and the researcher gathered data through surveys only rather than interviews or observations. This role of the researcher helped preclude any impact on participants' responses. The researcher does teach in a public high school but bracketed personal ideas and experiences when analyzing the data from the surveys. The researcher obtained permission to conduct research from the Walden University's Institutional Review Board before gaining participant consent or collecting any data.

Instrumentation

The MBI—ES (Maslach et al, 1996) measured teacher burnout for the quantitative portion of this study which addressed Research Question 1: Are burnout scores of high-stakes subject area public high school teachers greater than burnout scores of low-stakes subject area public high school teachers? Emotional exhaustion, depersonalization, and personal accomplishment burnout subscale scores from the MBI—ES are sums of Likert scale responses for survey statements for each of the three burnout dimensions. Aluja, Blanch, and Garcia (2005) compared their current study and five previous studies from 1981 to 1996 that used a form of the MBI in different countries and concluded that the burnout dimensions of emotional exhaustion, depersonalization, and reduced personal accomplishment "are measured by the MBI irrespectively of the country and the language samples" (p. 75). In the six studies, researchers gave alpha coefficients for each of the burnout dimensions: emotional exhaustion (.83 - .91), depersonalization (.50 - .79), and reduced personal accomplishment (.69 - .82). The three dimensions accounted for 43% of the variance. Maslach et al. reported mean and standard deviation normative data for teachers (N = 4,163) for the MBI subscales: emotional exhaustion (M = 21.25, SD = 11.01), depersonalization (M = 11.00, SD = 6.19), and personal accomplishment (M = 33.54, SD = 6.89). As recommended by Maslach et al., emotional exhaustion, depersonalization, and reduced personal accomplishment received separate analyses rather than analysis of a single, total burnout score. Appendix D contains a letter granting permission to use the MBI—ES. Appendix E contains information on obtaining the copyrighted MBI—ES.

Qualitative survey questions developed specifically for this study addressed Research Question 2: What do high-stakes subject area public high school teachers perceive is difficult about teaching a high-stakes subject area? Two survey questions addressed this research question: (a) What is difficult about teaching a subject area that is assessed at the state level? and (b) What could be done that would ease your workload or other aspects of your job? Appendix F contains the qualitative survey.

A demographic survey, the final part of the survey packet, requested information about subject area, gender, age, and years of teaching. Appendix G contains the demographic survey.

Data Collection Procedures

Data collection occurred in the high school auditorium in September at a date and time acceptable to both the principal and the researcher. Teachers followed along as the researcher read the informed consent agreement and the survey directions aloud. The researcher answered questions before participants completed the survey. The researcher collected all survey forms as teachers completed the surveys. Teachers absent did not complete the form at a later time because teacher discussion about survey questions could have impacted the responses of the absent teachers. Appendix H contains the informed consent agreement, and Appendix I contains the script for administering the survey.

Teacher confidentiality was maintained in part due to completing and submitting the surveys in a group setting because no identifying information was needed on the survey for tracking purposes. The researcher secured and will maintain the surveys for five years after which time the researcher will shred the surveys. As thanks for

participating in this educational research, participants received a letter suitable for their professional portfolios. Appendix J contains the participant thank you letter.

Data Analysis

The data analysis plan involved separate analyses for the quantitative and qualitative data as recommended by Gravetter and Wallnau (2005) for an embedded design. The quantitative data analysis plan for Research Question 1 was for a single-factor, independent-measures research design. A two-tailed independent-samples *t*-test is an appropriate statistical test for evaluating mean differences between two or more groups (Gravetter & Wallnau, 2005). The nonparametric chi-square test for independence, which does not require normal population distributions and homogeneity of variance, also assessed the above relationships. Significance was measured at the .05 level using SPSS 14.0 for Windows.

The qualitative data analysis plan for Research Question 2 was inductive analysis which involved creating domains for the research question (Hatch, 2002; Rubin & Rubin, 2005). Using inductive analysis avoided the potential weakness of typological analysis which can blind the researcher to dimensions outside predetermined categories (Hatch).

Data presentation followed advice given by Sandelowski (2003) for writing mixed methods studies: “Whereas numbers are used in quantitative research write-ups primarily for their evidentiary power, quotes are used in qualitative research write-ups for their evidentiary power and their aesthetic value” (p. 344). Chapter 4 contains tables with numbers presenting the quantitative results and contains teacher quotes for the qualitative results.

Reliability

Cronbach's alpha, a form of internal consistency reliability, tested reliability of the quantitative data. Cronbach's alpha was appropriate for a survey study because inter-observer reliability was not applicable, because participants did not retest, and because a parallel survey form was not relevant. Cronbach's alpha provided the equivalent of the average of all possible split-half estimates and is commonly used when many items appear on the survey (Trochim, 2006). As noted by Aluja et al. (2005), alpha coefficients for each subscale of the MBI supported a claim of internal consistency reliability. For this study, calculated Cronbach's alpha values provided a measure of reliability of the nine emotional exhaustion items, five depersonalization items, and eight personal accomplishment items.

Validity

Validity issues in this section include legitimation, conclusion and construct validity, generalizability, internal validity, and member checking.

1. Legitimation. Teddlie and Tashakkori (2003) used the term inference quality when referring to internal validity in quantitative studies and to credibility in qualitative studies. Onwuegbuzie and Johnson (2006) presented assessing the validity of findings in mixed methods research as the problem of integration. Onwuegbuzie and Johnson recommended using a bilingual nomenclature whereby validity in mixed methods research is termed legitimation, and suggested a typology with nine mixed methods legitimation types. The following legitimation types were relevant to the research for this study: Sample integration legitimation was not a concern because the same participants were involved in the quantitative and qualitative components; inside-outside legitimation

could involve comparing the outside researcher's interpretation of qualitative data with an inside participant's view; weakness minimization legitimation involved ensuring that strengths from one approach compensated for weaknesses from the other approach; multiple validities legitimation included addressing qualitative validities, quantitative validities, and relevant mixed legitimation types; and paradigmatic mixing legitimation had two solutions that included using pure qualitative and quantitative viewpoints and then making meaning from the two pure components, and considering a qualitative-quantitative continuum and taking a moderate position.

2. Conclusion Validity. The chi-square test and the *t*-test previously identified determined conclusion validity, determining if a relationship existed between the independent variable, high-stakes or low-stakes subject area, and the dependent variable, teacher burnout. Almost 90 teachers completed the survey in an attempt to achieve sufficient statistical power to determine if a relationship existed. A threat to validity was that data consisted solely of teacher self-report surveys, but this threat was lessened because stress is related to participants' perceptions (Selye, 1978). To the extent that internal validity affirms causation, no causal claim was made.

3. Construct Validity. Construct validity, the generalization of this study's definition of burnout to the world's understanding of burnout, was reasonable because researchers widely accept the three dimensions of burnout (Bakker et al., 2002) and the establishment of the MBI (Halbesleben & Buckley, 2004). Also, several survey items addressed each burnout dimension rather than relying on just one item each for emotional exhaustion, depersonalization, and reduced personal accomplishment.

4. Generalizability. Threats to external validity are "problems that threaten our ability to draw correct inferences from the sample data to other persons, settings, and past and future situations" (Creswell, 2008, p. 310). As previously acknowledged in the scope of the study, generalizability was limited to public high school teachers in adequate progress schools with less than 10% of the population eligible for free or reduced meals, to the three-dimensional model of burnout, to a specific definition of high-stakes tests, and to teacher burnout for high-stakes subject areas compared to low-stakes subject areas. Additionally, results were only generalizable to the specific time during the school year when participants provided data.

5. Internal Validity. Many of the threats to internal validity, which are not associated with causation, summarized by Creswell (2008) did not apply due to the cross-sectional nature of this study. The greatest threat to internal validity centered on selection of participants because teachers at one school participated rather than a random selection of teachers from many schools. However, this threat was offset by the advantage of eliminating intervening variables such as differences in student population, administration, and work environment if teachers from different schools participated in the study.

6. Member Checking. Validity of qualitative data asked the question, "Are we observing or measuring what we think we are observing or measuring?" (Merriam, 2002, p. 25). Member checking, a form of inside-outside legitimation (Onwuegbuzie & Johnson, 2006), assessed validity, or credibility, of qualitative data. As recommended by Tisdell (2002), the researcher invited participants with different backgrounds to participate in member checking.

Interpretation

This section considers interpretation from a literature perspective and from the perspective of this study.

Literature Perspective

Making an inference is not universally understood among researchers (Miller, 2003). Teddlie and Tashakkori (2003) defined inference as "an umbrella term to refer to a final outcome of a study" (p. 35). Teddlie and Tashakkori distinguished between inference quality, including internal validity in quantitative studies and credibility in qualitative studies, and inference transferability (or generalizability), including external validity in quantitative studies and transferability in qualitative studies. Transferability refers to contexts (ecological transferability), individuals/groups (population transferability), time periods (temporal transferability), and methods of measuring and observing (operational transferability). Demerath (2006) noted an appeal of mixed methods research "is that it can provide stronger inferences—an important consideration for those working in a public policy field such as education. . . . Authors propose replacing validity with 'inference transferability" (pp. 107-108). All understandings of inference warrant consideration.

Researchers also define triangulation in different ways. Creswell (2008) described a triangulation mixed methods design as one in which "the researcher gathers both quantitative and qualitative data, analyzes both datasets separately, compares the results from the analysis of both datasets, and makes an interpretation as to whether the results support or contradict each other" (p. 557). Johnson and Turner (2003) used intermethod mixing, previously described, as another name for triangulation. Erzberger and Kelle

(2003) identified this mutual validation process as just one instance of triangulation; a second instance of triangulation is "as a means to produce a more complete and 'fuller' picture of the social phenomena under study" (p. 462). However, Sandelowski (2003) issued a caution: "When any kind of research combination is designated as triangulation, there is no inquiry that is not triangulated. Having too much meaning, the word *triangulation* has no meaning at all" (p. 328, italics original). As with inferences, researchers need to consider different definitions of triangulation.

Interpretation in This Research

Interpretation of this study included interpreting both the concurrent transformative strategy and the concurrent nested strategy. First, considering the theoretical framework of the concurrent transformative strategy, interpretation involved determining if qualitative and quantitative analyses supported the job demands-resources model of burnout developed by Demerouti et al. (2001). Second, considering the concurrent nested strategy, interpretation involved determining if the qualitative data analysis helped explain the dominant quantitative analysis relating high-stakes testing and public high school teacher burnout.

The interpretation of this concurrent nested strategy, which is understood by some (Erzberger & Kelle, 2003) to involve triangulation, used the analysis of qualitative data to provide a fuller understanding of the phenomenon under study, the relationship between high-stakes testing and public high school teacher burnout. Integration occurred during the interpretation phase with teachers' perceptions about difficulties associated with teaching a high-stakes subject area shedding light on any differences between burnout subscores for high-stakes and low-stakes subject area public high school teachers.

Furthermore, interpretation related findings from this study to previous studies discussed in the literature review.

Summary

Research into mixed methods research itself shows a growing field with possible strengths but also questions about how to proceed with mixed methods research. Mixed methods research has a pragmatic paradigm that is relevant to educational research because it couples quantitative data that is required by some educational programs with an understanding that can be gained from qualitative research.

This study used mixed methods to addresses two research questions, one comparing burnout subscores of public high school teachers who teach in high-stakes subject areas versus low-stakes subject areas, and the other about perceptions of high-stakes subject area public high school teachers regarding perceived difficulties of teaching a high-stakes subject area.

A sample of 87 public high school teachers in a Maryland county school district who teach in adequate progress schools with less than 10% of students eligible for free or reduced meals participated. The population was about 350 public high school teachers in three high schools in the district. The chi-square test and the *t*-test analyzed data from the MBI—ES (Maslach et al., 1996). Inductive analysis analyzed the qualitative survey questions. Integration occurred during the interpretation phase. Following Institutional Review Board approval, the researcher collected and analyzed data, as described in chapter 4, and drew conclusions and made recommendations, as described in chapter 5.

CHAPTER 4:

RESULTS

Introduction

The purpose of this concurrent mixed methods study was to investigate the problem of teacher burnout and the possible impact of high-stakes testing resulting from NCLB. Concerns exist about basing high-stakes decisions on a single measure (Clarke et al., 2003; Herman et al., 2004) and the impact on teacher stress and morale (Center on Education Policy, 2006). Teacher workload is an issue (Brown, 2004; Thomas et al., 2004), and the current emphasis on student achievement and adequate yearly progress might add to the workload of teachers. As schools strive to incorporate standards and assessments (Smylie, 1999) and to meet the mandates of NCLB (Schroeder, 2006), schools cultivate students' needs yet sometimes overlook teachers' needs (Farber, 2000). In an attempt to better understand teacher burnout and the needs of high-stakes subject area public high school teachers, this study employed a mixed methods design, details of which follow.

This study used a concurrent transformative strategy which has a theoretical perspective and a concurrent nested strategy that has a single data collection phase (Creswell, 2003). The theoretical framework included two models: the multidimensional model of burnout (Maslach, 1982) and the job demands-resources model of burnout (Demerouti et al., 2001). According to the multidimensional model, burnout consists of three dimensions: exhaustion, depersonalization, and decreased personal accomplishment. Exhaustion results from either physical or emotional demands,

depersonalization includes negative attitudes, and decreased personal accomplishment involves reduced productivity. The second model in the theoretical framework, the job demands-resources model of burnout, identifies situations that foster and discourage burnout. High job demands predict exhaustion, and low job resources predict disengagement. This study concentrated on the possibility that job demands associated with NCLB could lead to increased burnout for high-stakes subject area public high school teachers.

The quantitative portion of the study examined the job demands-resources model of burnout (Demerouti et al., 2001) and addressed Research Question 1: Are burnout scores of high-stakes subject area public high school teachers greater than burnout scores of low-stakes subject area public high school teachers? The null hypothesis stated that there is no significant difference between high-stakes and low-stakes subject area public high school teachers and burnout scores; the alternative hypothesis stated there is a significant difference between high-stakes and low-stakes subject area public high school teachers and burnout scores. This alternative hypothesis suggested a direct relationship between the independent variable, subject area, and the dependent variable, teacher burnout. The independent variable, subject area, was labeled a high-stakes subject area if the subject is assessed at the state level and was labeled a low-stakes subject area if the subject is not assessed at the state level. The dependent variable, teacher burnout, was defined as a response consisting of emotional exhaustion, depersonalization, and reduced personal accomplishment (Maslach, 1982). The MBI—ES contained 22 statements and measured teacher burnout quantitatively using a 7-point Likert scale. The MBI—ES is based on the multidimensional model of burnout and measured emotional exhaustion,

depersonalization, and personal accomplishment as three separate subscores. Appendix E provides information on obtaining the copyrighted MBI—ES.

The qualitative portion of the study augmented the quantitative data and addressed Research Question 2: What perceptions do high-stakes subject area public high school teachers have about difficulties of teaching a high-stakes subject area? For the qualitative survey, participants responded to two questions in free writing format. Appendix F contains the qualitative survey.

The research population was public high school teachers in a Maryland county school district who teach in adequate progress schools with less than 10% of students eligible for free or reduced meals. Teachers at one of three high schools in the population completed a survey packet. The packet contained the informed consent agreement (Appendix H), the quantitative MBI—ES (Appendix E), the qualitative survey (Appendix F), and the demographic survey (Appendix G). Teachers completed the survey packets in a group setting at the monthly faculty meeting in September under the supervision of the researcher. Of 111 teachers at the school, 92 teachers returned the survey. Of the returned surveys, 56 surveys were from high-stakes subject area public high school teachers, 31 surveys were from low-stakes subject area public high school teachers, and 5 surveys had incomplete demographic information which prevented inclusion in data analysis. The overall survey response rate was 83%, and the usable survey response rate was 78%.

Data analysis included procedures for the quantitative research question and the qualitative research question. The researcher entered quantitative data on an Excel spreadsheet and transferred this data to the statistical program, SPSS 14.0 for Windows. Excel and SPSS documents are on a computer and a flash drive protected by a password

and stored in a safe location. The electronic documents contain no personal or school related identifying information. After 5 years, the researcher will destroy the paper survey packets. Quantitative data analysis for Research Question 1 included several parts. Cronbach's alpha determined the internal consistency reliability for each burnout subscale, and descriptive statistics included means and standard deviations and also analysis based on percentage of low, average, and high burnout categories. The chi-square test for independence determined if a correlation existed between subject area and burnout subscores, and a two-tailed independent-samples *t*-test determined if burnout subscores for high-stakes subject area public high school teachers were significantly different than burnout subscores for low-stakes subject area public high school teachers. Cohen's *d* measured effect size for each burnout subscale based on subject area. Quantitative results contain details about these analyses.

The qualitative data analysis plan for Research Question 2 was inductive analysis (Hatch, 2002; Rubin & Rubin, 2005). The researcher transcribed free writing responses into a Word document and then copied this data into a different Word document based on emerging domains. Member checking confirmed the quality of the qualitative results. Qualitative results contain details about the qualitative analysis process. The following sections contain data analysis details and findings for quantitative and qualitative results.

Quantitative Results

Quantitative results addressed Research Question 1: Are burnout scores of high-stakes subject area public high school teachers greater than burnout scores of low-stakes subject area public high school teachers? Emotional exhaustion, depersonalization, and personal accomplishment burnout subscale scores from the MBI—ES (Maslach et al.,

1996) are sums of Likert scale responses for survey statements for each of the three burnout dimensions. As recommended by Maslach et al., the scores for each burnout subscale received separate analyses rather than analysis of a single, total burnout score. For emotional exhaustion and depersonalization, higher scores indicated greater burnout; for personal accomplishment, lower scores indicated greater burnout.

Quantitative data analysis for Research Question 1 utilized SPSS 14.0 for Windows and included several analyses: (a) Cronbach's alpha provided evidence of quality by determining the internal consistency reliability between the nine emotional exhaustion items, the five depersonalization items, and the eight personal accomplishment items; (b) descriptive statistics compared means and standard deviations for the study sample and a normative sample; (c) percentage of teachers with low, average, and high burnout compared high-stakes subject area public high school teachers and low-stakes subject area public high school teachers; (d) the chi-square test for independence used these low, average, and high burnout categories to determine if a correlation existed between subject area and burnout; (e) means and standard deviations provided a second comparison of burnout subscores of high-stakes subject area public high school teachers and low-stakes subject area public high school teachers; (f) a two-tailed independent-samples *t*-test used these means and standard deviations to determine if burnout subscores of high-stakes subject area public high school teachers are significantly different than low-stakes subject area public high school teachers; and (g) Cohen's *d* measured effect size for each burnout subscale based on subject area.

Evidence of Quality

Researchers widely accept the three dimensions of burnout (Bakker et al., 2002) and the establishment of the MBI (Halbesleben & Buckley, 2004). Therefore, construct validity, the generalization of this study's definition of burnout to how the world understands burnout, is reasonable. Also, rather than relying on just one survey item each for emotional exhaustion, depersonalization, and reduced personal accomplishment, several survey items addressed each burnout dimension. Cronbach's alpha, a form of internal consistency reliability, tested reliability of the quantitative data. A value greater than .70 indicated that items focused on one construct. Cronbach's alpha values in this study indicated good internal consistency between the items for emotional exhaustion, between the items for depersonalization, and between the items for personal accomplishment. This means that items for each burnout subscale measured the intended subscale. For example, all emotional exhaustion items measured just one construct, emotional exhaustion. As shown in Table 1, the nine emotional exhaustion items had a Cronbach's alpha value of .877, the five depersonalization items had a Cronbach's alpha value of .801, and the eight emotional exhaustion items had a Cronbach's alpha value of .782.

Table 1

Cronbach's Alpha Reliability Statistics for Burnout Subscale Items

Burnout subscale	Cronbach's alpha	*N* items
Emotional exhaustion	.877	9
Depersonalization	.801	5
Personal accomplishment	.782	8

Comparison of Study Sample With Normative Sample

A comparison of teacher burnout subscores for the study sample ($N = 87$) and a normative sample ($N = 4{,}163$) provided by Maslach et al. (1996) showed that teachers in the study sample experienced greater burnout based on emotional exhaustion and less burnout based on depersonalization and personal accomplishment than teachers in the normative sample. Teachers in this study had higher emotional exhaustion subscores ($M = 23.93$) than teachers in the normative sample ($M = 21.25$) indicating more burnout for the teachers in this study compared to the normative sample. Teachers in this study had lower depersonalization subscores ($M = 7.86$) than teachers in the normative sample ($M = 11.00$) and higher personal accomplishment subscores ($M = 38.53$) than teachers in the normative sample ($M = 33.54$) indicating less burnout for the teachers in this study compared to the normative sample. Standard deviations for burnout subscores for the study sample and the normative sample were similar for all burnout subscores indicating similar ranges of burnout subscores for teachers in this sample compared to the normative

sample. Table 2 contains means and standard deviations for burnout subscores for the study sample and for a normative sample of teachers.

Table 2

Study and Normative Sample Burnout Subscore Means

Sample	*M*	*SD*
	Emotional exhaustion	
Normative	21.25	11.01
Study	23.92	11.02
	Depersonalization	
Normative	11.00	6.19
Study	7.86	6.66
	Personal accomplishment	
Normative	33.54	6.89
Study	38.53	6.63

Note. Normative sample of teachers, $N = 4{,}163$ (Maslach et al., 1996, p. 8). Study sample of teachers, $N = 87$.

Percentages of Teachers in Low, Average, and High Burnout Categories

One way to view burnout subscores is based on the ranges for low, average, and high burnout as defined by Maslach et al. (1996). The low range comprises the lower third, the average range the middle third, and the high range the upper third of a normative distribution. For the normative distribution, 33% of teachers had low burnout, 33% had average burnout, and 33% had high burnout. For all three burnout dimensions, high-stakes subject area public high school teachers experienced greater burnout than low-stakes subject area public high school teachers in this study.

Emotional exhaustion. For low-stakes subject area public high school teachers, the distribution in the low, average, and high burnout categories for emotional exhaustion were almost equal, but nearly twice as many high-stakes subject area teachers exhibited high burnout than low burnout based on emotional exhaustion. For emotional exhaustion, 50% of high-stakes subject area public high school teachers scored high compared to only 32% of low-stakes subject area public high school teachers. The greatest deviation from the normative distribution is that fewer high-stakes subject area public high school teachers experienced low and average levels of emotional exhaustion and more experienced high burnout for emotional exhaustion. Table 3 contains percentages of high-stakes and low-stakes subject area public high school teachers exhibiting low, average, and high burnout for emotional exhaustion.

Table 3

Emotional Exhaustion by Subject Area in Low, Average, and High Burnout Categories

Emotional exhaustion	% Low	% Average	% High
High-stakes subject area	27	23	50
Low-stakes subject area	35	32	32

Note. High-stakes subject area public high school teachers (n = 56) teach a subject that is assessed at the state level. Low-stakes subject area public high school teachers (n = 31) teach a subject that is not assessed at the state level.

Depersonalization. For depersonalization, more than half of both high-stakes and low-stakes subject area public high school teachers showed a low range of burnout. However, almost twice as many high-stakes subject area public high school teachers (23%) scored in the high range compared to low-stakes subject area public high school teachers (13%). Compared to the normative distribution, more high-stakes and low-stakes subject area public high school teachers experienced low levels of depersonalization and fewer experienced average and high burnout for depersonalization. Table 4 contains percentages of high-stakes and low-stakes subject area public high school teachers exhibiting low, average, and high burnout for depersonalization.

Table 4

Depersonalization by Subject Area in Low, Average, and High Burnout Categories

Depersonalization	% Low	% Average	% High
High-stakes subject area	55	21	23
Low-stakes subject area	71	16	13

Note. High-stakes subject area public high school teachers (n = 56) teach a subject that is assessed at the state level. Low-stakes subject area public high school teachers (n = 31) teach a subject that is not assessed at the state level.

Personal accomplishment. The percentage of teachers with high burnout based on personal accomplishment were nearly equal for high-stakes subject area public high school teachers (14%) and low-stakes subject area public high school teachers (16%), but the percent of teachers with low burnout based on personal accomplishment varied more when comparing subject area teacher groups. For high-stakes subject area public high school teachers, 59% exhibited low burnout for personal accomplishment compared to 71% of low-stakes subject area public high school teachers. As with depersonalization, compared to the normative distribution, more high-stakes and low-stakes subject area public high school teachers experienced low levels of depersonalization and fewer experienced average and high burnout for depersonalization. Table 5 contains percentages of high-stakes and low-stakes subject area public high school teachers in the low, average, and high burnout categories for personal accomplishment. Based on the categories established by Maslach et al. (1996), a low personal accomplishment subscore

reflects high burnout, and the categories in Table 5 are for low, average, and high burnout, not for low, average, and high personal accomplishment subscores.

Table 5

Personal Accomplishment by Subject Area in Low, Average, and High Burnout Categories

Personal accomplishment[a]	% Low	% Average	% High
High-stakes subject area	59	27	14
Low-stakes subject area	71	13	16

Note. High-stakes subject area public high school teachers (n = 56) teach a subject that is assessed at the state level. Low-stakes subject area public high school teachers (n = 31) teach a subject that is not assessed at the state level.

[a]For personal accomplishment, the percentages are for low, average, and high burnout, not for low, average, and high personal accomplishment subscores.

Chi-square Test

A chi-square test for independence examined the relationship between burnout and subject area. Using the low, average, and high categories contained in Tables 3, 4, and 5, the chi-square test for independence analyzed data for Research Question 1 to determine if a correlation exists between burnout scores and subject area. The nonparametric chi-square test does not require normal population distributions and homogeneity of variance. An alpha level of 0.05 applied.

Emotional exhaustion. For emotional exhaustion, more high-stakes subject area public high school teachers experienced high burnout (50%) compared to low-stakes

subject area public high school teachers (32%). However, based on the chi-square test, high-stakes subject area public high school teachers did not have significantly different subscores for emotional exhaustion than low-stakes subject area public high school teachers, $\chi^2(2, n = 87) = 2.561, p = .278$. The chi-square value is outside the critical region so there is refutation of a correlation and Null Hypothesis 1 is accepted; there is no correlation between high-stakes and low-stakes subject area public high school teachers and emotional exhaustion burnout subscores.

Depersonalization. For depersonalization, more high-stakes subject area public high school teachers experienced high burnout (23%) compared to low-stakes subject area public high school teachers (13%), and fewer high-stakes subject area public high school teachers experienced low burnout (55%) compared to low-stakes subject area public high school teachers (71%). However, based on the chi-square test, high-stakes subject area public high school teachers did not have significantly different subscores for depersonalization than low-stakes subject area public high school teachers, $\chi^2(2, n = 87) = 2.171, p = .338$. The chi-square value is outside the critical region so there is refutation of a correlation and Null Hypothesis 1 is accepted; there is no correlation between high-stakes and low-stakes subject area public high school teachers and depersonalization burnout subscores.

Personal accomplishment. For personal accomplishment, fewer high-stakes subject area public high school teachers experienced low burnout (59%) compared to low-stakes subject area public high school teachers (71%). However, based on the chi-square test, high-stakes subject area public high school teachers did not have significantly

different subscores for personal accomplishment than low-stakes subject area public high school teachers, $\chi^2(2, n = 87) = 2.264, p = .322$. The chi-square value is outside the critical region so there is refutation of a correlation and Null Hypothesis 1 is accepted; there is no correlation between high-stakes and low-stakes subject area public high school teachers and personal accomplishment burnout subscores. Table 6 contains chi-square results correlating subject area with each burnout subscale.

Table 6

Chi-square Burnout Subscale Analysis by Subject Area

Burnout subscale	χ^2	*p*
Emotional exhaustion	2.561	.278
Depersonalization	2.171	.338
Personal accomplishment	2.264	.322

Note. Subject area is high-stakes ($n = 56$) for public high school teachers teaching subjects assessed at the state level and low-stakes ($n = 31$) for public high school teachers teaching subjects not assessed at the state level.

Mean Values of Burnout Subscores

In addition to analyzing quantitative results based on low, average, and high categories for burnout, data analysis included analyzing data based on means and standard deviations of burnout subscores for high-stakes and low-stakes subject area public high school teachers.

Emotional exhaustion. The mean value for emotional exhaustion was higher for high-stakes subject area public high school teachers ($M = 25.05$) than for low-stakes subject area public high school teachers ($M = 21.87$) indicating that high-stakes subject area public high school teachers experienced greater burnout than low-stakes subject area public high school teachers. The standard deviation was greater for high-stakes subject area public high school teachers ($SD = 11.664$) than for low-stakes subject area public high school teachers ($SD = 9.601$) indicating that high-stakes subject area public high school teachers experienced a greater range of emotional exhaustion subscores than low-stakes subject area public high school teachers. Emotional exhaustion subscores of 17 to 26 are in the average range (Maslach et al., 1996) indicating that the mean emotional exhaustion subscore for low-stakes subject area public high school teachers is in the middle of the average range and that the mean emotional exhaustion subscore for high-stakes subject area public high school teachers, while in the average range, is nearing the high burnout range. Table 7 contains means and standard deviations of emotional exhaustion subscores for high-stakes and low-stakes subject area public high school teachers.

Table 7

Emotional Exhaustion Subscore Means by Subject Area

Emotional exhaustion	*M*	*SD*
High-stakes subject area	25.05	11.664
Low-stakes subject area	21.87	9.601

Note. High-stakes subject area public high school teachers (n = 56) teach a subject that is assessed at the state level. Low-stakes subject area public high school teachers (n = 31) teach a subject that is not assessed at the state level.

Depersonalization. The mean value for depersonalization was higher for high-stakes subject area public high school teachers (M = 8.25) than for low-stakes subject area public high school teachers (M = 7.16) indicating that high-stakes subject area public high school teachers experienced greater burnout than low-stakes subject area public high school teachers. The standard deviation for high-stakes subject area public high school teachers (SD = 6.612) was almost identical to low-stakes subject area public high school teachers (SD = 6.788) indicating that both teacher groups experienced a similar range of depersonalization subscores. Depersonalization subscores of 7 to 12 are in the average range (Maslach et al., 1996) indicating that the mean depersonalization subscore for both high-stakes and low-stakes subject area public high school teachers are near the cutoff for the low and average burnout ranges. Table 8 contains means and standard deviations of depersonalization subscores for high-stakes and low-stakes subject area public high school teachers.

Table 8

Depersonalization Subscore Means by Subject Area

Depersonalization	*M*	*SD*
High-stakes subject area	8.25	6.612
Low-stakes subject area	7.16	6.788

Note. High-stakes subject area public high school teachers (n = 56) teach a subject that is assessed at the state level. Low-stakes subject area public high school teachers (n = 31) teach a subject that is not assessed at the state level.

Personal accomplishment. The mean value for personal accomplishment was lower for high-stakes subject area public high school teachers (M = 37.61) than for low-stakes subject area public high school teachers (M = 40.19) indicating that high-stakes subject area public high school teachers experienced greater burnout than low-stakes subject area public high school teachers because personal accomplishment is reduced when someone experiences burnout. Like depersonalization subscores, the standard deviation for personal accomplishment subscores for high-stakes subject area public high school teachers (SD = 6.624) was very close to low-stakes subject area public high school teachers (SD = 6.421) indicating that both teacher groups experienced a similar range of personal accomplishment subscores. Personal accomplishment subscores of 32 to 38, with a low score indicating greater burnout, are in the average range (Maslach et al., 1996) indicating that the mean personal accomplishment subscore for high-stakes subject area public high school teachers is near the cutoff for the low and average burnout ranges and that the mean personal accomplishment subscore for low-stakes subject area public

high school teachers is in the low burnout range. Table 9 contains means and standard deviations of personal accomplishment subscores for high-stakes and low-stakes subject area public high school teachers.

Table 9

Personal Accomplishment Subscore Means by Subject Area

Personal accomplishment[a]	*M*	*SD*
High-stakes subject area	37.61	6.624
Low-stakes subject area	40.19	6.421

Note. High-stakes subject area public high school teachers (n = 56) teach a subject that is assessed at the state level. Low-stakes subject area public high school teachers (n = 31) teach a subject that is not assessed at the state level.

[a]Lower personal accomplishment subscores indicate greater burnout.

T-test

Using mean values for emotional exhaustion, depersonalization, and personal accomplishment, a one-tailed independent-samples *t*-test with equal variances assumed analyzed mean values for each burnout subscale to answer Research Question 1. An alpha level of 0.05 applied.

Emotional exhaustion. High-stakes subject area public high school teachers exhibited higher emotional exhaustion subscores than low-stakes subject area public high school teachers. However, the *t*-test failed to reveal a statistically reliable difference between emotional exhaustion subscores for high-stakes subject area public high school

teachers (M = 25.05, SD = 11.664) and low-stakes subject area public high school teachers (M = 21.87, SD = 9.601), $t(85) = 1.295$, $p = .199$, $\alpha = .05$, $d = .288$. The t statistic did not exceed the critical value for significance in the case of emotional exhaustion and Null Hypothesis 1 is accepted; there is no significant difference between high-stakes and low-stakes subject area public high school teachers and emotional exhaustion burnout subscores.

Depersonalization. High-stakes subject area public high school teachers exhibited higher depersonalization subscores than low-stakes subject area public high school teachers. However, the t-test failed to reveal a statistically reliable difference between depersonalization subscores for high-stakes subject area public high school teachers (M = 8.25, SD = 6.612) and low-stakes subject area public high school teachers (M = 7.16, SD = 6.788), $t(85) = .729$, $p = .468$, $\alpha = .05$, $d = .164$. The t statistic did not exceed the critical value for significance in the case of depersonalization and Null Hypothesis 1 is accepted; there is no significant difference between high-stakes and low-stakes subject area public high school teachers and depersonalization burnout subscores.

Personal accomplishment. High-stakes subject area public high school teachers exhibited lower personal accomplishment subscores than low-stakes subject area public high school teachers. However, the t-test failed to reveal a statistically reliable difference between personal accomplishment subscores for high-stakes subject area public high school teachers (M = 37.61, SD = 6.624) and low-stakes subject area public high school teachers (M = 40.19, SD = 6.421), $t(85) = 1.763$, $p = .081$, $\alpha = .05$, $d = .389$. The t statistic did not exceed the critical value for significance in the case of personal accomplishment and Null Hypothesis 1 is accepted; there is no significant difference between high-stakes

and low-stakes subject area public high school teachers and personal accomplishment burnout subscores. Table 10 contains *t*-test results comparing subject area with each burnout subscale.

Table 10

T-Test Burnout Subscale Analysis by Subject Area

Burnout subscale	*t*	*p*	*d*
Emotional exhaustion	1.295	.199	.288
Depersonalization	.729	.468	.164
Personal accomplishment	1.763	.081	.389

Note. Subject area is high-stakes ($n = 56$) for public high school teachers teaching subjects assessed at the state level and low-stakes ($n = 31$) for public high school teachers teaching subjects not assessed at the state level.

Effect Size

Cohen's *d* measured effect size by calculating the quotient of the mean difference of burnout subscores and the standard deviation for each subscore. The effect size for subject area and depersonalization (.164) was in the small effect range (< .2) indicating that the mean difference was less than 0.2 standard deviations. The effect size for subject area and emotional exhaustion (.288) and for subject area and personal accomplishment (.389) were in the medium effect range ($.2 < d < .8$) indicating that the mean differences were about 0.3 and 0.4 standard deviations respectively. Small and medium effect ranges are based on Gravetter and Wallnau (2005). Cohen's *d* values appear in Table 10.

Summary

Quantitative analysis included the chi-square test for independence and a two-tailed independent-samples *t*-test. Results of these two tests are in Figure 3.

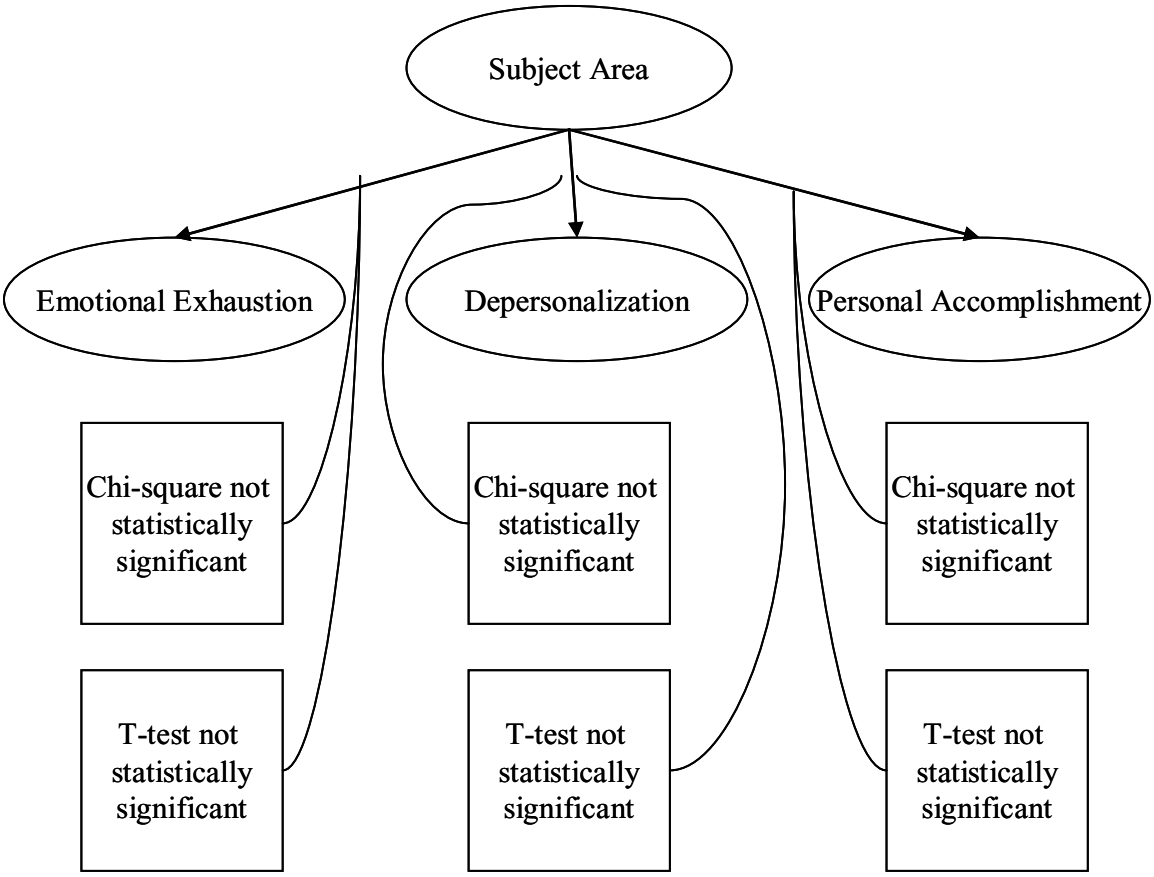

Figure 3. Quantitative statistical results comparing burnout subscores of high-stakes and low-stakes subject area public high school teachers.

Although burnout subscores for high-stakes subject area public high school teachers did not indicate significantly greater burnout than for low-stakes subject area public high school teachers, qualitative results provided insight into perceptions of high-stakes subject area public high school teachers about difficulties of teaching a high-stakes subject area. These qualitative results follow.

Qualitative Results

Qualitative results answered Research Question 2: What perceptions do high-stakes subject area public high school teachers have about difficulties of teaching a high-stakes subject area? After reading the data and looking for relationships, several domains emerged as a result of inductive analysis: (a) Teachers face a workload that is incompatible with the time allotted to complete the workload, (b) teachers feel pressured to get students to pass the high-stakes tests, (c) teachers perceive a need for all stakeholders to bear responsibility for students passing the high-stakes tests, (d) teachers experience a loss of autonomy due to set and test-driven curricula, and (e) teachers lack the resources needed for student success. This qualitative results section includes (a) evidence of quality, (b) a description of the analysis process, (c) background information about the participants' school to provide insight into teacher responses, and (d) details about each of the domains that emerged from the data.

Evidence of Quality

Inside-outside legitimation (Onwuegbuzie & Johnson, 2006) involved comparing the outside researcher's interpretation of qualitative data with an inside participant's view. Member checking, a form of inside-outside legitimation, assessed the validity, or credibility, of qualitative data. As Tisdell (2002) recommended, the researcher invited participants with different backgrounds to participate in member checking. After reviewing anonymous qualitative data, the coding system, and a draft of results, participants provided feedback in the form of written remarks and discussion comments. The researcher made adjustments to the results to include clarifying comments provided by the teachers participating in member checking.

Description of Analysis Process

Inductive analysis of qualitative data occurred in several steps. Rubin and Rubin (2005) warned, "Analysis involves systematic coding and extracting of information from the transcripts rather than looking for confirmation of your initial ideas" (p. 202). With this warning in mind, the researcher bracketed personal ideas and looked at the data from the surveys. The research question and the survey responses both informed the analysis process. Using Hatch (2002) and Rubin and Rubin as guides, the following are the steps used in analyzing the data:

1. Transcribed survey data into a Word document.
2. Read the data, identifying initial domains.
3. Devised codes for each domain.
4. Entered codes within the transcript, placing brackets around phrases.
5. Copied bracketed phrases, placing under domain headings in Word document.
6. Revised and regrouped domains, placing in outline form.
7. Wrote support for each domain.
8. Included data excerpts to support each domain.

The final domain arrangement reflects the participants' responses rather than the researcher's bias which was more present in the initial themes. For instance, workload, time, class size, paperwork, and meetings initially received placement in separate domains. Upon further analysis, these topics fit better under the domain of workload/time incompatibility. Also, the advisory period and the schedule of classes initially received domain codes, but further analysis revealed that few teachers commented on these issues. Therefore, advisories and the schedule provided background information about the school

and examples of workload issues rather than warranting inclusion as domains. Appendix K contains the final domain outline.

Background

As previously defined, the population for this study was public high school teachers in a Maryland county school district who teach in adequate progress schools with less than 10% of students eligible for free or reduced meals. Maryland school districts encompass an entire county, and teachers abide by decisions made at the county level. For example, curricula are uniform for all schools in the district. High schools are on an alternating block schedule with students taking four classes on one day and four different classes the next day; teachers teach six classes and possibly 180 students and have two planning periods over the course of 2 days. In addition to these six classes, each teacher may have a daily advisory period during the school day; during this 30 minute period, teacher duties include providing extra help to students or teaching a grade appropriate lesson. Teachers have an additional 30 minute duty such as hall duty, bus duty, or cafeteria duty every other day. Students in Maryland public high schools take high-stakes tests in English, math, science, and social studies. An understanding of this setting is important to understanding teacher responses.

Workload/Time Incompatibility

Workload and time issues are interrelated and subsumed in this domain of workload/time incompatibility. Teachers requested more time, specifically time for helping students understand a concept, time for planning lessons, and time for providing feedback to students. One teacher noted, “Frequent testing used teaching time and student time.” The number of different courses for which a teacher needs to prepare, or preps,

was a concern for teachers who suggested a maximum of two preps. A teacher requested, "Stop adding more requirements daily." Another teacher wished for administrators to stop making assumptions about teachers such as the assumption that "teachers, because we are naturally caring, won't mind performing any extra task asked of us because it's 'for the students'." Teachers argued the alternating block schedule is unrealistic: "The 8 period schedule is insane. The workload for the teachers and the students is too great." Another scheduling issue that negatively affected teachers was the advisory period. A teacher described these advisories as "time wasting" and another teacher called advisories "a real hassle." Teachers repeatedly cited examples of increasing workload in the forms of larger class sizes, paperwork, and meetings, details of which follow.

Class size. The most commonly mentioned concern about high-stakes testing was the number of students for which teachers are responsible. Most teachers expressing this concern specified a need for smaller classes while some teachers indicated the need for fewer students overall. With large class sizes, teachers pointed out they have difficulty meeting individual student needs through differentiated instruction and have difficulty giving students the individual attention necessary to build strong skills. Teachers have high expectations of themselves and their students, and a teacher stated, "The classroom is too large. I need smaller numbers to interact effectively and teach effectively." One teacher stated class size needs not in terms of what teachers need, but what students need: "Students need smaller numbers of fellow students in the classroom." Aside from interaction during class, the overall number of students is a concern. A teacher responded, "There are so many students . . . It makes it difficult to get to know each of them in depth to see how they learn best. If we knew the students better we could focus instruction

towards these strengths." Teachers have trouble meeting the needs of their students when class size and overall number of students is large.

Paperwork. Paperwork in the form of documentation required for high-stakes testing purposes and grading of student work poses challenges for teachers. High-stakes testing added to the workload of teachers because administrators require documentation for students in danger of not passing a high-stakes course. Also, if a student fails a course or the high-stakes test, teachers need to provide documentation of interventions and parent contacts. This documentation is in addition to grading papers for assessment and feedback purposes. Grading student work, especially when class sizes are large, is an area where teachers would like relief. Comments reflect teachers' concern for their students: "Grading at a highly communicative level requires extra time in and out of the classroom"; "getting feedback to students in a timely manner" is difficult; I have trouble "finding sufficient time due to class sizes to evaluate writing, to develop strong critical reading"; "lower student numbers per class equals less papers—more opportunity to comment and discuss each." A larger number of students exacerbates the paperwork problem.

Meetings. The last area where teachers experienced an increased workload was due to more required meetings. One teacher criticized the need for meetings or trainings in a course she has taught for years. Other teachers called for "eliminating pointless meetings" and "less time taken at meetings and other menial duties." A teacher enumerated her regular meetings and these included department meetings, 9th grade team meetings, 10th grade team meetings, special education meetings, and faculty meetings. Spending time in meetings is overwhelming teachers.

Pressure on Teachers for Students to Pass High-Stakes Tests

In addition to an increased workload, teachers told of the pressure and stress inherent in trying to help students pass high-stakes tests. Some teachers expressed this pressure as a fear and other teachers expressed concern about being blamed.

Fear. Teachers are fearful that they will not prepare their students for the high-stakes test. A teacher stated she needs "more time to teach the concept and often times the time is not available." Another teacher lives with "the fear that I will not prepare my students." Teachers who work with low performing and special needs students feel pressure because all students take the same high-stakes test. One teacher responded, "Keeping a pace to cover all material on the state assessment can be very stressful when dealing with lower level students." Even at a school that is making adequate yearly progress, a teacher noted, "The state, county, and school keep putting pressure on us to do better." Teachers are fearful that they will not meet the expectations of others and the needs of their students.

Blame. Teachers feel pressure because they believe administrators will blame them if their students do not pass the high-stakes test. "I want them [my students] to do well," one teacher contended, "but the responsibility for their success is being misplaced when their teachers are assessed on the students' performance." Because of high-stakes testing a teacher stated, "I often feel that my performance is watched more closely and that adds stress to all levels of my job." Extra pressure is felt by teachers during the year of high-stakes testing. A teacher claimed, "Even though the test in English is designed to assess their cumulative knowledge, the testing year teacher is blamed for failures." One

teacher went so far as to believe his job is in jeopardy. Teachers feel pressure to help students pass high-stakes tests but do not think they should shoulder the blame alone.

Need for All Stakeholders to Take Responsibility

Teachers noted that all stakeholders in the educational system need to meet their responsibilities, and teachers feel that the responsibility is not distributed among all stakeholders. In addition to teachers, these stakeholders include other adults such as parents and administrators and also include the students themselves.

Other adults. A teacher felt "the stress of being held responsible for the action of others" and believes "parents and students should be held more responsible." Teachers wished for parents "to support their students' education" and for teachers "not having to perform duties that parents should be taking care of." Teachers called for administration and the central office to "facilitate learning" and for "more realistic attitudes by administrators and curriculum and test writers (and politicians!)." Teachers need parents and administrators to do their parts.

Students. The stakeholder teachers discussed the most were the students. Students who do not care or who do not have the background knowledge necessary for the high-stakes test provide a challenge to teachers. Teachers expressed concern that some students "do not care what they learn", "couldn't care less about trying their best", and "don't really see the need for testing and therefore disrupt the learning environment." A teacher stated that students need to "work to learn." Students who lack prior knowledge could have difficulty passing the high-stakes test. A teacher commented about "dealing with lack of preparation in previous grades while still having to teach current curriculum effectively." Teachers want to work with students at high performance levels, but

insufficient background for a course provides limitations. An English teacher gave this example: “If kids learned logistical technique in fifth through eighth grade, high school could be a place for stylistic analysis, imitation, and mastery.” Teachers feel they are bearing more than their share of the burden for students to pass high-stakes tests.

Diminished Teacher Autonomy

Teachers are uneasy about the lack of autonomy they have in how and what they teach. County-mandated curricula and test-driven curricula are areas of concern.

Curricular restrictions. Teachers are concerned about the required curricula provided by the county school district. A teacher is offended by “curriculum that is shoved down your throat without any consideration in consultation when I have taught it for nearly 10 years with success.” Another teacher is upset by the “rigidity of the curriculum and the limitations it places on my teaching.” Teachers want more choice and control in their classrooms: “The administration and Board of Ed takes the instruction out of the hands of teachers. Lesson plans are almost scripted. What is good for one student, one class, or even one school, is not always good for everyone.” Teachers expressed interest in having a greater role: “Teachers should help with the implementation of all materials and work that each student is expected to complete.” Teachers think that their training and experience qualifies them to make curricular choices.

Test-driven curricula. Teachers commented on curricula that are test-driven, commonly referred to as teaching to the test. Teachers believe such emphasis on a high-stakes test is detrimental to the students. A teacher stated, “We teach to the test, not to the betterment of understanding of our students. We all support passing the HSA, even if it means sacrificing content in another course. [Other] skills get sacrificed in order to pass

the test." Another teacher described her fear that she is concentrating too much on tested concepts. She described her "fear of teaching toward the test and overemphasizing just the information necessary for the test" and told of the "great push for deeper understanding but the constant tension of a fun-packed pacing guide and the expectations to perform well on the test within the county." Teachers disputed any claim that administrators do not expect teachers to teach to the test: "Even though you're told 'teach the material' you really feel the pressure to teach to the test, especially since you often feel pressure from the administration if your scores aren't good." Teaching to a test removes exciting choices for teachers and students. A science teacher saw a choice: "Being able to teach what I love versus teaching a test. The kids have lost a love for science. They just simply see it as a means to an end, the test." Lack of choice can deflate both teachers and students.

Lack of Resources

Teachers responded that they do not receive resources or that they need better access to county and school resources necessary to do their jobs: "The state, county, and school keep putting pressure on us to do better but do not give us the resources needed." A teacher was frustrated because technology is mandated in her curriculum, but the mandated technology is not always available or working. Another teacher requested "more modern technology infusion into the classroom." Money for materials of instruction is a need, but students do not necessarily suffer. The teachers suffer by spending their own money, and a teacher wishes he did not have to do this to meet his students' needs. Teachers want the school system to provide the resources to meet teachers' job requirements.

Summary

Quantitative and qualitative data in this concurrent mixed methods study received separate analyses. Quantitative analysis addressed Research Question 1. Although mean burnout subscores showed greater burnout (higher subscores for emotional exhaustion and depersonalization and lower subscores for personal accomplishment) for high-stakes subject area public high school teachers than for low-stakes subject area public high school teachers, chi-square and *t*-test statistical analyses revealed no significant differences. Therefore, the data failed to support Alternative Hypothesis 1 that there is a significant difference between high-stakes and low-stakes subject area public high school teachers and burnout scores. Alternative Hypothesis 1 is rejected, and Null Hypothesis 1 is accepted.

Qualitative analysis of data for Research Question 2 revealed teacher perceptions of difficulties associated with teaching a high-stakes subject area. Teachers expressed concerns that their workload is too great for the time they have to complete their tasks, that they feel pressure related to students passing high-stakes tests, that stakeholders other than teachers need to take responsibility, that they have limited professional autonomy, and that they lack necessary resources. Chapter 5, conclusions and recommendations, contains interpretations and implications of these results.

CHAPTER 5:

CONCLUSIONS AND RECOMMENDATIONS

Overview

This study on high-stakes testing and teacher burnout is relevant in light of recent educational legislation in the United States. From the Elementary and Secondary School Act of 1965 to the report from the National Commission on Excellence in Education in 1983 to the recent NCLB, the U.S. federal government called for accountability from the educational system. Tests are a way to document accountability and measure progress of schools, and often tests have high-stakes purposes such as determining whether or not students graduate. High-stakes testing affects not only students but also impacts teacher stress and morale (Center on Education Policy, 2006), and this study focused on public high school teachers and the impact high-stakes testing has on them. An ever-increasing workload can lead to teacher burnout (Hanson, 2007; Naylor, 2001; Vandenberghe & Huberman, 1999), and when teacher expectations increase, teachers often lack sufficient time, a key resource, to fulfill those expectations (Hord, 2004; Mohr et al., 2004). Burnout can result in teacher attrition contributing to the teacher shortage (Ingersoll & Smith, 2003) which affects school districts. Burned-out teachers who do remain in the classroom can exhibit cognitive failures such as deficits in attention and inhibition (Van der Linden et al., 2005). With this history as a background, this concurrent mixed methods study investigated the problem of teacher burnout.

Teacher burnout in this study integrated two models in the theoretical framework. First, the multidimensional model of burnout (Maslach, 1982) maintains burnout consists

of three dimensions: emotional exhaustion, depersonalization, and decreased personal accomplishment. Exhaustion results from physical or emotional demands, depersonalization encompasses negative attitudes, and decreased personal accomplishment entails reduced productivity. Second, the job demands-resources model of burnout (Demerouti et al., 2001) identified situations that foster and discourage burnout. High job demands predict exhaustion, and low job resources predict disengagement.

The study addressed two research questions: Research Question 1, a quantitative question, asked, "Are burnout scores of high-stakes subject area public high school teachers greater than burnout scores of low-stakes subject area public high school teachers?"; Research Question 2, a qualitative question, asked, "What perceptions do high-stakes subject area public high school teachers have about difficulties of teaching a high-stakes subject area?"

The predominant quantitative method used a static group comparison preexperimental design and determined the effect of the independent variable, high-stakes or low-stakes subject area, on the dependent variable, teacher burnout. A high-stakes subject area is assessed at the state level and a low-stakes subject area is not assessed at the state level. For Maryland, high-stakes subject areas are English, math, science, and social studies (Maryland State Department of Education, n.d.). Teacher burnout, the dependent variable, is a response consisting of emotional exhaustion, depersonalization, and reduced personal accomplishment (Maslach, 1982). The MBI—ES (Maslach et al., 1996) measured teacher burnout quantitatively. The embedded qualitative portion of the study augmented the quantitative data and ascertained public

high school teachers' perceptions about difficulties associated with teaching a high-stakes subject area. Quantitative data analysis employed the chi-square test for independence and a two-tailed independent-samples *t*-test, and qualitative data analysis employed inductive analysis.

The research population comprised public high school teachers in a Maryland county school district who teach in adequate progress schools with less than 10% of students eligible for free or reduced meals. Teachers at one of three high schools in the population participated in the study. Of 111 teachers at the high school, 87 teachers completed all parts of the survey packet for a 78% response rate.

This study is significant for two reasons: This study filled a gap in the literature, and this study has the potential to affect social change. As recommended by researchers, this study evaluated burnout when a new strategy, high-stakes testing, was put in place in an effort to prevent work overload for teachers (Evers et al., 2002), focused on workload and stress factors to lessen results of burnout (Naylor, 2001), studied high-stakes accountability policies (Clarke et at., 2003; Gunzenhauser, 2003; Stecher & Barron, 2001), examined different types of teachers (Hanson, 2007; Miller et al. 1999), and contained a qualitative component (Abel & Sewell, 2001).

Mean burnout subscores showed greater burnout for high-stakes subject area public high school teachers than for low-stakes subject area public high school teachers, although not significantly so. Teacher perceptions of difficulties associated with teaching a high-stakes subject area included workload and time issues, pressure about students passing high-stakes tests, concern that all stakeholders bear responsibility, limited professional autonomy, and lack of resources.

Interpretation of Findings

Findings in this study corroborated most findings in the literature. Because high-stakes testing is a recent development, little quantitative research exists about the relationship between teacher burnout and high-stakes versus low-stakes subject area, so interpretation of emotional exhaustion, depersonalization, and personal accomplishment includes burnout research beyond the relationship to subject area. Qualitative research about teacher burnout, even though not specifically about high-stakes testing, is extensive, and current findings mirror previous findings. Each qualitative domain from this study receives separate interpretation. As noted throughout this interpretation section, this study supported the job demands-resources model of burnout (Demerouti et al., 2001), and qualitative findings helped explain high levels of emotional exhaustion for high-stakes subject area public high school teachers in this study. Relationships between this study and the literature follow for quantitative and qualitative findings, and the findings are related to the theoretical framework.

Quantitative Findings

Quantitative findings addressed Research Question 1: Are burnout scores of high-stakes subject area public high school teachers greater than burnout scores of low-stakes subject area public high school teachers? Data collected using the MBI—ES (Maslach et al., 1996) with 22 Likert scale statements underwent analyses (a) based on low, average, and high burnout categories with statistical significance determined with the chi-square test, and (b) based on mean burnout subscores with statistical significance determined with the *t*-test. Results of both the chi-square test and the *t*-test revealed no significant difference between burnout subscores for high-stakes and low-stakes public high school

teachers. Compared to a normative sample, teachers in this study, both high-stakes and low-stakes, exhibited less burnout than the normative sample (Maslach et al., 1996) with the exception of high-stakes subject area public high school teachers who exhibited greater burnout than the normative sample for the dimension of emotional exhaustion. Lower burnout levels for teachers in this study might be explained by the school making adequate yearly progress and by the high socioeconomic status of the students. Another possible explanation is a high level of caring by the teachers in this study because Teven (2007) determined that emotional exhaustion, depersonalization, and decreased personal accomplishment decreased as teacher caring increased. The high level of burnout for the emotional exhaustion dimension for high-stakes subject area public high school teachers is a concern. The quantitative results in chapter 4 contain detailed information about quantitative outcomes.

Like this study on public high school teachers, Hutter (2004) studied elementary teachers and found no significant difference between high-stakes and low-stakes subject area elementary teachers. Hutter suggested that schools that chose to participate might have been schools with lower stress levels. Hanson (2007) found no significant difference between burnout subscores for depersonalization and personal accomplishment but found that high-stakes subject area teachers had significantly higher emotional exhaustion subscores compared to low-stakes subject area teachers in urban elementary schools. Because Bakker and Schaufeli (2000) found that high school teacher burnout contagion is possible and because Bakker, Le Blanc, et al. (2005) reported that perceived burnout complaints of colleagues can impact other colleagues, concern for even small numbers of

burned-out teachers is warranted. Each burnout dimension receives separate interpretation.

Emotional exhaustion. Emotional exhaustion subscale items related to feeling drained, fatigued, strained, frustrated, and stressed. A greater percentage of high-stakes subject area public high school teachers (50%) exhibited high levels of emotional exhaustion compared to low-stakes subject area public high school teachers (32%). However, the chi-square test revealed no significant relationship between emotional exhaustion and subject area. Likewise, mean values for emotional exhaustion subscores for high-stakes subject area public high school teachers ($M = 25.05$) were greater than for low-stakes subject area public high school teachers ($M = 21.87$), but the t-test revealed no significant difference.

The tenet of the job demands-resources model of burnout (Demerouti et al., 2001), the theoretical framework for this study, is that high job demands are a predictor for emotional exhaustion and low job resources are a predictor for disengagement, and Bakker, Demerouti, et al. (2005) confirmed this relationship. The high percentage of teachers reporting high burnout due to emotional exhaustion corroborates recent findings. Hanson (2007) found that high-stakes subject area teachers had significantly higher emotional exhaustion subscores than low-stakes subject area teachers in urban elementary schools, indicating that high-stakes subject area teachers experienced increased emotional exhaustion. Hanson determined that increased workload contributed to increased emotional exhaustion for high-stakes subject area teachers compared to low-stakes subject area teachers in urban elementary schools. Emotional exhaustion was significant in other recent studies: Oginska-Bulik (2006) found that work overload is a predictor of

emotional exhaustion, Kokkinos (2007) reported that time constraints and student misbehavior are predictors for emotional exhaustion, and Halbesleben (2006) concluded that work-related social support is related to exhaustion. Workload demands, time constraints, and concerns about students fulfilling their responsibilities as stakeholders receive elaboration as domains in the qualitative findings which help explain why emotional exhaustion is so high for high-stakes subject area public high school teachers in this study.

Depersonalization. Depersonalization subscale items related to treating students impersonally, becoming callous and hardened emotionally, and not caring. A greater percentage of high-stakes subject area public high school teachers (23%) exhibited high levels of depersonalization compared to low-stakes subject area public high school teachers (13%). However, the chi-square test revealed no significant relationship between depersonalization and subject area. Likewise, mean values for depersonalization subscores for high-stakes subject area public high school teachers ($M = 8.25$) were greater than for low-stakes subject area public high school teachers ($M = 7.16$), but the *t*-test revealed no significant difference.

Numerous studies discovered factors related to depersonalization. Malanowski and Wood (1984) reported that teachers with more students had higher depersonalization subscores, and Kokkinos (2007) found that student misbehavior predicted depersonalization. Oginska-Bulik (2006) concluded that lack of rewards and physical burdens were predictors of depersonalization, and Halbesleben (2006) found that non-work social support is related to depersonalization. Taris et al. (2004) described the psychological withdrawal inherent in depersonalization as a passive coping strategy, and

Kokkinos (2007) supported Taris' view by describing depersonalization as defensive withdrawal that occurs when emotional resources are insufficient. Salanova et al. (2005) distinguished between depersonalization, a mental distancing from people, and cynicism, a mental distancing from work. Bakker, Demerouti, et al. (2005) discovered that lack of job resources predicted cynicism. Class size, students as stakeholders, and lack of resources receive attention in interpretation of qualitative results, and coping is an issue discussed further in the implications for social change section.

Personal accomplishment. Personal accomplishment subscale items related to dealing with problems effectively, positively influencing others, feeling energetic, and accomplishing things professionally. Percentages of high-stakes subject area public high school teachers (14%) exhibiting high burnout levels based on personal accomplishment were similar to low-stakes subject area public high school teachers (16%). Greater differences existed for low burnout because a lower percentage of high-stakes subject area public high school teachers (59%) exhibited low levels of burnout based on personal accomplishment compared to low-stakes subject area public high school teachers (71%). The chi-square test revealed no significant relationship between personal accomplishment and subject area. Mean values for personal accomplishment subscores for high-stakes subject area public high school teachers ($M = 37.61$) were less than low-stakes subject area public high school teachers ($M = 40.19$), indicating greater burnout for high-stakes subject area teachers, but the *t*-test revealed no significant difference.

Halbesleben (2006) found that non-work social support is related to personal accomplishment, and Bakker, Demerouti, et al. (2005) discovered that lack of job resources predicted professional efficacy. Evers et al. (2005) found that a positive self-

orientation is significantly related to personal accomplishment. Reduced personal accomplishment played a less prominent role in some research (Bakker et al., 2004) which could explain why fewer burnout researchers reported significant findings related to personal accomplishment. Of the personal accomplishment relationships from previous studies, lack of resources is a domain that receives further description in the interpretation of qualitative findings.

From a practical standpoint, even though burnout subscores were not significantly different for high-stakes and low-stakes public high school teachers, administrators need to address the high percentage of high-stakes subject area public high school teachers exhibiting a high level of burnout (50%). Implications for social change and recommendations for action sections contain detailed practical applications. More research is needed to better understand the quantitative relationship between high-stakes testing and teacher burnout, and the recommendations for further research section contains suggested future research questions. The next section on qualitative findings includes factors that teachers in this study identified as difficulties associated with teaching a high-stakes subject area.

Qualitative Findings

Qualitative findings addressed Research Question 2: What perceptions do high-stakes subject area public high school teachers have about difficulties of teaching a high-stakes subject area? Literature exists for all five qualitative domains: workload/time incompatibility, pressure on teachers for students to pass high-stakes tests, need for all stakeholders to take responsibility, diminished teacher autonomy, and lack of resources. The qualitative results section in chapter 4 contains detailed information about qualitative

outcomes. This section interprets qualitative results of this study in light of existing literature.

Workload and time issues. Teachers in this study expressed concern about class size, paperwork, and meetings as specific examples of workload/time incompatibility, an issue corroborating previous research. Even before NCLB, Leithwood and Menzies (1998) found that teacher workload was growing without an equivalent increase in paid work time. Time constraints consistently predicted burnout (Abel & Sewell, 2001; Borg & Riding, 1991; Kokkinos, 2007), and workload correlated with burnout in previous studies (Boyle et al., 1995; Evers et al., 2002; Garman et al., 2002; Oginska-Bulik, 2006). Adams et al. (1999) recommended reducing paperwork and meetings, two issues mentioned by teachers in this study. As teacher expectations and workload increase, teachers lose a key resource, time (Hord, 2004; Mohr et al., 2004). Van Veen and Sleegers (2006) found that teachers with a restricted school organizational orientation who focused on content and their own teaching cited lack of time and increased workload as reasons why they were unable to focus on the wider school and matters outside their classrooms, an extended school organizational orientation. The National Education Association (n.d.) identified reduced class size as a way to attract and keep quality teachers. Specifically related to high-stakes testing, Smylie (1999) considered the development of standards and assessments policies and found that these policies increased the potential for burnout, and Schroeder (2006) showed that an increase in teacher stress resulted from high-stakes testing. Workload, one of the areas of mismatch in the job-person fit model, can lead to burnout (Maslach & Leiter, 1997; Maslach et al., 2001). Workload related to the theoretical framework for this study because workload is

another word for job demands, one-half of the job demands-resources model of burnout (Demerouti et al., 2001) whereby job demands predict exhaustion.

Pressure on teachers. Teachers in this study described the pressure on teachers resulting from fear that students will not pass high-stakes tests and from worry that administrators will blame teachers for student failures. Placing too much emphasis on test scores is an issue found throughout the literature. Pressure to improve test scores caused teacher stress (Center on Education Policy, 2006). Koretz (2002a) cautioned that when a test has a broad scope, one teacher controls a small share of test score variance. Clarke et al. (2003) warned that unless school resources and student demographics are equated, administrators should not use test scores to compare teachers. Emphasis on test scores can lead to curriculum narrowing where teachers spend time on tested subjects and concepts at the expense of other curricula (Clarke et al., 2003; Gunzenhauser, 2003; Hamilton & Stecher, 2004; Johnson, 2002; Stecher & Barron, 2001).

Existential issues discussed in the literature relate to teachers' fears that their students might not pass a high-stakes test. Pines (2002) concluded that burnout, rather than the result of stressful work conditions, results from feeling that one is not making a difference. If teachers have students who fail a high-stakes test, the teachers might feel they did not make a difference for these children, and this could contribute to burnout. Some researchers found existential factors such as professional satisfaction related to burnout (Davis Wilson, 2000; Friedman, 2000; Friedman & Farber, 1992; Pearson & Moomaw, 2005), although teachers did not mention professional satisfaction issues in this study. Beyond professional satisfaction, Borg and Riding (1991) discussed professional recognition needs, Maslach and Leiter (1997) identified lack of reward as an

area of mismatch in the job-person fit model, and Oginska-Bulik (2006) found that lack of rewards was the primary cause of stress although only one teacher in this study mentioned lack of recognition as a difficulty associated with teaching a high-stakes subject area. The qualitative survey questions addressed difficulties and workload, so the phrasing of the questions might have precluded existential comments about recognition and professional satisfaction.

Stakeholder responsibility. Teachers in this study believed stakeholders in addition to teachers, such as other adults and the students themselves, need to share responsibility for high-stakes testing. Lack of fairness, one of the areas of mismatch in the job-person fit model, can lead to burnout (Maslach & Leiter, 1997; Maslach et al., 2001), and teachers might view disparate stakeholder accountability as unfair. Cases of disparate accountability among the stakeholders are found in the literature even though Linn (2003) believed that for accountability to have the expected positive effects without unintended negative effects, stakeholders need to share responsibility. Linn found that shared accountability is rarely attained and that most accountability systems and recent state and federal laws center on teachers and students. The National Commission on Excellence in Education (1983) noted that children must hold a deep respect for learning. However, Mulvenson et al. (2005) found that of all the stakeholders involved with high-stakes testing, teachers reported the most anxiety. The literature provided details about two key stakeholders, students and administration, details of which follow.

Having large numbers of students and having students who do not care are issues echoed in previous studies. Byrne (1998) identified uncaring students as a chief cause of burnout and found that for some students academic achievement had no importance.

Malanowski and Wood (1984) reported that depersonalization increased as student numbers increased. The effort-reward imbalance model (Siegrist, 1996) states that an imbalance between high effort and low reward is stressful. Taris et al. (2004) applied this model and helped explain why non-caring students can lead to teacher burnout: The inequity between investment and benefits could lead to burnout if teachers invest heavily in helping their students prepare for high-states tests and then the students do not pass. This inequity issue is reminiscent of the existential (Pines, 2002) understanding of burnout.

Teachers' perception that administration is not bearing its share of the responsibility as a stakeholder with high-stakes testing is supported by the literature. Byrne (1998) found that a cause of teacher burnout was an administration that denigrated teachers and failed to alleviate teacher workload. Friedman (2003) concluded that professionals feel less burdened if they can rely on the organization for professional support. Hargreaves (2003) found that policymakers often hold down rather than support teachers. Olson (2002) and Kincheloe (2002) cautioned against supervisors managing or controlling teachers rather than involving them.

Teacher autonomy. Teachers in this study identified curricular restrictions and test-driven curricula as instances of diminished teacher autonomy. Lack of control, a way of stating diminished teacher autonomy, is one of the areas of mismatch in the job-person fit model. (Maslach & Leiter, 1997; Maslach et al., 2001). Researchers studying stress and burnout found that teacher autonomy correlated with burnout. Moomaw (2005) reported that stress decreased as perceived empowerment increased; Abel and Sewell (2001) found that adverse working conditions such as lack of autonomy contributed to

stress and burnout; Smylie (1999) determined that constraints on individual autonomy and control contributed to stress. Van Veen et al. (2001) pointed out a contradiction that administration might expect teachers to participate in school decision-making yet also to follow mandated curricula, something that reduces teacher autonomy.

Resources. Teachers in this study identified lack of resources as a difficulty associated with teaching a high-stakes subject area, and lack of resources is applicable to the job demands-resources model of burnout (Demerouti et al., 2001). According to this model, low job resources are a predictor for disengagement, and the depersonalization dimension of burnout is a way of disengaging or withdrawing from people. Bakker, Demerouti, et al. (2005) discovered that lack of job resources evokes a withdrawal process by undermining employee motivation and learning and found that lack of job resources predicted cynicism and professional efficacy. According to the conservation of resources model of burnout (Hobfoll, 1989), people strive to keep and build resources and find the loss of resources threatening. Stress is produced by loss of resources or the lack of gain of resources (Hobfoll, 2001). Finally, lack of resources might be viewed by teachers as lack of fairness, one of the areas of mismatch that can lead to burnout in the job-person fit model. (Maslach & Leiter, 1997; Maslach et al., 2001).

Relationship to Theoretical Framework

The qualitative portion of this study augmented the quantitative portion and helped interpret findings with regards to the job demands-resources model of burnout (Demerouti et al, 2001). According to this model, high job demands predict exhaustion and low job resources predict disengagement. Relating the job demands-resources model to the multidimensional model of burnout (Maslach, 1982), job demands predict the

emotional exhaustion dimension and lack of job resources predict the cynicism (or depersonalization) dimension and the professional efficacy (or professional accomplishment) dimension (Bakker et al., 2005). Also, job demands could have a larger impact than job resources (Hakanen et al., 2006). Because high-stakes public high school teachers in this study exhibited high levels of burnout due to emotional exhaustion, but not due to depersonalization or reduced personal accomplishment, decreasing job demands could be more effective than increasing job resources as a way to decrease burnout of high-stakes subject area public high school teachers.

Of the five qualitative domains identifying difficulties of teaching a high-stakes subject area, two relate to job demands: workload/time incompatibility and the need for all stakeholders to take responsibility. Therefore, reducing teacher workload and involving stakeholders in addition to teachers could be two effective ways to reduce emotional exhaustion and teacher burnout. One practical way of reducing teacher workload and including other stakeholders is for school and district administrators to involve parents and community volunteers to relieve teachers of duties such as the 30 minute duty every other day. Active recruitment could lead to parents and other adult community volunteers, rather than teachers, serving hall duty, bus duty, or cafeteria duty in public high schools. Such action reduces job demands on teachers and could be effective in light of the theoretical framework.

Interpretation of quantitative and qualitative findings leads to implications for social change, discussed next.

Implications for Social Change

During the past 30 years of burnout research, a change occurred: Initially, researchers defined stress and looked for relationships between stress and various factors, and within the last decade, Leiter and Maslach (2001) emphasized that burnout is a sign of dysfunction within an organization and not an individual issue. With this more recent understanding of burnout, the practical implications of burnout are ripe for social change. This implications for social change section connects the outcomes from chapter 4 with the significance of the study from chapter 1.

Because burnout reflects not on individuals so much as on organizations, the results of this study are of interest to administrators and boards of education. Although burnout scores for high-stakes and low-stakes subject area teachers were not significantly different, the educational organization can benefit from the quantitative portion of this study by considering the high percentage (50%) of high-stakes subject area public high school teachers with a high level of emotional exhaustion and the wide range (*SD* = 11.664) of emotional exhaustion burnout subscores for high-stakes subject area public high school teachers. This large standard deviation indicated that some teachers have emotional exhaustion subscores well below the mean, but other teachers have emotional exhaustion subscores well above the mean and in the high burnout category (emotional exhaustion subscore ≥ 27, Maslach et al., 1996). If principals and other supervisors are aware that high-stakes subject area public high school teachers are at risk of burnout due to emotional exhaustion, school systems could make system-wide adjustments to lessen emotional exhaustion of teachers.

The educational organization can also benefit from the qualitative portion of this study by considering implications of teacher perceptions of difficulties of teaching a high-stakes subject area. Because the qualitative findings corroborated previous teacher burnout research, administrators and boards of education could consider that findings might extend beyond high-stakes subject area public high school teachers. If educators address difficulties and workload issues, teachers might stay in the profession to the benefit of students, and school systems could experience cost savings through decreased recruiting and new teacher training costs.

As previously identified when relating findings to the theoretical framework, reducing job demands could be an effective way to reduce teacher burnout. However, reducing job demands is not the only way to address the issue of teacher burnout and achieve social change. Considering quantitative and qualitative findings in light of existing scholarly literature, social change is possible if educators address two issues: (a) Teachers might employ coping strategies to the detriment of students, and (b) current practices might inhibit the change necessary to meet the demands of NCLB.

Coping

Because high-stakes subject area public high school teachers experienced greater burnout than low-stakes subject area public high school teachers, but not significantly so, this raises the question if high-stakes subject area public high school teachers are keeping burnout under control by coping. Golembiewski et al. (1983) suggested that coping is a major element of burnout and that different individuals are able to comfortably cope with different numbers and severities of stressors. The strain coping mode involves extra effort at the expense of behavioral and physiological costs, and the passive coping mode

involves reducing performance goals (Hockey, 1997). Carmona et al. (2006) found that teachers who ignored or rode the situation out, a palliative coping style, had higher levels of burnout than teachers who employed problem-solving behavior, a direct coping style. Hobfoll (2001) discussed accommodative coping by downgrading goals, and Farber (2000) described the worn-out teacher who works less hard, a coping mechanism, in order to avoid burnout. Naylor and Malcomson (2001) reported that teachers made adjustments based on workload coping requirements rather than pedagogical factors. Coping is a concern if teachers reduce their workload or goals to cope at the expense of instruction, and educators need to consider that teachers, particularly high-stakes subject area public high school teachers with an increased workload, might cope in negative ways.

Changing

Throughout the literature are instances where desired change is elusive (Gerla et al., 2006; Glickman & Alridge, 2001; Hargreaves, 2003; Smylie, 1999). Three themes emerged explaining why change does not occur. First, change involves additional work without additional time (Evers et al., 2002; Kutey, 2004; Naylor, 2001; Nolan & Meister, 2000; Roettger, 2004; Wexler, 2002). Second, teachers might need to change their identity or how they view themselves as teachers (Ancess, 2001; Beijaard et al., 2004; Geijsel & Meijers, 2005; Glickman & Alridge, 2001; Van Veen & Sleegers, 2006). Third, participants are often excluded from the change process and do not feel empowered (Eisner, 2000; Goodson et al., 2006; Kincheloe, 2002; Leiter & Maslach, 2001; Little, 2001; Olson, 2002). In this study the first and third themes were prevalent: Teachers noted a workload and time imbalance and felt excluded from the change process by

diminished teacher autonomy. If educators address the workload/time incompatibility issue and include teachers in the change process by granting teacher autonomy when possible, changes required to increase test scores and to meet the challenges presented by NCLB might be more forthcoming.

Recommendations for Action

This study is of interest to burnout researchers and to educators at the school, district, state, and federal levels who need to respond to high levels of emotional exhaustion in high-stakes subject area public high school teachers. NCLB charged high-stakes subject area teachers with helping students pass high-stakes tests by which adequate yearly progress is measured. High-stakes subject area teachers need to function at optimal cognitive levels, yet burned-out teachers remain in the classroom sometimes exhibiting cognitive failures such as deficits in attention, inhibition, and memory (Schmidt et al., 2007; Van der Linden et al., 2005). Because burnout can impede job performance, the achievement gap between subgroups of students might widen rather than close as intended by NCLB (Hanson, 2007). In an effort to keep high-stakes subject area public high school teachers in the classroom and free of burnout, recommendations for action are for local and state educators and for federal legislators. First, local and state educators need to (a) consider the impact when teachers receive additional duties or responsibilities and (b) provide professional development opportunities for teachers regarding positive coping strategies and for administrators regarding the change process. Second, federal legislators revising NCLB need to consider the impact of teacher burnout on instruction and resultant academic achievement and to write legislation that will prevent teachers from bearing an unfair share of NCLB mandates.

Local and State Educators

School, district, and state educators need to consider the impact on teachers when allocating additional duties or responsibilities. Such consideration would help educators set priorities rather than continually add to the workload of teachers. For instance, Maryland offers an academic validation project option (Maryland State Department of Education, 2007a) for students who are unable to demonstrate their knowledge on the four high-stakes tests required for graduation. Each student project requires a school-based project monitor. Projects are beginning for the first time during the 2008-2009 school year, so the impact on teacher workload is yet to be seen. If a teacher receives the additional responsibility of project monitor, from what other responsibility will the teacher see relief? Teachers feel like new requirements are added daily and administrators might not realize how even small additions add up. Administrators could simultaneously let teachers know what is added and what is removed from their list of responsibilities. One possibility is for administrators to give comp time during some teacher work days.

Local and state educators also need to provide professional development for teachers and administrators. Brock and Grady (2000) described teacher burnout as the "antithesis of professional growth" (p. 86). According to current research, effective professional growth and development is continuous (Coleman & Briggs, 2002), is collaborative (Cochran-Smith & Lytle, 2001; Glazer & Hannafin, 2006), is job-embedded (Katzenmeyer & Moller, 2001), acknowledges individual needs and engages teachers (Hawley & Rollie, 2002), includes informal professional development opportunities (Cole & Knowles, 2000), and is associated with uncertainty and with posing problems and dilemmas (Cochran-Smith & Lytle, 2001). Within this current understanding of

ongoing and collaborative professional development, teachers need to learn positive coping strategies to benefit themselves and their students not only because failure to employ positive coping strategies could lead to teacher burnout but also because negative coping strategies could prevent teacher burnout but to the detriment of the students. Administrators and central office personal need continuing professional development to learn how to engage teachers in the change process. Educators in supervisory roles might be unaware of research pointing to how additional work, identity change, and exclusion from the change process can inhibit the very change they seek from their teachers. Effective professional development opportunities for both teachers and supervisors could lessen teacher burnout and promote educational change.

Federal Legislators

Decision makers responsible for legislation such as NCLB need to consider the impact of teacher burnout on instruction and resultant academic achievement. As NCLB is reviewed and amended, legislators need to consider if state, district, or school administrators might pass requirements on to the teachers. All educational stakeholders need to share the responsibilities of high-stakes testing, and a revised NCLB could prevent an unfair share of the responsibility from falling on one educational stakeholder, the teacher. One possibility to achieve this goal of shared responsibility is for legislation to state specifically that certain requirements must be fulfilled by administrators, central office personnel, or someone other than teachers. For instance, if NCLB specifically stated that the number of students for whom teachers are responsible may not increase in order to meet NCLB mandates, Maryland teachers could not receive the additional responsibility of being a school-based project monitor. The positive impact is that

students might complete validation projects within a validation project class. Such a class would be part of teachers' regular class schedules so would not increase the number of students for whom a teacher is responsible, and a class environment would provide regular support to the students.

To achieve this prescribed action, the researcher will present results to the participating school and district and at professional conferences.

Recommendations for Further Study

The results of this study lead to recommendations for further study of high-stakes testing and teacher burnout. Because the relationship between high-stakes testing and teacher burnout is a recent research topic, studying any teachers affected by NCLB, whether elementary, middle, or high school teachers, are all worthwhile options.

First, more research is needed on the topic of this current study comparing burnout scores for high-stakes versus low-stakes subject area teachers. Second, a study needs to consider the year of teaching a high-stakes subject area, whether the year before the high-stakes test, the year of the high-stakes test, or the year after the high-stakes test. A third topic is how the school label assigned by NCLB affects teacher burnout scores. In this study the school was making adequate yearly progress; a study needs to compare teacher burnout at schools making adequate yearly progress and at schools not making adequate yearly progress. Fourth, a study needs to determine how the time of year affects burnout in teachers. Although this study showed no significant differences between burnout scores for high-stakes and low-stakes subject area public high school teachers within the first month of the school year, results could be different if teachers completed the same questionnaires at the end of the school year. Results at the end of the school

year are significant for retention because the end of the school year is when teachers decide whether they will return or resign. Fifth, this study considered only teachers at a school with a high socioeconomic status; studies need to compare teacher burnout for schools with different socioeconomic levels. Sixth, comparing teacher burnout for beginning teachers and experienced teachers in high-stakes subject areas is warranted. Just as mentoring programs exist for beginning teachers, maybe experienced teachers require interventions specific for them. Seventh, because this and other studies suggested teacher caring as a possible explanation for low teacher burnout, a study needs to address this possibility.

Studies that address these quantitative recommendations should also include a qualitative component to augment information provided by the quantitative comparisons. Finally a qualitative or mixed-methods study should determine the high-stakes testing policies in place at schools with low levels of teacher burnout to provide practical recommendations for schools with high levels of teacher burnout. The following are possible future research questions:

1. Are burnout scores of high-stakes subject area teachers greater than burnout scores of low-stakes subject area teachers?

2. Is there a significant difference between burnout scores for teachers who teach in high-stakes subject areas based on whether they teach the year before the state assessment, the year of the state assessment, or the year after the state assessment?

3. How do the levels of burnout reported by teachers compare for schools making adequate yearly progress versus schools not making adequate yearly progress?

4. Are burnout scores of teachers greater near the end of the school year than near the beginning of the school year?

5. Are teacher burnout scores different for teachers in a school with a high socioeconomic status compared to a school with a low socioeconomic status?

6. How do burnout scores compare for beginning teachers versus experienced teachers in high-stakes subject areas?

7. Does a correlation exist between teacher caring and teacher burnout?

8. What high-stakes testing policies exist at schools with low levels of teacher burnout?

Reflection on Researcher's Experience

With any study, particularly qualitative and mixed methods studies, the researcher needs to be aware of potential bias and preconceived ideas. The research questions, although justified by previous studies, hint at possible preconceived ideas. Research Question 1 suggested that high-stakes subject area public high school teachers might experience greater burnout than low-stakes subject area public high school teachers, and Research Question 2 suggested that teachers find some aspects of high-stakes testing difficult. Statistical analysis of Research Question 1 helped preclude any preconceived ideas from impacting results, and the use of established qualitative analysis procedures helped eliminate bias from qualitative results. Also, the awareness of potential bias and preconceived ideas helped the researcher bracket these ideas throughout the data collection and analysis processes. The survey nature of the study, whereby participants wrote responses rather than interviewing, helped eliminate the possibility that the

researcher affected participant responses. All these factors contributed to diminishing the effect of the researcher in this study.

As a result of this research study, the thoughts of the researcher changed. For the population in this study, public high school teachers in a Maryland county school district who teach in adequate progress schools with less than 10% of students eligible for free or reduced meals, a general program aimed at reducing teacher burnout is not warranted. What might be more effective is addressing high emotional exhaustion in high-stakes subject area public high school teachers since half of these teachers experienced high levels of burnout due to emotional exhaustion. The qualitative results provide domains that high-stakes subject area public high school teachers find difficult about teaching a high-stakes subject area, so addressing these domains, particularly workload/time incompatibility and need for all stakeholders to take responsibility, the domains related to job demands, might reduce emotional exhaustion. Also, as identified as implications for social change, providing effective professional development on positive coping strategies and including teachers in the change process would be beneficial routes.

Conclusion

This mixed methods study is among the first to explore high school teacher burnout and its relationship to high-stakes testing resulting from NCLB. This study applied the multidimensional model of burnout (Maslach, 1982) with its three burnout dimensions of emotional exhaustion, depersonalization, and reduced personal accomplishment, and this study supported the job demands-resources model of burnout (Demerouti et al., 2001). The quantitative portion of the study determined that although high-stakes subject area public high school teachers exhibited greater burnout than low-

stakes subject area public high school teachers, the difference was not statistically significant. High-stakes subject area teacher responses about difficulties of teaching a high-stakes subject area helped explain the high levels of emotional exhaustion of high-stakes subject area public high school teachers and yielded five qualitative domains: workload/time incompatibility, pressure on teachers for students to pass high-stakes tests, need for all stakeholders to take responsibility, diminished teacher autonomy, and lack of resources.

Teacher burnout reflects not a lack within an individual teacher but rather a lack within the educational organization. If principals and boards of education watch for teacher burnout and address coping and change issues, then students, teachers, administrators, and the community benefit from an improved school system with engaged teachers more likely to return to the classroom each year. School districts need to meet the needs of students and teachers simultaneously, and this study is a starting point for social change to accomplish that goal.

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APPENDIX A: DISTRICT PERMISSION TO CONDUCT RESEARCH

Dear Mrs. Tucker,

Based on my review of your research proposal, I give permission for you to conduct the study entitled "High-Stakes Testing and Teacher Burnout in Public High School Teachers" within _____ County Public Schools. The results of your study have significant potential for contributing to the delivery of instruction to students in the _____ County School Public Schools system. As part of this study, I authorize you to request permission from the building principal to provide names and contact information of teachers to participate in the study as survey and interview participants. Their participation will be voluntary and at their own discretion. This letter is formal approval by the Research Office to conduct your study; however, Board of Education policy stipulates that final approval for all research requests rests with the building principal. We reserve the right to withdraw from the study at any time if our circumstances change.

I understand that the data collected will remain entirely confidential and may not be provided to anyone outside of the research team without permission from the Walden University IRB.

Sincerely,

Coordinator of Research

_____ County School Public Schools

APPENDIX B: PRINCIPAL PERMISSION TO CONDUCT RESEARCH

Dear Mrs. Tucker,

Based on my review of your research proposal, I give permission for you to conduct the study entitled "High-Stakes Testing and Teacher Burnout in Public High School Teachers" within _____ High School. As part of this study, I authorize you to invite members of my organization, whose names and contact information I will provide, to participate in the study as survey and interview participants. Their participation will be voluntary and at their own discretion. We reserve the right to withdraw from the study at any time if our circumstances change.

I understand that the data collected will remain entirely confidential and may not be provided to anyone outside of the research team without permission from the Walden University IRB.

Sincerely,

Principal

_____ High School

APPENDIX C: SCRIPT FOR INVITATION TO PARTICIPATE IN RESEARCH

The following invitation was issued to potential participants by the researcher in person.

"I am conducting doctoral research on personal and job-related attitudes of public high school teachers. The research office at the Board of Education and the principal of your school have given permission for the research. If you agree to participate, you will complete an anonymous survey. Estimated time for the survey is less than 20 minutes. As a thank you for participating, I will send you a letter appropriate for your professional portfolio. Your participation may help researchers better understand teacher attitudes and may help administrators and superintendents better support their teachers. Please consider participating. Thank you."

APPENDIX D: PERMISSION TO USE MASLACH BURNOUT INVENTORY

April 8, 2008

Confirmation Letter for Qualification Level Requirements

Gail Tucker
c/o Walden University
1129 Hampton Road
Annapolis, MD 21409

To Whom It May Concern:

This letter will confirm that CPP, Inc. has received from Gail Tucker a written statement describing her training, coursework and/or academic supervision, and that CPP has accepted that statement as evidencing Gail Tucker's appropriate qualifications to administer and interpret the Maslach Burnout Inventory –Educator Survey. If you wish more information on these qualification criteria, please see the current CPP product catalog, available online at www.cpp.com.

Based upon these qualifications, CPP has agreed to license Gail Tucker use of the Maslach Burnout Inventory-Educator Survey in its original format. Licensed use does not include permission to reproduce the inventory in part or in its entirety.

If you have further questions or concerns, please contact CPP at 1-800-624-1765.

Sincerely,

Sylvia Castañeda

Sylvia Castañeda
Manager, Copyrights, Licensing and Permissions

CPP, Inc. 1055 Joaquin Road, 2nd Floor, Mountain View, CA 94043 Tel: 650.969.8901 Fax: 650.969.8608 **www.cpp.com**

APPENDIX E: DIRECTIONS TO OBTAIN COPYRIGHTED MBI

The MBI—ES may not be included due to copywriting by CPP, Inc.

To obtain the survey for licensed use, contact www.cpp.com.

APPENDIX F: QUALITATIVE SURVEY

Directions: If you teach in a subject area that is assessed at the state level (English, Math, Science, Social Studies), please answer the following questions:

1. What is difficult about teaching a subject area that is assessed at the state level?

2. What could be done that would ease your workload or other aspects of your job?

APPENDIX G: DEMOGRAPHIC SURVEY

The purpose of gathering this information is to compare groups of teachers based on criteria such as subject taught. Personal information will be used to provide averages and other statistics, and this information will be kept confidential.

Please provide the following information:

1. Choose the category that best describes your teaching assignment this year:

___ English

___ Math

___ Science

___ Social Studies

___ Subject area that is not assessed at the state level

2. If you checked "English," "Math," "Science," or "Social Studies" above, please check the item(s) below that describe the course(s) you teach. Please check all that apply:

___ Course(s) before the year of state assessment

___ Course(s) the year of state assessment

___ Course(s) after the year of state assessment

3. Gender: ___ Female ___ Male

4. Age: _____

5. Number of years teaching: _____

APPENDIX H: INFORMED CONSENT AGREEMENT

Dear Teacher,

You are invited to participate in a research study. You were selected for this study because you teach in a school that is making adequate yearly progress and has a student population with a high socioeconomic status.

I am a teacher with Anne Arundel County Public Schools and am also a Walden University student pursuing my Doctor of Education in Teacher Leadership. My research study concerns personal and job-related attitudes of public high school teachers and is being conducted under the supervision of Dr. Pamela Harrison.

The entire survey process will take approximately 20 minutes. The survey packet contains this informed consent agreement, 22 quantitative survey items, 2 qualitative survey items, and a demographic survey. Please respond honestly.

Walden University's Institutional Review Board has approved this research, and this research has no foreseeable risks. Although you will not be compensated and will not directly benefit from participation, your participation may help researchers better understand teacher attitudes and may help administrators and superintendents better support their teachers.

Participation is voluntary and anonymous. Neither your name nor a code will be on the survey packet. You may choose not to participate or may withdraw at any time.

The results of this study may be published in professional and/or scientific journals. Results may also be used for educational purposes and for professional presentations. However, no individual participant, school, or district will be identified.

The researcher will secure and maintain the surveys for five years after which time the researcher will shred the surveys.

You will receive a token of appreciation for listening to this invitation to participate in this research study.

Please contact me at gailtuck@aol.com if you have any questions about my research study. You may contact my faculty advisor, Dr. Pamela Harrison, at pamela.harrison@waldenu.edu. If you want to talk privately about your rights as a participant, you may call Dr. Leilani Endicott, Director of the Research Center at Walden University, at 1-800-925-3368, extension 1210.

Returning the survey packet is considered your consent to participate. The researcher will give you a copy of this form when you return the survey packet.

Thank you for participating.

Sincerely,

Gail Tucker, researcher

APPENDIX I: SCRIPT FOR ADMINISTERING SURVEYS

1. "Fellow teachers, please wait to open the survey packet I am distributing. Once everyone has a survey packet and a pencil, we will go through the survey packet together." [Distribute packets and pencils.] "Does anyone still need a survey packet or a pencil?" [Wait for response.]
2. "In accordance with established procedures, please follow along as I read the informed consent agreement on the first page of the packet." [Show and read informed consent agreement.]
3. "Please turn to the second page of your packet, a two-sided Educators Survey." [Show direction page.] "Directions appear on one side, and the 22-question survey appears on the other side. According to established procedures, please follow along as I read the purpose and directions aloud."
4. "The next page contains two open-ended questions for teachers that teach or co-teach in a subject area that is assessed at the state level (English, Math, Science, and Social Studies)." [Show qualitative survey questions page.] "If you do not teach in a subject area that is assessed at the state level, please skip these questions."
5. "Please turn to the final page of your packet, the demographic survey." [Show demographic survey page.] "This information will be used to compare teachers based on categories such as subject area or grade taught. Demographic data are also needed for research report information which will include percentage of males and females, average age, and average years of teaching."

6. “There are only honest answers, not right or wrong answers. Once all information is complete, please place your survey packet in a random location in the survey pile. Also, initial next to your name on the faculty roster so I can send you a personal letter for your portfolio. Are there any questions?” [Researcher answers any questions.] “Please complete the survey packet now.”
7. [Quiet is maintained.]
8. [Teachers turn in survey packets. Researcher thanks each teacher individually for participating.]

APPENDIX J: PARTICIPANT THANK YOU LETTER

Dear _____,

I am grateful for your participation in my doctoral research. This study will help fill a gap in the scholarly literature by considering the impact of high-stakes testing accountability policies on public high school teachers. Results of this study will alert principals and superintendents to address the issues of teacher burnout and difficulties associated with high-stakes testing.

Thank you for giving your time. Your willingness to participate in educational research demonstrates your commitment to your students, your school, and the broader educational community.

I look forward to seeing you again and to presenting the results of this study to you and your colleagues later this school year.

Sincerely,

Gail Tucker

Ed.D. Student, Walden University

APPENDIX K: QUALITATIVE DOMAIN OUTLINE

A. Workload/time incompatibility (work)

    1. Class size (work.class)

    2. Paperwork (work.paper)

    3. Meetings (work.meet)

B. Pressure on teachers for students to pass high-stakes test (press)

    1. Fear (press.fear)

    2. Blame (press.blame)

C. Need for All Stakeholders to Take Responsibility (stake)

    1. Other adults (stake.adult)

    2. Students (stake.stu)

D. Diminished Teacher Autonomy (aut)

    1. Curriculum (aut.curr)

    2. Teach to test (aut.test)

E. Lack of resources (res)

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Date November 5, 2008

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Sarah Bylund

Sarah Bylund
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CURRICULUM VITAE

Gail Tucker

Education

Walden University (2006-present)	Doctor of Education (anticipated)
St. John's College, Annapolis, MD (1989-1993)	Master of Arts
Virginia Tech, Blacksburg, VA (1981-1985)	Bachelor of Science

Teaching Experience

Anne Arundel Community College, Arnold, MD (2008-present)
Annapolis High School, Annapolis, MD (1995-present)
St. Mary's High School, Annapolis, MD (1988-1994)

Awards

2005 Most Influential Teacher for Annapolis High School's Capital Scholar

Chemistry Leadership Experience

College Board Advanced Placement Chemistry Reader (2006-present)
Annapolis High School Chemistry Team Leader (2006-present)
Maryland Chemistry Professional Development Executive Board (2003-present)
Chemistry Curriculum Writer for Anne Arundel County Schools (2005-2006)
American Chemical Society High School Teacher Day Executive Committee (2005)
International Baccalaureate Application Writing Team (2004)
Presenter for Maryland's Annual Chemistry Professional Development (2003)

Management Experience

Girl Scout Gold Award Advisory Panel (2005-present)
International Baccalaureate CAS Coordinator (2005-present)
St. Anne's Episcopal Church Vestry (2005-2008)
Girl Scout Council Trainer (2002-2006)
Hands on Science Leader (2004-2005)
Destination Imagination Team Manager (2004-2005)
Girl Scout Service Unit Manager (1997-2002)

Professional Organizations

American Chemical Society (2005-present)
National Science Teachers Association (1989-1991, 2003-present)
National Education Association (1996-present)
Maryland State Teachers Association (1996-present)
Teachers Association of Anne Arundel County (1996-present)