

THE RELATIONSHIP BETWEEN DEMANDS AND RESOURCES AND TEACHER  
BURNOUT: A FIFTEEN-YEAR META-ANALYSIS

A Dissertation Presented for the  
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Tammy Marie Stewart  
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## DEDICATION

“For I know the plans I have for you, declares the Lord,  
plans to prosper you and not harm you,  
plans to give you a hope and a future” (Jeremiah 29:11).

To my sons:

Lukas, Jacob, and Gary

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## ABSTRACT

This meta-analysis explored the phenomenon of teacher burnout—the biggest contributor to teacher attrition (Owens, 2013; Unterbrink, 2014; Yu, 2015). The focus of this study was to use meta-analytical procedures to explore the relationship between burnout dimensions (i.e., emotional exhaustion, depersonalization, and feelings of personal accomplishment) and specific demand and resource correlates. Demand correlates included work overload, role conflict, role ambiguity, and student misbehavior. Resource correlates included peer support, supervisory support, and decision-making. This meta-analytical research method encompassed fifteen years of published and unpublished studies from January 2000 through January 2015. A total of 116 studies met the following inclusion criteria: use of the Maslach Burnout Inventory (MBI) and teacher participants from rural or urban public elementary, middle, and/or secondary schools. Coding schemes included relevant quantitative data (e.g., Pearson  $r$  values,  $p$ -values,  $t$ ,  $F$ , mean and standard deviation, or Fisher's  $z$  statistics), and dichotomous or continuous variables. The study involved 39 meta-analyses using the Comprehensive Meta-Analysis (CMA, Version 2.0) software program to identify sample size, weighted mean correlational coefficient effect size, significance ( $p$ -value), mean, standard error, homogeneity ( $Q$  statistic), and degrees of freedom ( $df$ ) within respective hypotheses and research questions. As hypothesized, findings indicated a positive relationship between emotional exhaustion and demand correlates, a negative relationship between depersonalization and resource correlates, and a positive relationship between personal accomplishment and resource correlates. No significant relationship was found between

personal accomplishment and demand correlates, although unidentified variables may have moderated the relationship. This study provided substantive research, major findings, and practical recommendations that may influence future research, policies, and procedures to improve the wellbeing of educators. Teacher burnout is a debilitating psychological syndrome that continues to spread like wildfire and holds severe ramifications to the individual educator, students, educational system, and society as a whole. Previous research studies have lacked in an organizational approach, empirical evidence, conclusive findings, and substantial research on the relationship between burnout dimensions and demand and resource correlates. Hobfoll's Conservation of Resource Theory (1993, 2001), Leiter's burnout model (1993), and Brewer's "Process of Meta-Analysis" (2003) served as the theoretical framework and systematic means that guided this study.

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## **Chapter 1**

### **Introduction**

For over two decades, there has been a significant increase in teachers leaving the profession (Ingersoll & Merrill, 2010). Demanding responsibilities and overwhelming expectations for teachers have led to stress and emotional exhaustion for many educators (Ingersoll, 2001; Maslach & Leiter, 2008). Teacher accountability and work-related stressors have contributed to teacher attrition in the United States, resulting in an epidemic in the field of education that leaves schools and districts with significant staffing problems (Conley & You, 2014; Ingersoll, 2003; Ingersoll & Merrill, 2010). According to the National Commission on Teaching and America's Future (2014), the national estimate of teacher attrition has grown by 50% in the past 15 years, costing approximately \$7 billion a year. Nearly half of new teachers who enter the field of education leave within the first five years (Ingersoll, 2003). The most important and expensive part of any given educational system is the teacher (Ingersoll & Merrill, 2010; Maslach & Leiter, 1999). Given this dilemma in education, research has sought to identify causes for teacher turnover. Demanding workloads and extensive job duties in and beyond the classroom have pressured teachers into a state of mental and physical exhaustion. This state of being, low morale, and an increased rate of teacher attrition are defined as teacher job burnout (Farber, 1991; Ingersoll & Perda, 2010). Gaining a thorough understanding of burnout and the detrimental effects it can have on individuals and organizations is important to keep high quality teachers in the profession. This exodus of teachers has prompted a significant amount of research in the past fifteen years.

In fact, within the past two decades, teacher burnout has been a hot topic for discussions and is more likely to appear in teaching literature than in any other professional domain (Friedman, 1995; Maslach & Jackson, 1996).

Due to its impact and influence on society, the critical issues facing public education have led to prevalent examinations of teacher effectiveness, student academic growth, and school success. Current mandates to staff classrooms with highly qualified teachers leaves school districts challenged as large numbers of teachers leave the profession. This phenomenon has led to an increase of research studies on teacher job burnout (Abel & Sewell, 1999; Anderson & Iwanicki, 1984; Best & Kahn, 2006; Betoret, 2006; Cunningham, 1983; Farber, 2000; Harrison, 1996; Whitaker, 1996). Although there has been an abundance of research conducted on job burnout, many researchers did not employ an overarching theoretical framework in designing these studies; this has resulted in a lack of order and compatibility (Chiaburu, Oh, Berry, Li, & Gardner, 2011; Maslach, 1997; McMahan, 2003). It is important to the contribution of educational research to find a way to make sense of the variety of research findings. In order to accomplish this, a meta-analytic procedure will integrate the multitude of studies into meaningful findings about teacher job burnout. This organized means of combining research studies may allow leaders to take action in preventing burnout and keep high quality teachers in the classroom.

### **Statement of the Problem**

Burnout has become a problematic phenomenon for over the past quarter century (Ingersoll & Perda, 2010). Since the early 1980's, there have been more teachers leaving

the profession than those entering the teaching field (Darling-Hammond, 2003). Teachers have become burdened with the myriad of demands such as legislative mandates, school safety, curriculum alignment, and high stakes accountability (Fox, 2012; Whitaker, 1996). Research indicates increasing demands lead to high stress and burnout, which may set in motion leaving the profession (Whitaker, 1996). The literature is filled with how these demands are resulting in teacher job burnout and the subsequent exodus of teachers (Akca & Yaman, 2010; Bakker & Demerouti, 2007; Brouwers & Tomic, 2000; Chang, 2009; Chen, 2013; Hammett, 2013; Kokkinos, 2007; Martin, Sass, & Schmitt, 2012; Tomic & Tomic, 2008). Burnout results include an individual's decline in meeting job responsibilities, decreased motivation and energy, an onslaught of physical impairments, increased absenteeism, and attrition (Maslach & Jackson, 1996; McMahan, 2003). In order to meet the demands of having highly qualified teachers in every classroom, organizational leaders are faced with a critical selection shortage as they attempt to address these staffing inadequacies.

Teaching has been described as one of the most stressful, exhausting, and difficult of occupations with a higher annual turnover rate than other professionals (Cacha, 1981; Fernet, Guay, Senécal, & Austin, 2012; Gavish & Friedman, 2010; Ingersoll & Merrill, 2010). Just like other social work professions, teaching is an emotionally demanding job and, due to stress, is considered at high risk for burnout, more so than any other social occupations (Fernet et al., 2012; Gavish & Friedman, 2010; Grayson & Ivarez, 2008; Maslach & Leiter, 2008). Occupational hazards such as job stress, heavy workloads, and performance demands can lead to burnout which can impair one's physical health,

psychological well-being, and work performance (Conley & You, 2014; Maslach & Leiter, 2008). Research suggests that, when teachers reach burnout, quality education is compromised, teachers are unable to adequately devote themselves to the profession, the quality of work diminishes, and students are negatively impacted (Dorman, 2003; Sims, 2013; Yong & Yue, 2007). In consideration of these detrimental effects of burnout, gaining further understanding of teacher burnout may lead to intervention programs to prevent or remedy this syndrome.

Initial research on burnout lacked clarification and definitive meaning, focusing more on clinical applications as opposed to educational research. As research progressed, it became evident that consonance was limited and empirical evidence, nonexistent. Maslach was one of the first to research the phenomenon of burnout, conducting studies beginning over twenty years ago to continuing to make contributions to today's research. After extensive research, Maslach's findings suggest that burnout is a syndrome affecting individuals who do people-work (e.g., law enforcement personnel, nurses, social workers, teachers). After individuals reach the point of burnout, they experience emotional exhaustion, depersonalization, and feelings of reduced emotional accomplishment (Maslach, 1997). Although Maslach's research findings were published in numerous categories that ranged from psychology to the medical print, they never specifically addressed the educational dimension. Maslach and Leiter (2008) established that "burnout is a stress phenomenon that shows the expected pattern of health correlates, such as headaches, gastrointestinal disorders, muscle tension, hypertension, cold/flu episodes, and sleep disturbances" (p. 499). This form of mental distress is characterized

by emotional exhaustion and fatigue and can lead to depression and result in negative attitudes and behaviors that decrease one's work performance (Maslach & Leiter, 2008). Long-term involvement in demanding situations can be emotionally stressful and lead to mental exhaustion (Harrison, 1996); emotional exhaustion is the core of burnout (Brotheridge & Grandey, 2002). This is further validated by research conducted by Mearns and Cain (2003), which indicates that stress is associated with emotional exhaustion and depersonalization, echoing that stress is a factor related to burnout. This dysfunctional condition is something individuals and organizational leaders want to change (Maslach & Leiter, 2008). It is important to expand understanding of burnout so that interventions can be developed to prevent or alleviate teacher job burnout. Although there has been much research on burnout, a historical description of research on burnout has revealed a shortfall regarding its theoretical underpinnings. As a result, research results have been problematic and inconsistent (Maslach, 1997).

This study will present a thorough discussion on theories, models, and literature reviews related to burnout, specifically exploring Hobfoll's Conservation of Resource (COR) theory (1989) and Leiter's (1993) burnout model and replicating Lee and Ashforth's (1996) and McMahan's (2003) meta-analysis studies. This research will narrow the focus of burnout to the teacher population in order to contribute to the organizational issues that continue to arise from an extensive number of teachers leaving the profession.

### **Purpose of the Study**

The purpose of this meta-analytic study was to explore the relationship between various demand and resource correlates and the burnout dimensions of emotional exhaustion, depersonalization, and a reduced feeling of accomplishment among elementary and secondary teachers as reported in studies from January 2000 through January 2015. This study examined the following relationships: (a) a positive relationship between emotional exhaustion and demands, (b) a negative relationship between depersonalization and demands, (c) a positive relationship between personal accomplishments and resources, and (d) a negative relationship between personal accomplishment and demands. Based upon these findings, recommendations for future research and significance were established.

### **Significance of the Study**

This study furthers an understanding of the causes and consequences of burnout and contributes to the existing body of research by replicating the work of Lee and Ashforth (1996) and McMahan (2003). This meta-analysis was distinct to the teaching population. Individuals who have experienced burnout have reported negative consequences that resulted in high costs to school organizations (Maslach & Jackson, 1996; McMahan, 2003). Gaining additional insight into the factors related to individual dimensions of burnout can assist in developing policies, preventive measures, interventions, and possible remedies for burnout, ultimately helping to keep professionals (teachers, nurses, police, counselors) in the workplace.

In order to have a comprehensive, empirical understanding of a given topic requires a comparable, quantitative knowledge of the effect under consideration (McKubre, 2008). This level of understanding can be achieved through a replication study. Replication is critical in assessing the significance of research results (Ellsworth & Isakson, 1977). Replication conveys the ability to demonstrate the effect that is being studied and can enhance the interpretability of applied research (McKubre, 2008; Schafer, 2001). When results are consistent across several studies, there is a stronger basis for observed relationships than looking at individual studies (Schafer, 2001). Despite the abundant research on burnout, researchers have not obtained conclusive results as to the causes of burnout (Chiaburu et al., 2011; McMahan, 2003). The analysis of several studies results in a meta-analysis enabling one to combine a series of research replications. Although a meta-analysis is generally thought of as a quantitative study of existing research literature, it may also be used to analyze a series of related studies generated within a single subject (Schafer, 2001). The methodology of a meta-analysis, a scientific method used to combine data from multiple studies, will aid in future burnout interventions and remedies, thus benefiting students, teachers, and school organizations. In addition, due to current issues concerning teachers experiencing an increased level of accountability associated with No Child Left Behind, Race to the Top, and imposed mandates for increased use of test data for teacher evaluations, these issues are credible reasons for studying teacher job burnout (Fox, 2012). There is much to be gained from further meta-analysis investigations.

## **Studies That Have Addressed the Problem**

Discussion about teachers leaving the profession due to job burnout has become a topic of interest among educational researchers (Bae, 2007; Chang & Davis, 2009; Conley & You, 2014; Dozier, 2010; Gavish & Friedman, 2010; Hobfoll & Lilly, 1993; Lauer, 2004; Lee & Ashforth, 1996; Reyes-Gonzalez, 2007; Watts, 2013).

Demonstrations of the importance of teachers have been established in a number of areas (Fox, 2012). Darling-Hammond (2003) stated, “The single most important determinant of what students learn is the expertise of the teacher” (p. 6).

Researchers have attempted to understand the multiple facets of teacher burnout since the 1970’s (Freudenberger, 1974; Vandenburghe & Huberman, 1993; Watts, 2013). Literature reviews and the available research on teacher job burnout have focused on factors linked to burnout (Avtgis & Rancer, 2008; Aydin, Sarier, & Uysal, 2011; Lauer, 2004; Watts, 2013). Excessive work hours, demanding workloads, inadequate compensation, and high-stakes testing and accountability for increased student performance are some of the factors related to high stress levels with the consequence of burnout (Andrews & Grogan, 2002; Caddell & Malone, 2000; D’Arbon, Duignan, & Duncan, 2002; Norton, 2002; Cushing, Johnstone, & Kerrins, 2003; Swift & Zimmerman, 2010; Whitaker, 2003). Consequences of burnout include (a) increased teacher turnover, (b) increased intent to leave the teaching profession, (c) negative work attitudes, and (d) a reduction in quality performance (Brotheridge & Grandey, 2002; Cameron, Horsburgh, & Armstrong-Stassen, 1994; Lee & Ashforth, 1996; Wolpin, Burke, & Greenglass, 1991). Types of an individual’s symptoms attributed to burnout include anxiety, irritability,

headaches, fatigue, addiction, insomnia, ulcers, illness, depression, and discontentment (Carr, 1994; Friedman, 1995; Gates & Gmelch, 1998; Holt & Turner, 2004; Tang, Au, & Schmitz, 2001; Queen & Queen, 2005).

Throughout the literature, references are made to the nature of excessive teacher stresses at all levels (Gaines, 2011; Hobfoll, 1998; Holmes, 2005; Ingersoll & Perda, 2010; Lauer, 2004; Maslach, 2003; Maslach & Leiter, 2008; Mearns & Cain, 2003; Shin, Noh, Jang, Park, & Lee, 2013). Time and time again, the idea of teacher challenges and job demands is paired with teacher job burnout (Hobfoll, 1989; Hobfoll & Lilly, 1993; McMahan, 2003; Swift & Zimmerman, 2010; Talmor, Reiter, & Feigin, 2015).

The cost of recruiting, hiring, processing, and training teachers at the school and district level is substantial (Ingersoll & Merrill). Training replacement teachers equates to expenditures lost when teachers leave the profession (National Commission on Teaching and America's Future, 2014). Problems related to teacher stress and job burnout need to be addressed and understood; otherwise, current efforts to restructure American education will not succeed (Farber, 1991). This meta-analytic study addresses the importance of an organized, thorough investigation that may lead to understanding the burnout phenomenon more in depth and to inspire leaders to make decisions that will reduce the costs and loss of staff productivity and student success.

### **Hypotheses of the Study**

A hypothesis is a set of predictions about a possible outcome of a study. This study will include directional hypotheses as well as research questions in order to focus

data collection to make predictions based upon previous research. Having multiple supporting tests to confirm the hypotheses will serve to strengthen the study results.

- H<sub>1</sub> There is a significant positive relationship between demand correlates and emotional exhaustion as measured by the Maslach Burnout Inventory (MBI).
- H<sub>2</sub> There is a significant negative relationship between resource correlates and depersonalization as measured by the Maslach Burnout Inventory (MBI).
- H<sub>3</sub> There is a significant positive relationship between resource correlates and feelings of personal accomplishment as measured by the Maslach Burnout Inventory (MBI).
- H<sub>4</sub> There is a significant negative relationship between demand correlates and personal accomplishment as measured by the Maslach Burnout Inventory (MBI).

### **Research Questions**

After careful deliberation, the following research questions were designed to investigate the topic of teacher burnout with available resources. They were based on the determination that investigating the relationship between the related variables was of value and could contribute to the field of educational research.

1. What is the relationship between demand correlates and emotional exhaustion for teachers experiencing job burnout?
2. What is the relationship between resource correlates and depersonalization for teachers experiencing job burnout?

3. What is the relationship between resource correlates and feelings of personal accomplishment for teachers experiencing job burnout?
4. What is the relationship between demand correlates and personal accomplishment for teachers experiencing job burnout?

### **Assumptions of the Study**

Assumptions of a study are “presumed to be true but not actually verified” (Gay, Mills, & Airasian, 2012, p. 115). For the purpose of this study, the researcher made the following assumptions to guide the research strategies: Studies selected for this meta-analysis used approved research methodologies; those that were meta-analytic studies used published and unpublished documents. The respective researchers reported their study results in an accurate and forthright manner. Study participants responded to the Maslach Burnout Inventory completely and accurately to the best of their understanding of the items asked.

### **Limitations of the Study**

Limitations are those conditions beyond the control of the researcher that may place restrictions on the conclusions of the study and its application to other situations that effect generalizability of the results (Best & Kahn, 2006). In other words, limitations of a research study are the uncontrollable characteristics of the study that may have negative effects on the results of the study. The results of the study should be analyzed and interpreted with due consideration given to the limitations of the study listed below:

1. The availability of studies meeting criteria for inclusion was limited to those that could be obtained from the university library, electronic sources, Interlibrary Loan, and Dissertation Express.
2. This meta-analytic study's results were dependent on the data reported in the included studies. Consequently, this study was limited to the findings reported by the respective researchers.
3. This study was limited by the use of a self-reporting instrument, the Maslach Burnout Inventory, which measures emotional exhaustion, depersonalization, and personal accomplishment.
4. Study results were limited by the statistical capabilities of the researcher and the computer software program used for this meta-analytic study.

### **Delimitations of the Study**

Delimitations are the boundaries of the study that the researcher has purposefully set with consideration to the nature, size of the sample, and the settings (Best & Kahn, 2006). Studies that met certain eligibility criteria were exclusively included in this meta-analysis. The following criteria served as delimitations to this study:

1. This meta-analytic study only included studies that reported quantitative results in the form of correlations between (a) demand correlates and emotional exhaustion, (b) demand correlates and personal accomplishment, (c) resource correlates and depersonalization, (d) resource correlates and personal accomplishment.

2. Demand correlates were confined to work overload, role conflict, role ambiguity, and student misbehavior.
3. Resource correlates were restricted to peer support, supervisory support, and participation in decision-making.
4. This meta-analytic study only included studies that used the Maslach Burnout Inventory to measure teacher job burnout.
5. This meta-analytic study only included studies that used elementary, middle, and high school teachers as research participants.
6. This meta-analytic study only included studies that were available in English or English translation.
7. This meta-analytic study only included studies with results reported between January 2000 and January 2015.

### **Operational Definitions**

Several terms were used throughout this study. The researcher consistently used each term provided in this study. Though definitions are provided throughout the narrative, the following abbreviated glossary may prove helpful.

1. *Burnout*: A phenomenon with multiple descriptions throughout the literature, yet no singular universal definition exists. For the purpose of this study, burnout is considered as the increase of stress that leads to emotional exhaustion, depersonalization, loss of personal accomplishment, and frustration resulting from the continued dedication or work towards given

goals or principles that have failed to produce corresponding rewards (Freudenberger, 1974; Maslach & Leiter, 1999).

2. *Coping*: The “mental and/or ability of individuals to adapt, adjust, manage, or develop an emotional balance while facing challenging periods of life, challenging conditions, and/or high-stress environments” (Sims, 2013, p. 53).
3. *Demand correlates*: Perception of stressors (e.g., work overload, role conflict, role ambiguity, and student misbehavior) that can threaten personal resources (Lee & Ashforth, 1996).
4. *Depersonalization*: The uncaring and negative attitudes developed by individuals toward job responsibilities, work colleagues, and those they serve (Maslach, 1997; Maslach & Jackson, 1996).
5. *Detachment*: An individual’s operational, self-protective response to avoid pain associated with burnout. Detachment may lead to disengagement, distancing oneself from others, and/or numbing oneself to the work environment (Freudenberger, 1974).
6. *Effect size*: A statistic that “encodes the critical quantitative information from each relevant study finding” (Lipsey & Wilson, 2000, p. 3).
7. *Emotional exhaustion*: The dimension of burnout associated with the feeling of being emotionally overextended and exhausted by one’s work, with a loss of trust, interest, and spirit (Maslach, 1997; Maslach & Leiter, 1999).

8. *Eustress*: The positive or good stressors that give an individual the drive, motivation, energy, and enthusiasm to complete a job or task without being propelled into the damaging reaches of excessive stress (Seyle, 1956).
9. *Exhaustion*: One's sense of energy loss and intertwining emotions of weariness as a response to unrealistic expectations and problems within the work environment (Freudenberger, 1974).
10. *Homogeneous*: Relative to meta-analysis, the uniformity of a study's effect size as an approximation (Hunter & Schmidt, 1990).
11. *Locus of control*: The causal beliefs about a relationship between behaviors and outcomes with the absence of personal efficacy (Bae, 2007).
12. *Meta-analysis*: The method of integrating findings through the statistical analysis of several individual studies on the same topic (Glass, 1977).
13. *Peer support*: A resource correlate that involves teacher assistance with both personal and professional problems and ability to share one's own personal problems and solutions with other teachers, thus receiving consultation and guidance from colleagues (Gavish & Friedman, 2010).
14. *Reduced personal accomplishment*: A dimension of burnout associated with an individual's feelings of achievement, contribution to student's success, competence and self-efficacy (Maslach & Leiter, 1999). Regardless of an individual's work efforts, the sense of a lack of self-fulfillment or achievement at work results in symptoms of stress such as depression and despair (Talmor, et al. 2015).

15. *Replication*: The process of repeating a study's method, but in different situations and with different subjects and/or experiments (Heffner, 2011; McKubre, 2008).
16. *Resource correlates*: An asset that individuals value and strive to obtain (Cordes & Dougherty, 1993) that include supervisory support, peer support, and shared decision-making (Lee & Ashforth, 1996).
17. *Role ambiguity*: State of uncertainty due to a lack of adequate information about what is needed to do the job well (Maslach, Schaufeli, & Leiter, 2001).
18. *Role conflict*: A condition of burnout experienced when there is uncertainty as to what is expected in order to fulfill one's role when faced with two or more sets of pressures such as being in compliance to administrative demands and striving to live up to parent expectations at the same time (Byrne, 1999).
19. *Stress*: "The sum of the biological reactions to any adverse stimulus, mental or emotional, internal or external, that tends to disturb the organism's balance" (Queen & Queen, 2005, p. 7). Teacher stress—defined as an occurrence of negative conditions, including frustration and anxiety—affects various aspects of the job and is often perceived by teachers as threatening to their psychological or physical well-being (Kyriacou, 1987).
20. *Stressful event*: An experience that reduces an individual's resources to cope and negatively affects one's well-being (Lazarus & Folkman, 1984). For the purpose of this study, student misbehavior represents a stressful event.

21. *Student misbehavior*: Exhibited, negative behaviors such as lack of respect, lack of focus, and/or violence (Friedman, 1995).
22. *Supervisory support*: A resource correlate that refers to administrative support, efficient assistance with student disciplinary issues, pedagogical concerns, and demonstration of appreciation for the teacher's professionalism and teaching capabilities (Gavish & Friedman, 2010).
23. *Work demands*: Expectations perceived to be losses because meeting such demands requires investment of valued resources viewed as gains (Lee & Ashforth, 1996).
24. *Work overload*: A condition resulting from extensive demands without adequate time or means to meet those demands (McMahan, 2003).

## **Summary of Chapter 1**

Teachers are faced with meeting rigorous and demanding expectations. As a result of this increasing pressure, teachers are experiencing job burnout. Research exists on job burnout, but often lacks a clear theoretical framework. Chapter 1 provided an overview of the study, a brief discussion of the problem of teacher job burnout, an explanation of hypotheses and research questions, assumptions, limitations, delimitations, and operational definitions. In all, this chapter introduced a meta-analytic study designed to help fill the research deficiency on teacher job burnout.

## **Organization of the Dissertation**

The remaining four chapters present the theoretical framework of the study, the design and methodological procedures taken, and findings and implications for further

research. Specifically, Chapter 2 includes an extensive literature review that focuses on topics such as measurement of burnout, leadership and teacher burnout, teacher attrition, current challenges facing educators, burnout models, conservation of resources theory, meta-analysis as a research methodology, and replication. Chapter 3 outlines the research design and procedures for this study. Chapter 4 presents the results of the analyses. Finally, Chapter 5 presents the findings, conclusions, and recommendations for future research. The study concludes with a list of references and an appendix.

## **Chapter 2**

### **Review of Literature**

This chapter begins with an in-depth description of the theoretical framework that was utilized in this study, followed by a thorough review of both current and seminal literature of teacher job burnout that served to support that framework. This review of literature fosters an understanding of the measurement of burnout and why it is an essential component of the design of this study as shown in the various models of burnout provided. The hypotheses of this study served to test Leiter's model (1993) as well as to include a description of the models proposed by Cherniss (1980) and Golembiewski, Munzenrider, and Stevenson (1986). This section then presents a review of previous research reporting relationships between independent variables (demand and resource correlates) and dependent variables (dimensions of burnout), as well as a review of variables indicated as possible relationship moderators examined in this study. Finally, a discussion of meta-analysis followed by an explanation of a replication study is offered to increase understanding of the research approach taken in this study.

### **Theoretical Framework**

The theoretical framework for this study was the conservation of resources (COR) theory. Basically, the COR theory is the endeavor of individuals to keep the resources they possess, protect those resources, and strive to increase them (Hobfoll, 1998, 2001). Resources are objects or qualities that an individual places value upon, together with the means for acquiring these valued objects or qualities. According to Bakker and Demerouti (2007), resources "stimulate personal growth, learning, and development...

are valued in their own right or because they are means to achievement or protection of other valued resources” (p. 312). Stress can occur when resources are threatened or lost or when they do not increase (Bakker & Demerouti, 2007; Grandey & Cropanzano, 1999; Hobfoll, 1998, 2001).

Resources—objects, conditions, personal characteristics, and energies—are categorized as follows: (a) Object resources are valued because of their physical properties and the extent to which they meet basic survival needs (Hobfoll, 2001; Hobfoll & Lilly, 1993); (b) Conditions refer to an individual’s marital status, tenure, and seniority as valued and sought resources (Grandey & Cropanzano, 1999); (c) Personal resources include self-efficacy, self-esteem, optimism, affection, and sense of mastery, all of which serve as buffers to stress (Bakker & Demerouti, 2007; Grandey & Cropanzano, 1999); and (d) Energies help individuals gain additional resources, such as time, money, knowledge, and social competence (Hobfoll, 2001). Hobfoll (1998, 2001) believes that there are additional ways to categorize resources and that resources vary between individuals. The threat of a loss of these resources or the actual loss of any of these resources may contribute to the experience of stress.

Conservation of Resource (COR) theory presumes that resource loss is the primary ingredient in the stress process. In contrast, resource gain is of great importance in the context of resource loss. Individuals who experience more resource loss than gain are likely to experience rapid downward spirals of loss (Hobfoll, 2001). In order to grasp COR theory, it is important to review the nature of stress and resource theories.

Understanding how resource loss can lead to stress will assist in determining the stress process and outcomes, specifically stress that leads to burnout.

Historically, as explained by Hobfoll (2001), the stress process has been envisioned as an external, environmental phenomenon or an internal, mental occurrence. For instance, should individuals lose their home, family, and wealth (external events), yet maintain their faith that everything will be fine (internal mentality), it becomes evident that there is value in both external and internal resources in relation to stress. Social and behavioral sciences have oscillated between these two perspectives and confirmed the value of both. However, not all researchers have considered both internal and external resources as related to stress. The following historical background on stress and resource research will further the understanding of Hobfoll's COR theory.

Stress theories originated prior to resource theories, dating as far back as to the early 1930's. With the publication of *The Wisdom of the Body*, Cannon (1932) came to be considered the first researcher to refer to stress as a concept (Hobfoll, 1989). Years later, Selye (1974) explained the physical body's adaptation to stress by coining the term *eustress*—the negative and positive reactions to stress (negative threat vs. positive challenge). His contribution to research has labeled Selye as the “father of stress theory” (McMahan, 2003). It is important to note here that neither Cannon nor Selye considered the psychological effects of stress on individuals.

As the phenomenon of stress gained interest, Lazarus made his introduction into research on stress in 1966, proposing that stress was a primary outcome of personal appraisal (internal resource). Research supported that personal appraisal was a valued,

but problematic resource in that it tended to limit predictive strength and prevent insights into groups or systems (Lazarus & Folkman, 1984). Secondly, this theory of stress appraisals yielded minimal information about why individuals made certain appraisals and the extent to which these appraisals were automatic, over-learned rules of interpretation that were shared or culturally scripted. Lastly, this stress research neglected meaningful units necessary to measure demands and coping resources and could never be directly tested (Hobfoll, 1989). This shortcoming was accounted for in Hobfoll's COR theory as he defined and offered resources necessary to understand and measure stress.

Resource theories began in the late 1970's, as Caplan (1974) and Antonovsky's (1979) resource theories were derived from external circumstances of the Holocaust and post-Holocaust periods, where events threatened people's resource capacity (Lindstrom & Eriksson, 2006). Through the course of time, it was evident that all were captive to their resources (economic recession and employment instability threatened personal stability). However, these theories were shortcoming with internal resource considerations. In general, it was determined that resources were necessary and stress would occur when resources were either threatened, thought to be unstable, or lost. These resource theories ignited further discussion that led to the advancement of existing stress theories, however inadequate they might have been in addressing comprehensive aspects of stress. Conservation of Resource (COR) theory addressed this shortfall by following a set of precepts, principles, and corollaries that helped to clarify the limits of previous resource and stress theories. The COR theory held that people strived to obtain, retain, protect, and foster those things they valued. Hobfoll's (1989) theory offered a theoretical

guide for comprehending that the relationship between the threat or loss of valued resources would likely result in stress, and stress was ultimately connected to burnout.

Hobfoll (1989) suggested that individuals experienced stress when the following occurred: (a) threat of loss of resources due to overwhelming demands, (b) actual loss of resources, and (c) investment of resources without resource gain. In order to reach a greater understanding of the COR theory, it is important to state the principles and corollaries of COR. There are three principles of the COR theory (Hobfoll & Lily, 1993): (a) Resource loss is more powerful and potent than resource gain; (b) In order to gain resources or prevent their loss, one must invest other resources; and (c) Because people have fewer resources as they lose resources, they are decreasingly capable of withstanding further threats to resource loss. In addition to the three basic COR theory principles, there are corollaries. Hobfoll (2001) and Hobfoll and Shirom (2001) suggested the following parallels:

1. Individuals with greater resources are less vulnerable to resource loss and more capable of obtaining resource gain.
2. Individuals who lack access to strong resource “pools” are more likely to experience increased loss (“loss spiral”).
3. Individuals who possess strong resource “pools” are more likely to seek opportunities to risk resources for increased resource gains (“gain spiral”).
4. Individuals who lack resources are more likely to adopt defensive posture in order to conserve their resources.

For the sake of fairness from various standpoints, both criticisms and limitations of the COR theory have been taken into consideration. Some critics viewed COR theory as dominantly environmental, failing to acknowledge internal resources and merely restating previous stress theories (Lazarus, 2001; McMahan, 2003). However, proponents of COR theory supported the encounter with self, stating that attempts to separate external resources from internal ones would only serve to limit researchers' predictive capacity regarding the likelihood of the development of stress (Hobfoll, 2001). There also existed the argument that resources were limitless, and, as such, COR theory proved too general. In order to address this concern, COR theorists included an instrument that listed 74 resources (e.g., self-efficacy, self-esteem, optimism, and social support) which have been found to be key resources (Hobfoll, 2001).

In contrast to the COR theory criticisms, there were a number of advantages and benefits to the COR theory. COR theory brought out definitive implications for practice that offered distinctive advantages over previous stress theories. Even though COR theory did not overlap with other resource and stress theories, many of those other theories contain ideas borrowed from the COR theory (Antonovsky, 1979; Caplan, 1974; Schonpflug, 1985). Hobfoll's COR theory (2001) offered definite, practical applications that distinguished it from other stress theories. Hobfoll suggested that COR first looked at the settings people occupied, identifying the conditions of the workplace as an objective circumstance. In other words, this process objectively probed for the possible source of stress *before* considering the individual's attitude about work. In addition, COR theory revealed possible interventions with the potential to change people's resources. Finally,

COR theory appeared to be valuable because of its consistency in providing a broader picture of an individual's coping process.

The premise of Hobfoll's COR theory was to provide a cognitive framework for understanding burnout. This section has provided further understanding on stress and resource theories that lead to job burnout. It is evident that the COR theory has been used as a principle explanatory instrument for understanding the process of stress and burnout in work settings (Bakker & Demerouti, 2007; Grandey & Cropanzano, 1999; Hobfoll, 2001). The basis of this theory is the application of resources, and burnout is characterized by resource depletion; thus, COR theory is an absolute for understanding burnout (Schaufeli & Buunk, 2003). Burnout refers to the process where individuals experience a gradual increase of stress as characterized by reduced productivity, alienation from others, and emotional exhaustion (Hobfoll, 2001; Maslach & Leiter, 1999). The COR theory is a comprehensive model that provides researchers a theoretical basis which has been lacking in previous studies; it specifically defines and offers resources as the unit necessary for understanding and measuring stress (Hobfoll, 1998; McMahan, 2003).

### **Related Literature**

The concept of burnout was first introduced by Freudenberger (1974) and was soon followed by Maslach (1976). Literature served as a means to fuel the topic of burnout as public interest in the topic grew at an enormous rate, making burnout the buzzword in late 1970s and 1980s (Schaufeli & Buunk, 2003). Freudenberger began this pilgrimage into burnout with his paper on staff burnout—writing inspired from his

observation of staff volunteers in a clinic for drug addictions. This was soon followed by Maslach, a social psychological researcher who observed that poverty lawyers used the term burnout as a means to describe the downward spiral of exhaustion, cynicism, and decreased job commitment.

In the early publications on burnout, writers used the term loosely, making it applicable to numerous situations and losing the scientific basis of the concept. In fact, an early literature review revealed that only five out of the 48 articles on burnout included empirical data, and those five were primarily descriptive in nature (Schaufeli & Buunk, 2003). This generalization of the term was made evident by the rejection of Maslach's first psychological article that introduced the Maslach Burnout Inventory (MBI), a burnout measurement tool that later gained the most widespread use internationally over other instruments of that type. The note written on the proposed article read, "...because we do not publish 'pop' psychology" (Maslach & Jackson, 1984, p. 139). However, burnout research set in motion a steady increase from 5 to over 200 publications between 1975 and 1980, with an average publication rate of 200 per year (Schaufeli & Buunk, 2003). By early into the 21st century, over 6,000 publications on burnout had appeared. This spurred organizational interest in burnout as an effort to understand and take action to prevent or improve conditions related to burnout. The following section presents the most popular burnout instrument to date.

**Measurement of burnout.** In order to gain further understanding on burnout and the variables that could contribute to measuring its presence in individuals, the Maslach Burnout Inventory (MBI) was developed (Maslach & Jackson, 1981, 1996). Originally,

the scale was administered to 1,025 participants who performed service-oriented work. Included in this were physicians, police, nurses, social workers, and counselors. Findings revealed that burnout potentially could be described and measured by three dimensions: emotional exhaustion, depersonalization, and personal accomplishment. The need to learn more about why burnout existed and the variables present prompted this and other studies. In order to demonstrate the reliability of the MBI and to clarify burnout, findings were used to contribute to future research in hopes of addressing the increasing problem of burnout in the lives of professionals who worked in environments that could be stressful and emotionally draining (Maslach & Jackson, 1981). The scale proved to be highly reliable and valid for measuring burnout and came to be used internationally.

Further description of burnout portrayed it as a “psychological syndrome in response to chronic interpersonal stressors on the job” (Maslach et al., 2001, p. 399). As previously mentioned, emotional exhaustion, depersonalization, and reduced personal accomplishment had been established as the three dimensions of burnout as measured by the MBI. Emotional exhaustion referred to the individual experience of feeling overwhelmed and drained in a job that focused on meeting the needs of others. Depersonalization pertained to the experience of not feeling empathy or care for the recipients central to the job. This often created an attitude of indifference and cynicism, resulting in decreased capacity to respond to the need of others. Reduced personal accomplishment involved the feeling of being ineffective in one’s work. This phenomenon has led to commonly accepted definitions of burnout and frequent mention

of the three dimensions of burnout throughout the literature (Maslach & Jackson, 1981, 1984; Maslach et al., 2001).

Several measures of burnout have been developed, but the strongest psychometric properties were evident in a scale known as the Maslach Burnout Inventory (MBI) (Maslach et al., 2001). The MBI, a quantitative inventory comprising 22 items written as statements about personal attitudes or feelings, originally assessed larger populations in human service occupations. For example, the scale was administered to 1,025 physicians, police officers, nurses, social workers, and counselors. Findings revealed three dimensions of burnout as measured by the MBI: (a) emotional exhaustion, (b) depersonalization, and (c) reduced personal accomplishment. Emotional exhaustion refers to the feeling of being overwhelmed and drained in a job that focuses on meeting the needs of others, where individuals feel they can no longer give of themselves at a psychological level (Maslach & Jackson, 1984). Depersonalization is the experience of not feeling empathy or care for the recipients on which the job focuses. This causes an attitude of indifference and cynicism resulting in decreased capacity to respond to the need of others. Reduced personal accomplishment is the feeling of being ineffective in one's work and/or feeling incompetent (Maslach & Leiter, 1999).

Encompassing these three dimensions, the MBI serves to assess burnout in human services, education, and government professions. Two versions apply to human service occupations: MBI-Human Services Survey (MBI-HSS) for use with participants who work in human services and health care and the MBI-Educators Survey (MBI-ES; Maslach et al., 2001) developed for use with educational professionals. The MBI-General

Survey (MBI-GS) constitutes a third version that was developed for participants outside people-oriented occupations. The MBI-GS provides a broader perspective not limited to personal relationships that may be part of the job, but also with respect to the job itself (Maslach et al., 2001). It has been reported that over 90% of empirical studies on burnout have used the MBI (Schaufeli & Enzmann, 1998) in at least one of its three versions.

This phenomenon has led to multiple definitions of burnout. For instance, Freudenberger (1974) described burnout as an individual's depletion of physical and mental resources in efforts to achieve or meet unrealistic expectations. These expectations could be self-imposed or presented as valued by the larger society. Maslach and Jackson (1996) stated that burnout represented a syndrome characterized by emotional exhaustion, depersonalization, and reduced personal accomplishment and that it occurred more frequently among individuals employed in the helping professions.

The MBI contains a Likert-type scale ranging from 0 (*never*) to 6 (*every day*). The scale has proven to be highly reliable and valid for measuring burnout, allowing researchers to determine whether the symptoms of burnout are empirically distinct from one another and whether they are differentially associated with other variables (Lee & Ashforth, 1996; Mulvaney, 2013; Schaufeli & Enzmann, 1998). However, as noted by Maslach and Jackson (1996), a combined score from the three subscales should not be obtained, as the three dimensions of burnout are measured independently by the respective subscale. In the research literature, the MBI is considered the most predominately accepted and consistently used burnout measurement instrument (Lee & Ashforth, 1996; Maslach & Leiter, 1999).

The increasing occurrences of burnout has raised inquiries on burnout such as what are its causes, what are its consequences, and what can we do about it. Since Maslach's pioneering into defining and understanding burnout, a plethora of published and unpublished research has been conducted. Although these studies contributed to further understanding burnout and included different occupational groups, the teaching population was neglected. Historically, few studies on burnout have solely encompassed teacher job burnout. The past fifteen years of research has contributed significantly to understanding burnout in greater depth as it applies to teachers, but has lacked an organizational approach.

Since the emergence of defining burnout, research has revealed that burnout is not limited to professional caregivers as originally thought (Maslach, 2003). Researchers have addressed the topic of burnout in various occupations and have reached consensus that burnout can be experienced by anyone who provides extensive care for another individual (Maslach, 2003; Lee & Ashforth, 1996). Burnout has been recognized as a universal term and encompasses people who work in all occupations (Maslach, 2003). In conclusion, the MBI suggests a correlation to Hobfoll's COR theory where a combination of a decline in resources, workload demands and personal conflicts may lead to emotional exhaustion. When an individual's emotional exhaustion increases, depersonalization occurs. At this stage of the burnout process, the individual begins to lose his or her sense of accomplishment, and feelings of incompetence in the job leads to personal withdrawal from the job (Mulvaney, 2013). These sequential events ultimately lead to physical illness, increased absenteeism and turnover, and diminished commitment to the

organization (Maslach, 2003). This has brought about the development of structural models in burnout research (Maslach et al., 2001) allowing researchers to consider burnout influences and consequences simultaneously. Figure 1 represents a structural model of burnout as depicted by Maslach and Jackson (1984).

The MBI has been viewed as a continuous variable ranging from a low to high degree of feelings related to each of the MBI subscales (Maslach & Jackson, 1996). Low scores on the emotional exhaustion and depersonalization subscales and a high score on the personal accomplishment subscale reflected a low degree of burnout. Average scores on all three subscales indicated an average degree of burnout. High scores on emotional exhaustion and depersonalization and a low score on personal accomplishment suggested a high degree of burnout. Maslach and Jackson recommended that scores from the three subscales be viewed separately, not as a single score. Support for the MBI three-factor structure has been evident and considered internally consistent as validated by various studies (Schaufeli & Enzmann, 1998). The most robust factor of the MBI turned out to be emotional exhaustion, which was strongly related to various correlates of burnout. Additional burnout inventories existed, but few had received substantial attention in the research field (McMahan, 2003).

**Models of burnout.** According to Richardson and Burke (1995), there were three characteristics that a comprehensive model of burnout must possess: “(1) incorporate various individual organizational variables that constitute sources of stress and demands leading to burnout, (2) incorporate consequences of burnout in terms of personal, work-related and organizational outcomes, and (3) be able to provide a framework for

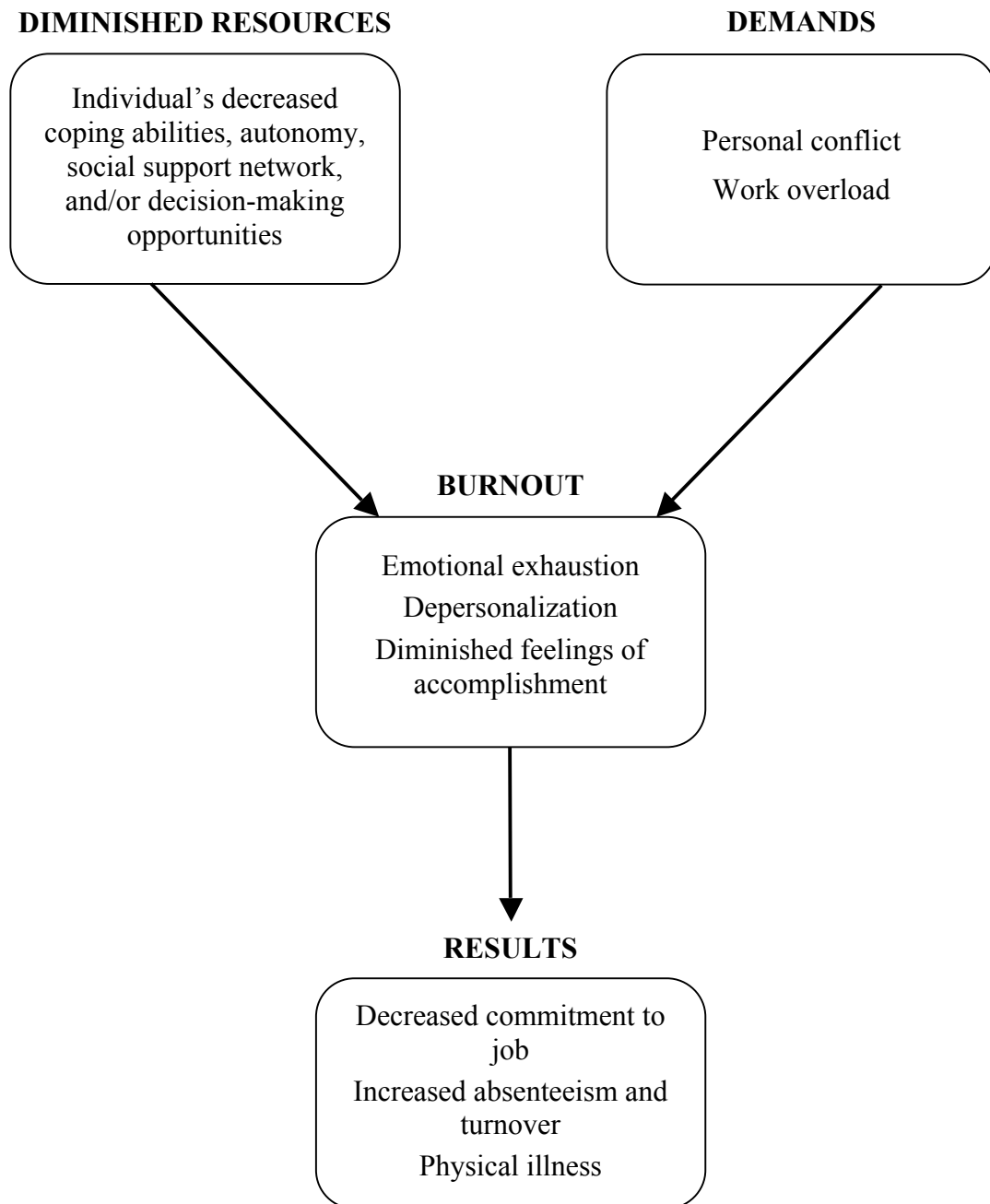


Figure 1. *Structural model of burnout.*

multilevel interventions to alleviate burnout or to prevent its development” (p. 32). As evidenced in the literature, there were three primary models of burnout: Cherniss’s model (1980), Golembiewski’s phase model (1986), and Leiter’s model (1993). Each represented a different view on the individual’s development of burnout.

**Cherniss’s model.** Cherniss (1980) developed the first process model of burnout. This model and variables affecting burnout emanated from a two-year study involving interviews and observations of high school teachers and personnel in mental health, poverty law, and public health nursing (Richardson & Burke, 1995). Even though this was the first burnout model, two studies supported and validated the model (Burke & Greenglass, 1995; Richardson & Burke, 1995). These two studies examined relationships with variables in the model and confirmed that the proposed work setting and stress were significantly correlated with a measure of the attitude changes as described by Cherniss; the two variables were also related to the MBI, the most prominent measure of burnout. Cherniss’s model proposed that numerous work setting characteristics actually interacted with individuals who had pre-conceived career orientations and individuals bring extra-work demands and supports to the work setting (Richardson & Burke, 1995). The combination of these factors resulted in an individual’s experiencing particular sources of stress that occurred in varying degrees. Cherniss (1980) posited that some exhibited active problem-solving strategies while others employed negative attitudes due to stress. Over time, these resulted in burnout.

**Golembiewski’s model.** A second model examined burnout as a phased process. Golembiewski, Munzenrider, and Stevenson (1986) described burnout as a phase model.

Using MBI's three dimensions of burnout (emotional exhaustion, depersonalization, and loss of personal accomplishment), there were eight distinguishable phases of burnout (Golembiewski & Munzenrider, 1988). Golembiewski and colleagues (1986) proposed these eight stages of burnout by dichotomizing the three components of the MBI at the median into low and high scales. During the process of burnout, a theory-based sequence had taken place. First, detachment had occurred. This led to depersonalization, followed by a decrease in job performance and an increase in emotional strain (Golembiewski & Munzenrider, 1988). The classification of the phases of burnout placed depersonalization as the first contributor to burnout, followed by lack of personal accomplishment and then emotional exhaustion (Golembiewski & Munzenrider, 1988). For example, individuals with low levels of burnout scored low for the subdomain of depersonalization, which increased first, then an increase in score for subdomain personal accomplishment, and finally a higher score for emotional exhaustion (Golembiewski & Munzenrider, 1988). Table 1 identifies Golembiewski's phase model in relationship to Maslach's three burnout components.

Research provided support for these progressive phases (Burke & Greenglass, 1995; Golembiewski & Munzenrider, 1988; Golembiewski et al., 1986; Richardson & Burke, 1995). As phases progressed from I to VIII, individuals were more likely to recount a higher number of negative work experiences and outcomes, to see their worksite as less attractive, to indicate decreased satisfaction and higher turnover intentions, to have less job involvement, and to report increased physical symptoms. However, Golembiewski et al. (1983) did not provide a detailed explanation for their

Table 1

*Golembiewski's Phases of Burnout*

| <b>Phase</b> | <b>Depersonalization</b> | <b>Personal<br/>Accomplishment</b> | <b>Emotional<br/>Exhaustion</b> |
|--------------|--------------------------|------------------------------------|---------------------------------|
| <b>I</b>     | Low                      | Low                                | Low                             |
| <b>II</b>    | High                     | Low                                | Low                             |
| <b>III</b>   | Low                      | High                               | Low                             |
| <b>IV</b>    | High                     | High                               | Low                             |
| <b>V</b>     | Low                      | Low                                | High                            |
| <b>VI</b>    | High                     | Low                                | High                            |
| <b>VII</b>   | Low                      | High                               | High                            |
| <b>VIII</b>  | High                     | High                               | High                            |

Adapted from *Teacher Characteristics to Burnout in High School Teachers in Rural Arizona*, by T. L. Mulvaney, 2013, Dissertation, p. 23.

phase model and received criticism for lacking theoretical concepts in regard to burnout (Ashford & Lee, 1997). Furthermore, Golembiewski and Munzenrider (1988) explained that emotional exhaustion was the final step in the burnout process occurring after depersonalization and decreased personal accomplishments occurred. This concept contradicted Maslach's explanation of the burnout process with emotional exhaustion as the catalyst to burnout (Ashford & Lee, 1997; Mulvaney, 2013). Golembiewski's phase model supported progressive phases of burnout, but was criticized for minimizing the significance of emotional exhaustion (Ashford & Lee, 1997; Mulvaney, 2013).

**Leiter's model.** Leiter's model (1993) suggested a researched model of burnout based upon two assumptions. First, the three MBI components of burnout influenced one another over time. Second, the three MBI components "have distinct relationships with environmental conditions and individual difference characteristics" (Richardson & Burke, 1995, p. 35). This model was developed through the use of structural equation modeling, which maintained the three-factor structure posited in the MBI (emotional exhaustion, depersonalization, and reduced personal accomplishment) while testing the contribution of various organizational measures as well as exploring one component of burnout to the other two MBI components. According to Leiter (1993), emotional exhaustion first developed as a result of a demanding environment. In an attempt to cope with emotional exhaustion, an individual experienced depersonalization. According to Leiter's model, reduced personal accomplishment developed independently of the other two burnout dimensions "arising from environmental demands and mediated by the presence of resources" (McMahan, 2003, p. 16). In contrast to the previously mentioned models,

Leiter's model positions emotional exhaustion as centrally located in the burnout process. Stressors could include work overload and conflict with colleagues. However, as Leiter suggested, buffering to burnout occurred when individuals utilized coping efforts, when supervisors and/or co-workers exhibited support, and positive client (or student) relationships existed. Leiter (1993) stated that, as occupational stressors increased, emotional exhaustion occurred, resulting in various outcomes such as a decrease in organizational or professional commitment. Studies have provided significant support for Leiter's model (McMahan, 2003; Richardson & Burke, 1995). Figure 2 depicts three burnout models as they align with Richardson and Burke's characteristics of a comprehensive burnout model.

Based in part on COR theory (Hobfoll, 1989), these burnout models capture the burnout process. However, Cherniss's and Golembiewski's models lack empirical evidence and are piecemeal and limited in scope (Lee & Ashforth, 1996; McMahan, 2003). Leiter's (1993) burnout model offers a more substantial theoretical guide to understanding Hobfoll's COR theory as it relates to burnout.

**Burnout and Conservation of Resource (COR) theory.** As previously discussed, Leiter used the COR theory as a framework for understanding the process of burnout. The association between COR theory and Leiter's model of burnout was described through the demands and resources that contributed to the burnout syndrome. There have been other studies to utilize COR theory as a framework for understanding the relationship between demands and resources as they related to Maslach's three

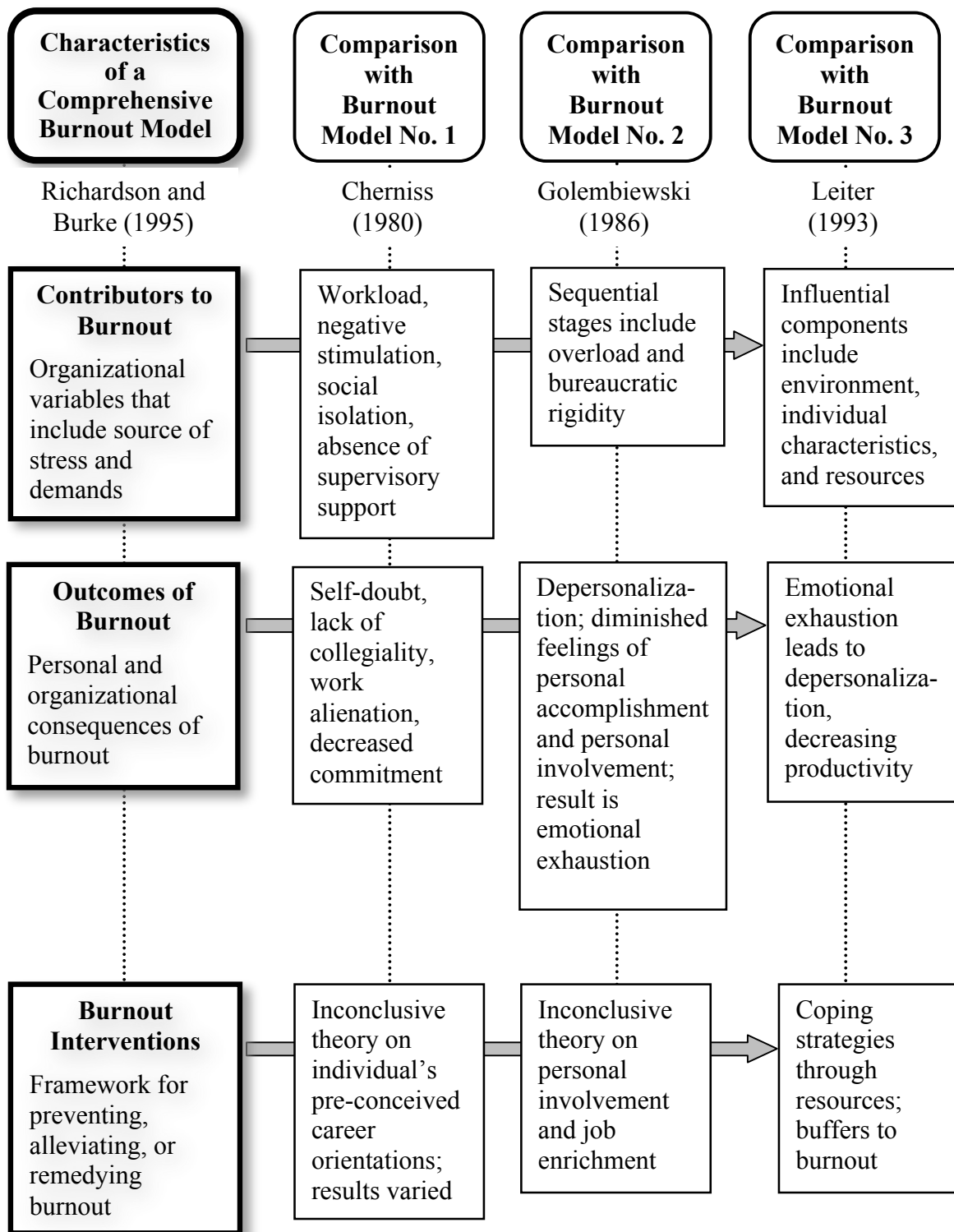


Figure 2. *Comparison of burnout models.*

dimensions of burnout. Two studies using meta-analytic methodology investigated the empirical relations between burnout and stress. One such study was conducted by Lee and Ashforth (1996). Their meta-analytic research accumulated correlations from 61 burnout studies using the MBI and included human service providers such as police officers, counselors, nurses, and teachers. These researchers stated that demands were associated with emotional exhaustion. These demands were identified as role ambiguity, role conflict, stressful events, and work overload (Lee & Ashforth, 1996; McMahan, 2003). Lee & Ashforth (1996) found that the Emotional Exhaustion scale had corrected mean correlations of .65, .53, .50, and .21 with workload, role conflict, work pressure, and role ambiguity. Resources were associated more with depersonalization and reduced feelings of personal accomplishment. Lee and Ashforth's (1996) study identified resources as social support, supervisory support, participation in decision-making, and autonomy (McMahan, 2003). A second meta-analytic study was conducted by Collins (1999). This research revealed lower meta-correlations between burnout and stressors, mostly ranging in the .30's, with the Emotional Exhaustion scale of the MBI and chronic stresses to be mostly in the .40's. Both of these meta-analytic studies and other studies supported the concept that burnout and stress represented distinct constructs (Bakker & Demerouti, 2007; Lee & Ashforth, 1993; Leiter, 1993; Leiter & Maslach, 1988; Melamed, Shirom, Toker, Berliner, & Shapira, 2006; Talmor et al., 2015). The next area of discussion to be presented pertains to demand correlates and related studies.

**Demand correlates.** Demand correlates are stressors perceived by an individual as threatening to his or her resources (Lee & Ashforth, 1996). Stress can affect teacher

quality and effectiveness with students and impair relationships with them; stress can lead to mental and physical illness (Abel & Sewell, 1999; Blasé, 1986; Kyriacou, 1987; Talmor et al., 2015). A teacher's experience of stress can result from the individual's perception of demands, the difficulty with or inability in meeting these demands (stemming from lack of effective coping resources), and the overall threat to one's physical or mental well-being (Lazarus & Folkman, 1984). Studies have found that prolonged stress can result in burnout (Abel & Sewell, 1999; Blasé, 1986; Talmor et al., 2015). The ability to cope with stress in a working environment may not be effective because numerous work environment stressors are out of an individual's control (Kyriacou, 1987). Teachers' sources of stress are considered multidimensional (Abel & Sewell); they exceed expectations and demands from years past (Hammond & Prince, 2007; Hargreaves, 2003). As previously mentioned, Lee and Ashforth (1996) identified work overload, role conflict, role ambiguity, and stressful events as demand correlates relevant to burnout.

***Work overload.*** Work overload has been identified as the most significant predictor of teacher job burnout (Fernet et al., 2012; Mazur & Lynch, 1989). Work demands that involve high levels of interpersonal involvement are reflected in the burnout process and referred to as mental exhaustion (Talmor et al., 2015). As cited by Farber (2000), the National Institute for Occupational Safety and Health reported the number of weekly work hours has increased 8% over the past 20 years, and the American worker now averages 47 hours per week. Teachers, along with other people-service workers, are now asked to do more and more with decreased resources (Farber, 2000).

Research indicates work overload to be linked to burnout (Brewer & Shapard, 2004; Farber, 2000; Gavish & Friedman, 2010; Mazur & Lynch, 1989; McMahan, 2003; Talmor et al., 2015).

Elements of work overload are two-fold. When an individual is given too many demands, yet has inadequate time provided to meet those demands, work overload occurs (Byrne, 1999; McMahan, 2003). Byrne (1999) expanded his explanation of work overload as occurring when an individual lacks the knowledge and skills necessary to successfully complete an assigned task. Contributing factors to teacher's work overload include an excessive amount of paperwork, oversized classes, classes with differentiated learning abilities, imposed time constraints, and the need to teach subjects outside the teacher's particular academic area (Byrne, 1999). It is evident that teacher job demands and workload have increased (Farber, 2000; Gavish & Friedman, 2010).

In contrast to the detrimental effects of work overload, research has found a significant association between decreased workload and low burnout (Huberman, 1993). When work overload does not exist, and an individual finds tasks to be challenging, varied in nature, and personally significant, the more likely it becomes that the individual experiences a sense of self-fulfillment at work and less burnout (Talmor et al., 2015).

***Role conflict.*** An additional demand correlate to high levels of teacher job burnout has been identified as role conflict (Boles, Dean, Ricks, Short, & Wang, 2000; Byrne, 1994). When conflicting expectations or demands are placed upon an individual (e.g., the demands of the school administration on a teacher that conflict with parent

expectations), the teacher experiences role conflict (Brewer & Shapard, 2004; McMahan, 2003).

Another consideration of role conflict suggests that, when individuals experience conflicting role expectations, they tend to impose their own role expectations or rely on self-perceived definitions in order to remedy a situation (Jackson & Schuler, 1985).

Research has found an association between role conflict and high levels of stress and burnout, but responses vary among individuals (Brewer & Shapard, 2004; Byrne, 1994; Conley & You, 2013; Gavish & Friedman, 2010; McMahan, 2003).

***Role ambiguity.*** Although inconsistent findings about the relationship between role ambiguity and teacher job burnout have occurred, McMahan (2003) states, “Role ambiguity has occurred when there has been a lack of understanding by an individual of the expectations placed on him or her” (p. 19). The definition of role ambiguity has been broadened by Byrne (1999) with the following three examples: (a) student discipline procedures are inconsistent or unclear, (b) federal mandates require the restructuring of curricula and a change in implementing pedagogical constructs, and (c) teacher perceive themselves as being held in low regard by the general public, students, parents, and school administrators. Overall, role ambiguity has been associated with negative work outcomes including reduced job satisfaction, decreased commitment, increased anxiety, and burnout (Conley & You, 2014).

While few researchers have brought attention to the absence of a positive relationship between role ambiguity and burnout (Byrne, 1994), this absence is noteworthy in that it supports McMahan’s assumption that findings about the relationship

between role ambiguity and burnout are inconsistent. Other researchers have reported a positive relationship between role ambiguity and teacher burnout does exist (Brewer & Shapard, 2004; Burke & Greenglass, 1995; Conley & You, 2014).

***Student misbehavior (stressful events).*** Disruptive students have been identified as a work-related stressor for teachers (Borg & Riding, 1991; Chen, 2013; Farber, 1991; Fernet et al., 2012; Haberman, 2004; Hastings & Bham, 2003; McMahan, 2003; Sims, 2013). Kyriacou (1987) suggested that continuous daily hassles were dominantly higher stress sources than occasional stressful encounters with problematic pupils. Several studies have indicated that student disciplinary stressors have proved a consistent, and perhaps the best, predictor of teacher stress (Abel & Sewel, 1999; Byrne, 1994; Gavish & Friedman, 2010; Ingersoll, 2007; Lauer, 2004; McMahan, 2003). In fact, studies have linked student misbehavior to high degrees of teacher burnout (Abel & Sewell, 1999; Byrne, 1994; Fernet et al., 2012; Friedman, 1995; Lauer, 2004; Mazur & Lynch, 1989). Teacher burnout and teacher attrition have been influenced by student behavior (Chen, 2013; Ingersoll, 1997; Kokkinos, Panayiotou, & Davazoglou, 2005). One supporting study of student disciplinary stressors was conducted by Abel and Sewell (1999). Based on results from using the MBI, their study of 98 urban and rural school teachers found that teacher stress from student misbehavior was significantly greater than stress from poor working conditions or poor staff relationships for both rural and urban school teachers. Friedman conducted a replication of study that examined teacher burnout and student misbehavior. Results suggested that student behavior affected teacher burnout. Ingersoll (2003) carried out a detailed, multi-variant and multi-level analysis on turnover

of mathematical and science teachers in public schools. Study findings indicated that the strongest predictors of this turnover was the degree of student discipline problems. In contrast, Fernet et al., (2012) suggested that teachers who were confident in their abilities to teach and deal with disruptive students perceived themselves to be competent and expressed no association to burnout.

Literature covering demand correlates has served as evidence that Lee and Ashforth (1996) accurately identified correlates attributing to teacher stress and, in turn, ultimately leading to burnout. However, these correlates were not isolated contributors to teacher stress and burnout. One could speculate that the level of stress resulting from the constantly increasing demands for teachers was likely to be significant. The role of the teacher was becoming increasingly more complex and demanding. Jobs that involved working with people (e.g., nurses, service workers) were emotionally challenging (Maslach & Jackson, 1981), and the practice of teaching was a psychologically demanding profession (Bakker & Demerouti, 2007; Conley & You, 2014; Gaines, 2011). Although teachers have strived to effectively educate and guide students, they have often been left feeling intellectually and emotionally drained due to demand correlates such as work overload, role conflict, role ambiguity, and frequent student misbehavior (Chang & Davis, 2009; Talmor et al., 2015). Demand correlates could also be described as individual emotional demands—those necessary energies for carrying out daily workloads, regulating personal expressions, and controlling their own emotions (Chang, 2009; Maslach et al., 2001; Sims, 2013). Teachers have become depleted from expending emotional energies on the various demand correlates and have been prone to emotional

exhaustion (Maslach, 2003). A visual model of the linkages to demand correlates as influences to teacher burnout and attrition is depicted in Figure 3. Teachers have continued in their endeavors to serve and help with the needs of others, making significant emotional investments that have required emotional stability and a balanced state of mind (Sims, 2013). In an attempt to self-regulate emotionally draining events, teachers have sought resources to compensate for their emotional depletion. The following section discusses the resource correlates related to teacher job burnout.

**Resource correlates.** Resource correlates have served as compensation for certain losses by indirectly helping workers cope with work demands. For example, personal experiences of weak social or supervisory support have been likely to lead to interpersonal stressors and from there to burnout. Yet, with strong peer or supervisory support, it has become more likely that this progression can diminish substantially (Lee & Ashforth, 1996; Leiter, 1993).

As previously mentioned, Lee and Ashforth identified resource correlates as social support, supervisory support, and teachers' participation in the decision-making process. Research has proposed that resources may serve as a buffer to work overload and demands leading to stress and burnout (Bakker & Demerouti, 2007). Insight into resource correlates may serve to increase understanding of the phenomenon of burnout, to contribute to predicting preventive or remedial burnout strategies, and to foster the retention of high quality teachers in the profession.

***Supervisory Support.*** In support of Lee and Ashforth's resource correlates assumptions, Bakker and Demerouti (2007), Lauer (2004), and McMahan (2003)

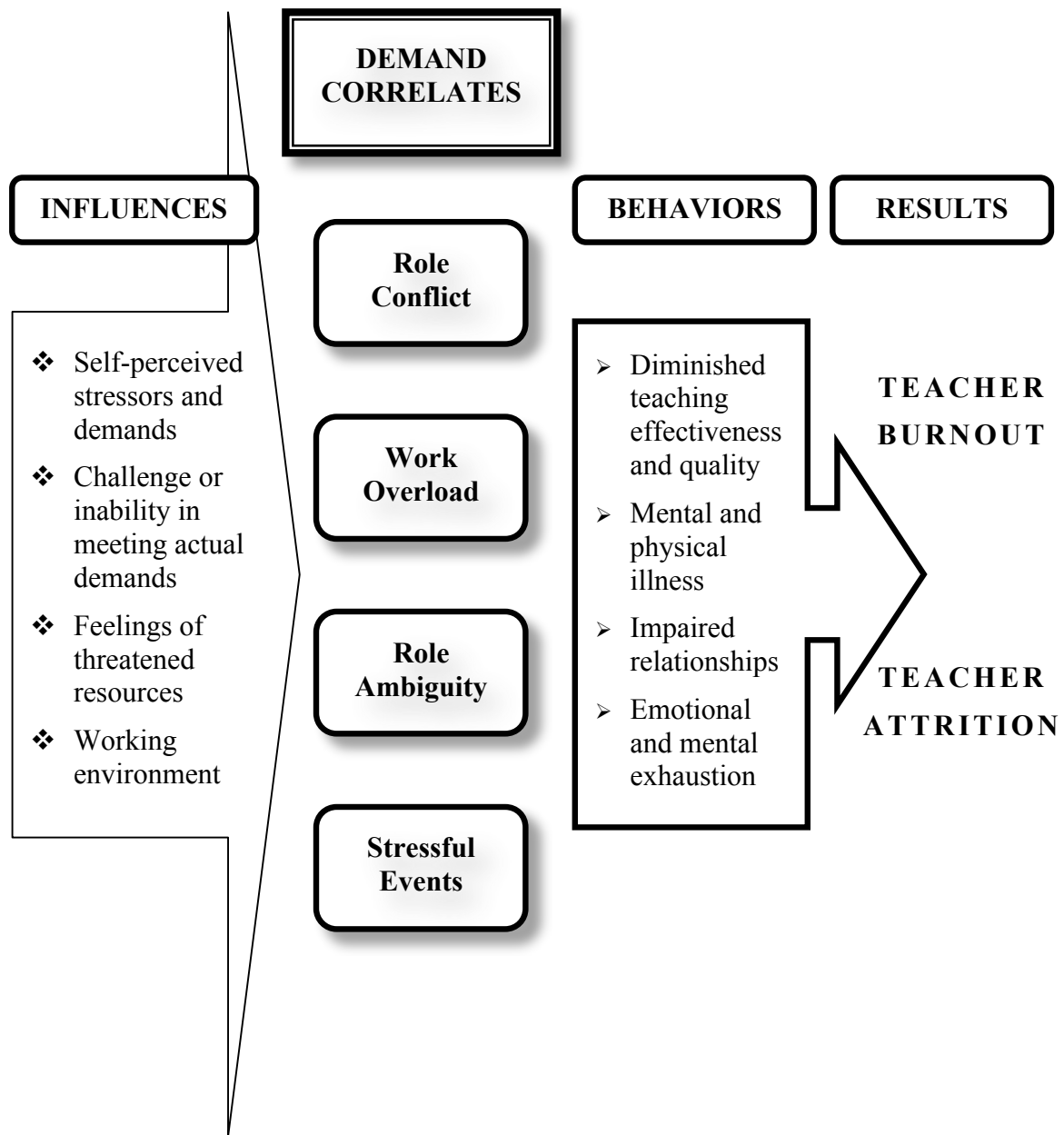


Figure 3. Conceptual model of demand correlates' linkages to teacher burnout.

affirmed that burnout researchers were interested in the influence of supervisory support for teachers. Previous research indicated that supervisory support was critical to teachers (Bakker & Demerouti, 2007; Gavish & Friedman, 2010; Lauer, 2004; Maslach & Leiter, 1999; Maslach et al., 2001). Research also pointed out that principal support appeared to be more important to teachers than support offered from colleagues (Bakker & Demerouti, 2007; Maslach et al., 2001). Furthermore, statistically speaking, the role of the school principal helped to explain only one aspect of burnout, exhaustion (Gavish & Friedman, 2010). Perhaps it would be beneficial for a school district to explore the supervisor's and/or principal's role rather than the individual teacher's personal burnout needs (Dworkin, 2001; Lauer, 2003).

Talmor et al. (2015) offered the suggestion that, when a worker had supportive leadership, efficient communication practices tended to occur; when a respectful working relationship existed, the individual's sense of control and self-fulfillment were enhanced, thus lowering the level of burnout experienced. Research conducted by Teven (2007) found that teachers who perceived their immediate supervisors as caring for their welfare and well-being experienced greater job satisfaction. Bakker and Demerouti (2007) noted;

A high quality relationship with one's supervisor may alleviate the influence of job demands (e.g., work overload, emotional and physical demands) on job strain... Leader's appreciation and support may also aid the worker in coping with the job demands, facilitate performance, and act as a protector against ill health.  
(p. 315)

The more teachers felt appreciated and supported by leaders, the more satisfied they were with their jobs. This brought about teacher motivation and dedication to their work, thus reducing susceptibility to burnout.

The majority of research indicated a significant relationship between high supervisory support and low burnout or low supervisory support and high levels of burnout (Byrne, 1994; Ferent et al., 2012; Gavish & Friedman, 2010; Hammett, 2013; Mazur & Lynch, 1989; Teven, 2007). In general, administrative support was necessary for teachers to feel empowered and confident in their classroom practices. The absence of this support could lead to decreased motivation, inspiration, and creativity. In addition, lack of quality leadership or, in many instances, principal turnover, often left teachers feeling insecure and isolated; this affected teachers' attitude and willingness to invest in growth and change. One could speculate that the level of stress resulting from the constant increasing demands for teachers would be significant.

***Peer Support.*** Another burnout moderator was the degree to which teachers supported one another (McMahan, 2003). Researchers noted that teachers who sought out emotional and social support by turning to others (peers and colleagues) benefited when under stress; yet, those who avoided the problem(s) might actually exacerbate distress (Gavish & Friedman, 2010; Burke, Greenglass, & Schwarzer, 1996; Greenglass, Fiksenbaum, & Burke, 1995, 1996).

Overall, research has been inconclusive as evidence of the relationship of peer support, or lack thereof, with burnout. Some research indicated that, when peer support was present, teachers had lower levels of stress and/or burnout (Bakker & Demerouti,

2007; Greenglass et al., 1995, 1996). On the other hand, mistreatment from colleagues (contradictory to support) could have negative effects on teachers (Sims, 2013), but that lack of peer support as a resource correlate was not significantly indicative of high levels of burnout (Burke & Greenglass, 1996). Furthermore, as noted by McMahan (2003), general accounts of peer support were informal in nature. Although Lee & Ashforth (1996) identified peer support as a resource correlate to burnout, the existing literature proved richer in supervisory rather than colleague support regarding burnout.

***Decision-making.*** According to McMahan (2003), “That teachers had little or no influence on decisions that directly affect them (e.g., curricular decisions) has been another factor that researchers have considered when investigating teacher burnout” (p. 21). Some research findings on the relationship between decision-making and teacher burnout revealed that teachers who did have influence on decision-making were associated with low levels of burnout (Byrne, 1994; Fernet et al., 2012; Mazur & Lynch, 1989). Other studies suggested that increased responsibility of teacher participation in decision-making served to increase stress due to possible disputes and disagreements (Conley & You, 2014; Maslach et al., 2001; Rogers & Molnar, 1976).

It became evident that teachers had been given the added responsibility of leadership and decision-making roles (Lauer, 2004; Gavish & Friedman, 2010). With this increase of responsibilities came pressure (internally and externally imposed) to adequately perform assigned tasks and contribute to the decision-making process. Research found that teachers’ perception of their own inability to adequately meet the responsibilities related to decision-making (communication, assertiveness, and/or

influence) significantly predicted feelings of exhaustion and lack of accomplishment, conducive to developing burnout (Fernet et al., 2012; Gavish & Friedman, 2010). Research indicated a relationship between decision-making and burnout (Byrne, 1994; Gavish & Friedman, 2010; Lauer, 2004; Maslach et al., 2001; Mazur & Lynch, 1989). However, research lacked convincing findings on the influence that decision-making had on levels of burnout.

**Possible moderating variables.** The previous section discussed literature reviews related to demand and resource correlates in relationship to teacher burnout as presented by Lee and Ashforth (1996). This section considers other variables as possible moderators of the relationship among the independent and dependent variables examined in this meta-analytic study. Literature review findings included numerous, potentially applicable variables; however, the three salient variables included locus of control, coping, and demographic characteristics.

***Locus of control.*** Investigations of locus of control in relationship to burnout have been a topic among several researchers (Akca & Yaman, 2009; Brouwers & Tomic, 2000; Conley & You, 2013; Gan & Shang, 2007; Judge & Bono, 2001; Tomic & Tomic, 2008; Wang, Bowling, & Eschleman, 2010). This moderating variable has referred to the manner in which an individual viewed personal control over life events (McMahan, 2003). The initial concept of locus of control came from social learning theory, which described varying degrees of internal and external locus of control. Internal personalities reflected an individual's belief that rewards were obtained through their own behaviors, independence, and control of their own destination. External beliefs held that resulting

events came at the mercy of others' influence, random luck, or fate, and that individuals had no direct control over their own destinies.

A review of literature found that those with higher levels of internal locus of control were associated with lower levels of stress and burnout, while individuals with higher levels of external locus of control were more likely to experience higher levels of stress and burnout (Akca & Yaman, 2010; Byrne, 1994; Conley & You, 2014; Hipps & Malpin, 1991; Lauer, 2004; Maslach et al., 2001; Mazur & Lynch, 1989; Tevan, 2014; Wang et al., 2010). A study of 53 preschool teachers revealed a significant positive relationship between teachers' external locus of control and emotional exhaustion or depersonalization (Akca & Yaman, 2010). Jackson & Schuler (1985) conducted a meta-analysis that explored locus of control, finding that those who experienced stressors were generally associated with external locus of control. Studies on locus of control have led to conclusions that supported locus of control as a moderating variable in relationship to the burnout process (Akca & Yaman, 2010; Conley & You, 2014; Jackson & Schuler, 1985; Lauer, 2004; Wang et al., 2010).

Among the most frequently cited predictors of burnout is internal and external locus of control (Gan & Shang, 2007; Lauer, 2004; Wang et al., 2010). Studies of service work burnout have found that locus of control served to moderate the relationship between work stress and physical and/or mental suffering (Mearns & Cain, 2003; Wang et al., 2010). Researchers have concluded that internal and external locus of control's relationships with job attitudes, employees' well-being, withdrawal intentions, perceived work stressors, and perceived autonomy could influence withdrawal behaviors such as

high absenteeism and intent to leave among employees (Akca & Yaman, 2010; Conley & You, 2014; Lauer, 2004; Wang et al., 2010). For example, people internally controlled were more likely to set challenging personal goals and exhibit superior performance as compared to those externally controlled (Fernet et al., 2012; Wang et al., 2010). Fernet and his colleagues (2012) offered contrasting suggestions in that internals put pressure on themselves through internal coercion (e.g., anxiety, shame), and externals sought to obtain a reward in order to avoid constraint. Finally, locus of control might influence work relationships and coping behaviors. In general, internals possessed better social skills, were more considerate of others, and were more influential on others than externals (Akca & Yaman, 2010; Wang et al., 2010). This suggested that individuals with high levels of internal (vs. external) locus of control were more likely to cope successfully with stressful situations and were better at making and following through with plans to reduce or eliminate stress (Conley & You, 2014; Wang et al., 2010).

***Coping.*** Coping has been described as a mental and/or physical art form that substantially enabled an individual to adapt, manage, adjust, or develop emotional balance while faced with challenging conditions, challenging situations in life, and/or high stress environments (Betoret, 2006; Lazarus & Folkman, 1984; Sims, 2013; Schwarzer, Schmitz, & Tang, 2008). Teachers who perceived a sense of harmony between emotional and physical well-being were less likely to experience the burden of work demands and excessive strain that could lead to burnout (Holmes, 2005; Mearns & Cain, 2003; Sims, 2013). As cited in Lauer's (2004) study, in order for teachers to succeed in contending with the ever increasing workload, it was essential to develop new

coping skills in order to deal with stress and prevent burnout. Effective means of preventing stress and burnout was for teachers to develop and employ strategies for coping (Hargreaves, 2003; Sims, 2013; Wagner, 2010).

Research has suggested that, although high levels of stress do occur, it might not always lead to burnout (Mearns & Cain, 2003). There have been a variety of manners in which an individual might cope with stress and experience outcomes the stress might produce (Gavish & Friedman, 2010; Mearns & Cain, 2003). International studies on Hong Kong and Swedish teachers found that coping strategies reduced negative effects of stress on teacher's emotional well-being (Brenner, Sorbom, & Wallace, 1985; Chan, 1998). In addition, Mearns and Cain (2003) surveyed 86 teachers in six schools using various survey instruments to measure teacher burnout, specifically measuring teacher stress, coping, and burnout. Their research indicated that teachers who relied on coping strategies experienced lower levels of stress, reducing the likelihood of burnout.

The burden of stress has taken a toll on teachers and has required tremendous emotional investment and considerable time and energy (Freudenberger, 1974). One approach to coping with this burdensome burnout factor has been the tendency to treat [students] in a dehumanizing manner; this was referred to as a defensive coping response (Maslach, 1976). This demonstration of coping represented a negative reaction to stress, where individuals limited their involvement with others, created buffers between themselves and their job responsibilities, became distant, and basically gave up (Gavish & Friedman, 2010). Furthermore, if coping strategies such as depersonalization were

ineffective at decreasing or removing stress, burnout was more likely to occur (Gavish & Friedman, 2010).

***Demographic variables.*** An additional type of moderating variable presented in burnout literature pertained to demographic variables such as age, gender, years of teaching experience, marital status, and college degree (Akca & Yaman, 2010; Brewer & Shapard, 2004; Grossi, Perski, Evengard, Blomkvist, & Orth-Gomér, 2003; Lauer, 2004; Maslach, 2003; Maslach et al., 2001; Timms, Graham, & Caltabiano, 2006). Gaining further understanding as to the reasons why teachers remained in the profession after having experienced burnout would benefit stakeholders for various reasons. Insight into teachers staying or leaving had been documented in previous and current literature (Ingersoll & Merrill, 2010; Ingersoll & Perda, 2010). Understanding this variable could help further document prior research that had suggested that teachers who remained within the profession might feel trapped due to longevity and/or inadequate retirement plans (Ingersoll & Merrill, 2010; Lauer, 2004; Truch, 1980). Research has also established that teachers who had suffered burnout and yet remained in the classroom had a negative impact on students (Lauer, 2004; Truch, 1980).

Truch (1980) identified various types of teachers who exhibited burnout symptoms. For example, the “master teachers” demonstrated burnout consequences due to over-extending themselves with unrealistic commitments to their students’ process of learning at the cost of their own well-being and health. As another example, “rust-out teachers” experiencing burnout symptoms were described as representative of the “core of teaching personnel” who had easily entered into teaching, but only remained because

there was no effective exit currently available. Teachers experiencing burnout and remaining in the teaching profession negatively impacted students as well as others in the teaching profession (Lauer, 2004).

In order to further understand burnout variables and consequences, Lauer (2004) cited the following research:

Mykletun and Mykletun (1999) explored exhaustion, high cynicism, and low professional efficacy in teachers. The result of the study suggested that factors associated with exhaustion were greater age, female gender, low sense of competence in handling classroom process, and organizational processes. Factors associated with the high cynicism group identified on the basis of the researchers work were male gender, low sense of competency, and stress due to lack of competence and conflicts with pupils and colleagues. The findings for low professional efficacy were reported by the researchers as characterized by male gender, low sense of competence in handling both the pupils and organizational expectation as well as low productivity when faced with stress.” (p. 42)

As suggested by Maslach et al. (2001), younger workers were more likely to experience burnout; therefore, teachers who were over 30 years of age reported to have had less incidents of burnout. The assumption then was that individuals who burned out early in their careers were more likely to resign from the profession as compared to older workers (Ingersoll & Merrill, 2010). Assumption held by Maslach (2001) and colleagues has been supported by more recent evidence of teachers leaving the profession early in their teaching career. In consideration of years of experience, research conducted by

Lauer (2004) found that no relationship existed between the number of years' teaching and burnout. Hence, as stated by Lauer (2004), "age may not be a major factor in efforts to explain burnout" (p. 34). The correlation between age and burnout was inconclusive, yet may be due to differing characteristics of subjects or sampling error (Brewer & Shapard, 2004; Hunter & Schmidt, 1990).

Regarding higher academic degree and teacher job burnout, Maslach (2003) discovered evidence that burnout existed more often with individuals who had completed college, but had not yet obtained any postgraduate education. Maslach observed that teachers who possessed higher levels of education exhibited higher levels of personal goals and expectations, but found themselves to be inadequately prepared for the onslaught of stress and, subsequently, to burnout. Literature has defined burnout as the final phase to a progressive buildup of stress (Gavish & Friedman, 2010; Maslach & Jackson, 1981) This concept, as supported by a novice teacher burnout study conducted by Gavish and Friedman (2010), found observed burnout to be part of an ongoing process and suggested that, when teachers entered teaching, they were already burned out.

A study by Tumkaya (2001) found that burnout was higher in male teachers than in female teachers. Individuals who were married were less likely to experience burnout as compared to singles (Cordes & Dougherty, 1993). Additional demographic consideration has been presented by Burke and Greenglass (1995) who suggested that grade levels taught have an effect on teacher burnout. They reported that high school teachers expressed greater distress and dissatisfaction than did elementary teachers.

This section discussed research literature that examined correlates in relationship to teacher burnout. As presented by Lee and Ashforth (1996), demand and resource correlates have been considered as primary determinates of burnout. Consistent support for demand and resource correlates in relationship to burnout was evident and affirmed by researchers throughout the literature (Akca & Yaman, 2010; Byrne, 1999; Conely & You, 2013; Fernet et al., 2012; Gavish & Friedman, 2010; Lauer, 2004; Maslach, 2003; Maslach et al., 2001; Mazur & Lynch, 1989; McMahan, 2003; Sims, 2013; Talmar, 2014; Teven, 2007; Wang et al., 2010). Demands such as work overload, role conflict, role ambiguity, and student misbehavior contributed to teacher stress, which ultimately led to burnout. Resource correlates considered by researchers included supervisory support, peer support, and decision-making. Additional variables presented as underlying measures to burnout included locus of control, coping, and demographic variables. However, these variables were not isolated in the influence of stress and burnout and should be explored in future research. Research findings were inconclusive on some variables as correlates to burnout; therefore, a meta-analysis could serve as the best methodology in resolving conflicting results. Brewer and Shapard (2004) stated,

Meta-analysis provides a means to reconcile apparently conflicting results from different studies and subsequently to explain differences in findings to draw general conclusions. From these conclusions, human resource professionals can design interventions and strategies to buttress employees against the damaging effects of burnout.” (p. 105)

A thorough discussion of meta-analysis is presented in the following section.

## **Meta-analysis as a Research Methodology**

Educational research produced literally hundreds of studies that varied from methodologies used, measurements taken, and the types of person studied, but shared the same research topic. As discussed in this chapter, a plethora of burnout studies have been conducted, but many findings were inconclusive and lacked definitive answers to the current burnout dilemma. The need to systematically “fit together a sprawling and seemingly contradictory research literature” (Glass, 1977, p. 353) became critical to reconcile disparity in research findings (Brewer, 2009, Glass, 1977; McMahan, 2003). Meta-analysis provided a quantitative technique to reconcile the differences within a substantial body of research literature to clarify findings (Brewer, 2009; Creswell, 2008; Glass, 1977, 2000; Hunter & Schmidt, 1990; McMahan, 2003, Wolf, 1986). This study has undertaken a scholarly endeavor to integrate the high volume of recent burnout research. A thorough discussion of meta-analysis follows.

Prior to meta-analysis, ways of selecting and conducting research and methods of combining research findings were inconsistent, with little thought given to the methodological and technical problems of research integration (Brewer, 2009; Glass, 1977). This inconsistency led to conflicting results and called for further research (Hunter & Schmidt, 1990; Wolfe, 1986). Unlike researchers in the physical sciences, social scientists have struggled with such inconsistencies, conducting more and more studies on the same topic, resulting in incessant research instead of definitive answers (Brewer, 2009; Hunter & Schmidt, 1990; McMahan, 2003; Wolfe, 1986). Researchers have

experienced barriers in making sense of the extensive number of accumulated study findings (Hunter & Schmidt, 1990).

Traditional literature reviews have been conservative and proven inadequate in combining research findings (Glass, 1977; Glass, McGaw, & Smith, 1981; McMahan, 2003). According to McMahan (2003) and Wolfe (1986), problems with traditional literature reviews include:

1. Reviewer's selection process, often based on a bias view of the quality of a given study;
2. Reviewer's subjective interpretations and differential weighting of study findings;
3. Reviewer's misleading interpretations of study findings;
4. Reviewer's failure to identify various study characteristics as possible explanations for comparison or consistent results across studies; and
5. Reviewer's failure to examine moderate variables in the relationship under review.

These problems with traditional literature reviews, the need to systematically summarize research findings, and the need for professionals to know how to merge and make sense of conflicting information led to the grouping of similar aspects of research (Brewer, 2009). In response, Glass (1977) and Hunter and Schmidt (1977) developed statistical ways to reconcile the differences among sources—meta-analysis.

Glass (2000) first coined the term meta-analysis (originally derived from meta-evaluation, meaning the evaluation of evaluations) in 1975 as a reaction to personal and

scholarly circumstances. He acknowledged the increasing volume of research; traditional summative and narrative approaches were failing at adequately representing the various fields. However, there were factors that prompted Glass to devise meta-analysis. Three primary influential circumstances led Glass to come up with meta-analysis.

1. Glass had personal motive. His dedicated involvement in psychotherapy and his goal to gain experience in therapy practice was thwarted by critic Eysenks's negative reviews that psychotherapy was useless. Glass took the negative reviews personally, as he had dedicated a decade of his life to the field (investing his finances a great deal as well) and felt that his scholarly judgment was being questioned. Glass set out to rebuke Eysenk's literature reviews that dismissed psychotherapy and to demonstrate the effectiveness of psychotherapy in practice.
2. As president of the American Educational Research Association, Glass was asked to speak at the annual meeting to over 1,500 researchers in 1974. Glass wanted something profound and worthwhile to present to the educational research arena. He was determined to contribute to research society and not disappoint this scholar audience.
3. Glass sought a way to advance educational research while proving the effectiveness of psychotherapy.

The meta-analysis debate has been ongoing among researchers ever since its origination. Glass (2000) disclaimed Eysenk's credibility by pointing out Eysenck (1978)

did not include theses, dissertations, project reports, or other unpublished, peer-reviewed journals. In criticism of these exclusions, Glass stated,

It's one thing to believe that peer-review guarantees truth; it is quite another to believe that all truth appears in peer reviewed journals... meta-analysis must deal with all studies, good, bad, and indifferent, and that their results are only properly understood in the context of each other, not after having been censored by some *a priori* set of prejudices. An effect size of 1.50 for 20 studies employing randomized groups has a whole different meaning when 50 studies using matching show an average effect of 1.40 than is 50 matched groups studies show an effect of -.50, for example.” (para. 2 after Figure 1)

Glass continued to criticize Eysenck's methodology and suggested that, if one conducted all research in the opposite manner in which Eysenck did, one would be led straight to meta-analysis. Behavioral therapists readily accepted meta-analysis, crediting the methodology as “revolutionary and proved what they had known all along” (Glass, 2000, page not numbered). Popularity of meta-analysis in the social sciences and education has significantly increased over the past quarter century. As stated by McMahan (2003), “By using meta-analytic procedures, researchers have been able to synthesize a wide variety of research findings while reducing their own bias” (p. 24). The advantages and criticisms of meta-analysis follow.

**Advantages of meta-analysis.** This study employed meta-analysis chiefly because “it provides a means to synthesize disparate research findings” (McMahan, 2003, p. 24). Researchers have provided a plethora of favorable benefits to meta-analysis. To

begin, meta-analysis has afforded quantitative methods of analysis so that a more statistically reliable and valid method of analysis could be available to researchers, while providing an explanation of what needed to be explained by the theory (Bae, 2007; Hunter & Schmidt, 1990; McMahan, 2003; Rosenthal, 1979). Bae (2007) explained advantages of utilizing meta-analysis because it:

1. Reduced variations among reviewers and differentiates related studies from other related studies;
2. Integrated individual research articles into one category;
3. Included a variety of studies, even the otherwise forgotten articles; and
4. Served to translate various study results into a concise, quantitative form.

Furthermore, the ongoing, extensive employment of meta-analysis research brought to light the following benefits of meta-analysis:

1. Meta-analysis could generate conclusive answers quantitatively to complex issues with similar hypotheses to clarify findings and draw general conclusions. Otherwise, results of bodies of research could be inconsistent (Brewer, 2009; Brewer & Shapard, 2004; Creswell, 2008; Glass, 2000; McMahan, 2003).
2. Through the use of quantitative measures, using meta-analysis as a research tool could provide insight into the strengths and weaknesses of previous research findings (Brewer, 2009; Brewer & Shapard, 2004; Glass et al., 1981).

3. Meta-analysis, as a research tool, provided a suitable means to help professionals with complex challenges facing their organization (Brewer, 2009; Wolfe, 1986).
4. A high quality meta-analysis will extend an exhaustive literature search, providing an organized method for integrating a multitude of studies on a given topic into meaningful findings (Brewer, 2009; Lipsey & Wilson, 2000; McMahan, 2003; Mullen & Rosenthal, 1985).
5. Through the implementation of meta-analysis procedures, researchers would be able to synthesize a wide variety of research findings while reducing their own personal bias (Glass et al., 1981; McMahan, 2003).
6. Meta-analysis examined a thorough representative sample of studies (Glass et al., 1981).
7. Through a meta-analytic process, an equitable representation of studies comprised published and unpublished research findings (Brewer, 2009; Glass et al., 1981; McMahan, 2003).

In general, meta-analysis has become the statistical analysis of the summary findings of many empirical studies and has been characterized as quantitative, free from prejudgment of research findings in terms of research quality, and brought to an end with general conclusions (Glass et al., 1981; Hunter, 1990; Lipsey & Wilson, 2000; Wolfe, 1986). A meta-analytic review and summary of an area of research might serve many functions such as helping direct future research more efficiently, increasing the effectiveness in which policy decisions were made, and disseminating scientific

information to wider audiences (Mullen & Rosenthal, 1985). This methodology was never intended as a complicated means, one that would only add to study upon study. Glass (2000) described it simply as, “The term ‘meta-analysis’... is not the grand theory of research; it is simply a way of speaking of the statistical analysis of statistical analysis” (para. 1 after Figure 1).

**Criticisms of meta-analysis.** The criticisms of meta-analysis could be grouped into two categories: the “apple and oranges” problem and the “file drawer problem” (Hunter, 1990; Glass et al., 1981). Overall, some researchers considered meta-analysis inadequate as it compared studies done with different measurement techniques and different types of persons, that it aggregated conclusions that should be derived only from “good” studies, and that large result data sets rendered a mistaken impression of the reliability of the results (Glass, 1977; Glass et al., 1981; Hunter & Schmidt, 1990). The following subsection discusses criticisms of meta-analysis.

***Apples and oranges.*** Some researchers have said that a meta-analysis could be difficult to understand regarding how studies with widely varying materials, measures, and methods could be adequately compared (Hunter & Schmidt, 1990; Lipsey & Wilson, 2000; Rosenthal & DiMatteo, 2001). One form of criticism of meta-analysis argued that no two things could be compared unless they were the same. This has often been referred to as comparing apples and oranges, and critics have believed that we just end up with a “statistical fruit salad” (Hunter & Schmidt, 1990; Lipsey & Wislon, 2000). Glass’s approach was “if studies are the same, then there are not two things, there is only one thing and comparison is not an issue” (Glass, 2000, “Criticisms of Meta-analysis,” para.

2). Glass further explained meta-analysis as the consideration that no two studies were the same, that all studies differed, and that one should only be concerned with how they might vary across factors conceived as important. If studies were related in methodology and the outcome of research, then studies in a meta-analysis could be grouped according to methodology to determine its effects. Rosenthal and DiMatteo (2001) suggested that “it is a good thing to mix apples and oranges, particularly if one wants to generalize about fruit, and that studies that are exactly the same in all respects are actually limited in generalizability” (p. 68). The intention of a well-conducted meta-analysis was to methodically take these differences into account by treating them as moderator variables (Rosenthal & DiMatteo, 2001).

***File drawer problem.*** Eysenck (1978) criticized meta-analysis as “meta-silliness” and stated that, should one abandon scholarly articles [and include unpublished, non peer reviewed articles], then “it would mark the beginning of a passage into the dark age of scientific psychology” (p. 517). Some researchers believed only published studies to be valid data findings. However, not all journals were created equal. Assessing the quality of reviewed research depended on the journal’s editorial policy and publication standards. As a result, the quality of publications varied among journals. Researchers have been faced with the dilemma on how to remove this problem. For instance, should a reputable, non-refereed journal be given the same consideration as a refereed journal? Even published research might not be of equal quality. There was no definite guarantee that all published articles were high quality, thereby creating a bias in published studies. When considering the published realm of studies, the researcher should consider what could be

weighted in accordance with the soundness of methodology, regardless of journal quality. This could be subjective as based upon the expert's level of experience and interpretation of the study results. This bias might also be applied when considering non-published studies known as the file drawer problem (Rosenthal, 1979). Eysenck referred to using unpublished studies as invalidated, subjective, and unreliable, stating that it would be nothing more than "garbage in—garbage out" (Hunt, 1997; Rosenthal & DiMatteo, 2001, p. 66). However, in rebuttal to this criticism, Glass never suggested that researchers "abandon" scholarly articles, but rather include all applicable studies, thus alleviating bias in the inclusion and exclusion process. Rosenthal and DiMatteo (2001) suggested "using a weighting technique that takes into account and quantifies the methodological strength of each study in the analysis" (p. 67). In consideration of potential bias in study selections, meta-analysis has included both published and non-published studies, creating equitable representation, thus minimizing bias. Researchers using meta-analysis have considered the file drawer problem as a serious issue because it could produce bias and inflate the probability of making a Type II error (a sample that only yielded statistically significant results). Chapter 3 discusses the file drawer problem as it relates to this meta-analytic study.

Critics have agreed that there was room for improvement in the methodology used in meta-analysis. Existing research techniques were not used as effectively as they could be, and although meta-analysis had its defects, meta-analysis could and often did lead to more rigorous reviews of research than were possible with conventional research

techniques (Wachter & Straf, 1990). As suggested by Lipsey and Wilson (2000), it was crucial to be specific about the criteria used for exclusion and inclusion in a meta-analysis.

**Replicating a meta-analysis study.** The process of repeating a study using the same methods, but with different subjects and different experiments, has come to be known as replication (Heffner, 2011; Shuttlesworth, 2009). Replication of a study was determined to be significant for several reasons.

1. Replication assured that results were valid and reliable.
2. Replication determined generalizability of the role of extraneous variables.
3. Replication applied results to real world situations.
4. Replication served to inspire new research which combined previous findings from related studies.
5. Replication helped increase the generalizability of any significant findings (Elsworth & Isakson, 1977; Heffner, 2011; King, 1995).

Discussions among researchers supported the growing adoption of replication studies (King, 1995; Shuttlesworth, 2009). For the purpose of this study, replication served to explore teacher burnout studies by applying the same theory and methodology to a new time period (meta-analysis of teacher burnout for the past fifteen years, January 2000 to January 2015) in attempt to determine generalization. Shuttlesworth (2009) suggested the following guidelines and criteria for a replication:

1. There is significance in the original research question and a replication can contribute and support to the body of research.
2. Existing research literature supports the topic relevance.

3. A replication study possesses the potential to empirically support the results of the original study, either by clarification or extending its generalizability.
4. The researcher possesses the competence and expertise on the chosen topic, has access to adequate information, and is capable to design and execute a replication.
5. The study can be based on current knowledge in the same field of study, extending or modifying the original study.
6. The same research rigor can be applied to a replication as was in original study.

The absence of teacher job burnout replication studies has been problematic because empirical research on the topic has been somewhat inconclusive and has lacked definitive answers to a growing phenomenon of empirical studies being prone to error (Burman, Reed, & Alm, 2010). Burnout research has analyzed the same problem from different perspectives, improving measurement techniques and methods over time. A replication study on teacher burnout could build upon existing work instead of reinventing the wheel (King, 1995). Some researchers encouraged replications because “replication itself is a valuable method for teaching young scholars appropriate research methodology... and the benefits of replication far exceed the costs... research that cannot be replicated is not science, and cannot be trusted either as part of the profession’s accumulated body of knowledge or as a basis for policy.” (Burman et al., 2010, p. 791; Ellsworth & Isakson, 1977; King, 1995; McKubre, 2008). It has been noted that

replication was sufficient and rigorous in achieving widespread support of success (McKubre, 2008).

It is said that experimental research had to be replicable to be scientific. Such replications were seldom actually undertaken. An attempt to gain complete empirical understanding required “a comprehensive, quantitative, and fundamental understanding of the effect under study” (McKubre, 2008, p. 2). From a scientific perspective, there was no pressure to conduct an actual replication, only a description of the type of study that, in theory, appeared amenable to being replicated (Glass et al., 1981). Glass and colleagues (1981) explained the reanalysis of data for the purpose of answering the original research questions with better statistical techniques or answering new questions with old data, providing a quantitative, empirical aim to assess a particular phenomenon. Meta-analysis has not been a technique, but rather a perspective that used many techniques of measurement and statistical analysis (Glass et al., 1981). Meta-analysis was similar to traditional narrative literary reviews in some of its goals and assumptions, but it differed in its capacity to be more precise, objective, and replicative (Mullen, 1989). A meta-analysis that explored replication could affirm or refute the abundance of studies that have produced disparate findings and could contribute to the body of existing research. In order to contribute to the existing body of research, replication studies were necessary and deserved to be published (Dewald, Thursby, & Anderson, 1988). Replication served to validate or refute previous research findings. According to Burman et al. (2010), there were three types of replications. Positive (or validating) replications were studies where the replicating author showed the original article’s findings to be

robust to substantial extensions over time, to explanatory variables, and/or to alternative estimation procedures. Negative replications (negative—Type 1) were studies where the replicating author was unable to reproduce the original article's results using the same data, the same specification, and the same econometric software. Negative replications (negative—Type 2) were studies where the replicating author was able to reproduce the original article's results, but revealed that the original results were not robust to substantial extensions over time, data sets, explanatory variables, functional forms, software, and/or alternative estimation procedures (p. 789). This meta-analysis has replicated two studies conducted by Lee and Ashforth (1996) and McMahan (2003) based upon criteria such as the studies' widely cited and standard original research and important and relevant topic in the area of burnout. This replication has attempted to reproduce original findings on teacher job burnout, using the same specifications, variables, and methodology, but with the most current data available between January 2000 and January 2015. A replication of meta-analytic procedure explored the relationship between demand and resource correlates and the dimensions of teacher burnout. This study contains a detailed exposition describing the researcher's efforts in replicating original studies; it has provided sufficient details that served to validate that the replication was done correctly and with a high standard of competence, with an explanation for any differences.

## **Summary of Chapter 2**

In summary, burnout among teachers has captured the interest of many, including administrative leaders, policy makers, and other stakeholders who look to public

education of as a criterion for meeting employment needs and contributing to society. Due to the high level of demands for teachers as compared to other social service professions, a variety of studies have been conducted on teacher job burnout (Chang, 2009). Burnout components have been acknowledged as widespread among professions and have been a topic for both behavioral and health research since the 1970's (Swift & Zimmerman, 2010). Burnout has influence consequences such as increased turnover, increased teacher intent to leave, reduced levels of performance, and negative work attitudes (Jackson, Schwab, & Schuler, 1986; Lee & Ashworth, 1996; Wolpin et al., 1991).

The Conservation of Resource (COR) theory (Hobfoll, 1989) provided the theoretical framework for further understanding burnout. In addition, Leiter's model (1993) was based upon Hobfoll's theory and has received empirical support (Byrne, 1994; Lee & Ashforth, 1996). As presented in Chapter 2, the literature review provided evidence of the relationship between variables and dimensions of burnout. Evidence supported demand and resource correlates as variables to burnout that included work overload, role conflict, role ambiguity, decision-making, supervisory support, peer support, locus of control, and demographic characteristics (Byrne, 1994; Lee & Ashforth, 1996; Queen & Queen, 2005; Schwab & Iwanicki, 1982; Swift & Zimmerman, 2010; Truch, 1980; Wang et al., 2010; Watts, 2013; Whitaker, 1996; Yong & Yue, 2007). The Maslach Burnout Inventory (MBI) has become the prominent choice for measuring burnout with its three dimensions of emotional exhaustion, depersonalization, and diminished feelings of personal accomplishment (Maslach & Jackson, 1981, 1984, 1996).

Meta-analysis has served to bring logical order and congruence to a disparate body of research findings. A replication of Lee and Ashforth's (1996) and McMahan's (2003) burnout research provided significance because it assured results were valid and reliable, determined generalizability of variables, applied results to real world situations, served to inspire new research which combined previous findings from related studies, and helped increase the generalizability of any significant findings (Elsworth & Isakson, 1977; Heffner, 2011; King, 1995). A description of how meta-analytic procedures were used for this study is presented in the following chapter.

## **Chapter 3**

### **Methodology**

This study utilized a meta-analytic research design. Beginning in the 1970's, meta-analysis has been conducted to synthesize research findings by using existing data to uncover patterns of study results that included similar or the same constructs (Lipsey & Wilson, 2000). Meta-analysis is the most highly recommended quantitative synthesis method in most areas of natural and social sciences research (Rosenthal & DiMatteo, 2001). A meta-analysis has the potential to allow the researcher to systematically review studies, thus allowing the researcher to apply statistical methods and analyze findings as reported by original studies. This quantitative technique will yield meaningful findings about the relationship between dimensions of burnout and demand and resource correlates. This chapter presents a description of the methods used to ensure statistical significance. In keeping with the concept of a replication study, this research design employs similar methodological practices as evident in studies such as those of Lee and Ashforth (1996) and McMahan (2003).

The "Process of Meta-Analysis" (Brewer, 2009) presented in Figure 4 displays a flowchart of the research process. This systematic means of examining a body of research addresses the variations among scholars by combining data, calculating and comparing effect sizes, and providing answers to the burnout dilemma. This is essential for conducting a meta-analytic study that includes available and relevant information, but does not "muddy the waters" with excessive incomparable data (Eells, 2011, p. 74). As

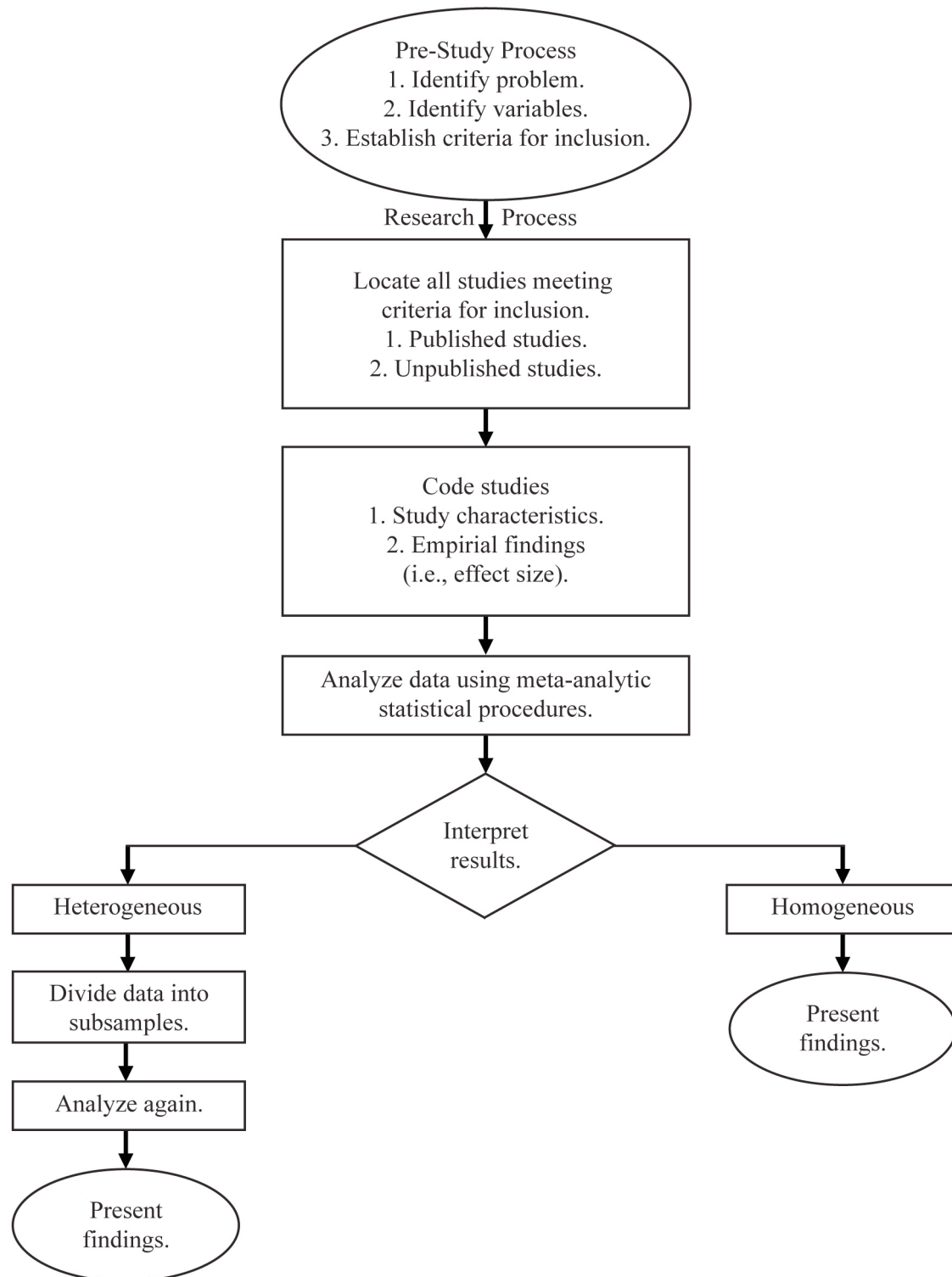


Figure 4. The process of meta-analysis. Source: E. W. Brewer (2009, with permission).

suggested in “The Process of Meta-Analysis” (Brewer, 2009), the research process begins with a “pre-study process”—a directive to identify problems and variables to be studied as discussed in Chapters 1 and 2; this chapter resumes with the third step of the pre-study process, establishing criteria for inclusion.

### **Criteria for Inclusion**

A discussion of eligible criteria for this study is significant for decreasing potential bias in the selection process. This meta-analytic study included only those studies that met specific eligibility criteria. As cited by McMahan (2003), researchers have suggested six general categories for the selection process: (a) distinguishable features, (b) research respondents, (c) key variables, (d) research designs, (e) cultural and linguistic range, and (f) time frame (Lipsey & Wilson, 2000). A detailed discussion of how each of these categories applied to this particular meta-analysis will be presented in the following section.

**Distinguishing features.** The first criteria for the selection process of eligible studies included specific distinguishing features such as the studies that investigated teacher burnout and the studies that utilized the Maslach Burnout Inventory (MBI) as the reported burnout score. The burnout score may be reported as one or more of the three burnout subscales. The MBI is the most widely used burnout inventory in current research; it distinguishes between (a) emotional exhaustion, (b) depersonalization, and (c) personal accomplishment (Maslach, 2003).

**Research respondents.** Eligible studies for this meta-analytic research were also limited to potential moderators such as the type of respondents who participated. For the

purpose of this research, studies that included teachers from rural and urban public elementary, middle, and/or secondary schools were accepted. Studies that other types of participants such as college faculty, child-care workers, pre-school teachers, students, and/or school administrators were not considered eligible.

**Key variables.** Only studies that included quantitative scores on one or more subscales of the MBI were eligible for this study. Furthermore, studies that provided quantitative scores for one or more demand or resource correlates were accepted.

**Research design.** Eligible studies included those that incorporated a correlational research design and reported an association between one or more burnout dimensions (emotional exhaustion, depersonalization, diminished feelings of accomplishment) and demand correlates (work overload, role conflict, role ambiguity, student misbehavior) or resource correlates (supervisory support, peer support, decision-making). A correlational research design allows the researcher to describe the data sets, a descriptive technique that simultaneously summarizes data on one or more variables (Huck, 2012). For example, studies with correlation coefficients (or other data that could be converted to correlations) and empirical studies where burnout dimensions were measured by the MBI were accepted for this research design. This meta-analysis included studies that provided quantitative data so that an effect size that could be computed.

**Cultural and linguistic range.** Studies written in English or translated into English were accepted for this research. Because the MBI is implemented internationally and available in numerous languages across many cultures and countries (Byrne, 1994; Maslach & Jackson, 1996; Maslach & Leiter, 2008; McMahan, 2003), international

studies were included if an English version was available. Consideration of study participants' varied nationalities were coded as a precaution for possible moderating variables.

**Time frame.** Due to the “rapid expansion of the burnout literature and inclusion of more information” (Halbeslaban, 2006, p. 1141), this meta-analysis encompasses a wider base of information as compared to Lee and Ashforth’s (1996) and McMahan’s (2003) studies. Only recent research on teacher burnout served to provide a statistical analysis on the most current data. Therefore, only studies conducted between years January 2000 through January 2015 were included in this research. To examine the validity of these conflicting study findings, a quantitative review (using meta-analysis) was conducted.

### **Literature Search of Relevant Research Articles**

A meta-analytic study requires a comprehensive literature search for relevant research articles with careful attention and analysis paid to both published and unpublished documents (Brewer, 2009; Rosenthal & DiMatteo, 2001). According to Brewer, research that incorporates several types of databases is important to a thorough literature search. An extensive literature search was employed using key word searches of the following terms: “burnout,” “teacher OR educator,” and derivations of these terms. Electronic databases (i.e., *Education Index*, *Academic Search Premier*, *Dissertations and Theses Abstracts: Proquest* and *Google Scholar*, *ERIC*, *PsychINFO* and *PsychARTICLES*) were accessed for studies conducted from January 2000 through January 2015. Recent issues of psychology, education, medical, social and behavioral

journals were searched for articles that might not yet have been included in these databases. Searches from other available electronic databases did not yield additional potential articles. The researcher also employed a thorough review of reference lists. First, a review of the reference section of the two replicated studies (Lee & Ashforth, 1996; McMahan, 2003) was conducted. This was then followed by a “backward search” of articles’ reference sections which provided additional studies for consideration (De Dreu & Weingart, 2003). Glass (2000) suggests using “forward tracking” of articles which “is a function in the database that locates the most current studies available on a given topic” (p. 431). As modeled by Lee and Ashforth (1996), an examination of numerous reference lists is effective in identifying additional studies. When applicable, authors who had researched or who were in the process of researching burnout, teacher burnout, meta-analysis, and/or variables related to burnout were contacted to solicit missed, in press, or unpublished research that may not have yet been catalogued. Articles that met the inclusion criteria were saved and sometimes printed for further coding. Documents that could not be collected electronically were obtained from hardcopy journals and books at The University of Tennessee Library via interlibrary loan.

These efforts provided the researcher a substantial compilation of articles that allowed a thorough review of the respective titles and abstracts as a preliminary screening process. Studies that did not adhere to the inclusion criteria were eliminated from further review. The researcher then thoroughly examined the remaining articles to determine if sufficient information was available for this meta-analysis study. The resulting collection of studies that met the inclusion criteria consisted of published and unpublished articles.

The purpose of this literature search was to identify published and unpublished documents that fit this study's inclusion criteria. As suggested by Brewer (2009), including both published and unpublished articles results in a more accurate representation of the literature research and minimizes publication bias. The following sections discuss the search process for published and unpublished studies respectively.

**Published studies.** Consistency in a replication study is necessary to maintain validity to the study process and sequential results. Therefore, this study employed similar methodological procedures as conducted by Lee and Ashforth (1996) and McMahan (2003). As discussed in Chapter 2 and again in Chapter 3's literature search, this research explored numerous sources to locate published studies for the purpose of this meta-analytic study such as computerized bibliographical databases, bibliographic reference volumes, relevant journals, and reference lists from relevant studies, books, and review articles.

The first step to locating published studies for this meta-analysis was to conduct a computerized bibliographic search from four electronic databases—*Education Index*, *ERIC*, *PsychINFO*, and *Google Scholar*. Key terms for the search were “burnout,” “teacher OR educator,” and derivatives of these terms. In order to locate additional publications that might not have been surfaced through a computerized search, the researcher sought out hard-copy documents pertaining to this research topic. This was accomplished through a manual search of bibliographic reference volumes. As a final step, a search of relevant journals and their reference lists, books, and review articles was conducted.

**Unpublished studies.** As previously discussed in Chapter 2, scholars and researchers have debated on whether to include unpublished articles in a meta-analysis. In order to prevent reliance upon published studies that often only report statistically significant findings, a “whole picture” approach (Rosenthal & DiMatteo, 2001) was implemented by the researcher. This entailed a thorough search for unpublished studies and provided a balanced representation of burnout studies (McMahan, 2003). As stated by one researcher, “Meta-analysts who decide to include unpublished studies can get a good start by consulting the *Dissertation Abstracts* database” (Brewer, 2009, p. 568). Therefore, this researcher employed an electronic search through *Dissertations Abstracts* database. Consistent with the search for published studies, this search included the same key terms: “burnout,” “teacher OR educator,” and applicable derivations of these terms for years January 2000 through January 2015.

### **Coding Studies**

According to Holton (2010), coding is the core process in methodology. In order to maintain consistency in conducting a replication study, this researcher employed similar coding practices as Lee and Ashforth (1996) and McMahan (2003). As previously described, this meta-analysis included studies meeting the previously discussed inclusion criteria. This was accomplished through (a) the library, (b) interlibrary loans, (c) electronic sources, and (d) Dissertations Express. After an extensive review of eligible articles was conducted, the researcher coded the studies according to study characteristics and empirical findings (i.e., effect sizes) in a clear and concise method. Based upon McMahan’s (2003) coding form, the researcher created a detailed coding form that

provided consistent documentation of significant moderators and any additional variables. The Teacher Burnout Individual Coding Form is sectioned for recording each study's citation, participant characteristics, methodological characteristics, statistical characteristics, quality of the study, and any additional variables. The relevant details included in the coding process were consistent and purposeful. The coding process allowed the researcher a "condensed, abstract view with scope and dimension that encompasses otherwise seemingly disparate phenomena". (Holton, 2010, p. 266). The coding form is provided in Appendix A for further explanation of the coding process. According to Brewer (2009), one should only code what is significant to the studies; in a meta-analysis; the type of effect size must be the same for all included studies. This procedure allowed the researcher a systematic means to integrate study findings in a consistent method.

**Study characteristics.** As part of the coding process, the researcher coded each study for the following characteristics: (a) gender; (b) age; (c) grade level taught; (d) type of student taught (i.e., academic-track, vocational, special education, other); (e) nationality; and (f) time with organization. These characteristics correspond to those used in McMahan's study (2003) with the addition of "years teaching" and "time with organization" as coding criteria. This additional coding is necessary and will serve as an insightful variable in relationship to teacher burnout. Due to the increased exodus of newer teachers (teachers leaving the profession within the first five years of teaching) as compared to teachers who remain in the profession despite burnout (referred to as "rust-out"), this will contribute to the teacher burnout phenomenon without altering the

replication or meta-analysis methodology. This particular characteristic is supported in the literature discussed in Chapter 2 and adheres to the recommendation provided by Brewer (2009), “A researcher should include factors that might have had possible moderating effects on the study’s results. For example, if the literature indicates that a factor such as time with an organization has an effect on the variable of interest to the researcher, time with organization should be one of the coded study characteristics” (Glass, 2000, p. 568).

In addition, the researcher coded the following methodological characteristics of each of the studies: (a) sampling method, (b) sample size, (c) reliability estimates of all measures, and (d) dichotomous or continuous variables (nominal variables which only have two categories, such as “gender” categorized as “male” or “female”). Study characteristics are considered independent variables in a meta-analysis (Lipsey & Wilson, 2000). This coding process was consistent with McMahan’s (2003) coding method.

**Effect size.** After teacher burnout studies were coded according to study characteristics as described in the previous section, the researcher commenced to code each study’s empirical findings. When coding a study, it is important for the researcher to convert the empirical findings into an effect size (Brewer, 2009). An effect size is a numerical value used to express the strength of relationships reported in the study. According to McMahan (2003), “The type of effect size must be the same for all studies included in a meta-analysis and depends on the type of studies included in a meta-analysis” (p. 33). Researchers refer to the statistical significance of a finding in two ways:

*significance* is good and *nonsignificance* is bad (Lipsey & Wilson, 2000; Rosenthal & DiMatteo, 2001). However, as Rosenthal and DiMatteo stated,

The significance of any given effect size will be determined by the size of the sample studied... it helps us realize that repeated results in the same direction across several studies, even if not one is significant, are much more powerful evidence than a single significant result.” (p. 63)

This prevents researchers from relying solely upon the significance of any single research finding. Meta-analysis is a quantitative research process that focuses on effect size because it affords an opportunity for all findings, even small and nonsignificant effects, to be considered in the overall picture of research results, thus keeping generalizability in perspective. In a meta-analysis, a study’s empirical findings are considered as the dependent variables (Lipsey & Wilson, 2000).

Correlational studies within a meta-analysis are represented by the Pearson product-moment correlation ( $r$ ) or its variants (Hunter & Schmidt, 1990; Lipsey & Wilson, 2000; McMahan, 2003; Rosenthal & DiMatteo, 2001). To replicate studies by Lee and Ashforth (1996) and McMahan consistently, test statistics other than Pearson product-moment correlations ( $r$ ) were transformed into appropriate effect size statistics using methods outlined by Lipsey and Wilson, Wilson and Wolfe (1986), and McMahan. According to Lipsey and Wilson, a meta-analysis should only have one effect size from dependent data sets. Therefore, there should be one effect size per study per meta-analysis (McMahan, 2003). This required meta-analytic procedures to reduce multiple effect sizes to a single effect size by forming linear composites with unit weights. Due to

the complexity of this process, the researcher relied on the Comprehensive Meta-Analysis software. A brief introductory discussion of this software is presented later in this chapter, and further explanation is presented in the subsequent chapters.

In addition, the researcher identified the necessity to deal with multiple correlations reported for dependent data sets. To reduce multiple effect sizes into single effect sizes, it has been suggested that the researcher either select the effect size dealing with a specific operationalization of interest and use only that effect size in the analysis or reduce multiple effect sizes to a single effect size by averaging the effect sizes (Lipsey & Wilson, 2000). However, as expressed by McMahan (2003), the first suggestion impelled the researcher to determine what burnout correlate was of greater interest to the study, and this might result in subjectivity. For example, a researcher would determine if role conflict or role ambiguity was of greater relevance to the study and would then use only the selected effect size reported in that construct. For this study, the researcher did not choose to adopt this suggestion as there was no foundation in determining which burnout construct should be selected; each construct should be considered equivalent in relationship to teacher burnout. This decision is supported by COR theory (Lee and Ashforth, 1996; McMahan, 2003) in that no demand or resource correlates should be considered as having precedence over other demand and resource correlates.

The second suggestion in reducing multiple effect sizes into a single effect size was to average the effect sizes (Lipsey & Wilson, 2000; McMahan, 2003). The researcher used caution in averaging effect sizes across studies, considering that mean differences from standard deviations were sensitive to samples utilized. The practical significance of

the estimates generated from averaging effect sizes was relevant. This process has been supported as a “suitable means to create an independent set of effect sizes” (McMahan, 2003, p. 34). In order to determine outcomes across multiple studies, computing a simple average of the effects is more commonly used for disaggregating findings for transparency (Maynard, Dong, & Perez-Johnson, 2007). The researcher selected this option for creating independent effect sizes. As modeled by McMahan, in meta-analysis studies that tested specific demand or resource correlates, no averaging was necessary.

When each study’s coding was completed, the researcher began analyzing the data. This process involved transferring the coded data into an electronic spreadsheet compatible with a meta-analysis statistical software program. For the purpose of this research study, the Comprehensive Meta-Analysis software program was employed. This software program provided the researcher the means to conduct a cumulative meta-analysis; this allowed additional retrospective insight into the teacher burnout phenomenon. This analysis showed how the body of burnout research evidence has shifted over time.

### **Data Management**

For the purpose of this replicative meta-analytic study on teacher burnout, the researcher adopted and modified McMahan’s (2003) Individual Study Coding Form (see Appendix A). First, each study was manually coded as previously described, then methodically entered into electronic spreadsheets. The electronic spreadsheets were utilized as a transferring tool to enter data into the Comprehensive Meta-Analysis

software program. This study fully relied on previous studies (from January 2000 to January 2015); therefore, no confidentiality measures were necessary.

### **Data Analysis**

According to Brewer (2009), the next step in conducting a meta-analysis is to analyze the data. The researcher first manually averaged the effect sizes for each of the meta-analysis studies. This step provided an unweighted mean correlation. The remaining meta-analysis procedures were conducted using the Comprehensive Meta-Analysis (Version 2.0) software program.

The researcher then analyzed the data using the Comprehensive Meta-Analysis (Version 2.0) software program. This can be reported as a weighted mean product-moment correlation coefficient or as a weighted Fisher's  $z$  correlation (McMahan, 2003). Researchers discuss the statistical properties of both and are inconsistent with their opinions on reporting values (Lipsey & Wilson, 2000; McMahan; Rosenthal & DiMatteo, 2001). The Comprehensive Meta-Analysis software program employed in this study had the capability to calculate weighted mean product-moment correlation coefficient and mean and standard error. Therefore, both values were calculated and recorded in this study.

Lastly, the researcher constructed confidence intervals for the weighted mean product-moment correlation coefficient and the weighted Fisher's  $z$  correlation. Once this was completed, confidence intervals were constructed at the 95% level. This level is most frequently used and recommended by social science researchers (Gay & Airasian, 2003; Huck, 2012; McMahan, 2003). Therefore, as stated by Huck, "Looked at collectively, 95

percent of these 95 percent CIs [confidence intervals] would contain the parameter.

Accordingly, when you see a 95 percent CI, you should consider that the chances are 95 out of 100 that the interval you are looking at is one of those that does, in fact, capture the parameter” (p. 124). Consistent with the study being replicated, this data analysis process followed McMahan’s (2003) data analysis process.

### **Homogeneity Test**

The final phase of a meta-analysis study is to interpret the results from the analysis. Brewer (2009) stated, “It is critical to test for homogeneity to determine if the results have been affected by moderating variables” (p. 569). To determine if the effect sizes were consistent across the reviewed studies and identify possible variables moderating results obtained, the researcher tested the homogeneity of the effect sizes. Hunter and Schmidt (1990) determined that, if original samples were not homogeneous, then the correlates were not supported across the board. A homogeneity test includes the *Q* statistic, credibility intervals, and chi-square tests (Brewer, 2009; Hunter & Schmidt, 1990). The homogeneity test for this meta-analysis used the *Q* statistic, a chi-square test that is based upon the weighted effect sizes (Hunter & Schmidt, 1990; McMahan, 2003). This was conducted at the .05 significance level, a common level used throughout the social science research. According to McMahan (2003), if  $p < .05$ , the sample is considered heterogeneous. Should the test result in heterogeneity (lacking uniformity), the data would then need to be divided into subsamples. The researcher divided effect sizes categorically, as listed by specific demands and resources correlates in this study. An additional analysis process would be necessary to identify moderating variables

(Brewer, 2009). The researcher implemented an analysis process as recommended by Rosenthal and DiMatteo (2001) and McMahan (2003), which involved plotting the effect sizes by their standard deviations. The researcher then examined the resulting graph to identify and report any outliers among the standard deviations. With the outliers known, the data were examined for patterns, and the respective studies associated with those patterns were then analyzed accordingly. Should the meta-analytical test for homogeneity (uniformity) result affirmatively, the statistical results could be accepted and presented to applicable parties (Brewer, 2009).

### **Summary of Chapter 3**

Chapter 3 provided a detailed description of the meta-analytic procedures employed by this study. As suggested by Rosenthal and DiMatteo (2001), this study was guided by the basic, interrelated principles of accuracy, simplicity, and clarity. This meta-analysis followed Brewer's "Process of Meta-Analysis" (2009) as a logical and straightforward means to conducting this form of research. Rosenthal and DiMatteo noted that, "The simpler the meta-analysis, the more likely it is to be accurate, it is not possible to present one that is too simple" (p. 68). This researcher purposed to conduct a statistical analysis employing uncomplicated methodology and appropriate, well understood procedures. The following is a summary of those procedures.

First, the researcher accessed computerized bibliographic databases, bibliographic reference volumes, relevant journals, replication studies' reference lists from Lee and Ashforth (1996) and McMahan (2003), and reference lists from relevant studies, books, and review articles to locate published and unpublished studies on teacher burnout. Based

upon the inclusion criteria established by the researcher, studies were assessed and identified based upon the following criteria: (a) distinguishing features, (b) research respondents, (c) key variables, (d) research designs, (e) cultural and linguistic range, and (f) time from January 2000 to January 2015. After the researcher determined study eligibility, each study was coded for characteristics and empirical findings. Lastly, the data were transferred to a statistical software program and analyzed using meta-analytic procedures. Chapter 4 presents the meta-analysis results on teacher burnout.

## **Chapter 4**

### **Results**

The purpose of this dissertation focused on the phenomenon of demands and resource correlates in relationship to teacher burnout with its three dimensions: emotional exhaustion, depersonalization, and personal accomplishment. Demand and resource correlates have been categorized as the antecedent variables most frequently related to teacher burnout. The process of meta-analysis used in this study has been noted as effective (Brewer & McMahan, 2002; McMahan, 2003). This meta-analytical research method encompassed fifteen years of published and unpublished studies from January 2000 through January 2015. Chapter 4 describes the research studies that were included in the meta-analysis and presents findings in relationship to the specific hypotheses and research questions posed in this study.

In order to identify potential studies in this quantitative synthesis, the researcher conducted a comprehensive, systematic search strategy. The search of electronic databases for published studies included the terms “teacher OR educator” AND “burnout” and derivatives of these terms yielded 1,046 publications from January 2000 thru January 2015. Databases identified identical studies (i.e., two databases identified 41 of the same studies) and enabled the researcher to eliminate duplicate studies from consideration. The researcher reviewed each abstract from the 1,005 remaining publications and eliminated studies that did not meet the specific inclusion criteria for this study. Studies for consideration included (a) the Maslach Burnout Inventory (MBI) as the reported burnout score, (b) respondents representing elementary, middle, and/or

high school teachers in a rural or urban school setting, (c) quantitative scores on one or more MBI subscales and one or more demand and/or resource correlates, (d) English or a translation into English, and (e) publication dates between January 2000 through January 2015. The researcher then conducted the search in *Dissertation Abstracts*, including terms “teacher OR educator” AND “burnout” and derivative terms; this yielded 21,014 dissertations and theses (i.e., unpublished studies). The search was electronically refined to the study’s inclusion criteria using terms “Maslach Burnout Inventory OR MBI,” “resources OR demands,” and derivative terms, resulting in 621 dissertations and theses retained for further inspection. The researcher employed a thorough review of reference lists from both published and unpublished studies, identifying 14 additional studies for consideration. When applicable, the author or researcher was contacted to solicit missed, in press, or studies that had not yet been catalogued. Documents that could not be collected electronically were obtained from hardcopy journals and books at The University of Tennessee Library via interlibrary loan. The researcher reviewed each abstract from the 635 unpublished studies and eliminated those that did not adhere to the inclusion criteria for this study. This comprehensive search and examination process resulted in 128 published and unpublished studies for consideration.

Upon further investigation during the coding process, the researcher identified studies that had unexpected limitations. Several social science studies included the term “teachers” or “educators” within the abstract; however, the results were reported as combined data for “people work,” the work done by people in the helping professions such as nurses, counselors, teachers, and police officers. Various studies reported results

as separate independent data sets by type of professional (i.e., nurses, counselors, educators, etc.), while other studies combined participants by group and reported “teacher” or “educator” data collectively. Studies reporting multiple participant data collectively were excluded from this meta-analysis because independent teacher burnout data could not be extracted. Studies that provided independent statistical results for teacher burnout were carefully extracted, ensuring accuracy and eligibility for this study. One study (Trépanier, Fernet, Austin, Forest, & Vallerand, 2014) reported multiple data sets including “teachers” or “educators” and “nurses.” This study reported teacher independent burnout correlates, met the inclusion criteria, and provided a significant sample size of 745 teachers. Additional studies provided independent teacher burnout data that could be extracted, providing valuable information for this meta-analysis (Tomic & Tomic, 2008; Waugh, 2003).

Hunter and Schmidt (1990) discussed technical questions regarding combined subject correlations. In addition, the researcher pondered the implications of including minimal amount of studies, or excluding such studies, which may prove to be significant or insignificant to this meta-analysis. A researcher who selects to exclude pertinent studies due to laborious data extraction or potential bias to the individual does not present a thorough research investigation for any given study. Problems related to whether or not a given study should be included or excluded is not uncommon to researchers (Borenstein, Hedges, Higgins, & Rothstein, 2009), and researchers are divided as to whether a single or small number of studies are important enough for inclusion. Excluding any study that

meets a given criterion, significant or insignificant, is relevant for consideration.

According to Borenstein et al., (2009):

We have explained that systematic reviews and meta-analysis require explicit mechanisms for deciding which studies to include and which ones to exclude. These eligibility criteria are determined by a combination of consideration of relevance and consideration of bias, and are typically decided before the search for studies is implemented. Studies should be sufficiently similar to yield results that can be interpreted, and sufficiently free of bias to yield results that can be believed. For both purposes, judgments are required and not all meta-analysts or readers would reach the same judgments on each occasion. Importantly, in meta-analysis the criteria are transparent and are described as part of the report. (p. 381)

The researcher thoroughly reviewed studies reporting combined subject correlations (e.g., teachers, nurses, police officers), eliminating studies in question and retaining the studies that provided independent data for teacher burnout. As a result of the aforementioned research procedures, the researcher identified 116 published and unpublished studies eligible for the purpose of this meta-analysis.

### **Combined Variations and Different Outcome Measures**

Correlational studies within a meta-analysis are frequently represented by the Pearson product-moment correlation ( $r$ ) or its variants. However, numerous studies report correlations in multiple effect sizes. Therefore, coding themes throughout studies were identified and documented by the researcher. Within this meta-analysis, the researcher included the following coding schemes: (a) Standard Mean Difference (SMD) also

known as Cohen's  $d$  in the literature, (b) Pearson product-moment correlation ( $r$ ) or its variants, (c) means and standard deviation, and (d) other quantitative data to calculate effect sizes (e.g.,  $t$  or  $F$  statistics). According to Hunter & Schmidt (1990), "Because different authors use different measures of the dependent variable, the raw score difference is not usually reasonable for meta-analysis. Thus, the usual statistics used to characterize the size of the treatment effect are  $d$  and  $r$ " (p. 336). The researcher identified the potential problematic dilemma of calculating various effect size data and considered suggestions to reduce multiple effect sizes into single effect sizes without subjectivity or researcher bias and as a suitable means to create independent effect sizes (McMahan, 2003). One effect size per study per meta-analysis must be consistent and requires the researcher to reduce multiple effect sizes into a single effect size by forming linear composites with unit weights. According to Borenstein et al. (2009), "Meta-analysts frequently have to deal with results reported in different ways" (p. 361). The researcher documented each study's empirical findings into an effect size which provided significant quantitative evidence across study results. This allowed variance to remain in perspective and prevented the researcher from relying upon a single research finding. Even within studies "investigating the same outcome, results can be reported in different ways" (Borenstein et al., 2009, p. 361). Although 116 studies reported correlational data results on teacher burnout, the same analysis was reported using different statistics. The list of variation possibilities is extensive and the researcher did not attempt a comprehensive summary of all options, limiting the outcome measures to the 116 studies. According to Borenstein et al. (2009),

There is sound rationale for combining the different outcome measures in the analysis... When studies are addressing the same outcome, measured in the same way, using the same approach to analysis, but presenting results in different ways, then the only obstacles to meta-analysts are practical. If sufficient information is available to estimate the effect size of interest, then a meta-analysis is possible. (p. 362)

Further considerations were to determine if studies were meaningful in interpretation and how multiple outcomes were to be dealt with. The researcher was sensitive to proceeding while not violating assumptions and impacting the validity of the process.

Methodological characteristics of each of the studies were then coded.

Independent variables coded in this meta-analysis included (a) sampling method, (b) sample size, (c) reliability estimates of all measures, and (d) dichotomous or continuous variables (nominal variables such as “gender” categorized as “male” or “female”). Overall, when a number of studies are small or report statistical results in various manners, there are no perfect recommendations (Borenstein et al., 2009). Therefore, the researcher reported all statistical findings in order to provide an accurate representation of otherwise limited data.

Because researchers should consider technical factors that contribute to inflation in standard error estimates that could be misleading (Hunter & Schmidt, 1990), and because necessary computational abilities exceeded those of the researcher, the researcher relied on the CMA (Version 2.0) software program for this process, noting its sophisticated capabilities as well as its limitations, as described in Chapter 3. Use of

CMA supported the cumulative meta-analysis conducted and produced results that helped to add greater insight into the teacher burnout phenomenon. A more detailed description of the software program and its effect size calculations, cross-reference procedures, and data entry is provided in the next section.

### **Comprehensive Meta-analysis Software Program (Version 2.0)**

The Comprehensive Meta-Analysis (CMA, Version 2.0) software program is the result of multiple grant-funded research endeavors aimed at pioneering in the medical arena. Due to the CMA program capabilities to calculate multiple types of data into weighted means correlations and effect sizes, the program has become a resourceful tool to social science researchers. In fact, the CMA software program is a current international approach to synthesize multiple data results (Kis, 2014). The CMA software program relies upon statistical formulas to automatically synthesize multiple data from multiple studies, converting over 100 types of data into one effect size. The computerized calculation of diverse effect sizes from multiple studies into one effect size provides meta-analytical researchers numerous advantages: (a) reduces or eliminates limitations that otherwise would exclude relevant studies, (b) reduces or eliminates research bias, (c) reduces probability of human and sampling error, and (d) increases research efficiency (Borenstein et al., 2009).

The researcher purchased CMA (Version 2.0), conducted the necessary procedures preparatory to methodically entering coded data from the 116 studies into the program, and noted limitations accordingly. CMA is limited to a Microsoft Windows operating system compatible only to PC computers. Therefore, to be able to install the

program to a Macintosh computer, the researcher had to first install Windows and a required conversion program, Bootcamp. This installation allowed the researcher to successfully install the Windows version of CMA (Version 2.0) onto a Macintosh computer. The researcher studied the software program user manual and viewed all tutorials provided. In order to increase understanding and to minimize error, the researcher contacted the CMA support services as necessary.

Studies reporting correlational data were entered into the software program. Derivative terms were included (e.g., “supervisor support” also “principal support” also “administrative support”) as one correlate. Studies reporting means and standard deviation statistics had to be entered separately from studies reporting correlational data due to the software program limitations. CMA (Version 2.0) provides for data with over 100 different effect sizes to be entered. However, the means and standard deviation statistics are only accepted when two groups are being compared (e.g., treatment and control groups, pre-/post-groups). Teacher burnout data are independent data, which are not applicable to group comparisons. Therefore, the researcher conducted two meta-analysis tests for each hypothesis, increasing statistical relevance for this study.

### **Publication Bias**

One advantage to meta-analysis is the reduction of publication bias. In consideration of potential publication bias, CMA (Version 2.0) recognizes that publication of studies with large sample sizes or significant findings typically overestimate mean effect size (Borenstein et al., 2009; Kis, 2014). The researcher noted the CMA computational attributes and tested for publication bias with the following

methods: Orwin's *fail safe N*, Funnel plot, and Duval and Tweedie's trim and fill method. According to Kis (2014), these are three statistical methods most commonly used and understood. The three-burnout dimensions (Emotional Exhaustion, Depersonalization, and Personal Accomplishment) showed no obvious difference in both magnitude and direction. Therefore, the analysis indicated that the 116 included studies in this meta-analysis held no publication bias.

Procedures of this study were to examine burnout dimensions and demand and resource correlates, to identify moderating variables, to accurately code eligible studies, and to calculate and analyze studies' effect sizes. Effect sizes were weighted according to the inverse of their variance to ensure that more precise estimates influenced overall effect size more heavily and to attenuate the upwardly biased estimates of smaller studies. Calculated weighted mean product-moment correlation coefficient and weighted Fisher's *z* correlations were calculated by the CMA software program. Confidence intervals were constructed at the 95% level.

### **Factors That Affect Study Precision and Homogeneity**

**Bare bones approach.** Meta-analytical studies focus on relationships between variables, combining an estimated mean within a single population (e.g., burnout among teachers). In the meta-analysis itself, the researcher focuses on a series of values and their variances. This is referred to as a "bare bones" approach (Hunter & Schmidt, 2004). This study used the "subset method" in order to identify moderator variables in studies; this was the recommended method for using moderators as corrected variables and for

increasing precision and reliability (Hunter & Schmidt, 2004). According to Hunter & Schmidt,

Bare bones meta-analysis uses the mean of sample effect size, the standard deviation of sample effect sizes, and the sample size for each study to produce an estimate of the mean and the standard deviation of population effect sizes... The use of bare bones meta-analysis to study a potential moderator variable requires no new math. The potential moderator variable is used to break the studies into subsets. A bare bones meta-analysis is then run on each subset separately. (p. 337)

The key to a comprehensive meta-analysis is dependent upon research consistency in combining comparable studies and using the same metric. Therefore, “combining effect sizes from studies that used different metrics must be considered on a case by case basis” (Hunter & Schmidt, 2004, p. 45). Kis (2014) discusses the methodological coding process, indicating researcher subjectivity by concluding that “disagreements were discussed, and final coding reflected the consensus of the coders” (p. 547). Reporting inconsistencies should not determine the researcher’s omission of studies that used an alternate data metric (e.g., correlational vs. means and standard deviation) which “would involve the loss of information, and possibly the *systematic* loss of information, resulting in a biased sample of studies” (Hunter & Schmidt, 2004, p. 46). The CMA software program is designed to reduce and possibly eliminate bias by calculating effect sizes, thus removing computational barriers to the researcher. This allowed for increased precision and yielded more information to this study, thereby making a greater contribution to research.

**Standard deviation and standard error.** Precision is driven by effect sizes, which is calculated based upon studies' sample size. Sample size provides a weight, which varies from one study to the next. The CMA (Version 2.0) software program converts sample sizes into appropriate weights, reported study variables as effect sizes, *p*-value, mean and standard error. Meta-analysis calculations may be based on fixed effect sizes, random effect sizes, and in some cases, combined effect sizes. However in social studies, random effect sizes was recommended (Borenstein et al., 2009; Cumming, 2012; Kis, 2014). Current meta-analysis practices usually report information as mean and standard error (Borenstein et al., 2009). This is not to be confused with mean and standard deviation (degree which individuals within the sample differ with the sample mean). Standard error is an estimate of how far the sample mean represents the population mean, thus reporting a probabilistic statement as opposed to reporting a descriptive variation in measurements.

**Homogeneity and *Q* statistic.** The researcher gave careful attention to systematically coding general factors from individual studies, assuring each effect size had the same meaning in all studies. In addition to general factors that affected precision, there were two unique dominant factors to consider: sample size and study design (Borenstein et al., 2009). Other possible sources of variability included sampling error within a study and between studies (Huedo-Medina, Sanchez-Meca, Marin-Martinez, & Botella, 2006). It is inevitable that variability due to undetermined number of characteristics will vary among studies (Borenstein et al., 2009; Huedo-Medina et al., 2006). Unique study factors that could also affect precision included homogeneity at

times. However, it should be noted that Hunter and Schmidt (1990) viewed homogeneity as an unrealistic assumption unless the study was infinite; they stated:

The homogeneity test has all the flaws of any significance test. If the number of studies is small, then a real moderator variable must be enormous to be detected by this test. On the other hand, if the number of studies is large, then the trivial departure from heterogeneity, such as departures in artifact uniformity, will suggest the presence of a moderator variable where there may be none. However, research on human decision-making has shown that, when there is no good alternative available, people will grasp at straws. The heterogeneity test is just such a straw. (p. 428)

The researcher recognized that not all studies were methodologically identical, that heterogeneity was “buried in implicit statistical assumptions” (Hunter & Schmidt, 1990, p. 426), and that variance was likely to exist. Meta-analytical studies should use multiple indicators to assess given variables to reduce sampling error in the average correlations, representing the study, but excluding generalizability and assumptions (Hunter & Schmidt, 2004). To obtain multiple measurements in an effort to provide study representations that would foster clear discussions, CMA (Version 2.0) was used to test for effect sizes, *p*-values, means, and standard errors. This included testing for the homogeneity of the effect sizes using the *Q* statistic, credibility intervals, and chi-square test based upon the weighted effect sizes, but results were inconclusive and failed to add value to the analyses of the given demand and resource correlates.

The primary goal of this study was to add knowledge about and insight into the relationship between teacher burnout and resources and demands correlates. Previous studies have been conducted on teacher burnout, but were piecemeal and lacked empirical evidence to the phenomenon of teacher burnout. Burnout had been found to be prevalent in the teaching profession, more so than in any other profession; it was described as a debilitating progression for some and an acute crisis for others (Owens, 2013). Results from this meta-analytical study provided useful information and insight to advance the importance of investigating teacher burnout.

The remaining sections of this chapter present the results of the multiple supporting tests conducted. These results are organized within their respective hypotheses and research questions that guided this meta-analysis. Discussion explains how they have helped to confirm the hypotheses, to answer the research questions, and to strengthen the significance of the study overall.

### **Emotional Exhaustion and Demand Correlates**

**H<sub>1</sub> There is a significant positive relationship between demand correlates and emotional exhaustion as measured by the Maslach Burnout Inventory (MBI).**

**Research Question 1: What is the relationship between demand correlates and emotional exhaustion for teachers experiencing job burnout?**

The first hypothesis tested if there was a significant positive relationship between emotional exhaustion and demand correlates. The research question explored the relationship between demand correlates and emotional exhaustion for teachers experiencing job burnout. The researcher conducted 12 meta-analyses to test this

hypothesis. First, 72 studies were identified as reporting correlational values (Pearson  $r$  values,  $p$ -values,  $t$ ,  $F$ , or Fisher's  $z$ ) which serve as an appropriate index of effect sizes (Borenstein et al., 2009). Second, an additional 33 studies were identified which reported means, standard error, and sample size for emotional exhaustion and demand correlates as measured by the MBI. The researcher tested the hypothesis with a total of 105 studies, 180,375 effect sizes, and 161,085 participants ( $n$ ). Table 2 provides information related to the authors, year studies were reported, sample sizes, combined effect sizes, and  $p$ -values. Table 3 provides information related to the authors, year studies were reported, sample sizes, means, and standard error.

The effect size was calculated at a 95% confidence interval with the lower limit 0.011 to the upper limit 0.299. The correlation coefficient effect size was 0.158 and the  $p$ -value of 0.036 ( $p < 0.05$ ). Studies reporting correlates as means, standard error, and sample size had a mean of 15.75, standard error of 0.698, and 0.488 variance. Therefore, both data analysis confirmed a significant positive relationship between emotional exhaustion and demands. The researcher then tested for homogeneity for all studies reporting a relationship between emotional exhaustion and demand correlates. The test results were  $Q = 29,033.318$ ,  $df = 71$ , ( $p < 0.001$ ), standard error 0.203, variance 0041;  $Q = 37,757.760$ ,  $df = 32$ , ( $p < 0.001$ ), standard error 9.141, and variance 83.549, respectively.

Table 2

*Studies Reporting Correlations Between Emotional Exhaustion and Demand Correlates*

| Author(s)                                                                      | Year | <i>n</i> | Effect Size | <i>p</i> -value |
|--------------------------------------------------------------------------------|------|----------|-------------|-----------------|
| Aguayo, R., Pecino, C. V., de la Fuente Solana, E. I., & Fernández, L. M. L.   | 2011 | 25,337   | 0.880       | 0.000           |
| Alarcon, G. M.                                                                 | 2011 | 231      | 0.632       | 0.238           |
| Aloe, A. M., Amo, L., & Shanahan, M. E.                                        | 2013 | 48       | 0.401       | 0.417           |
| Antoniou, A. S., Polychroni, F., & Viachakis, A. N.                            | 2006 | 493      | 0.389       | 0.354           |
| Bataineh, O., & Alsagheer, A.                                                  | 2012 | 83       | 0.329       | 0.387           |
| Bell, D. J.                                                                    | 2010 | 129      | 0.162       | 0.067           |
| Brouwers, A., & Tomic, W.                                                      | 2000 | 611      | 0.690       | 0.214           |
| Carson, R. L.                                                                  | 2006 | 85       | 0.611       | 0.153           |
| Chen, C. E.                                                                    | 2013 | 237      | 0.446       | 0.333           |
| Covell, K., McNeil, J. K., & Howe, B. R.                                       | 2009 | 127      | 0.234       | 0.508           |
| Croom, B. D.                                                                   | 2003 | 164      | 0.394       | 0.209           |
| Dicke, T., Parker, P. D., Marsh, H. W., Kunter, M., Schmeck, A., & Leutner, D. | 2014 | 1,227    | 0.379       | 0.184           |
| Edmonson, S.                                                                   | 2001 | 46       | 0.397       | 0.330           |
| Egyed, C. J., & Short, R. J.                                                   | 2006 | 106      | 0.337       | 0.215           |
| Erkutlo, H.                                                                    | 2006 | 1,344    | 0.304       | 0.240           |
| Eslamdost, M., Mirjamali, E., Yousefi, M., & Abedimahzoun, M.                  | 2014 | 503      | 0.134       | 0.415           |
| Evers, W. J., Tomic, W., & Brouwers, A.                                        | 2004 | 41       | 0.126       | 0.435           |
| Fatemi, M. A., Alimirzaei, H., Ghaffari, S., & Izadi, M.                       | 2014 | 160      | 0.135       | 0.392           |
| Gaines, C. B.                                                                  | 2011 | 282      | 0.334       | 0.348           |
| Gaitan, P. E.                                                                  | 2009 | 45       | 0.291       | 0.375           |
| Geil, K. E.                                                                    | 2011 | 650      | 0.335       | 0.172           |
| Gelman, R. B.                                                                  | 2008 | 77       | 0.330       | 0.145           |
| Gokhan, B.                                                                     | 2011 | 376      | -0.387      | 0.000           |
| Grayson, J. L. & Alvarez, H. K.                                                | 2008 | 320      | 0.249       | 0.322           |
| Hanson, A. M.                                                                  | 2006 | 291      | 0.301       | 0.154           |
| Howard, T. S.                                                                  | 2008 | 35       | 0.271       | 0.182           |
| Iligan, D. J.                                                                  | 2010 | 101      | 0.263       | 0.168           |
| Jackson, L., & Rothmann, S.                                                    | 2005 | 266      | 0.227       | 0.347           |
| Javadi, F.                                                                     | 2014 | 143      | 0.112       | 0.464           |

Table 2 (*continued*)

| Author(s)                                                                                                | Year | <i>n</i> | Effect Size | <i>p</i> -value |
|----------------------------------------------------------------------------------------------------------|------|----------|-------------|-----------------|
| Johnson, B. W.                                                                                           | 2010 | 135      | 0.199       | 0.113           |
| Joseph, A. C.                                                                                            | 2010 | 229      | 0.251       | 0.159           |
| Khezerlou, E.                                                                                            | 2013 | 486      | 0.103       | 0.491           |
| Killian, J. G.                                                                                           | 2004 | 252      | 0.193       | 0.108           |
| Kis, A.                                                                                                  | 2014 | 12,205   | 0.106       | 0.431           |
| Kitchel, T., Smith, A. R., Henry, A. L.,<br>Robinson, J. S., Lawver, R. G., Park, T.<br>D., & Schell, A. | 2012 | 383      | 0.118       | 0.371           |
| Koenig, A.                                                                                               | 2014 | 74       | 0.284       | 0.091           |
| Kokkinos, C. M., & Stavropoulos, G.                                                                      | 2014 | 174      | 0.207       | 0.372           |
| Koustelios, A., & Tsigilis, N.                                                                           | 2005 | 170      | 0.159       | 0.103           |
| Kucuksuleymanoglu, R.                                                                                    | 2011 | 67       | 0.167       | 0.155           |
| Lim, S., & Sungmin, E.                                                                                   | 2014 | 367      | 0.186       | 0.407           |
| Luk, A. L., Chan, B. P., Cheong, S. W., &<br>Ko, S. K.                                                   | 2010 | 138      | 0.134       | 0.543           |
| Lynn, S. J.                                                                                              | 2013 | 98       | 0.237       | 0.156           |
| McCarthy, C. J., Lambert, R. G.,<br>O'Donnell, M., & Melendres, L. T.                                    | 2009 | 451      | 0.139       | 0.508           |
| McKenzie, K. A.                                                                                          | 2009 | 208      | 0.239       | 0.119           |
| Montgomery, C. & Rupp, A. A.                                                                             | 2005 | 65       | 0.168       | 0.146           |
| Mulvaney, T. L.                                                                                          | 2013 | 117      | 0.245       | 0.094           |
| Munson, A.                                                                                               | 2012 | 91       | 0.172       | 0.145           |
| Okwaraji, F.E. & Aguwa, E.N.                                                                             | 2015 | 432      | 0.153       | 0.183           |
| Ozan, M. D.                                                                                              | 2009 | 196      | 0.151       | 0.244           |
| Papastylianou, A., Kaila, M., &<br>Polychronopoulos, M.                                                  | 2009 | 562      | 0.165       | 0.409           |
| Platsidou, M., & Agaliotis, I.                                                                           | 2008 | 127      | 0.143       | 0.453           |
| Platsidou, M.                                                                                            | 2010 | 127      | 0.156       | 0.422           |
| Purvanova, R. K., & Muros, J. P.                                                                         | 2010 | 77,656   | 0.164       | 0.169           |
| Roberts, J.                                                                                              | 2013 | 50       | 0.157       | 0.086           |
| Sacco, M. D.                                                                                             | 2011 | 163      | 0.230       | 0.101           |
| Sadeghi, K., & Khezrlou, S.                                                                              | 2014 | 40       | 0.175       | 0.102           |
| Sagone, E., & De Caroli, M. E.                                                                           | 2014 | 106      | 0.176       | 0.104           |
| Sari, H.                                                                                                 | 2004 | 295      | 0.170       | 0.123           |
| Skaalvik, E.M., & Skaalvik, S.                                                                           | 2009 | 563      | 0.132       | 0.477           |
| Skaalvik, E.M., & Skaalvik, S.                                                                           | 2010 | 2,249    | 0.171       | 0.105           |

Table 2 (*continued*)

| Author(s)                                                                                                              | Year | <i>n</i> | Effect Size | <i>p</i> -value |
|------------------------------------------------------------------------------------------------------------------------|------|----------|-------------|-----------------|
| Skaalvik, E.M., & Skaalvik, S.                                                                                         | 2011 | 2,569    | 0.128       | 0.472           |
| Skaalvik, E.M., & Skaalvik, S.                                                                                         | 2014 | 2,569    | 0.172       | 0.092           |
| Stephenson, T.                                                                                                         | 2012 | 178      | 0.227       | 0.090           |
| Swider, B. W. & Zimmerman, R. D.                                                                                       | 2010 | 5,737    | 0.172       | 0.088           |
| Thornqvist, N. S.                                                                                                      | 2011 | 96       | 0.160       | 0.088           |
| Tschiesner, R., Tauber, S., Martina, P., & Farneti, A.                                                                 | 2014 | 71       | 0.163       | 0.104           |
| Tsigilis, N., Zachopoulou, E., & Grammatikopoulos, V.                                                                  | 2006 | 178      | 0.150       | 0.385           |
| Unterbrink, T., Pfeifer, R., Krippeit, L., Zimmerman, L., Rose, U., Joos, A., Hartmann, A., Wirsching, M., & Bauer, J. | 2014 | 924      | 0.163       | 0.145           |
| Van Droogenbroeck, F., Spruyt, B., & Vanroelen, C.                                                                     | 2014 | 1,878    | 0.142       | 0.401           |
| Watts, G. J.                                                                                                           | 2013 | 171      | 0.210       | 0.106           |
| Weng, C. H.                                                                                                            | 2004 | 5,700    | 0.170       | 0.076           |
| Worley, J.A., Vassar, M., Wheeler, D. L., & Barnes, L.                                                                 | 2008 | 491      | 0.174       | 0.076           |

Table 3

*Studies Reporting Means and Standard Error Between Emotional Exhaustion  
and Demand Correlates*

| Author(s)                                                     | Year | <i>n</i> | Mean  | Standard Error |
|---------------------------------------------------------------|------|----------|-------|----------------|
| Benevene, P., & Fiorilli, C.                                  | 2015 | 479      | 11.34 | 8.130          |
| Benevene, P., & Fiorilli, C.                                  | 2015 | 479      | 10.90 | 8.290          |
| Beckett, T. M.                                                | 2011 | 74       | 24.08 | 11.55          |
| Brewer, E. W., & McMahan, J.                                  | 2003 | 133      | 10.96 | 6.750          |
| Deryakulu, D.                                                 | 2006 | 122      | 11.08 | 4.930          |
| Elder, C., Nidich, S., Moriarty, F., & Nidich, R.             | 2014 | 40       | 8.402 | 6.700          |
| Embech, J. L.                                                 | 2014 | 300      | 9.931 | 3.720          |
| Erkutlo, H.                                                   | 2012 | 1,344    | 9.341 | 5.820          |
| Goddard, R., & Goddard, M.                                    | 2006 | 112      | 10.88 | 5.440          |
| Gursel, M., Sunbul, A. M., & Sari, H.                         | 2002 | 290      | 10.90 | 3.210          |
| Gursel, M., Sunbul, A. M., & Sari, H.                         | 2002 | 290      | 10.86 | 5.440          |
| Karakus, M.                                                   | 2012 | 425      | 10.80 | 3.210          |
| Karakus, M.                                                   | 2012 | 425      | 10.67 | 5.820          |
| Khatun, R.                                                    | 2013 | 100      | 13.37 | 10.27          |
| Loerbroks, A., Meng, H., Chen, M. L., Herr, R., & Angerer, P. | 2014 | 425      | 13.52 | 10.20          |
| McCormick, J., & Barnett, K.                                  | 2011 | 416      | 12.91 | 7.190          |
| O'Rourke, E., O'Brien, K.E., & Park, H. H.                    | 2014 | 95       | 12.32 | 7.030          |
| Ozdemir, S.                                                   | 2006 | 78       | 12.48 | 6.240          |
| Ozdemir, S.                                                   | 2006 | 78       | 12.55 | 5.660          |
| Pishghadam, R., Adamson, B., Sadafian, S. S., & Kan, F. L.    | 2013 | 113      | 12.64 | 9.034          |
| Rice, W. J.                                                   | 2013 | 41       | 13.20 | 6.240          |
| Sahni, M., & Deswal, A.                                       | 2015 | 122      | 14.20 | 3.230          |
| Sahni, M., & Deswal, A.                                       | 2015 | 122      | 15.14 | 7.350          |
| Shukla, A., & Trivedi, T.                                     | 2008 | 320      | 15.27 | 6.268          |
| Shukla, A., & Trivedi, T.                                     | 2008 | 320      | 15.37 | 9.034          |

Table 3 (*continued*)

| Author(s)                                                                | Year | <i>n</i> | Mean  | Standard Error |
|--------------------------------------------------------------------------|------|----------|-------|----------------|
| Tomic, W., Evers, W., & Brouwers, A.                                     | 2004 | 215      | 14.77 | 6.195          |
| Trépanier, S. G., Fernet, C., Austin, S., Forest, J., & Vallerand, R. J. | 2014 | 745      | 14.32 | 4.156          |
| Waugh, K. C., & Judd, M. R.                                              | 2003 | 40       | 14.60 | 9.890          |
| Weinstein, T. L.                                                         | 2013 | 98       | 14.22 | 6.950          |
| Yavuz, M.                                                                | 2009 | 231      | 14.15 | 6.268          |
| Yavuz, M.                                                                | 2009 | 189      | 14.11 | 6.196          |
| Yazdi, M. T., Motallebzadeh, K., & Ashraf, H.                            | 2013 | 41       | 14.85 | 6.126          |
| Yu, X., Wang, P., Zhai, X., Dai, H., & Yang, Q.                          | 2014 | 387      | 18.33 | 7.350          |

**Emotional exhaustion and demand correlates in published studies.** It was important to test the hypothesis to determine if publication status (i.e., published or unpublished) served as a moderator of the relationship between emotional exhaustion and demands. However, due to the limitations of the researcher and CMA (Version 2.0), published and unpublished studies reporting emotional exhaustion and demand correlates as means and standard error could not be analyzed separately; only effect size and  $p$ -value are shown.

The researcher tested the hypothesis on 46 published studies with 250,054 effect sizes and 142,245 participants ( $n$ ); these studies were identified as reporting weighted means correlation values (Pearson  $r$  values,  $p$ -values,  $t$ ,  $F$ , or Fisher's  $z$ ). Table 4 provides information related to the authors, year studies were reported, sample sizes, combined effect sizes, and  $p$ -values.

The effect size was calculated at a 95% confidence interval with the range from lower limit -0.032 to the upper limit 0.339. The weighted means correlation coefficient was 0.159. The  $p$ -value was 0.103 ( $p > 0.05$ ). A test for homogeneity was then conducted. Heterogeneity results  $Q = 26,207.145$ ,  $df = 45$ ,  $p < 0.001$ . The standard error was 0.246 with a variance of 0.060.

**Emotional exhaustion and demand correlates in unpublished studies.** There were 26 unpublished studies that reported correlation values (Pearson  $r$  values,  $p$ -values,  $t$ ,  $F$ , or Fisher's  $z$ ). Due to the limitations of the researcher and CMA (Version 2.0), published and unpublished studies reporting emotional exhaustion and demand correlates as means and standard error could not be analyzed separately; only effect size and

Table 4

*Published Studies Reporting Correlations Between Emotional Exhaustion  
and Demand Correlates*

| Author(s)                                                                                       | Year | <i>n</i> | Effect Size | <i>p</i> -value |
|-------------------------------------------------------------------------------------------------|------|----------|-------------|-----------------|
| Aguayo, R., Pecino, C. V., de la Fuente Solana, E. I., & Fernández, L. M. L.                    | 2011 | 25,337   | 0.880       | 0.000           |
| Alarcon, G. M.                                                                                  | 2011 | 231      | 0.632       | 0.238           |
| Aloe, A., Amo, L., & Shanahan, M.                                                               | 2013 | 48       | 0.401       | 0.417           |
| Antoniou, A. S., Polychroni, F., & Viachakis, A. N.                                             | 2006 | 493      | 0.389       | 0.354           |
| Bataineh, O., & Alsagheer, A.                                                                   | 2012 | 83       | 0.329       | 0.387           |
| Covell, K., McNeil, J. K., & Howe, B. R.                                                        | 2009 | 127      | 0.234       | 0.508           |
| Croom, B. D.                                                                                    | 2003 | 164      | 0.394       | 0.209           |
| Dicke, T., Parker, P. D., Marsh, H. W., Kunter, M., Schmeck, A., & Leutner, D.                  | 2014 | 1,227    | 0.379       | 0.184           |
| Egyed, C. J., & Short, R. J.                                                                    | 2006 | 106      | 0.337       | 0.215           |
| Erkutlo, H.                                                                                     | 2006 | 1,344    | 0.304       | 0.240           |
| Eslamdost, M., Mirjamali, E., Yousefi, M., & Abedimahzoun, M.                                   | 2014 | 503      | 0.134       | 0.415           |
| Evers, W. J., Tomic, W., & Brouwers, A.                                                         | 2004 | 41       | 0.126       | 0.435           |
| Fatemi, M. A., Alimirzaei, H., Ghaffari, S., & Izadi, M.                                        | 2014 | 160      | 0.135       | 0.392           |
| Goddard, R., & Goddard, M.                                                                      | 2011 | 376      | 0.116       | 0.456           |
| Grayson, J. L., & Alvarez, H. K.                                                                | 2008 | 320      | 0.249       | 0.322           |
| Jackson, L., & Rothmann, S.                                                                     | 2005 | 266      | 0.227       | 0.347           |
| Javadi, F.                                                                                      | 2014 | 143      | 0.112       | 0.464           |
| Khezerlou, E.                                                                                   | 2013 | 486      | 0.103       | 0.491           |
| Kis, A.                                                                                         | 2014 | 12,205   | 0.106       | 0.431           |
| Kitchel, T., Smith, A. R., Henry, A. L., Robinson, J. S., Lawver, R. G., Park, T., & Schell, A. | 2012 | 383      | 0.118       | 0.371           |
| Kokkinos, C. M., & Stavropoulos, G.                                                             | 2014 | 174      | 0.207       | 0.372           |
| Koustelios, A., & Tsigilis, N.                                                                  | 2005 | 170      | 0.159       | 0.103           |
| Kucuksuleymanoglu, R.                                                                           | 2011 | 67       | 0.167       | 0.155           |
| Lim, S., & Sungmin, E.                                                                          | 2014 | 367      | 0.186       | 0.407           |
| Luk, A. L., Chan, B. P., Cheong, S. W., & Ko, S. K.                                             | 2010 | 138      | 0.134       | 0.543           |

Table 4 (*continued*)

| Author(s)                                                                                                              | Year | <i>n</i> | Effect Size | <i>p</i> -value |
|------------------------------------------------------------------------------------------------------------------------|------|----------|-------------|-----------------|
| McCarthy, C., Lambert, R., O'Donnell, M., & Melendres, L.                                                              | 2009 | 451      | 0.139       | 0.508           |
| Montgomery, C., & Rupp, A. A.                                                                                          | 2005 | 65       | 0.168       | 0.146           |
| Okwaraji, F. E., & Aguwa, E. N.                                                                                        | 2015 | 432      | 0.153       | 0.183           |
| Ozan, M. D.                                                                                                            | 2009 | 196      | 0.151       | 0.244           |
| Papastilianou, A., Kaila, M., & Polychronopoulos, M.                                                                   | 2009 | 562      | 0.165       | 0.409           |
| Platsidou, M., & Agaliotis, I.                                                                                         | 2008 | 127      | 0.143       | 0.453           |
| Platsidou, M.                                                                                                          | 2010 | 127      | 0.156       | 0.422           |
| Purvanova, R. K., & Muros, J. P.                                                                                       | 2010 | 77,656   | 0.164       | 0.169           |
| Sadeghi, K., & Khezrlou, S.                                                                                            | 2014 | 40       | 0.175       | 0.102           |
| Sagone, E., & De Caroli, M. E.                                                                                         | 2014 | 106      | 0.176       | 0.104           |
| Sari, H.                                                                                                               | 2004 | 295      | 0.170       | 0.123           |
| Skaalvik, E.M., & Skaalvik, S.                                                                                         | 2009 | 563      | 0.132       | 0.477           |
| Skaalvik, E.M., & Skaalvik, S.                                                                                         | 2010 | 2,249    | 0.171       | 0.105           |
| Skaalvik, E.M., & Skaalvik, S.                                                                                         | 2011 | 2,569    | 0.128       | 0.472           |
| Skaalvik, E.M., & Skaalvik, S.                                                                                         | 2014 | 2,569    | 0.172       | 0.092           |
| Swider, B. W. & Zimmerman, R. D.                                                                                       | 2010 | 5,737    | 0.172       | 0.088           |
| Tschiesner, R., Tauber, S., Martina, P., & Farneti, A.                                                                 | 2014 | 71       | 0.163       | 0.104           |
| Tsigilis, N., Zachopoulou, E., & Grammatikopoulos, V.                                                                  | 2006 | 178      | 0.150       | 0.385           |
| Unterbrink, T., Pfeifer, R., Krippeit, L., Zimmerman, L., Rose, U., Joos, A., Hartmann, A., Wirsching, M., & Bauer, J. | 2014 | 924      | 0.163       | 0.145           |
| Van Droogenbroeck, F., Spruyt, B., & Vanroelen, C.                                                                     | 2014 | 1,878    | 0.142       | 0.401           |
| Worley, J. A., Vassar, M., Wheeler, D. L., & Barnes, L.                                                                | 2008 | 491      | 0.174       | 0.076           |

$p$ -value are shown. The researcher tested the hypothesis with a total of 60,772 effect sizes that represented 10,051 participants ( $n$ ). Table 5 provides information related to the authors, year studies were reported, sample sizes, combined effect sizes, and  $p$ -values.

The effect size was calculated at a 95% confidence interval with the range from lower limit -0.022 to the upper limit 0.327. The correlation coefficient was 0.157. The  $p$ -value was 0.086 ( $p > 0.05$ ). A test for homogeneity was then conducted. Heterogeneity test results were  $Q = 1,476.369$ ,  $df = 25$ , ( $p < 0.001$ ), standard error 0.128 with a variance of 0.016.

**Emotional exhaustion and work overload.** There were 20 studies that reported correlations between emotional exhaustion and work overload. An additional 26 studies were identified which reported means, standard error, and sample size for emotional exhaustion and work overload as measured by the MBI. The researcher tested this hypothesis with a total of 46 studies, 85,545 effect sizes, and 30,994 participants ( $n$ ). Table 6 provides information related to the authors, year studies were reported, sample sizes, combined effect sizes, and  $p$ -values. Table 7 provides information related to the authors, year studies were reported, sample sizes, means, and standard error.

The correlation coefficient weighted mean effect size was calculated at a 95% confidence interval with the range from lower limit -0.015 to the upper limit 0.300. The  $p$ -value was 0.146 ( $p > 0.05$ ). Studies reporting means and standard error correlates had 7,156 participants ( $n$ ), standard error of 1.051, and 1.104 variance. A test for

Table 5

*Unpublished Studies Reporting Correlations Between Emotional Exhaustion  
and Demand Correlates*

| Author(s)                 | Year | <i>n</i> | Effect Size | <i>p</i> -value |
|---------------------------|------|----------|-------------|-----------------|
| Bell, D. J.               | 2010 | 129      | 0.162       | 0.067           |
| Brouwers, A., & Tomic, W. | 2000 | 611      | 0.690       | 0.214           |
| Carson, R. L.             | 2006 | 85       | 0.611       | 0.153           |
| Chen, C. E.               | 2013 | 237      | 0.446       | 0.333           |
| Edmonson, S.              | 2001 | 46       | 0.397       | 0.330           |
| Gaines, C. B.             | 2011 | 282      | 0.334       | 0.348           |
| Gaitan, P. E.             | 2009 | 45       | 0.291       | 0.375           |
| Geil, K. E.               | 2011 | 650      | 0.335       | 0.172           |
| Gelman, R. B.             | 2008 | 77       | 0.330       | 0.145           |
| Hanson, A. M.             | 2006 | 291      | 0.301       | 0.154           |
| Howard, T. S.             | 2008 | 35       | 0.271       | 0.182           |
| Iligan, D. J.             | 2010 | 101      | 0.263       | 0.168           |
| Johnson, B. W.            | 2010 | 135      | 0.199       | 0.113           |
| Joseph, A. C.             | 2010 | 229      | 0.251       | 0.159           |
| Killian, J. G.            | 2004 | 252      | 0.193       | 0.108           |
| Koenig, A.                | 2014 | 74       | 0.284       | 0.091           |
| Lynn, S. J.               | 2013 | 98       | 0.237       | 0.156           |
| McKenzie, K. A.           | 2009 | 208      | 0.239       | 0.119           |
| Mulvaney, T. L.           | 2013 | 117      | 0.245       | 0.094           |
| Munson, A.                | 2012 | 91       | 0.172       | 0.145           |
| Roberts, J.               | 2013 | 50       | 0.157       | 0.086           |
| Sacco, M. D.              | 2011 | 163      | 0.230       | 0.101           |
| Stephenson, T.            | 2012 | 178      | 0.227       | 0.090           |
| Thornqvist, N. S.         | 2011 | 96       | 0.160       | 0.088           |
| Watts, G. J.              | 2013 | 171      | 0.210       | 0.106           |
| Weng, C. H.               | 2004 | 5,700    | 0.170       | 0.076           |

Table 6

*Studies Reporting Correlations Between Emotional Exhaustion and Work Overload*

| Author(s)                                                                                                              | Year | <i>n</i> | Effect Size | <i>p</i> -value |
|------------------------------------------------------------------------------------------------------------------------|------|----------|-------------|-----------------|
| Alarcon, G. M.                                                                                                         | 2011 | 231      | 0.490       | 0.000           |
| Antoniou, A. S., Polychroni, F., & Viachakis, A. N.                                                                    | 2006 | 493      | 0.360       | 0.000           |
| Edmonson, S.                                                                                                           | 2000 | 46       | 0.430       | 0.003           |
| Edmonson, S.                                                                                                           | 2000 | 46       | -0.286      | 0.054           |
| Gelman, R. B.                                                                                                          | 2008 | 77       | 0.215       | 0.060           |
| Jackson, L., & Rothmann, S.                                                                                            | 2005 | 266      | 0.500       | 0.000           |
| Javadi, F.                                                                                                             | 2014 | 143      | -0.035      | 0.679           |
| Johnson, B. W.                                                                                                         | 2010 | 135      | -0.010      | 0.909           |
| Khezerlou, E.                                                                                                          | 2013 | 486      | -0.133      | 0.009           |
| Kis, A.                                                                                                                | 2014 | 12,205   | -0.035      | 0.000           |
| Kokkinos, C. M., & Stavropoulos, G.                                                                                    | 2014 | 174      | 0.300       | 0.000           |
| Koustelios, A., & Tsigilis, N.                                                                                         | 2005 | 170      | -0.780      | 0.000           |
| Luk, A. L., Chan, B. P., Cheong, S. W., & Ko, S. K.                                                                    | 2010 | 138      | -0.626      | 0.000           |
| Montgomery, C., & Rupp, A. A.                                                                                          | 2005 | 65       | 0.270       | 0.029           |
| Munson, A.                                                                                                             | 2012 | 91       | 0.570       | 0.000           |
| Roberts, J.                                                                                                            | 2013 | 50       | 0.091       | 0.532           |
| Unterbrink, T., Pfeifer, R., Krippeit, L., Zimmerman, L., Rose, U., Joos, A., Hartmann, A., Wirsching, M., & Bauer, J. | 2014 | 924      | 0.500       | 0.000           |
| Van Droogenbroeck, F., Spruyt, B., & Vanroelen, C.                                                                     | 2014 | 1,878    | -0.320      | 0.000           |
| Weng, C. H.                                                                                                            | 2004 | 5,700    | 0.410       | 0.000           |
| Worley, J. A., Vassar, M., Wheeler, D. L., & Barnes, L.                                                                | 2008 | 491      | 0.600       | 0.000           |

Table 7

*Studies Reporting Means and Standard Error Between Emotional Exhaustion and Work Overload*

| Author(s)                                                                | Year | <i>n</i> | Mean   | Standard Error |
|--------------------------------------------------------------------------|------|----------|--------|----------------|
| Brewer, E. W., & McMahan, J.                                             | 2003 | 133      | 19.280 | 0.982          |
| Deryakulu, D.                                                            | 2006 | 122      | 11.550 | 0.638          |
| Elder, C., Nidich, S., Moriarty, F., & Nidich, R.                        | 2014 | 40       | -5.610 | 1.690          |
| Embech, J. L.                                                            | 2014 | 300      | 15.860 | 0.445          |
| Erkutlo, H.                                                              | 2012 | 1,344    | 3.085  | 0.058          |
| Goddard, R., & Goddard, M.                                               | 2006 | 112      | 24.090 | 0.999          |
| Gursel, M., Sunbul, A., & Sari, H.                                       | 2002 | 290      | 11.120 | 0.565          |
| Gursel, M., Sunbul, A., & Sari, H.                                       | 2002 | 290      | 10.560 | 0.375          |
| Karakus, M.                                                              | 2012 | 425      | 9.630  | 0.180          |
| Karakus, M.                                                              | 2012 | 425      | 9.100  | 0.172          |
| Khatun, R.                                                               | 2013 | 100      | 48.750 | 0.675          |
| Loerbroks, A., Meng, H., Chen, M. L., Herr, R., & Angerer, P.            | 2014 | 425      | 8.680  | 0.082          |
| McCormick, J., & Barnett, K.                                             | 2011 | 416      | 3.620  | 0.070          |
| Okwaraji, F. E., & Aguwa, E. N.                                          | 2014 | 95       | 3.200  | 0.125          |
| Ozdemir, S.                                                              | 2006 | 78       | 15.255 | 1.161          |
| Ozdemir, S.                                                              | 2006 | 78       | 13.950 | 1.159          |
| Pishghadam, R., Adamson, B., Sadafian, S. S., & Kan, F. L.               | 2013 | 113      | 14.320 | 0.850          |
| Sahni, M., & Deswal, A.                                                  | 2015 | 122      | 34.400 | 0.404          |
| Sahni, M., & Deswal, A.                                                  | 2015 | 122      | 35.500 | 0.690          |
| Shukla, A., & Trivedi, T.                                                | 2008 | 320      | 18.340 | 0.905          |
| Shukla, A., & Trivedi, T.                                                | 2008 | 320      | 17.760 | 1.000          |
| Tomic, W., Evers, W., & Brouwers, A.                                     | 2004 | 215      | 12.650 | 0.426          |
| Trépanier, S. G., Fernet, C., Austin, S., Forest, J., & Vallerand, R. J. | 2014 | 745      | 3.280  | 0.048          |
| Waugh, K. C., & Judd, M. R.                                              | 2003 | 40       | 21.250 | 0.171          |
| Weinstein, T. L.                                                         | 2013 | 98       | 3.710  | 0.121          |
| Yu, X., Wang, P., Zhai, X., Dai, H., & Yang, Q.                          | 2014 | 387      | 32.690 | 0.699          |

homogeneity was then conducted with these results:  $Q = 4,359.382$ ,  $df = 20$ , ( $p < 0.001$ ), standard error 0.116 with a variance of 0.013;  $Q = 30,976.079$ ,  $df = 25$ , ( $p < 0.001$ ), respectively.

**Emotional exhaustion and role conflict.** There were 13 studies that reported correlations between emotional exhaustion and role conflict. One additional study (Loerbroks, 2014) was identified with reported means, standard error, and sample size for emotional exhaustion and role conflict as measured by the MBI. The researcher tested the hypothesis with a total of 14 studies and 41,046 effect sizes that represented 25,654 participants ( $n$ ). Table 8 provides information related to the authors, year studies were reported, sample sizes, combined effect sizes, and  $p$ -values. Table 9 provides information related to the author, year, sample size, mean, and standard error.

The correlation coefficient weighted mean effect size was calculated at a 95% confidence interval with the range from lowest limit -0.135 to the upper limit 0.287. The  $p$ -value was 0.470 ( $p > 0.05$ ). Loerbroks (2014) lower limit 17.870, upper limit 18.11, mean 17.87, and standard error 0.123. A test for homogeneity was then conducted. The test results were  $Q = 2.675.519$ ,  $df = 12$ , ( $p < 0.001$ );  $Q = 538.523$ ,  $df = 14$ , ( $p < 0.001$ ), respectively.

**Emotional exhaustion and role ambiguity.** There were 11 studies that reported correlations between emotional exhaustion and role ambiguity. The researcher identified 21 additional studies, which reported means, standard error, and sample size for emotional exhaustion and role ambiguity as measured by the MBI. The researcher tested the hypothesis with a total of 32 studies, 42,392 effect sizes, and 24,647 participants ( $n$ ).

Table 8

*Studies Reporting Correlations Between Emotional Exhaustion and Role Conflict*

| Author(s)                                                                                                              | Year | <i>n</i> | Effect Size | <i>p</i> -value |
|------------------------------------------------------------------------------------------------------------------------|------|----------|-------------|-----------------|
| Antoniou, A. S., Polychroni, F., & Viachakis, A. N.                                                                    | 2006 | 493      | 0.240       | 0.000           |
| Edmonson, S.                                                                                                           | 2000 | 46       | 0.380       | 0.009           |
| Javadi, F.                                                                                                             | 2014 | 143      | 0.035       | 0.679           |
| Khezerlou, E.                                                                                                          | 2014 | 386      | -0.133      | 0.009           |
| Kis, A.                                                                                                                | 2014 | 12,205   | -0.035      | 0.000           |
| Kokkinos, C. M., & Stavropoulos, G.                                                                                    | 2014 | 174      | 0.180       | 0.017           |
| Koustelios, A., & Tsigilis, N.                                                                                         | 2005 | 170      | -0.780      | 0.000           |
| Roberts, J.                                                                                                            | 2013 | 50       | 0.091       | 0.532           |
| Skaalvik, E.M., & Skaalvik, S.                                                                                         | 2011 | 2,569    | -0.190      | 0.000           |
| Unterbrink, T., Pfeifer, R., Krippeit, L., Zimmerman, L., Rose, U., Joos, A., Hartmann, A., Wirsching, M., & Bauer, J. | 2014 | 924      | 0.500       | 0.000           |
| Van Droogenbroeck, F., Spruyt, B., & Vanroelen, C.                                                                     | 2014 | 1,878    | -0.260      | 0.000           |
| Weng, C. H.                                                                                                            | 2004 | 5,700    | 0.530       | 0.000           |
| Worley, J. A., Vassar, M., Wheeler, D. L., & Barnes, L.                                                                | 2008 | 491      | 0.600       | 0.470           |

Table 9

*Studies Reporting Means and Standard Error Between Emotional Exhaustion and Role Conflict*

| Author(s)                                                     | Year | <i>n</i> | Means | Standard Error |
|---------------------------------------------------------------|------|----------|-------|----------------|
| Loerbroks, A., Meng, H., Chen, M. L., Herr, R., & Angerer, P. | 2014 | 425      | 17.87 | 0.123          |

Table 10 provides information related to the authors, year studies were reported, sample sizes, combined effect sizes, and  $p$ -values. Table 11 provides information related to the authors, year studies were reported, sample sizes, means, and standard error.

The weighted mean correlation coefficient effect size was calculated at a 95% confidence interval ranging from lower limit -0.050 to upper limit 0.258. The  $p$ -value was 0.183 ( $p > 0.05$ ). Studies reporting correlates as means, standard error, and sample size had a standard error of 1.236 and 1.528 variance. A test for homogeneity was then conducted. The test results:  $Q = 32,517.928$ ,  $df = 52$ , ( $p < 0.001$ ), standard error 0.401 with a variance of 0.160;  $Q = 27,064.096$ ,  $df = 20$ , ( $p < 0.001$ ), respectively.

**Emotional exhaustion and student misbehavior.** There were 13 studies that reported correlations between emotional exhaustion and student misbehavior. Two additional studies were identified, which reported means, standard error, and sample size for emotional exhaustion and student misbehavior as measured by the MBI. The researcher tested this hypothesis with a total of 15 studies, 7,578 effect sizes, and 5,829 participants ( $n$ ). Table 12 provides information related to the authors, year studies were reported, sample sizes, effect sizes, and  $p$ -values. Table 13 provides information related to the authors, year studies were reported, sample sizes, means, and standard error.

The weighted mean correlation coefficient effect size was calculated at a 95% confidence interval with the range from lower limit -0.266 to the upper limit 0.377. The  $p$ -value was 0.716 ( $p > 0.05$ ). Studies reporting correlates as means, standard error, and sample size had a standard error of 1.847 and 3.412 variance. A test for homogeneity was

Table 10

*Studies Reporting Correlations Between Emotional Exhaustion and Role Ambiguity*

| Author(s)                                                                                                                      | Year | <i>n</i> | Effect Size | <i>p</i> -value |
|--------------------------------------------------------------------------------------------------------------------------------|------|----------|-------------|-----------------|
| Alarcon, G. M.                                                                                                                 | 2011 | 231      | 0.270       | 0.000           |
| Edmonson, S.                                                                                                                   | 2000 | 46       | 0.135       | 0.373           |
| Javadi, F.                                                                                                                     | 2014 | 143      | -0.035      | 0.679           |
| Khezerlou, E.                                                                                                                  | 2013 | 486      | -0.133      | 0.009           |
| Kis, A.                                                                                                                        | 2014 | 12,205   | -0.035      | 0.000           |
| Koustelios, A., & Tsigilis, N.                                                                                                 | 2005 | 170      | -0.780      | 0.000           |
| Roberts, J.                                                                                                                    | 2013 | 174      | 0.091       | 0.532           |
| Stacy, E., & Thompson, D.                                                                                                      | 2001 | 46       | 0.310       | 0.036           |
| Unterbrink, T., Pfeifer, R., Krippel,<br>L., Zimmerman, L., Rose, U.,<br>Joos, A., Hartmann, A.,<br>Wirsching, M., & Bauer, J. | 2014 | 924      | 0.500       | 0.000           |
| Weng, W. E.                                                                                                                    | 2004 | 924      | 0.310       | 0.000           |
| Worley, J. A., Vassar, M., Wheeler,<br>D. L., & Barnes, L.                                                                     | 2008 | 491      | 0.600       | 0.000           |

Table 11

*Studies Reporting Means and Standard Error Between Emotional Exhaustion  
and Role Ambiguity*

| Author(s)                                                                | Year | <i>n</i> | Mean   | Standard Error |
|--------------------------------------------------------------------------|------|----------|--------|----------------|
| Deryakulu, D.                                                            | 2006 | 122      | 11.55  | 0.638          |
| Elder, C., Nidich, S., Moriarty, F., & Nidich, R.                        | 2014 | 40       | -5.610 | 1.690          |
| Erkutlo, H.                                                              | 2006 | 1,344    | 2.990  | 0.041          |
| Goddard, R., & Goddard, M.                                               | 2006 | 112      | 24.09  | 0.998          |
| Gursel, M., Sunbul, A. M., & Sari, H.                                    | 2002 | 80       | 11.12  | 0.564          |
| Gursel, M., Sunbul, A. M., & Sari, H.                                    | 2002 | 210      | 10.56  | 0.375          |
| Karakus, M.                                                              | 2012 | 425      | 9.630  | 0.180          |
| Karakus, M.                                                              | 2012 | 425      | 9.100  | 0.172          |
| Khatun, R.                                                               | 2013 | 100      | 48.75  | 0.675          |
| O'Rourke, E., O'Brien, K., & Park, H.                                    | 2014 | 95       | 3.200  | 0.125          |
| Ozdemir, S.                                                              | 2006 | 39       | 15.25  | 1.161          |
| Ozdemir, S.                                                              | 2006 | 39       | 13.95  | 1.159          |
| Pishghadam, R., Adamson, B., Sadafian, S. S., & Kan, F. L.               | 2013 | 113      | 14.32  | 0.849          |
| Sahni, M., & Deswal, A.                                                  | 2015 | 76       | 34.40  | 0.403          |
| Sahni, M., & Deswal, A.                                                  | 2015 | 46       | 35.50  | 0.690          |
| Shukla, A., & Trivedi, T.                                                | 2008 | 160      | 18.34  | 0.905          |
| Shukla, A., & Trivedi, T.                                                | 2004 | 160      | 17.76  | 1.000          |
| Tomic, W., Evers, W., & Brouwers, A.                                     | 2004 | 215      | 12.65  | 0.425          |
| Trépanier, S. G., Fernet, C., Austin, S., Forest, J., & Vallerand, R. J. | 2014 | 745      | 3.280  | 0.048          |
| Waugh, K. C., & Judd, M. R.                                              | 2003 | 4,163    | 21.25  | 0.170          |
| Weinstein, T. L.                                                         | 2013 | 98       | 3.710  | 0.121          |

Table 12

*Studies Reporting Correlations Between Emotional Exhaustion and Student Misbehavior*

| Author(s)                                                                                                                       | Year | <i>n</i> | Effect Size | <i>p</i> -value |
|---------------------------------------------------------------------------------------------------------------------------------|------|----------|-------------|-----------------|
| Aloe, A., Amo, L., & Shanahan, M.                                                                                               | 2013 | 16       | -0.270      | 0.318           |
| Brouwers, A., & Tomic, W.                                                                                                       | 2000 | 611      | 0.910       | 0.000           |
| Carson, R. L.                                                                                                                   | 2006 | 85       | 0.470       | 0.000           |
| Evers, W. J., & Tomic, W.                                                                                                       | 2002 | 73       | -0.750      | 0.000           |
| Evers, W. J., Tomic, W., & Brouwers, A.                                                                                         | 2004 | 41       | -0.650      | 0.000           |
| Gokhan, B.                                                                                                                      | 2011 | 376      | -0.363      | 0.000           |
| Javadi, F.                                                                                                                      | 2014 | 143      | -0.035      | 0.679           |
| Khezerlou, E.                                                                                                                   | 2013 | 386      | -0.133      | 0.009           |
| Unterbrink, T., Pfeifer, R., Krippeit, L.,<br>Zimmerman, L., Rose, U., Joos, A.,<br>Hartmann, A., Wirsching, M., &<br>Bauer, J. | 2014 | 924      | 0.500       | 0.000           |
| Roberts, J.                                                                                                                     | 2013 | 50       | 0.091       | 0.532           |
| Skaalvik, E.M., & Skaalvik, S.                                                                                                  | 2010 | 2,249    | 0.130       | 0.000           |
| Tschiesner, R., Tauber, S., Martina, P.,<br>& Farneti, A.                                                                       | 2014 | 71       | -0.260      | 0.028           |
| Worley, J. A., Vassar, M., Wheeler, D.,<br>& Barnes, L.                                                                         | 2008 | 491      | 0.600       | 0.000           |

Table 13

*Studies Reporting Means and Standard Error Between Emotional Exhaustion**and Student Misbehavior*

| Author(s)      | Year | <i>n</i> | Mean  | Standard Error |
|----------------|------|----------|-------|----------------|
| Embech, J. L.  | 2014 | 300      | 25.92 | 0.329          |
| Tripken, J. L. | 2011 | 13       | 65.70 | 1.783          |

then conducted. The test results were  $Q = 1,558.660$ ,  $df = 12$ , ( $p < 0.001$ );  $Q = 55.016$ ,  $df = 2$ , ( $p < 0.001$ ), respectively.

### **Summary of Meta-Analyses Involving Emotional Exhaustion**

The first hypothesis tested if there was a significant positive relationship between emotional exhaustion and demand correlates. The researcher conducted twelve meta-analyses on the relationship between emotional exhaustion and demand correlates: (a) emotional exhaustion and demands as reported by correlates, (b) emotional exhaustion and demands as reported by means and standard error, (c) emotional exhaustion and demands correlates as reported in published studies only, (d) emotional exhaustion and demands as reported in unpublished studies only, (e) emotional exhaustion and work overload as reported by correlations, (f) emotional exhaustion and work overload as reported by means and standard error, (g) emotional exhaustion and role conflict as reported by correlations, (h) emotional exhaustion and role conflict as reported by means and standard error, (i) emotional exhaustion and role ambiguity as reported by correlations, (j) emotional exhaustion and role ambiguity as reported by means and standard error, (k) emotional exhaustion and student misbehavior as reported by correlations, and (l) emotional exhaustion and student misbehavior as reported by means and standard error. Each meta-analysis indicated a positive relationship between emotional exhaustion and demands. Heterogeneity tests revealed that each sample was homogeneous ( $p < 0.001$ ).

## **Depersonalization and Resource Correlates**

**H<sub>2</sub> There is a significant negative relationship between resource correlates and depersonalization as measured by the Maslach Burnout Inventory (MBI).**

**Research question 2: What is the relationship between resource correlates and depersonalization for teachers experiencing job burnout?**

The second hypothesis tested if there was a significant negative relationship between depersonalization and resource correlates. The research question explored the relationship between resource correlates and depersonalization for teachers experiencing job burnout. The researcher conducted nine meta-analyses to test this hypothesis. First, 43 studies were identified as reporting correlational values (Pearson  $r$  values,  $p$ -values,  $t$ ,  $F$ , or Fisher's  $z$ ). Second, an additional 11 studies were identified which reported means, standard error, and sample size for depersonalization and resource correlates as measured by the MBI. The researcher tested the hypothesis with a total of 54 studies, 130,015 effect sizes that represented 63,702 participants ( $n$ ). Table 14 provides information related to the authors, year studies were reported, sample sizes, combined effect sizes, and  $p$ -values. Table 15 provides information related to the authors, year studies were reported, sample sizes, mean, and standard error.

The effect size was calculated at a 95% confidence interval with the lowest limit - 0.122 to the upper limit 0.189. The weighted mean correlation coefficient was 0.034 and the  $p$ -value of 0.668 ( $p > 0.05$ ). Studies reporting correlates as means, standard error, and sample size had a standard error of 1.155 and 1.333 variance with lower limit 13.24 to

Table 14

*Studies Reporting Correlations Between Depersonalization and Resource Correlates*

| Author(s)                                                                              | Year | <i>n</i> | Effect Size | <i>p</i> -value |
|----------------------------------------------------------------------------------------|------|----------|-------------|-----------------|
| Aguayo, R., Pecino, C. V., Fuente, A., & Fernandez, L. M. L.                           | 2011 | 25,337   | 0.710       | 0.000           |
| Aloe, A., Amo, L. C., & Shanahan, M. E.                                                | 2013 | 16       | -0.320      | 0.232           |
| Bataineh, O.                                                                           | 2009 | 83       | 0.114       | 0.307           |
| Bataineh, O., & Alsagheer, A.                                                          | 2012 | 300      | -0.033      | 0.569           |
| Beckett, T. M.                                                                         | 2011 | 74       | 0.250       | 0.031           |
| Bell, D. J.                                                                            | 2010 | 129      | 0.245       | 0.005           |
| Chen, C. E.                                                                            | 2013 | 237      | -0.380      | 0.000           |
| Covell, K., McNeil, J. K., & Howe, B. R.                                               | 2009 | 127      | -0.355      | 0.000           |
| Egyed, C. J., & Short, R. J.                                                           | 2006 | 106      | -0.039      | 0.692           |
| Erkutlo, H.                                                                            | 2006 | 1,344    | -0.062      | 0.022           |
| Evers, W. J., Tomic, W., & Brouwers, A.                                                | 2004 | 41       | -0.151      | 0.348           |
| Gaines, C. B.                                                                          | 2011 | 282      | -0.074      | 0.216           |
| Gokhan, B.                                                                             | 2011 | 376      | -0.387      | 0.000           |
| Grayson, J. L., & Alvarez, H. K.                                                       | 2008 | 320      | -0.325      | 0.000           |
| Hammett, J.                                                                            | 2013 | 98       | -0.289      | 0.004           |
| Howard, T. S.                                                                          | 2008 | 35       | -0.297      | 0.083           |
| Iligan, D. J.                                                                          | 2010 | 101      | 0.027       | 0.792           |
| Jackson, L., & Rothmann, S.                                                            | 2005 | 266      | 0.218       | 0.000           |
| Javadi, F.                                                                             | 2014 | 143      | -0.037      | 0.664           |
| Joseph, A. C.                                                                          | 2010 | 229      | -0.350      | 0.000           |
| Khezerlou, E.                                                                          | 2013 | 386      | -0.053      | 0.296           |
| Kis, A.                                                                                | 2014 | 12,205   | -0.052      | 0.000           |
| Kitchel, T., Smith, A., Henry, A., Robinson, S., Lawver, R. G., Park, T., & Schell, A. | 2012 | 383      | 0.400       | 0.000           |
| Kucuksuleymanoglu, R.                                                                  | 2011 | 67       | 0.005       | 0.968           |
| Lynn, S. J.                                                                            | 2010 | 138      | -0.462      | 0.000           |
| McCarthy, C. J., Lambert, R. G., O'Donnell, M., & Melendres, L. T.                     | 2009 | 451      | -0.203      | 0.000           |
| McClouchlan, K. A.                                                                     | 2010 | 95       | -0.424      | 0.000           |
| Mulvaney, T. L.                                                                        | 2013 | 117      | 0.911       | 0.000           |
| Okwaraji, F.E., & Aguwa, E. N.                                                         | 2015 | 432      | -0.041      | 0.396           |

Table 14 (*continued*)

| Author(s)                                                                                                              | Year | <i>n</i> | Effect Size | <i>p</i> -value |
|------------------------------------------------------------------------------------------------------------------------|------|----------|-------------|-----------------|
| Owens, S. A.                                                                                                           | 2013 | 127      | -0.205      | 0.021           |
| Platsidou, M., & Agaliotis, I.                                                                                         | 2008 | 127      | -0.115      | 0.198           |
| Purvanova, R. K., & Muros, J. P.                                                                                       | 2010 | 5,310    | 0.370       | 0.000           |
| Roberts, J.                                                                                                            | 2013 | 50       | 0.013       | 0.929           |
| Sari, H.                                                                                                               | 2004 | 295      | 0.090       | 0.122           |
| Skaalvik, E. M., & Skaalvik, S.                                                                                        | 2009 | 563      | 0.020       | 0.636           |
| Skaalvik, E.M., & Skaalvik, S.                                                                                         | 2010 | 2,249    | -0.005      | 0.810           |
| Swider, B. W., & Zimmerman, R. D.                                                                                      | 2010 | 3,852    | 0.221       | 0.000           |
| Thornqvist, N. S.                                                                                                      | 2011 | 96       | 0.526       | 0.000           |
| Tschiesner, R., Tauber, S., Martina, P., & Farneti, A.                                                                 | 2014 | 71       | -0.270      | 0.022           |
| Unterbrink, T., Pfeifer, R., Krippeit, L., Zimmerman, L., Rose, U., Joos, A., Hartmann, A., Wirsching, M., & Bauer, J. | 2014 | 924      | 0.729       | 0.000           |
| Van Droogenbroeck, F., Spruyt, B., & Vanroelen, C.                                                                     | 2014 | 1,878    | -0.080      | 0.001           |
| Watts, G. J.                                                                                                           | 2013 | 171      | -0.291      | 0.000           |
| Worley, J., Vassar, M., Wheeler, D., & Barnes, L.                                                                      | 2008 | 491      | 0.350       | 0.000           |

Table 15

*Studies Reporting Means and Standard Error Between Depersonalization  
and Resource Correlates*

| Author(s)                                                                   | Year | <i>n</i> | Mean   | Standard Error |
|-----------------------------------------------------------------------------|------|----------|--------|----------------|
| Brewer, E. W., & McMahan, J.                                                | 2003 | 133      | 6.150  | 0.499          |
| Elder, C., Nidich, S., Moriarty, F., &<br>Nidich, R.                        | 2014 | 40       | -5.610 | 1.690          |
| Erkutlo, H.                                                                 | 2006 | 1,344    | 2.990  | 0.041          |
| Gursel, M., Sunbul, A. M., & Sari, H.                                       | 2002 | 80       | 27.600 | 1.862          |
| Gursel, M., Sunbul, A. M., & Sari, H.                                       | 2002 | 210      | 35.080 | 1.051          |
| Karakus, M.                                                                 | 2012 | 425      | 9.630  | 0.180          |
| Karakus, M.                                                                 | 2012 | 425      | 9.100  | 0.172          |
| Khatun, R.                                                                  | 2013 | 100      | 48.750 | 0.675          |
| Ozdemir, S.                                                                 | 2006 | 39       | 18.110 | 1.303          |
| Ozdemir, S.                                                                 | 2006 | 39       | 17.060 | 1.366          |
| Trépanier, S. G., Fernet, C., Austin, S.,<br>Forest, J., & Vallerand, R. J. | 2014 | 745      | 3.280  | 0.048          |

upper limit 17.76. The researcher then tested for homogeneity. The test results were  $Q = 2949.20$ ,  $df = 12$ , ( $p < 0.001$ );  $Q = 8,210.283$ ,  $df = 10$ , ( $p < 0.001$ ), respectively.

**Depersonalization and resource correlates in published studies.** It was important to test the hypothesis and to determine if publication status served as a moderator of the relationship between depersonalization and resource correlates. A separate meta-analysis was conducted between published and unpublished studies. However, due to the limitations of the researcher and CMA (Version 2.0), published and unpublished studies reporting depersonalization and resources as means and standard error could not be analyzed separately. There were 29 published studies identified as reporting weighted means correlational values (Pearson  $r$  values,  $p$ -values,  $t$ ,  $F$ , or Fisher's  $z$ ). Table 16 provides information related to the authors, year studies were reported, sample sizes, combined effect sizes, and  $p$ -values.

The researcher tested the hypothesis with a total of 58,346 effect sizes that represented 58,281 participants ( $n$ ). The effect size was calculated at a 95% confidence interval with the range from lowest limit -0.244 to the upper limit 0.130. The weighted means correlation coefficient was -0.060. The  $p$ -value was 0.539 ( $p > 0.05$ ). A test for homogeneity was then conducted. The test results were  $Q = 15,082.962$ ,  $df = 30$ , ( $p < 0.001$ ), standard error 0.175, and a variance of 0.031.

**Depersonalization and resource correlates in unpublished studies.** There were 15 unpublished studies that reported correlation values (Pearson  $r$  values,  $p$ -values,  $t$ ,  $F$ , or Fisher's  $z$ ). Due to the limitations of the researcher and CMA (Version 2.0), published and unpublished studies reporting depersonalization and resource correlates as means and

Table 16

*Published Studies Reporting Correlations Between Depersonalization  
and Resource Correlates*

| Author(s)                                                                                    | Year | <i>n</i> | Effect Size | <i>p</i> -value |
|----------------------------------------------------------------------------------------------|------|----------|-------------|-----------------|
| Aguayo, R., Pecino, C.V., Fuente, A., & Fernandez, L. M. L.                                  | 2011 | 25,337   | 0.710       | 0.000           |
| Aloe, A., Amo, L., & Shanahan, M.                                                            | 2013 | 16       | -0.320      | 0.232           |
| Bataineh, O.                                                                                 | 2009 | 83       | 0.114       | 0.307           |
| Bataineh, O., & Alsagheer, A.                                                                | 2012 | 300      | -0.033      | 0.569           |
| Covell, K., McNeil, J. K., & Howe, B. R.                                                     | 2009 | 127      | -0.355      | 0.000           |
| Egyed, C. J., & Short, R. J.                                                                 | 2006 | 106      | 0.1739      | 0.692           |
| Erkutlo, H.                                                                                  | 2006 | 1,344    | -0.062      | 0.022           |
| Evers, W. J., Tomic, W., & Brouwers, A.                                                      | 2004 | 41       | -0.151      | 0.348           |
| Gokhan, B.                                                                                   | 2011 | 376      | -0.387      | 0.000           |
| Grayson, J. L., & Alvarez, H. K.                                                             | 2008 | 320      | -0.325      | 0.000           |
| Jackson, L., & Rothmann, S.                                                                  | 2005 | 266      | 0.218       | 0.000           |
| Javadi, F.                                                                                   | 2014 | 143      | -0.037      | 0.664           |
| Khezerlou, E.                                                                                | 2013 | 386      | -0.053      | 0.296           |
| Kis, A.                                                                                      | 2014 | 12,205   | -0.052      | 0.000           |
| Kitchel, T., Smith, A. R., Henry, A., Robinson, S., Lawver, R. G., Park, T. D., & Schell, A. | 2012 | 383      | 0.400       | 0.000           |
| Kucuksuleymanoglu, R.                                                                        | 2011 | 67       | 0.005       | 0.968           |
| Luk, A. L., Chan, B. P., Cheong, S. W., & Ko, S. K.                                          | 2010 | 138      | -0.462      | 0.000           |
| McCarthy, C. J., Lambert, R. G., O'Donnell, M., & Melendres, L. T.                           | 2009 | 451      | -0.203      | 0.000           |
| Okwaraji, F.E. & Aguwa, E.N.                                                                 | 2015 | 432      | -0.041      | 0.396           |
| Platsidou, M., & Agaliotis, I.                                                               | 2008 | 127      | -0.115      | 0.198           |
| Purvanova, R. K., & Muros, J. P.                                                             | 2010 | 5,310    | 0.370       | 0.000           |
| Sari, H.                                                                                     | 2004 | 295      | 0.090       | 0.122           |
| Skaalvik, E. M., & Skaalvik, S.                                                              | 2009 | 563      | 0.020       | 0.636           |
| Skaalvik, E.M., & Skaalvik, S.                                                               | 2010 | 2,249    | -0.005      | 0.810           |
| Swider, B. W. & Zimmerman, R. D.                                                             | 2010 | 3,852    | 0.221       | 0.000           |
| Tschiesner, R., Tauber, S., Martina, P., & Farneti, A.                                       | 2014 | 71       | -0.270      | 0.022           |

Table 16 (*continued*)

| Author(s)                                                                                                                       | Year | <i>n</i> | Effect Size | <i>p</i> -value |
|---------------------------------------------------------------------------------------------------------------------------------|------|----------|-------------|-----------------|
| Unterbrink, T., Pfeifer, R., Krippeit, L.,<br>Zimmerman, L., Rose, U., Joos, A.,<br>Hartmann, A., Wirsching, M., &<br>Bauer, J. | 2014 | 924      | 0.729       | 0.000           |
| Van Droogenbroeck, F., Spruyt, B., &<br>Vanroelen, C.                                                                           | 2014 | 1,878    | -0.080      | 0.001           |
| Worley, J. A., Vassar, M., Wheeler, D. L.,<br>& Barnes, L.                                                                      | 2008 | 491      | 0.350       | 0.000           |

standard error could not be analyzed separately. The researcher tested the hypothesis with a total of 2,327 effect sizes, and 1,939 participants ( $n$ ). Table 17 provides information related to the authors, year studies were reported, sample sizes, combined effect sizes, and  $p$ -values.

The effect size was calculated at a 95% confidence interval with the range from lowest limit -0.205 to the upper limit 0.306. The correlation coefficient was 0.054. The  $p$ -value was 0.686 ( $p > 0.05$ ). A test for homogeneity was then conducted. The test results were  $Q = 437.229$ ,  $df = 14$ , ( $p < 0.001$ ), standard error 0.106, and variance 0.011.

**Depersonalization and peer support.** There were 10 studies that reported correlations between depersonalization and peer support. One additional study was identified, which reported means, standard error, and sample size for depersonalization and peer support as measured by the MBI. The researcher tested this hypothesis with a total of 11 studies, 4,895 effect sizes, and 3,628 participants ( $n$ ). Table 18 provides information related to the authors, year studies were reported, sample sizes, effect sizes, and  $p$ -values. Table 19 provides information related to the author, year study was reported, sample size, means, and standard error.

The weighted mean correlation coefficient effect size was calculated at a 95% confidence interval with the range from lower limit -0.193 to the upper limit 0.359. Effect size 0.034,  $p$ -value was 0.535 ( $p > 0.05$ ). One study reported correlates as means, standard error, and sample size had a standard error of 0.000 and 0.000 variance. A test for homogeneity was

Table 17

*Unpublished Studies Reporting Correlations Between Depersonalization  
and Resource Correlates*

| Author(s)          | Year | <i>n</i> | Effect Size | <i>p</i> -value |
|--------------------|------|----------|-------------|-----------------|
| Beckett, T. M.     | 2011 | 74       | 0.250       | 0.031           |
| Bell, D. J.        | 2010 | 129      | 0.245       | 0.005           |
| Chen, C. E.        | 2013 | 237      | -0.380      | 0.000           |
| Gaines, C. B.      | 2011 | 282      | -0.074      | 0.216           |
| Hammett, J.        | 2013 | 98       | -0.289      | 0.004           |
| Howard, T.S.       | 2008 | 35       | -0.297      | 0.083           |
| Iligan, D. J.      | 2010 | 101      | 0.020       | 0.843           |
| Joseph, A.C.       | 2010 | 229      | -0.350      | 0.000           |
| Lynn, S. J.        | 2013 | 98       | 0.506       | 0.000           |
| McClouchlan, K. A. | 2010 | 95       | -0.424      | 0.000           |
| Mulvaney, T. L.    | 2013 | 117      | 0.911       | 0.000           |
| Owens, S. A.       | 2013 | 127      | -0.205      | 0.021           |
| Roberts, J.        | 2013 | 50       | 0.013       | 0.929           |
| Thornqvist, N. S.  | 2011 | 96       | 0.526       | 0.000           |
| Watts, G. J.       | 2013 | 171      | -0.291      | 0.000           |

Table 18

## Studies Reporting Correlations on Depersonalization and Peer Support

| Author(s)                                                             | Year | <i>n</i> | Effect Size | <i>p</i> -value |
|-----------------------------------------------------------------------|------|----------|-------------|-----------------|
| Beckett, T. M.                                                        | 2011 | 74       | 0.250       | 0.031           |
| Bell, D. J.                                                           | 2010 | 129      | 0.245       | 0.005           |
| Covell, K., McNeil, J., & Howe, B.                                    | 2009 | 127      | -0.355      | 0.000           |
| Egyed, C. J., & Short, R. J.                                          | 2006 | 106      | -0.039      | 0.692           |
| Erkutlo, H.                                                           | 2006 | 1,344    | -0.280      | 0.000           |
| Hammett, J.                                                           | 2013 | 98       | -0.289      | 0.004           |
| Jackson, L., & Rothmann, S.                                           | 2005 | 266      | 0.300       | 0.000           |
| McCarthy, C. J., Lambert, R. G.,<br>O'Donnell, M., & Melendres, L. T. | 2009 | 451      | -0.203      | 0.000           |
| Mulvaney, T. L.                                                       | 2013 | 117      | 0.910       | 0.000           |
| Watts, G. J.                                                          | 2013 | 171      | -0.210      | 0.006           |

Table 19

*Study Mean and Standard Error on Depersonalization and Peer Support*

| Author(s)                                                                       | Year | <i>n</i> | Mean  | Standard Error |
|---------------------------------------------------------------------------------|------|----------|-------|----------------|
| Trépanier, S., G., Fernet, C.,<br>Austin, S., Forest, J., &<br>Vallerand, R. J. | 2014 | 745      | 3.430 | 0.017          |

then conducted. The test results were  $Q = 19,476.132$ ,  $df = 18$ , ( $p < 0.001$ ).  $Q = 1,296.591$ ,  $df = 10$ , ( $p < 0.001$ ), standard error 9.141 with a variance of 74.263, respectively.

**Depersonalization and supervisory support.** There were six studies that reported correlations between depersonalization and supervisory support. Only one additional study (Kaya, 2008) was identified which reported means, standard error, and sample size for depersonalization and supervisory support as measured by the MBI. The researcher tested this hypothesis with a total of seven studies, 9,784 effect sizes, and 8,854 participants ( $n$ ). Table 20 provides information related to the authors, year studies were reported, sample sizes, combined effect sizes, and  $p$ -values. Table 21 provides information related to the authors, year studies were reported, sample sizes, means, and standard error.

The weighted mean correlation coefficient effect size was calculated at a 95% confidence interval with the range from lowest limit -0.190 to the upper limit 0.184. The weighted mean correlation coefficient was -0.003, and the  $p$ -value was 0.974 ( $p > 0.05$ ). One study reporting correlates as means, standard error, and sample size had a standard error of 0.212 and 0.004 variance. A test for homogeneity was then conducted. The test results were  $Q = 22,976.012$ ,  $df = 12$ , ( $p < 0.001$ ), standard error 1.053 with a variance of 0.060;  $Q = 0.000$ , standard error 0.212, and variance 0.045 ( $p < 0.001$ ), respectively.

Table 20

*Studies Reporting Correlations on Depersonalization and Supervisory Support*

| Author(s)                       | Year | <i>n</i> | Effect Size | <i>p</i> -value |
|---------------------------------|------|----------|-------------|-----------------|
| Bataineh, O.                    | 2009 | 83       | 0.320       | 0.003           |
| Iligan, D. J.                   | 2010 | 101      | 0.040       | 0.692           |
| Joseph, A.C.                    | 2010 | 229      | -0.350      | 0.000           |
| Lynn, S. J.                     | 2013 | 98       | 0.370       | 0.000           |
| Owens, S. A.                    | 2013 | 127      | -0.205      | 0.021           |
| Skaalvik, E. M., & Skaalvik, S. | 2010 | 2,249    | -0.120      | 0.000           |

Table 21

*Studies Reporting Mean and Standard Error on Depersonalization  
and Supervisory Support*

| Author(s) | Year | <i>n</i> | Mean  | Standard Error |
|-----------|------|----------|-------|----------------|
| Kaya, O.  | 2008 | 5,967    | 4.262 | 0.212          |

**Depersonalization and decision-making.** There were only three studies that reported correlations between depersonalization and decision-making in means, standard error, and sample size as measured by the MBI. The studies included 6,091 effect sizes, and 1,692 participants ( $n$ ). Table 22 provides information related to the authors, year studies were reported, sample sizes, means, and standard error.

Studies reporting correlates as means, standard error, and sample size had a standard error of 0.065 and a 0.004 variance. A test for homogeneity was then conducted. The test results were  $Q = 6,210.243$ ,  $df = 12$ , ( $p < 0 .001$ ).

### **Summary of Meta-Analysis Involving Depersonalization**

The second hypothesis tested if there was a significant negative relationship between depersonalization and resource correlates. The researcher conducted nine meta-analyses on the relationship between depersonalization and resource correlates: (a) depersonalization and resources as reported by correlates, (b) depersonalization and resources as reported in unpublished studies only, (c) depersonalization and peer support

Table 22

*Studies Reporting Mean and Standard Error on Depersonalization and Decision-Making*

| Author(s)                            | Year | $n$   | Mean  | Standard Error |
|--------------------------------------|------|-------|-------|----------------|
| Brewer, E. W., & McMahan, J.         | 2003 | 133   | 6.150 | 0.499          |
| Erkutlo, H.                          | 2006 | 1,344 | 2.960 | 0.070          |
| Tomic, W., Evers, W., & Brouwers, A. | 2004 | 215   | 3.310 | 0.178          |

resources as reported by means and standard error, (c) depersonalization and resource correlates as reported in published studies only, (d) depersonalization and as reported by correlations, (f) depersonalization and peer support as reported by means and standard error, (g) depersonalization and supervisory support as reported by correlations, (h) depersonalization and supervisory support as reported by means and standard error, and (i) depersonalization and decision-making as reported by means and standard error. Each meta-analysis yielded mixed results. There were two meta-analyses reporting a significant negative relationship between depersonalization and resource correlates (e.g., published studies on depersonalization and resources and studies reporting depersonalization and supervisory support). The two meta-analyses represented over half of the sample sizes, a significant representation supporting this hypothesis. Therefore, a significant negative relationship between depersonalization and resource correlates exists. However, sample size representation in published studies indicated that a moderating variable exists, but other unidentified variables may have moderated the relationship.

### **Personal Accomplishment and Resource Correlates**

**H<sub>3</sub> There is a significant positive relationship between resource correlates and feelings of personal accomplishment as measured by the Maslach Burnout Inventory (MBI).**

**Research question 3: What is the relationship between resource correlates and feelings of personal accomplishment for teachers experiencing job burnout?**

The third hypothesis tested if there was a significant positive relationship between personal accomplishment and resource correlates. The research question explored the

relationship between resource correlates and decreased feelings of personal accomplishment for teachers experiencing job burnout.

The researcher conducted ten meta-analyses to test this hypothesis. First, 50 studies were identified as reporting correlational values (Pearson  $r$  values,  $p$ -values,  $t$ ,  $F$ , or Fisher's  $z$ ). Second, an additional 11 studies were identified which reported means, standard error, and sample size for personal accomplishment and resource correlates as measured by the MBI. The researcher tested this hypothesis with a total of 61 studies and 42,806 effect sizes that represented 40,005 participants ( $n$ ). Table 23 provides information related to the authors, year studies were reported, sample sizes, combined effect sizes, and  $p$ -values. Table 24 provides information related to the authors, year studies were reported, sample sizes, means, and standard error.

The effect size was calculated at a 95% confidence interval with the lower limit - 0.022 to the upper limit 0.200. The weighted mean correlation coefficient was 0.090 and the  $p$ -value of 0.114 ( $p > 0.05$ ). Studies reporting correlates as means, standard error, and sample size had a standard error of 1.155 and variance of 1.333. The researcher then tested for homogeneity. The test results were  $Q = 4,569.097$ ,  $df = 49$ , ( $p < 0.001$ ) standard error 0.087 and variance 0.007;  $Q = 26,805.289$ ,  $df = 13$ , ( $p < 0.001$ ), standard error 1.281, and variance 1.640, respectively.

**Personal accomplishment and resource correlates in published studies.** It was important to test the hypothesis to determine if publication status (i.e., published or unpublished) served as a moderator of the relationship between personal accomplishment and resource correlates. However, due to the limitations of the researcher and the CMA

Table 23

*Studies on Personal Accomplishment and Resource Correlates*

| Author(s)                                            | Year | <i>n</i> | Effect Size | <i>p</i> -value |
|------------------------------------------------------|------|----------|-------------|-----------------|
| Alarcon, G. M.                                       | 2011 | 5,065    | -0.440      | 0.000           |
| Aloe, A., Amo, L. C., & Shanahan, M. E.              | 2013 | 16       | 0.430       | 0.097           |
| Antoniou, A. S., Polychroni, F., & Viachakis, A. N.  | 2006 | 493      | -0.005      | 0.912           |
| Bataineh, O.                                         | 2009 | 83       | -0.111      | 0.320           |
| Bataineh, O., & Alsagheer, A.                        | 2012 | 300      | 0.082       | 0.154           |
| Beckett, T. M.                                       | 2011 | 74       | 0.350       | 0.002           |
| Bell, D. J.                                          | 2010 | 129      | -0.039      | 0.658           |
| Carson, R. L.                                        | 2006 | 85       | -0.340      | 0.001           |
| Chen, C. E.                                          | 2013 | 237      | 0.320       | 0.000           |
| DeVito, N.                                           | 2009 | 100      | 0.300       | 0.002           |
| Edmonson, S.                                         | 2000 | 46       | -0.286      | 0.054           |
| Egyed, C. J., & Short, R. J.                         | 2006 | 106      | -0.039      | 0.692           |
| Erkutlo, H.                                          | 2006 | 1,344    | -0.092      | 0.001           |
| Evers, W. J., & Tomic, W.                            | 2002 | 73       | 0.620       | 0.000           |
| Evers, W. J., Tomic, W., & Brouwers, A.              | 2004 | 41       | 0.670       | 0.000           |
| Fernet, C., Lavigne, G., Vallerand, R., & Austin, S. | 2014 | 175      | 0.600       | 0.000           |
| Gaines, C. B.                                        | 2011 | 282      | 0.021       | 0.725           |
| Gokham, B.                                           | 2011 | 376      | -0.302      | 0.000           |
| Grayson, J. L. & Alvarez, H. K.                      | 2008 | 320      | 0.940       | 0.000           |
| Hammett, J.                                          | 2013 | 98       | 0.576       | 0.000           |
| Howard, T. S.                                        | 2008 | 35       | -0.106      | 0.547           |
| Iligan, D.                                           | 2010 | 101      | 0.096       | 0.341           |
| Jackson, L., & Rothmann, S.                          | 2005 | 266      | 0.430       | 0.000           |
| Javadi, F.                                           | 2014 | 143      | 0.039       | 0.644           |
| Joseph, A.                                           | 2010 | 229      | 0.430       | 0.000           |
| Khezerlou, E.                                        | 2013 | 386      | -0.021      | 0.674           |
| Killian, J. G.                                       | 2004 | 252      | 0.050       | 0.430           |

Table 23 (*continued*)

| Author(s)                                                                                                                       | Year | <i>n</i> | Effect Size | <i>p</i> -value |
|---------------------------------------------------------------------------------------------------------------------------------|------|----------|-------------|-----------------|
| Kis, A.                                                                                                                         | 2014 | 12,205   | 0.039       | 0.000           |
| Kitchel, T., Smith, A. R., Henry, A. L.,<br>Robinson, J. S., Lawver, R. G., Park,<br>T. D., & Schell, A.                        | 2012 | 383      | -0.290      | 0.000           |
| Koenig, A.                                                                                                                      | 2014 | 74       | -0.140      | 0.235           |
| Kokkinos, C. M., & Stavropoulos, G.                                                                                             | 2014 | 174      | -0.260      | 0.001           |
| Koustelios, A., & Tsigilis, N.                                                                                                  | 2005 | 170      | 0.017       | 0.831           |
| Lynn, S. J.                                                                                                                     | 2013 | 98       | 0.520       | 0.000           |
| McCarthy, C. J., Lambert, R. G.,<br>O'Donnell, M., & Melendres, L. T.                                                           | 2009 | 451      | -0.045      | 0.337           |
| Mccoughlan, K. A.                                                                                                               | 2010 | 95       | 0.153       | 0.139           |
| Mulvaney, T. L.                                                                                                                 | 2013 | 117      | 0.236       | 0.010           |
| Owens, S. A.                                                                                                                    | 2013 | 127      | -0.370      | 0.000           |
| Platsidou, M., & Agaliotis, I.                                                                                                  | 2008 | 127      | -0.126      | 0.158           |
| Platsidou, M.                                                                                                                   | 2010 | 123      | 0.211       | 0.019           |
| Roberts, J.                                                                                                                     | 2013 | 50       | 0.325       | 0.021           |
| Sacco, M. D.                                                                                                                    | 2011 | 163      | -0.099      | 0.209           |
| Sari, H.                                                                                                                        | 2004 | 295      | 0.006       | 0.918           |
| Skaalvik, E.M., & Skaalvik, S.                                                                                                  | 2009 | 563      | -0.170      | 0.000           |
| Tschiesner, R., Tauber, S., Martina, P., &<br>Farneti, A.                                                                       | 2014 | 71       | -0.300      | 0.011           |
| Unterbrink, T., Pfeifer, R., Krippeit, L.,<br>Zimmerman, L., Rose, U., Joos, A.,<br>Hartmann, A., Wirsching, M., &<br>Bauer, J. | 2014 | 924      | -0.892      | 0.000           |
| Van Droogenbroeck, F., Spruyt, B., &<br>Vanroelen, C.                                                                           | 2014 | 1,878    | 0.078       | 0.001           |
| Watts, G. J.                                                                                                                    | 2013 | 171      | 0.443       | 0.000           |
| Weng, C. H.                                                                                                                     | 2004 | 5,700    | -0.200      | 0.000           |
| Williams, B. L.                                                                                                                 | 2014 | 65       | 0.354       | 0.004           |
| Worley, J. A., Vassar, M., Wheeler, D.,<br>& Barnes, L.                                                                         | 2008 | 491      | 0.300       | 0.000           |

Table 24

*Studies Reporting Mean and Standard Deviation on Personal**Accomplishment and Resources*

| Author(s)                                                             | Year | n     | Mean   | Standard Error |
|-----------------------------------------------------------------------|------|-------|--------|----------------|
| Brewer, E. W., & McMahan, J.                                          | 2003 | 133   | 6.150  | 0.499          |
| Elder, C., Nidich, S., Moriarty, F.,<br>& Nidich, R.                  | 2014 | 40    | -5.610 | 1.690          |
| Erkutlo, H.                                                           | 2006 | 1,344 | 2.990  | 0.041          |
| Gursel, M., Sunbul, A., & Sari, H.                                    | 2002 | 80    | 27.600 | 1.862          |
| Gursel, M., Sunbul, A., & Sari, H.                                    | 2002 | 210   | 35.080 | 1.051          |
| Karakus, M.                                                           | 2012 | 99    | 9.630  | 0.180          |
| Karakus, M.                                                           | 2012 | 326   | 9.100  | 0.172          |
| Khatun, R.                                                            | 2013 | 100   | 48.750 | 0.675          |
| Ozdemir, S.                                                           | 2006 | 39    | 18.110 | 1.303          |
| Ozdemir, S.                                                           | 2006 | 39    | 17.060 | 1.366          |
| Trépanier, S., Fernet, C., Austin, S.,<br>Forest, J., & Vallerand, R. | 2014 | 745   | 3.280  | 0.048          |

(Version 2.0), published and unpublished studies reporting personal accomplishment and resources as mean and standard error could not be analyzed separately; only effect size and  $p$ -value are shown.

The researcher tested the hypothesis on a total of 34 published studies, 61,041 effect sizes, and 59,451 participants ( $n$ ); these studies were identified as reporting weighted means correlation values (Pearson  $r$  values,  $p$ -values,  $t$ ,  $F$ , or Fisher's  $z$ ). Table 25 provides information related to the authors, year studies were reported, sample sizes, combined effect sizes, and  $p$ -values.

The weighted mean correlation coefficient effect size was calculated at a 95% confidence interval with the range from lower limit -0.136 to the upper limit 0.317. The weighted mean correlation coefficient was 0.091 and  $p$ -value was 0.442 ( $p > 0.05$ ). A test for homogeneity was then conducted. The test results were  $Q = 21,091.094$ ,  $df = 33$ , ( $p < 0.001$ ), standard error = 0.315, and variance = 0.099.

#### **Personal accomplishment and resource correlates in unpublished studies.**

There were 24 unpublished studies that reported correlations between personal accomplishment and resource correlates as measured by the MBI. The researcher tested this correlate with a total of 24 published studies, 17,201 effect sizes, and 8,501 participants ( $n$ ). Table 26 provides information related to the authors, year studies were reported, sample sizes, combined effect sizes, and  $p$ -values.

The weighted mean correlation coefficient effect size was calculated at a 95% confidence interval with the range from lower limit 0.004 to the upper limit 0.259. The weighted mean correlation coefficient was 0.134 and  $p$ -value was 0.043 ( $p < 0.05$ ). A test

Table 25

*Published Studies on Personal Accomplishment and Resource Correlates*

| Author(s)                                                                                        | Year | <i>n</i> | Effect Size | <i>p</i> -value |
|--------------------------------------------------------------------------------------------------|------|----------|-------------|-----------------|
| Aguayo, R., Pecino, C. V., de la Fuente Solana, E. I., & Fernández, L. M. L.                     | 2011 | 25,337   | 0.780       | 0.000           |
| Alarcon, G. M.                                                                                   | 2011 | 5,585    | -0.335      | 0.000           |
| Aloe, A. M., Amo, L., & Shanahan, M. E.                                                          | 2013 | 16       | 0.430       | 0.097           |
| Antoniou, A. S., Polychroni, F., & Viachakis, A. N.                                              | 2006 | 493      | -0.005      | 0.912           |
| Bataineh, O.                                                                                     | 2009 | 83       | -0.111      | 0.320           |
| Bataineh, O., & Alsagheer, A.                                                                    | 2012 | 300      | 0.082       | 0.154           |
| Egyed, C. J., & Short, R. J.                                                                     | 2006 | 106      | -0.039      | 0.692           |
| Erkutlo, H.                                                                                      | 2006 | 1,344    | -0.034      | 0.207           |
| Evers, W. J., & Tomic, W.                                                                        | 2002 | 73       | 0.620       | 0.000           |
| Evers, W. J., Tomic, W., & Brouwers, A.                                                          | 2004 | 41       | 0.670       | 0.000           |
| Fernet, C., Lavigne, G. L., Vallerand, R. J., & Austin, S.                                       | 2014 | 175      | 0.600       | 0.000           |
| Gokham, B.                                                                                       | 2011 | 376      | -0.302      | 0.000           |
| Grayson, J. L., & Alvarez, H. K.                                                                 | 2008 | 320      | 0.940       | 0.000           |
| Jackson, L., & Rothmann, S.                                                                      | 2005 | 266      | 0.127       | 0.038           |
| Javadi, F.                                                                                       | 2014 | 143      | 0.042       | 0.623           |
| Khezerlou, E.                                                                                    | 2013 | 386      | -0.021      | 0.674           |
| Kis, A.                                                                                          | 2014 | 12,205   | 0.204       | 0.000           |
| Kitchel, T., Smith, A. R., Henry, A. L., Robinson, J. S., Lawver, R. G., Park, T. D., Schell, A. | 2012 | 383      | -0.290      | 0.000           |
| Kokkinos, C. M., & Stavropoulos, G.                                                              | 2014 | 174      | -0.260      | 0.001           |
| Koustelios, A., & Tsigilis, N.                                                                   | 2005 | 170      | 0.017       | 0.831           |
| Kucuksuleymanoglu, R.                                                                            | 2011 | 67       | 0.172       | 0.165           |
| Lim, S., & Sungmin, E.                                                                           | 2014 | 367      | -0.354      | 0.000           |
| McCarthy, C. J., Lambert, R. G., O'Donnell, M., & Melendres, L. T.                               | 2009 | 451      | -0.045      | 0.337           |
| Okwaraji, F., & Aguwa, E.                                                                        | 2015 | 432      | 0.037       | 0.443           |

Table 25 (*continued*)

| Author(s)                                                                                                              | Year | <i>n</i> | Effect Size | <i>p</i> -value |
|------------------------------------------------------------------------------------------------------------------------|------|----------|-------------|-----------------|
| Platsidou, M., & Agaliotis, I.                                                                                         | 2008 | 127      | -0.126      | 0.158           |
| Platsidou, M.                                                                                                          | 2010 | 123      | 0.142       | 0.117           |
| Sagone, E., & De Caroli, M. E.                                                                                         | 2014 | 106      | 0.587       | 0.000           |
| Sari, H.                                                                                                               | 2004 | 295      | 0.006       | 0.918           |
| Skaalvik, E.M., & Skaalvik, S.                                                                                         | 2009 | 563      | -0.170      | 0.000           |
| Swider, B. W., & Zimmerman, R. D.                                                                                      | 2010 | 5,580    | -0.120      | 0.000           |
| Tschiesner, R., Tauber, S., Martina, P., & Farneti, A.                                                                 | 2014 | 71       | -0.300      | 0.011           |
| Unterbrink, T., Pfeifer, R., Krippeit, L., Zimmerman, L., Rose, U., Joos, A., Hartmann, A., Wirsching, M., & Bauer, J. | 2014 | 924      | -0.892      | 0.000           |
| Van Droogenbroeck, F., Spruyt, B., & Vanroelen, C.                                                                     | 2014 | 1,878    | 0.078       | 0.001           |
| Worley, J. A., Vassar, M., Wheeler, D. L., & Barnes, L.                                                                | 2008 | 491      | 0.300       | 0.000           |

Table 26

*Unpublished Studies on Personal Accomplishment and Resource Correlates*

| Author(s)          | Year | <i>n</i> | Effect Size | <i>p</i> -value |
|--------------------|------|----------|-------------|-----------------|
| Beckett, T. M.     | 2011 | 74       | 0.350       | 0.002           |
| Bell, D. J.        | 2010 | 129      | -0.039      | 0.658           |
| Carson, R. L.      | 2006 | 85       | -0.340      | 0.001           |
| Chen, C. E.        | 2013 | 237      | 0.320       | 0.000           |
| DeVito, N.         | 2009 | 100      | 0.300       | 0.002           |
| Edmonson, S.       | 2000 | 46       | -0.214      | 0.155           |
| Gaines, C. B.      | 2011 | 282      | 0.021       | 0.725           |
| Gelman, R.         | 2008 | 77       | -0.147      | 0.202           |
| Hammett, J.        | 2013 | 98       | 0.576       | 0.000           |
| Howard, T. S.      | 2008 | 35       | -0.106      | 0.547           |
| Iligan, D.         | 2010 | 101      | 0.096       | 0.341           |
| Joseph, A.         | 2010 | 229      | 0.430       | 0.000           |
| Killian, J. G.     | 2004 | 252      | 0.050       | 0.430           |
| Koenig, A.         | 2014 | 74       | -0.140      | 0.235           |
| Lynn, S. J.        | 2013 | 98       | 0.520       | 0.000           |
| McClouchlan, K. A. | 2010 | 95       | 0.153       | 0.139           |
| Mulvaney, T. L.    | 2013 | 117      | 0.236       | 0.010           |
| Owens, S. A.       | 2013 | 127      | -0.370      | 0.000           |
| Roberts, J.        | 2013 | 50       | 0.325       | 0.021           |
| Sacco, M. D.       | 2011 | 163      | -0.091      | 0.251           |
| Thornqvist, N. S.  | 2011 | 96       | 0.409       | 0.000           |
| Watts, G. J.       | 2013 | 171      | 0.443       | 0.000           |
| Weng, C. H.        | 2004 | 5700     | -0.200      | 0.000           |
| Williams, B. L.    | 2014 | 65       | 0.354       | 0.004           |

for homogeneity was then conducted. The test results were  $Q = 456.346$ ,  $df = 23$ , ( $p < 0.001$ ), standard error 0.062, and variance 0.004.

**Personal accomplishment and peer support.** There were ten studies that reported correlations between depersonalization and peer support. Eleven additional studies were identified, which reported means, standard error, and sample size for personal accomplishment and peer support as measured by the MBI. The researcher tested this hypothesis with a total of 21 studies, 19,464 effect sizes, and 18,864 participants ( $n$ ). Table 27 provides information related to the authors, year studies were reported, sample sizes, combined effect sizes,  $p$ -values, means, and standard error. Table 28 provides information related to the authors, year studies were reported, sample size, means, and standard error.

The weighted mean correlation coefficient effect size was calculated at a 95% confidence interval with the range from lower limit -0.043 to the upper limit 0.481. The weighted mean correlation coefficient was 0.094 and  $p$ -value was 0.669 ( $p > 0.05$ ). Studies reporting mean, standard error, and sample size ranged from lower limit 12.142 to upper limit 15.706 with a  $p$ -value of 0.00. A test for homogeneity was then conducted. The test results were  $Q = 2,675.519$ ,  $df = 12$ , ( $p < 0.001$ ), standard error 0.329 with a variance of 0.108;  $Q = 10,130.89$ ,  $df = 10.00$ , standard error 8.002, ( $p < 0.001$ ), respectively.

**Personal accomplishment and supervisory support.** There were eight studies that reported correlations between personal accomplishment and supervisory support. One additional study was identified, which reported means, standard error, and sample

Table 27

*Studies on Personal Accomplishment and Peer Support*

| Author(s)                                                                                                                  | Year | <i>n</i> | Effect Size | <i>p</i> -value |
|----------------------------------------------------------------------------------------------------------------------------|------|----------|-------------|-----------------|
| Bataineh, O.                                                                                                               | 2009 | 83       | -0.076      | 0.496           |
| Bataineh, O., & Alsagheer, A.                                                                                              | 2012 | 300      | 0.159       | 0.006           |
| Beckett, T. M.                                                                                                             | 2011 | 74       | 0.370       | 0.001           |
| Javadi, F.                                                                                                                 | 2014 | 143      | 0.039       | 0.644           |
| Khezerlou, E.                                                                                                              | 2013 | 386      | -0.021      | 0.674           |
| Kis, A.                                                                                                                    | 2014 | 12,205   | 0.039       | 0.000           |
| Koustelios, A., & Tsigilis, N.                                                                                             | 2005 | 170      | 0.840       | 0.000           |
| Roberts, J.                                                                                                                | 2013 | 50       | 0.325       | 0.021           |
| Unterbrink, T., Pfeifer, R., Krippeit, L.,<br>Zimmerman, L., Rose, U., Joos, A.,<br>Hartmann, A., Wirsching, M., Bauer, J. | 2014 | 924      | -0.892      | 0.000           |
| Worley, J. A., Vassar, M., Wheeler, D. L.,<br>& Barnes, L.                                                                 | 2008 | 491      | 0.300       | 0.000           |

Table 28

*Studies Reporting Mean and Standard Error on Personal Accomplishment**and Peer Support*

| Author(s)                                                               | Year | <i>n</i> | Mean   | Standard Error |
|-------------------------------------------------------------------------|------|----------|--------|----------------|
| Deryakulu, D.                                                           | 2006 | 122      | 11.930 | 0.446          |
| Elder, C., Nidich, S., Moriarty, F., & Nidich, R.                       | 2014 | 40       | -5.610 | 1.690          |
| Erkutlo, H.                                                             | 2003 | 1,344    | 2.495  | 0.041          |
| Karakus, M.                                                             | 2012 | 425      | 9.630  | 0.180          |
| Karakus, M.                                                             | 2012 | 425      | 9.100  | 0.172          |
| Khatun, R.                                                              | 2013 | 100      | 48.750 | 0.675          |
| McCormick, J., & Barnett, K.                                            | 2011 | 372      | 4.710  | 0.052          |
| Ozdemir, S.                                                             | 2006 | 39       | 18.110 | 1.303          |
| Ozdemir, S.                                                             | 2006 | 39       | 17.060 | 1.366          |
| Trépanier, S. G., Fernet, C., Austin, S., Forest, J., & Vallerand, R. J | 2014 | 745      | 3.355  | 0.036          |
| Yu, X., Wang, P., Zhai, X., Dai, H., & Yang, Q.                         | 2014 | 387      | 32.690 | 0.699          |

size for personal accomplishment and supervisory support as measured by the MBI. The researcher tested this hypothesis with a total of nine studies, 4,579 effect sizes, and 4,044 participants ( $n$ ). Table 29 provides information related to the authors, year studies were reported, sample sizes, combined effect sizes, and  $p$ -values. Table 30 provides information related to the author, year study was reported, sample size, mean, and standard error.

The weighted mean correlation coefficient effect size was calculated at a 95% confidence interval with the range from lower limit -0.226 to the upper limit 0.599. The weighted mean correlation coefficient was 0.226 and  $p$ -value was 0.326 ( $p > 0.05$ ). One study reporting correlates as means, standard error, and sample size had a standard error of 0.017 and 0.000 variance. A test for homogeneity was then conducted. The test results:  $Q = 1,578.352$ ,  $df = 7$ , ( $p < 0.001$ ), standard error 0.166, and variance 0.290;  $Q = 2,215.468$ ,  $df = 9$ , ( $p < 0.001$ ), standard error 0.403 ( $p < 0.001$ ), and variance 0.000, respectively.

**Personal accomplishment and decision-making.** There were eight studies that reported correlations between depersonalization and supervisory support. Only one additional study was identified, which reported means, standard error, and sample size for depersonalization and supervisory support as measured by the MBI. The researcher tested this hypothesis with a total of nine studies, 32,287 effect sizes, and 20,179 participants ( $n$ ). Table 31 provides information related to the authors, year studies were reported, sample sizes, combined effect sizes, and  $p$ -values. Table 32 provides information related to the author, year study was reported, sample size, mean, and standard error.

Table 29

*Studies Reporting Correlations on Personal Accomplishment and Supervisory Support*

| Author(s)                                          | Year | <i>n</i> | Effect Size | <i>p</i> -value |
|----------------------------------------------------|------|----------|-------------|-----------------|
| Bataineh, O.                                       | 2009 | 83       | -0.145      | 0.192           |
| Bell, D. J.                                        | 2010 | 129      | -0.168      | 0.057           |
| Grayson, J. L. & Alvarez, H. K.                    | 2008 | 320      | 0.94        | 0.000           |
| Iligan, D.                                         | 2010 | 101      | 0.19        | 0.057           |
| Lynn, S. J.                                        | 2013 | 98       | 0.52        | 0.000           |
| Owens, S. A.                                       | 2013 | 127      | -0.37       | 0.000           |
| Skaalvik, E.M., & Skaalvik, S.                     | 2009 | 563      | -0.17       | 0.000           |
| Van Droogenbroeck, F., Spruyt, B., & Vanroelen, C. | 2014 | 1878     | 0.2         | 0.000           |

Table 30

*Studies Reporting Mean and Standard Error on Personal Accomplishment  
and Supervisory Support*

| Author(s)                                                                | Year | <i>n</i> | Mean | Standard Error |
|--------------------------------------------------------------------------|------|----------|------|----------------|
| Trépanier, S. G., Fernet, C., Austin, S., Forest, J., & Vallerand, R. J. | 2014 | 745      | 3.43 | 0.460          |

Table 31

*Studies Reporting Correlations on Personal Accomplishment and Decision-Making*

| Author(s)                                                                                                                      | Year | <i>n</i> | Effect Size | <i>p</i> -value |
|--------------------------------------------------------------------------------------------------------------------------------|------|----------|-------------|-----------------|
| Alarcon, G. M.                                                                                                                 | 2011 | 5,065    | -0.220      | 0.000           |
| Javadi, F.                                                                                                                     | 2014 | 143      | 0.039       | 0.644           |
| Khezerlou, E.                                                                                                                  | 2013 | 386      | -0.021      | 0.674           |
| Kis, A.                                                                                                                        | 2014 | 12,205   | 0.039       | 0.000           |
| Koustelios, A., & Tsigilis, N.                                                                                                 | 2005 | 170      | 0.840       | 0.000           |
| Roberts, J.                                                                                                                    | 2013 | 50       | 0.325       | 0.021           |
| Unterbrink, T., Pfeifer, R.,<br>Krippel, L., Zimmerman, L.,<br>Rose, U., Joos, A., Hartmann,<br>A., Wirsching, M., & Bauer, J. | 2014 | 924      | -0.892      | 0.000           |
| Worley, J. A., Vassar, M.,<br>Wheeler, D. L., & Barnes, L.                                                                     | 2008 | 491      | 0.300       | 0.000           |

Table 32

*Studies Reporting Means and Standard Error on Personal Accomplishment and Decision-Making*

| Author(s)                                                                   | Year | <i>n</i> | Mean | Standard Error |
|-----------------------------------------------------------------------------|------|----------|------|----------------|
| Trépanier, S. G., Fernet, C., Austin,<br>S., Forest, J., & Vallerand, R. J. | 2014 | 745      | 3.43 | 0.460          |

The weighted mean correlation coefficient effect size was calculated at a 95% confidence interval with the range from lower limit -0.285 to the upper limit 0.333. The weighted mean correlation coefficient was 0.026 and  $p$ -value was 0.871 ( $p > 0.05$ ). One study reporting correlates as means, standard error, and sample size had a standard error of 0.017 and a 0.000 variance, with a range from lower limit 12.14 to upper limit 15.70. A test for homogeneity was then conducted. The test results were  $Q = 2,347.595$ ,  $df = 7$ , ( $p < 0.001$ ), standard error 0.023 with a variance of 0.006;  $Q = 10,130.89$ ,  $df = 10$ , standard error 0.090, and variance = 0.826 ( $p < 0.001$ ), respectively.

### **Summary of Meta-Analysis Involving Personal Accomplishment and Resource Correlates**

The third hypothesis tested if there was a significant positive relationship between personal accomplishment and resource correlates. The researcher conducted ten meta-analyses on the relationship between depersonalization and resource correlates:

- (a) personal accomplishment and resources as reported by correlates, (b) personal accomplishment and resources as reported by means and standard error, (c) personal accomplishment and resources correlates as reported in published studies only, (d) personal accomplishment and resources as reported in unpublished studies only, (e) personal accomplishment and peer support as reported by correlations, (f) personal accomplishment and peer support as reported by means and standard error, (g) personal accomplishment and supervisory support as reported by correlations, (h) personal accomplishment and supervisory support as reported by means and standard error, (i) personal accomplishment and decision-making as reported by correlations, and

(j) personal accomplishment and decision-making as reported by means and standard error. Each meta-analysis indicated a positive relationship between personal accomplishment and resource correlates.

### **Personal Accomplishment and Demand Correlates**

**H<sub>4</sub> There is a significant negative relationship between demand correlates and personal accomplishment as measured by the Maslach Burnout Inventory (MBI).**

**Research question 4: What is the relationship between demand correlates and personal accomplishment for teachers experiencing job burnout?**

The fourth hypothesis tested if there was a significant negative relationship between personal accomplishment and demand correlates. The research question explored the relationship between demand correlates and personal accomplishment for teachers experiencing job burnout.

The researcher conducted eight meta-analyses to test this hypothesis. First, 58 studies were identified as reporting correlational values (Pearson  $r$  values,  $p$ -values,  $t$ ,  $F$ , or Fisher's  $z$ ). There were an additional 14 studies identified as reported means, standard error, and sample size for personal accomplishment and demand correlates as measured by the MBI. Therefore, the researcher tested this hypothesis with a total of 72 studies and 79,282 effect sizes that represented 72,075 participants ( $n$ ). Table 33 provides information related to the authors, year studies were reported, sample sizes, combined effect sizes, and  $p$ -values. Table 34 provides information related to the authors, year studies were reported, sample sizes, means, and standard error.

Table 33

*Studies Reporting Correlations Between Personal Accomplishment  
and Demand Correlates*

| Author(s)                                                           | Year | <i>n</i> | Effect Size | <i>p</i> -value |
|---------------------------------------------------------------------|------|----------|-------------|-----------------|
| Aguayo, R., Pecino, C., de la Fuente Solana, E. I., & Fernández, L. | 2011 | 25,337   | 0.780       | 0.000           |
| Alarcon, G. M.                                                      | 2011 | 6,578    | -0.321      | 0.000           |
| Aloe, A. M., Amo, L. C., & Shanahan, M. E.                          | 2013 | 16       | 0.430       | 0.097           |
| Antoniou, A. S., Polychroni, F., & Viachakis, A. N.                 | 2006 | 493      | -0.050      | 0.268           |
| Bataineh, O.                                                        | 2009 | 83       | -0.022      | 0.844           |
| Bataineh, O., & Alsagheer, A.                                       | 2012 | 300      | 0.027       | 0.637           |
| Beckett, T. M.                                                      | 2011 | 74       | 0.355       | 0.002           |
| Bell, D. J.                                                         | 2010 | 129      | -0.220      | 0.012           |
| Brouwers, A., & Tomic, W.                                           | 2000 | 611      | 0.860       | 0.000           |
| Carson, R.L.                                                        | 2006 | 85       | 0.131       | 0.231           |
| Chen, C. E.                                                         | 2013 | 237      | 0.320       | 0.000           |
| Covell, K., McNeil, J., & Howe, B.                                  | 2009 | 127      | -0.355      | 0.000           |
| Croom, B. D.                                                        | 2003 | 164      | 0.770       | 0.000           |
| Edmonson, S.                                                        | 2001 | 46       | -0.229      | 0.127           |
| Egyed, C. J., & Short, R. J.                                        | 2006 | 106      | 0.061       | 0.538           |
| Erkutlo, H.                                                         | 2006 | 1,344    | -0.056      | 0.041           |
| Evers, W. J., & Tomic, W.                                           | 2002 | 73       | 0.178       | 0.133           |
| Evers, W., Tomic, W., & Brouwers, A.                                | 2004 | 41       | 0.541       | 0.000           |
| Gaines, C. B.                                                       | 2011 | 282      | 0.021       | 0.725           |
| Gelman, R. B.                                                       | 2008 | 77       | -0.161      | 0.162           |
| Gokhan, B.                                                          | 2011 | 376      | -0.302      | 0.000           |
| Grayson, J. L. & Alvarez, H. K.                                     | 2008 | 320      | 0.294       | 0.000           |
| Howard, T. S.                                                       | 2008 | 35       | -0.072      | 0.683           |

Table 33 (*continued*)

| Author(s)                                                                                        | Year | <i>n</i> | Effect Size | <i>p</i> -value |
|--------------------------------------------------------------------------------------------------|------|----------|-------------|-----------------|
| Iligan, D.                                                                                       | 2010 | 101      | 0.150       | 0.134           |
| Jackson, L., & Rothmann, S.                                                                      | 2005 | 266      | 0.078       | 0.207           |
| Javadi, F.                                                                                       | 2014 | 143      | 0.042       | 0.623           |
| Joseph, A.C.                                                                                     | 2010 | 229      | 0.210       | 0.001           |
| Khezerlou, E.                                                                                    | 2013 | 386      | -0.021      | 0.674           |
| Killian, J. G.                                                                                   | 2004 | 252      | 0.050       | 0.430           |
| Kis, A.                                                                                          | 2014 | 12,205   | 0.204       | 0.000           |
| Kitchel, T., Smith, A. R., Henry, A. L., Robinson, J. S., Lawver, R. G., Park, T. D., Schell, A. | 2012 | 383      | -0.290      | 0.000           |
| Kokkinos, C., & Stavropoulos, G.                                                                 | 2014 | 174      | -0.218      | 0.004           |
| Koustelios, A., & Tsigilis, N.                                                                   | 2005 | 170      | -0.830      | 0.000           |
| Kucuksuleymanoglu, R.                                                                            | 2011 | 67       | 0.172       | 0.165           |
| Lim, S., & Sungmin E.                                                                            | 2014 | 367      | 0.150       | 0.004           |
| Luk, A. L., Chan, B. P., Cheong, S. W., & Ko, S. K.                                              | 2010 | 138      | 0.492       | 0.000           |
| Lynn, S. J.                                                                                      | 2013 | 98       | -0.410      | 0.000           |
| McCarthy, C. J., Lambert, R. G., O'Donnell, M., & Melendres, L. T.                               | 2009 | 451      | 0.374       | 0.000           |
| McKenzie, K. A.                                                                                  | 2009 | 308      | 0.590       | 0.000           |
| Mulvaney, T. L.                                                                                  | 2013 | 117      | 0.354       | 0.000           |
| Okwaraji, F.E. & Aguwa, E.N.                                                                     | 2015 | 432      | 0.037       | 0.443           |
| Owens, S. A.                                                                                     | 2013 | 127      | -0.370      | 0.000           |
| Papastylanou, A., Kaila, M., & Polychronopoulos, M.                                              | 2009 | 562      | 0.430       | 0.000           |
| Platsidou, M., & Agaliotis, I.                                                                   | 2008 | 127      | -0.106      | 0.236           |
| Platsidou, M.                                                                                    | 2010 | 123      | 0.185       | 0.040           |
| Roberts, J.                                                                                      | 2013 | 50       | 0.325       | 0.021           |
| Sacco, M. D.                                                                                     | 2011 | 163      | -0.033      | 0.672           |
| Sagone, E., & De Caroli, M. E.                                                                   | 2014 | 106      | 0.587       | 0.000           |

Table 33 (*continued*)

| Author(s)                                                                                                              | Year | <i>n</i> | Effect Size | <i>p</i> -value |
|------------------------------------------------------------------------------------------------------------------------|------|----------|-------------|-----------------|
| Sari, H.                                                                                                               | 2004 | 295      | 0.006       | 0.918           |
| Skaalvik, E.M., & Skaalvik, S.                                                                                         | 2009 | 563      | -0.220      | 0.000           |
| Stephenson, T.                                                                                                         | 2012 | 178      | -0.363      | 0.000           |
| Swider, B. W. & Zimmerman, R. D.                                                                                       | 2010 | 3,015    | -0.181      | 0.000           |
| Thornqvist, N. S.                                                                                                      | 2011 | 96       | 0.805       | 0.000           |
| Tschiesner, R., Tauber, S., Martina, P., & Farneti, A.                                                                 | 2014 | 71       | -0.300      | 0.011           |
| Unterbrink, T., Pfeifer, R., Krippeit, L., Zimmerman, L., Rose, U., Joos, A., Hartmann, A., Wirsching, M., & Bauer, J. | 2014 | 924      | -0.892      | 0.000           |
| Van Droogenbroeck, F., Spruyt, B., & Vanroelen, C.                                                                     | 2014 | 1,878    | 0.024       | 0.306           |
| Weng, C. H.                                                                                                            | 2004 | 5,700    | -0.070      | 0.000           |
| Worley, J. A., Vassar, M., Wheeler, D. L., & Barnes, L.                                                                | 2008 | 491      | 0.300       | 0.000           |

Table 34

*Studies Reporting Means and Standard Error for Personal Accomplishment  
and Demand Correlates*

| Author(s)                                                                       | Year | <i>n</i> | Mean   | Standard Error |
|---------------------------------------------------------------------------------|------|----------|--------|----------------|
| Benevene, P., & Fiorilli, C.                                                    | 2015 | 153      | 41.460 | 0.516          |
| Benevene, P., & Fiorilli, C.                                                    | 2015 | 153      | 25.400 | 2.320          |
| Deryakulu, D.                                                                   | 2006 | 122      | 11.930 | 0.446          |
| Elder, C., Nidich, S., Moriarty, F.,<br>& Nidich, R.                            | 2014 | 40       | -5.610 | 1.690          |
| Erkutlo, H.                                                                     | 2006 | 1,344    | 2.495  | 0.041          |
| Karakus, M.                                                                     | 2012 | 425      | 9.630  | 0.180          |
| Karakus, M.                                                                     | 2012 | 425      | 9.100  | 0.172          |
| Khatun, R.                                                                      | 2013 | 100      | 48.750 | 0.675          |
| McCormick, J., & Barnett, K.                                                    | 2011 | 372      | 4.710  | 0.052          |
| Ozdemir, S.                                                                     | 2006 | 39       | 18.110 | 1.303          |
| Ozdemir, S.                                                                     | 2006 | 39       | 17.060 | 1.366          |
| Rice, W. J.                                                                     | 2013 | 41       | 37.900 | 0.283          |
| Trépanier, S., G., Fernet, C.,<br>Austin, S., Forest, J., &<br>Vallerand, R. J. | 2014 | 745      | 3.280  | 0.048          |
| Yu, X., Wang, P., Zhai, X., Dai,<br>H., & Yang, Q.                              | 2014 | 387      | 25.510 | 0.561          |

The effect size was calculated at a 95% confidence interval with the lower limit -0.087 to the upper limit 0.249. The weighted mean correlation coefficient effect size was 0.083 and the  $p$ -value of 0.336 ( $p > 0.05$ ). Studies reporting correlates as means, standard error, and sample size had a mean effect size 17.851, standard error 1.464 and a 2.144 variance. The researcher then tested for homogeneity. The test results were  $Q = 26,802.649$ ,  $df = 27$ , ( $p < 0.001$ ) The standard error was 0.329 with a variance of 0.108;  $Q = 29,709.41$ ,  $df = 13$ , ( $p$ -value = 0.00), respectively.

**Personal accomplishment and demand correlates in published studies.** It was important to test the hypothesis to determine if publication status served as a moderator of the relationship between personal accomplishment and demand correlates. However, due to the limitations of the researcher and the CMA (Version 2.0), published and unpublished studies reporting personal accomplishment and demands as means and standard error could not be analyzed separately: only effect size and  $p$ -value are shown.

The researcher tested this hypothesis with a total of 37 published studies, 59,809 effect sizes, and 58,694 participants ( $n$ ); these studies were identified as weighted means correlation values (Pearson  $r$  values,  $p$ -values,  $t$ ,  $F$ , or Fisher's  $z$ ) Table 35 provides information related to the authors, year studies were reported, sample sizes, combined effect sizes, and  $p$ -values.

The weighted mean correlation coefficient effect size was calculated at a 95% confidence interval with the range from lower limit -0.148 to the upper limit 0.289. The weighted mean correlation coefficient was 0.074 and  $p$ -value was 0.514 ( $p > 0.05$ ). A test

Table 35

*Published Studies Reporting Correlations Between Personal Accomplishment  
and Demand Correlates*

| Author(s)                                                                                        | Year | <i>n</i> | Effect Size | <i>p</i> -value |
|--------------------------------------------------------------------------------------------------|------|----------|-------------|-----------------|
| Aguayo, R., Pecino, C. V., de la Fuente Solana, E., & Fernández, L.                              | 2011 | 25,337   | 0.780       | 0.000           |
| Alarcon, G. M.                                                                                   | 2011 | 231      | -0.321      | 0.000           |
| Aloe, A., Amo, L., & Shanahan, M.                                                                | 2013 | 48       | 0.430       | 0.097           |
| Antoniou, A. S., Polychroni, F., & Viachakis, A. N.                                              | 2006 | 493      | -0.050      | 0.268           |
| Bataineh, O.                                                                                     | 2009 | 83       | -0.022      | 0.844           |
| Bataineh, O., & Alsagheer, A.                                                                    | 2012 | 83       | 0.027       | 0.637           |
| Covell, K., McNeil, J., & Howe, B.                                                               | 2009 | 127      | -0.355      | 0.000           |
| Croom, B. D.                                                                                     | 2003 | 164      | 0.770       | 0.000           |
| Egyed, C. J., & Short, R. J.                                                                     | 2006 | 106      | 0.061       | 0.538           |
| Erkutlo, H.                                                                                      | 2006 | 1,344    | -0.056      | 0.041           |
| Evers, W. J., & Tomic, W.                                                                        | 2002 | 73       | 0.178       | 0.133           |
| Evers, W., Tomic, W., & Brouwers, A.                                                             | 2004 | 41       | 0.541       | 0.000           |
| Gokhan, B.                                                                                       | 2011 | 376      | -0.302      | 0.000           |
| Grayson, J. L. & Alvarez, H. K.                                                                  | 2008 | 320      | 0.294       | 0.000           |
| Jackson, L., & Rothmann, S.                                                                      | 2005 | 266      | 0.115       | 0.062           |
| Javadi, F.                                                                                       | 2014 | 143      | 0.042       | 0.623           |
| Khezerlou, E.                                                                                    | 2013 | 486      | -0.021      | 0.674           |
| Kis, A.                                                                                          | 2014 | 12,205   | 0.204       | 0.000           |
| Kitchel, T., Smith, A. R., Henry, A. L., Robinson, J. S., Lawver, R. G., Park, T. D., Schell, A. | 2012 | 383      | -0.290      | 0.000           |
| Kokkinos, C., & Stavropoulos, G.                                                                 | 2014 | 174      | -0.218      | 0.004           |
| Koustelios, A., & Tsigilis, N.                                                                   | 2005 | 170      | 0.017       | 0.831           |
| Kucuksuleymanoglu, R.                                                                            | 2011 | 67       | 0.172       | 0.165           |
| Lim, S., & Sungmin, E.                                                                           | 2014 | 367      | -0.109      | 0.037           |

Table 35 (*continued*)

| Author(s)                                                                                                              | Year | <i>n</i> | Effect Size | <i>p</i> -value |
|------------------------------------------------------------------------------------------------------------------------|------|----------|-------------|-----------------|
| Luk, A. L., Chan, B. P., Cheong, S. W., & Ko, S. K.                                                                    | 2010 | 138      | 0.492       | 0.000           |
| McCarthy, C. J., Lambert, R. G., O'Donnell, M., & Melendres, L. T.                                                     | 2009 | 451      | 0.369       | 0.000           |
| Okwaraji, F.E. & Aguwa, E.N.                                                                                           | 2015 | 432      | 0.037       | 0.443           |
| Papastylanou, A., Kaila, M., & Polychronopoulos, M.                                                                    | 2009 | 562      | 0.430       | 0.000           |
| Platsidou, M., & Agaliotis, I.                                                                                         | 2008 | 127      | -0.097      | 0.278           |
| Platsidou, M.                                                                                                          | 2010 | 127      | 0.156       | 0.084           |
| Sagone, E., & De Caroli, M. E.                                                                                         | 2014 | 106      | 0.587       | 0.000           |
| Sari, H.                                                                                                               | 2004 | 295      | 0.006       | 0.918           |
| Skaalvik, E.M., & Skaalvik, S.                                                                                         | 2009 | 563      | -0.158      | 0.000           |
| Swider, B. W. & Zimmerman, R. D.                                                                                       | 2010 | 5,737    | -0.181      | 0.000           |
| Tschiesner, R., Tauber, S., Martina, P., & Farneti, A.                                                                 | 2014 | 71       | -0.300      | 0.011           |
| Unterbrink, T., Pfeifer, R., Krippeit, L., Zimmerman, L., Rose, U., Joos, A., Hartmann, A., Wirsching, M., & Bauer, J. | 2014 | 924      | -0.892      | 0.000           |
| Van Droogenbroeck, F., Spruyt, B., & Vanroelen, C.                                                                     | 2014 | 1,878    | -0.020      | 0.397           |
| Worley, J. A., Vassar, M., Wheeler, D. L., & Barnes, L.                                                                | 2008 | 491      | 0.300       | 0.000           |

for homogeneity was then conducted. The test results were  $Q = 19,441.920$ ,  $df = 36$ , ( $p < 0.001$ ), and standard error 0.329 with a variance of 0.108.

**Personal accomplishment and demand correlates in unpublished studies.**

There were 23 unpublished studies that reported correlations between personal accomplishment and demand correlates as measured by the MBI. The researcher tested this hypothesis with a total of 9,230 effect sizes and 8,866 participants ( $n$ ). Table 36 provides information related to the authors, year studies were reported, sample sizes, combined effect sizes, and  $p$ -values.

The weighted mean correlation coefficient effect size was calculated at a 95% confidence interval with the range from lower limit  $-0.038$  to the upper limit  $0.363$ . The effect size was  $0.170$  and  $p$ -value was  $0.108$  ( $p > 0.05$ ). A test for homogeneity was then conducted. The test results were  $Q = 1,411.800$ ,  $df = 22$ , ( $p < 0.001$ ).

**Personal accomplishment and work overload.** There were only five studies that reported correlations between personal accomplishment and work overload as measured by the MBI. The researcher tested this hypothesis with a total of 10,975 effect sizes and 6,313 participants ( $n$ ). Table 37 provides information related to the authors, year studies were reported, sample sizes, combined effect sizes, and  $p$ -values.

The weighted mean correlation coefficient effect size was calculated at a 95% confidence interval with the range from lower limit  $-0.267$  to the upper limit  $-1.050$ . The weighted mean correlation coefficient was  $-0.188$  and  $p$ -value was  $0.000$ . A test for homogeneity was then conducted. The test results were  $Q = 1,476.369$ ,  $df = 25$ , ( $p = 0.000$ ).

Table 36

*Unpublished Studies on Personal Accomplishment and Demand Correlates*

| Author(s)                 | Year | <i>n</i> | Effect Size | <i>p</i> -value |
|---------------------------|------|----------|-------------|-----------------|
| Beckett, T. M.            | 2011 | 74       | 0.355       | 0.002           |
| Bell, D. J.               | 2010 | 129      | -0.220      | 0.012           |
| Brouwers, A., & Tomic, W. | 2000 | 611      | 0.860       | 0.000           |
| Carson, R. L.             | 2006 | 85       | 0.131       | 0.231           |
| Chen, C. E.               | 2013 | 237      | 0.320       | 0.000           |
| Edmonson, S.              | 2000 | 46       | -0.229      | 0.127           |
| Gaines, C. B.             | 2011 | 282      | 0.021       | 0.725           |
| Gelman, R. B.             | 2008 | 77       | -0.133      | 0.249           |
| Howard, T. S.             | 2008 | 35       | -0.072      | 0.683           |
| Iligan, D.                | 2010 | 101      | 0.150       | 0.134           |
| Joseph, A.                | 2010 | 229      | 0.210       | 0.001           |
| Killian, J. G.            | 2004 | 252      | 0.050       | 0.430           |
| Lynn, S. J.               | 2013 | 98       | -0.410      | 0.000           |
| McKenzie, K. A.           | 2009 | 208      | 0.590       | 0.000           |
| Mulvaney, T. L.           | 2013 | 117      | 0.354       | 0.000           |
| Owens, S. A.              | 2013 | 127      | -0.370      | 0.000           |
| Roberts, J.               | 2013 | 50       | 0.325       | 0.021           |
| Sacco, M. D.              | 2011 | 163      | -0.056      | 0.476           |
| Stephenson, T.            | 2012 | 178      | -0.363      | 0.000           |
| Thornqvist, N. S.         | 2011 | 96       | 0.805       | 0.000           |
| Watts, G. J.              | 2013 | 171      | 0.424       | 0.000           |
| Weng, C. H.               | 2004 | 5,700    | -0.070      | 0.000           |
| Williams, B. L.           | 2014 | 65       | 0.354       | 0.004           |

Table 37

*Studies Reporting Correlations on Personal Accomplishment and Work Overload*

| Author(s)                          | Year | <i>n</i> | Effect Size | <i>p</i> -value |
|------------------------------------|------|----------|-------------|-----------------|
| Edmonson, S.                       | 2000 | 129      | -0.286      | 0.054           |
| Jackson, L., & Rothmann, S.        | 2005 | 266      | -0.030      | 0.626           |
| Kokkinos, C. M., & Stavropoulo, G. | 2014 | 174      | -0.260      | 0.001           |
| Platsidou, M., & Agaliotis, I.     | 2008 | 127      | -0.251      | 0.004           |
| Weng, C. H.                        | 2004 | 5,700    | -0.200      | 0.000           |

**Personal accomplishment and role conflict.** There were only two studies that reported correlations between personal accomplishment and role conflict as measured by the MBI. Therefore, the researcher tested this hypothesis with a total of 9,456 effect sizes and 7,578 participants (*n*). Table 38 provides information related to the authors, year studies were reported, sample sizes, combined effect sizes, and *p*-values.

The weighted mean correlation coefficient effect size was calculated at a 95% confidence interval with the range from lowest limit -0.365 to the upper limit 0.443. The weighted mean correlation coefficient was 4.680 and *p*-value was 0.830 ( $p > 0.05$ ). A test for homogeneity was then conducted. The test results were  $Q = 1,478.369$ ,  $df = 25$ , ( $p < 0.001$ ), standard error 0.057 with a variance of 0.000.

**Personal accomplishment and role ambiguity.** There was only one study that reported correlations between personal accomplishment and role ambiguity as measured by the MBI. Therefore, the researcher tested this hypothesis with one study, 7,570 effect

Table 38

*Studies Reporting Correlations on Personal Accomplishment and Role Conflict*

| Author(s)                                          | Year | <i>n</i> | Effect Size | <i>p</i> -value |
|----------------------------------------------------|------|----------|-------------|-----------------|
| Van Droogenbroeck, F., Spruyt, B., & Vanroelen, C. | 2014 | 1,878    | 0.26        | -0.190          |
| Weng, C. H.                                        | 2004 | 5,700    | 0.26        | 0.530           |

sizes, and 5,700 sample sizes. Table 39 provides information related to the author, year study was reported, sample size, combined effect size, and *p*-value.

The weighted mean correlation coefficient effect size was calculated at a 95% confidence interval with the range from lower limit -0.145 to the upper limit -0.094. The weighted mean correlation coefficient was -0.120 and *p*-value 0.830 ( $p > 0.05$ ). A test for homogeneity was then conducted. The test results were  $Q = 1,279.389$ ,  $df = 14$ , ( $p < 0.001$ ), standard error 0.057 with a variance of 0.000.

**Personal accomplishment and student misbehavior.** There were nine studies that reported correlations between personal accomplishment and student misbehavior as measured by the MBI. The researcher tested this hypothesis with a total of 4,579 effect sizes and 3,228 participants (*n*). Table 40 provides information related to the authors, year studies were reported, sample sizes, combined effect sizes, and *p*-values.

Table 39

*Studies Reporting Correlations on Personal Accomplishment and Role Ambiguity*

| Author(s)   | Year | <i>n</i> | Effect Size | <i>p</i> -value |
|-------------|------|----------|-------------|-----------------|
| Weng, C. H. | 2004 | 5,700    | -0.120      | 0.830           |

Table 40

*Studies on Personal Accomplishment and Student Misbehavior*

| Author(s)                                                 | Year | <i>n</i> | Effect Size | <i>p</i> -value |
|-----------------------------------------------------------|------|----------|-------------|-----------------|
| Aloe, A., Amo, L., & Shanahan, M.                         | 2013 | 16       | 0.43        | 0.097           |
| Brouwers, A., & Tomic, W.                                 | 2000 | 611      | 0.86        | 0.000           |
| Carson, R. L.                                             | 2006 | 85       | -0.34       | 0.001           |
| Evers, W. J., & Tomic, W.                                 | 2002 | 73       | 0.62        | 0.000           |
| Evers, W., Tomic, W., & Brouwers, A.                      | 2004 | 41       | 0.67        | 0.000           |
| Gelman, R.                                                | 2008 | 77       | -0.348      | 0.002           |
| Gokhan, B.                                                | 2011 | 376      | -0.302      | 0.000           |
| Tschiesner, R., Tauber, S., Martina, P.,<br>& Farneti, A. | 2014 | 71       | -0.3        | 0.011           |
| Van Droogenbroeck, F., Spruyt, B., &<br>Vanroelen, C.     | 2014 | 1,878    | 0.22        | 0.000           |

The weighted mean correlation coefficient effect size was calculated at a 95% confidence interval with the range from lowest limit -0.145 to the upper limit -0.094. The weighted mean correlation coefficient was 0.234 and  $p$ -value was 0.290 ( $p > 0.05$ ). A test for homogeneity was then conducted. The test results were  $Q = 1,479.769$ ,  $df = 12$ , ( $p < 0.001$ ), standard error 0.057 with a variance of 0.000.

### **Summary of Meta-Analysis Involving Personal Accomplishment and Demand Correlates**

The fourth hypothesis tested if there was a significant negative relationship between personal accomplishment and demand correlates. The researcher conducted eight meta-analyses on the relationship between personal accomplishment and demand correlates: (a) personal accomplishment and demands as reported by correlates, (b) personal accomplishment and demands as reported by means and standard error, (c) personal accomplishment and demand correlates as reported in published studies only, (d) personal accomplishment and demands as reported in unpublished studies only, (e) personal accomplishment and work overload as reported by correlations, (f) personal accomplishment and role conflict as reported by correlations, (g) personal accomplishment and role ambiguity as reported by correlates, and (h) personal accomplishment and student misbehavior as reported by correlations. There were two out of eight meta-analyses reporting a significant negative relationship between personal accomplishment and demand correlates (i.e., personal accomplishment and work overload, personal accomplishment and role ambiguity). Thus, it appeared other moderating variables might be at work.

## **Summary of Chapter 4**

This study involved conducting 39 meta-analyses to identify relationships existing between demands and resources correlates and teacher burnout in accordance with the four research hypotheses. The results from each analysis supported a given relationship, with the cumulative results supporting all three of the following relationships: (a) a positive relationship between emotional exhaustion and demand correlates, (b) a negative relationship between depersonalization and resources, and (c) a positive relationship between personal accomplishment and resources. However, a negative relationship between personal accomplishment and demands indicated mixed results. Thus, this research did not support the hypothesis that a significant negative relationship existed between personal accomplishment and demands. A separate meta-analysis was conducted on each specific correlate; other moderating variables were not identified. A discussion of the conclusions, implications, and recommendations drawn from these findings are provided in Chapter 5.

## **Chapter 5**

### **Major Findings, Conclusions, Implications, and Recommendations**

Meta-analysis affords a synthesized means to provide empirical evidence on otherwise piecemeal, confusing, or contradicting study results. This meta-analytical study explored the phenomenon of teacher burnout—a psychological syndrome involving stressors that contribute to decreased job performance, depression, physical illness, increased absenteeism, depression, substance abuse—all contributors to teacher attrition (Aloe, 2011; Karakus, 2012; Kis, 2014; Lypsey & Wilson, 2001; McMahan, 2003; Owens, 2013; Unterbrink, 2014; Yu, 2015). Increasing research on teacher burnout has identified the burnout dimensions of emotional exhaustion, depersonalization, and (reduced) feelings of personal accomplishment, but only limited studies have explored the relationship between burnout dimensions and demand and resource correlates.

The purpose of this meta-analytical study was to explore the relationship between teacher burnout and demand and resource correlates. Study results were intended to provide substantive, empirically-based research for educational researchers investigating teacher burnout. Major findings, conclusions, implications, and practical recommendations of the research were expected to expand upon the existing literature and to indicate possible areas of focus for future research. The following directional hypotheses were tested:

- H<sub>1</sub> There is a significant positive relationship between demand correlates and emotional exhaustion as measured by the Maslach Burnout Inventory (MBI).

- H<sub>2</sub> There is a significant negative relationship between resource correlates and depersonalization as measured by the Maslach Burnout Inventory (MBI).
- H<sub>3</sub> There is a significant positive relationship between resource correlates and feelings of personal accomplishment as measured by the Maslach Burnout Inventory (MBI).
- H<sub>4</sub> There is a significant negative relationship between demand correlates and personal accomplishment as measured by the Maslach Burnout Inventory (MBI).

In order to add value and contribute to the field of educational research, an investigation of the relationship between demand and resource variables was conducted based on the following research questions:

1. What is the relationship between demand correlates and emotional exhaustion for teachers experiencing job burnout?
2. What is the relationship between resource correlates and depersonalization for teachers experiencing job burnout?
3. What is the relationship between resource correlates and feelings of personal accomplishment for teachers experiencing job burnout?
4. What is the relationship between demand correlates and personal accomplishment for teachers experiencing job burnout?

### **Major Findings**

The meta-analytical study yielded major findings with regard to the relationships between burnout dimensions and associated demand and resource correlates. A total of

40 separate meta-analyses of 116 studies were used to test the hypotheses and to answer the research questions. In each case, sample size, weighted mean correlational coefficient effect size,  $p$ -value, mean and standard error,  $Q$  statistic, and  $df$  were reported. Each specific correlate was explored, with mixed results reported. There were significant findings regarding emotional exhaustion and demand correlates, depersonalization and resource correlates, and personal accomplishment and resource correlates. However, results reported no significant relationship between personal accomplishment and demand correlates as hypothesized, although unidentified moderating variables might have influenced any of the given relationships. Overall, results supported the first three hypotheses, but failed to confirm the fourth hypothesis that a significant negative relationship existed between personal accomplishment and demands. Table 41 provides a summary of statistical findings of this study.

## **Conclusions**

Consideration of this study's limitations and delimitations as identified in Chapter 1 has entered into the development of the conclusions drawn from the findings of this study. These conclusions are summarized as follows:

1. A statistically significant, positive relationship exists between emotional exhaustion and demand correlates, measured together and separately. This suggests that, as demands (e.g., workload) placed upon an individual increase, that person tends to experience greater emotional exhaustion. This finding supports previous research by McMahan (2003).

Table 41

*Summary of Findings*

| Meta-analysis           | Effect Size | <i>p</i> -value | Mean  | Standard Error |
|-------------------------|-------------|-----------------|-------|----------------|
| Emotional exhaustion    |             |                 |       |                |
| Demands (all)           | 0.146       | 0.086           | 15.57 | 0.698          |
| Published studies       | 0.159       | 0.103           |       |                |
| Unpublished studies     | 0.157       | 0.086           |       |                |
| Work overload           | 0.146       | 0.086           | 15.24 | 1.051          |
| Role conflict           | 0.079       | 0.470           | 17.87 | 0.123          |
| Role ambiguity          | 0.106       | 0.183           | 15.06 | 1.236          |
| Student misbehavior     | 0.062       | 0.716           | 16.23 | 0.021          |
| Depersonalization       |             |                 |       |                |
| Resources (all)         | 0.034       | 0.668           | 15.50 | 1.155          |
| Published studies       | -0.060      | 0.539           |       |                |
| Unpublished studies     | 0.054       | 0.686           |       |                |
| Peer support            | 0.034       | 0.535           | 3.430 | 0.017          |
| Supervisory support     | -0.003      | 0.974           | 4.626 | 0.212          |
| Decision-making         |             |                 | 4.626 | 0.065          |
| Personal accomplishment |             |                 |       |                |
| Resources (all)         | 0.090       | 0.114           | 15.50 | 1.155          |
| Published studies       | 0.091       | 0.442           |       |                |
| Unpublished studies     | 0.134       | 0.043           |       |                |
| Peer support            | 0.094       | 0.669           | 13.92 | 0.909          |
| Supervisory support     | 0.226       | 0.326           | 3,430 | 0.017          |
| Decision-making         | 0.026       | 0.871           | 3.430 | 0.460          |
| Personal accomplishment |             |                 |       |                |
| Demands (all)           | 0.083       | 0.336           | 17.85 | 2.143          |
| Published studies       | 0.074       | 0.514           |       |                |
| Unpublished studies     | 0.170       | 0.108           |       |                |
| Work overload           | -0.188      | 0.000           |       |                |
| Role conflict           | 0.680       | 0.830           |       |                |
| Role ambiguity          | -0.120      | 0.830           |       |                |
| Student misbehavior     | 0.234       | 0.290           |       |                |

2. A statistically significant, negative relationship exists between depersonalization and resource correlates when measured separately, but this determination is less conclusive from the mixed results derived when measured together. In other words, as more resources become available to an individual, that person is less likely to experience depersonalization, but to a limited degree. Although the relationship is likely to be moderated by other unidentified variables, this finding supports previous research by McMahan (2003). Depersonalization and a composite of resource correlates in published and unpublished studies vary.
3. A statistically significant, positive relationship exists between personal accomplishment and resource correlates, measured together and separately. As more resources become available to an individual, that person is more likely to experience a greater sense of accomplishment. This finding supports McMahan's (2003) findings.
4. Based on the mixed results of the meta-analysis, there is no clear evidence of a statistically significant, negative relationship between personal accomplishment and demand correlates, whether measured together or separately. This indicates the possibility that other unidentified moderating variables are at work. Results from this study cannot statistically confirm the likelihood that an individual will experience a diminished sense of personal accomplishment when pressured by increased demands. McMahan's (2003) study results were inconsistent with this finding.

5. Two out of 39 meta-analysis cases indicate that publication status (published vs. unpublished studies) may possibly serve as a moderator between a dimension of burnout and resource correlates. However, when Orwin's *fail safe N*, Funnel plot, and Duval and Tweedie's trim and fill tests are applied, the results failed to substantiate publication bias. In addition, in two out of eight cases, McMahan (2003) reported publication status was a moderator between a dimension of burnout and demand and resource correlates.

Overall, conclusions from this fifteen-year meta-analytical study are supportive to McMahan's study results (2003) and contribute to the value of this replicative study. McMahan conducted 26 separate meta-analyses using 42 studies to test the hypotheses, while this study further contributed to existing research with 39 meta-analyses using 116 studies to test the hypotheses. Both studies used conceptual arguments (Hobfoll, 1989; Leiter, 1993) and empirical evidence (Byrne, 1994; Lee & Ashforth, 1996, 2009), which provided relevant linkage to existing and future research literature on teacher burnout. Statistical findings and indications of unidentified moderating variables should be considered on a case-by-case basis. McMahan's study characteristics are supported by these meta-analyses and provided empirical evidence to further research as presented throughout chapter 5. This and McMahan's research findings provided insight into the increasing literature, provided support for relationships between demand and resource correlates and teacher burnout.

## **Recommendations**

Studies of teacher burnout and attrition over the last fifteen years have become more comprehensive than in earlier research explorations. Current research reports have included important variables that may or may not have been previously investigated, as well as studies that may or may not have included comparisons between and among general teachers, department chairpersons, private school teachers, career and technical education (CTE) teachers, special education teachers, and so forth. In view of this research trend and the findings revealed in this study, it appears vital that teacher burnout research be continued and interpreted in a way that helps to explain the increasing teacher attrition. Perhaps more importantly, it is critical to address the consequences of burnout suffered by the individual educator and its subsequent impact on students. With these points in mind, it is recommended that future research:

1. Explore how other moderating variables influence the relationship between burnout and resource and demand correlates. Such research should adhere to Brewer & McMahan's (2003) process of meta-analysis and incorporate Leiter's (1993) model of burnout.
2. Explore the established resource correlates as indicative of their previous, current, and future influence on the dimensions of teacher burnout. Hobfoll's (1989) conservation of resources (COR) theory identified resources, not demands, as a tool for measuring and understanding stress. Resources—their presence or their absence—may serve as influential moderating variables that merit further investigation.

3. Explore individual factors as possible variables and essential resources for gaining a better understanding of teacher burnout and developing more effective strategies to prevent or remedy the burnout syndrome. For example, studies have shown experienced teachers to have reported less stress than inexperienced teachers, suggesting that teachers with more years of experience were more likely to have developed coping skills over time (Soroor, 2015). In addition, researchers have recently explored marital status as a resource consideration. Studies have reported that teachers who enjoyed supportive relationships outside the school setting experienced less stress as opposed to teachers who were single (Iligan, 2010; Lau, Yuen, & Chan, 2005; Loonstra, 2009; Luk, 2010; Mulvaney, 2013; Nivodita, 2014).
4. Explore the demand correlates identified earlier, as information on these variables can foster greater insight into their previous, current, and future influence on the dimensions of teacher burnout. Although it is evident that the relationship between emotional exhaustion and demands plays a significant role in teacher burnout, researchers stand to gain further understanding of the impact of such demands—the degree to which those demands serve as a contributing factor to increased stress which ultimately leads to burnout.
5. Explore the relationship between the dimensions of burnout and demand and resource correlates collectively as well as separately. Cumulative, comparative research on the three dimensions of burnout and resources and demands can provide a stronger, more comprehensive repository of data regarding this

phenomenon. The researcher who explores the relationship between individual burnout dimensions and individual correlates has an opportunity to provide greater insight into burnout which may lead to more effective discussion and decision making generalizable to more populations.

6. Consider conducting more studies on organizational factors in relationship to burnout dimensions. For example, previous studies have revealed that peer support groups, supervisory support practices, and appropriate professional development opportunities hold the potential to reduce or prevent teacher burnout (Soroor, 2015). Specifically, an exploration of the relationship between the burnout dimension of emotional exhaustion and resource correlates such as the above mentioned support variables can provide practical implications for stakeholders. Factors such as these warrant further investigation.
7. Set a standard for prospective meta-analytical teacher burnout studies to include specific procedures and methodologies to correct for study artifacts other than just sampling error. Results from bare bones meta-analyses can then be compared in order to identify any potential bias, thereby allowing corrections for range restrictions and possible measurement reliability.
8. Identify a system and methodology for posting raw data sets from studies on teacher burnout in archives such as the Inter-university Consortium for Political and Social Research (ICPSR). McMahan (2003) recommended such consideration because research was piecemeal on demographic data (e.g., gender, marital status, years of teaching), and research at that time continued to

be inconsistent in utilizing such relevant data. Although school principals and supervisors, educational leaders, and policy makers cannot alter demographic variables, they can consider the implications of those variables for teacher burnout when developing strategies and policies to improve the work environment specific to a given population. Such applications can decrease teacher stress, prevent or remedy burnout, and reverse teacher attrition rates.

9. Address strategies and programs to reduce attrition among beginning teachers more intensively. Teachers are more likely to leave the teaching field within the first five years of their career (Fernet et al., 2012). In fact, studies indicate that teachers are potentially burned out before even entering the classroom (Fernet, et al., 2012; Rodriguez-Hidalgo, Calmaestra, & Dios, 2014). A better understanding of teachers' transition into the teaching arena can provide critical information regarding how best to support those teachers (Billingley, 2004). While there is an assumption that "Teachers who are fired up about their work are widely thought to be vulnerable to burnout" (Fernet et al., 2012, p. 270), research suggests that "In order to burn out, an employee must first be fired up." (Fernet et al., 2012, p. 270). Therefore, if, given the implications mentioned above, (a) teachers are possibly burned out before entering the classroom, (b) teachers are more likely to leave the profession during their first five years in the classroom, and (c) new teachers are most vulnerable to burnout, then it is logical to develop programs strategically to prevent or minimize new teacher burnout. There is also a gap in the literature regarding studies on

teachers in training. Following these new educators through their transition into the classroom and early years of teaching can yield perspectives that further enlighten researchers, identify new variables, and contribute to the teacher burnout phenomenon (Billingsley, 2004; Rodriguez-Hidalgo et al., 2014).

Exploring specific factors that influence new teachers to remain in the classroom is needed.

10. Explore new stressors related to the teacher burnout phenomenon such as financial strain due to student loans, low salaries, moving, and unidentified role expectations (Thornqvist, 2011; Iligan, 2010). Teachers have recently reported a significant decrease in *time*—decreased instructional time due to classroom interruptions, insufficient planning time and professional development or training in order to meet new mandates—all demands implicating that there has simply not been enough *time* in a given school day to meet these imposed expectations (Antoniore, 2006; Loerbroks, 2014; Munson, 2012; Soroor, 2015; Thornqvist, 2011; Unterbrink, 2014; Yu, 2014).
11. Explore the relationship between teacher burnout dimensions and identified constructs. Studies have indicated that variables such as age, gender, years of teaching, marital status, and school and legislative factors are influential to teacher burnout (Croom, 2003; Iligan, 2010; Khatun, 2013; Lau, et al., 2005; Loonstra, 2009; Lynn, 2013; Mulvaney, 2013; Nivodita, 2014; Soroor, 2015). Research is inconsistent in reporting demographic variables or constructs in relationship to teacher burnout. Albeit that the data are piecemeal at best,

various studies have reported higher emotional exhaustion levels for females versus males; teachers who have more years of experience in teaching report higher levels of depersonalization, and single teachers report higher levels of emotional exhaustion and depersonalization than do their married counterparts (Croom, 2003; Iligan, 2010; Khatun, 2013; Loonstra, 2009; Lynn, 2013; Mulvaney, 2013; Nivodita, 2014).

### **Implications**

The long-term effects of teacher burnout and teacher attrition are detrimental to individuals, children, school organizations, and society. This study explored the dimensions of teacher burnout and relationships between a number of specific demand and resource correlates. With its approach as a meta-analysis, this study has not only built upon the evidence-based foundation provided by existing related research; it has contributed to it appreciably by taking piecemeal data from carefully selected studies as reported within a 15-year period from January 2000 through January 2015, developing a systematically cumulative analysis, and equipping stakeholders with valuable increased understanding.

The findings and conclusions from this meta-analytical study hold logical implications for researchers, educators, principals, supervisors, policy makers, and essentially those in a position to impact teacher burnout. The following implications are practical in nature, emphasizing how research findings can promote clear conversations for leaders; they can influence decision makers to consider the ramifications of teacher

burnout and to intensify their focus on solutions, remedies, and preventive programs dealing with teacher stress, burnout, and attrition.

First, it is important that educational leaders review policies and procedures regarding teacher responsibilities and clarify teacher role expectations. Within these considerations, decision makers can address unspoken, presumed, and inferred teacher responsibilities (e.g., bus duties, athletic duties, club sponsorships, parent conferences) and clear up or remove any ambiguous statements. This leads to increased clarity and understanding, thus reducing role ambiguity and other stressors teachers may experience.

Next, educational leaders can benefit by increasing professional and personal investments in teachers, improving communication skills, focusing on support, and cultivating collaborative environments—all are critical to teacher retention, yet have received limited attention (Billingsley, 2004). It is imperative that educational leaders receive training on how to provide adequate support and resources to personnel. People in leadership roles serve as models for classroom teachers. In turn, classrooms are important contexts for children's social development, and teachers often serve as role models for their students (Lambert, McCarthy, O'Donnell, & Wang, 2009). Teachers make a professional and personal investment; yet often feel that investment is in vain (Laugaa, Rasle, & Bruchon-Schweitzer, 2008). Teachers who experience decreased feelings of personal accomplishment attribute this to a lack of support, lack of recognition, or nonexistent collaboration with school leaders (Billingsley, 2004). As a result, teachers may exhibit negative attitudes, indifference, and cynicism. These can often lead to a

vicious cycle of low morale or health problems, which increase teacher ineffectiveness, absenteeism, and attrition rates.

In addition, educational leaders can help by seeking programs to reduce stress and increase coping strategies for classroom teachers. Educators are vulnerable to stress due to high demands, and the existing literature does not provide a clear pathway for intervention or prevention strategies to reduce harmful effects of stress (Billingsley, 2004). However, some research has reported effective programs that promote mental health and overall wellbeing (Elder, 2014; Soroor, 2015; Waugh, 2003). Recent studies have suggested practices that foster physical, emotional, and spiritual health (e.g., yoga, meditation, counseling, mindfulness, aerobics, and support groups). Such programs have been shown to positively impact teacher morale and to decrease teacher absenteeism (Elder, 2014; Mulvaney, 2003; Soroor, 2015; Tripken, 2011; Yu, 2014). A likely relationship between the aforementioned resources (including personal resources and perceived self-efficacy serving as protective factors to burnout) merits further consideration (Brouwers & Tomic, 2000).

Finally, an increase in effective collaborative environments can help to cultivate better understanding among educators and foster a greater sense of belonging for new teachers. The level of administrative support provided is strongly related to attrition (Billingsley, 2004). Educational leaders need to know how to promote positive school climates, how to motivate and encourage educators, as well as how to prevent educators from becoming stale or bored with the teaching practice (Soroor, 2015). Educational leaders must provide resources, interventions, and support accordingly.

## **Summary of Chapter 5**

This study indicated that demand and resource correlates as well as other factors influence teacher burnout. Future research needs to place more attention on other variables such as student loans, burnout prior to even entering the classroom, boredom, and organizational and demographic factors (e.g., age, gender, and years of teaching). Fostering a collaborative climate and facilitating critical support programs and services may prevent negative reactions that potentially lead to emotional exhaustion, depersonalization, and (reduced) feelings of personal accomplishment. These areas need to be addressed in order to prevent the ramifications of teacher burnout.

The results of this meta-analysis may serve to motivate school leaders, policy makers, and other stakeholders to consider policies and procedures to improve the wellbeing of educators, individually and collectively. Teaching is such an emotional investment, one that honors humanity as a whole and contributes to society, now and in the future. The educational system and stakeholders can only benefit by recognizing the need to prevent and overcome burnout among educators. Educational leaders can make a profound impact by taking steps to organize and implement supportive programs that work toward reducing stress and to provide mechanisms to increase teacher recruitment and retention, thereby enhancing educator effectiveness at all levels and the performance of the educational system as a whole.

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## **Appendix**

## **Appendix A: Individual Study Coding Form**

## TEACHER BURNOUT INDIVIDUAL STUDY CODING FORM

|                                                               |                            |                          |                      |                  |                        |
|---------------------------------------------------------------|----------------------------|--------------------------|----------------------|------------------|------------------------|
| <b>Study ID:</b>                                              |                            | <b>Publication Date:</b> |                      |                  |                        |
| <b>1. Citation</b>                                            |                            |                          |                      |                  |                        |
| 1a. Author(s)/editor(s):                                      |                            |                          |                      |                  |                        |
| 1b. Title:                                                    |                            |                          |                      |                  |                        |
| 1c. Publication type:                                         |                            |                          |                      |                  |                        |
| 1d. Website/URL:                                              |                            |                          |                      |                  |                        |
| 1e. Other information:                                        |                            |                          |                      |                  |                        |
| <b>2. Participating Teacher Characteristics</b>               |                            |                          |                      |                  |                        |
| 2a. Mean age:                                                 |                            |                          |                      |                  |                        |
| 2b. Gender                                                    | 1 = % female:              | 2 = % male:              | 3 = unreported:      |                  |                        |
| 2c. Nationality                                               | 1 = United States/Canada   | 2 = Great Britain        | 3 = Israel           |                  |                        |
|                                                               | 4 = Australia/ New Zealand | 5 = Japan                | 6 = the Netherlands  |                  |                        |
|                                                               | 7 = Taiwan                 | 8 = unreported           | 9 = other: _____     |                  |                        |
| 2d. Range of total years teaching                             | 1 = 1 <sup>st</sup> yr-5   | 2 = 6-10                 | 3 = 11-15            | 4 = 16-20        | 5 = 21+                |
| 2e. Number of years at reported institution                   | 1 = 1 <sup>st</sup> yr-5   | 2 = 6-10                 | 3 = 11-15            | 4 = 16-20        | 5 = 21+                |
| 2f. Main grade level taught                                   | 1 = elementary (K-5)       |                          | 2 = middle (6-8)     |                  | 3 = high school (9-12) |
|                                                               | 4 = mixed                  | 5 = unreported           |                      | 6 = other: _____ |                        |
| 2g. Main school setting                                       | 1 = urban                  | 2 = suburban             | 3 = rural            |                  | 4 = mixed              |
|                                                               | 5 = unreported             |                          | 6 = other: _____     |                  |                        |
| 2h. Main type of student taught                               | 1 = academic track         |                          | 2 = vocational track |                  | 3 = special education  |
|                                                               | 4 = unreported             |                          | 5 = other: _____     |                  |                        |
| 2i. Other teacher characteristics of interest from the study: |                            |                          |                      |                  |                        |

**TEACHER BURNOUT INDIVIDUAL STUDY CODING FORM** (*Continued*)

|                                                                   |                                                     |                          |                     |                                     |                   |
|-------------------------------------------------------------------|-----------------------------------------------------|--------------------------|---------------------|-------------------------------------|-------------------|
| <b>Study ID:</b>                                                  |                                                     | <b>Publication Date:</b> |                     |                                     |                   |
| <b>3. Methodological Characteristics</b>                          |                                                     |                          |                     |                                     |                   |
| 3a. Sampling method                                               | 1 = simple random                                   | 2 = stratified           | 3 = cluster         | 4 = systematic                      |                   |
|                                                                   | 5 = convenience                                     | 6 = purposive            | 7 = unknown         | 8 = other: _____                    |                   |
| 3b. Sample size ( <i>n</i> ): _____                               |                                                     |                          |                     |                                     |                   |
| <b>4. Statistical Characteristics</b>                             |                                                     |                          |                     |                                     |                   |
| 4a. Study statistics reported                                     |                                                     | 1 = <i>r</i>             | 2 = <i>t</i>        | 3 = <i>F</i>                        | 4 = two-way ANOVA |
|                                                                   |                                                     | 5 = <i>d</i>             | 6 = <i>p</i>        | 7 = other: _____                    |                   |
| 4b. Dichotomization of continuous variable                        | 1 = No                                              | 2 = Yes: _____           |                     |                                     |                   |
| 4c. Relationship reported: _____                                  |                                                     |                          |                     |                                     |                   |
| 4d. Type of relationship reported                                 | 1 = emotional exhaustion and demand correlates      |                          |                     |                                     |                   |
|                                                                   | 2 = depersonalization and resource correlates       |                          |                     |                                     |                   |
|                                                                   | 3 = personal accomplishment and demand correlates   |                          |                     |                                     |                   |
|                                                                   | 4 = personal accomplishment and resource correlates |                          |                     |                                     |                   |
| 4e. Specific correlate                                            | 1 = work overload                                   | 2 = role conflict        | 3 = role ambiguity  | 4 = stressful event                 | 5 = peer support  |
|                                                                   | 6 = supervisory support                             |                          | 7 = decision-making | 8 = other modifying variable: _____ |                   |
| 4f. Reliability estimate of burnout instrument: _____             |                                                     |                          |                     |                                     |                   |
| 4g. Reliability estimate of correlate instrument: _____           |                                                     |                          |                     |                                     |                   |
| 4h. Effect size reported as <i>r</i> : _____                      |                                                     |                          |                     |                                     |                   |
| 4i. Other variables/correlates of interest explored in the study: |                                                     |                          |                     |                                     |                   |

**TEACHER BURNOUT INDIVIDUAL STUDY CODING FORM** (*Continued*)

|                                                                                                                        |                          |
|------------------------------------------------------------------------------------------------------------------------|--------------------------|
| <b>Study ID:</b>                                                                                                       | <b>Publication Date:</b> |
| <b>5. Quality of the Study</b>                                                                                         |                          |
| 5a. To what extent was the study population well described?                                                            |                          |
| 5b. How clearly and thoroughly did the authors specify screening criteria for participant eligibility (if applicable)? |                          |
| 5c. What issues arose with the data collection? What applicable limitations were discussed?                            |                          |
| 5d. Were there any problems with the data analyses? Were the analyses appropriate to the study's purpose and data?     |                          |
| <b>6. Implications for Further Research Derived from the Study</b>                                                     |                          |
| 6a.                                                                                                                    |                          |
| 6b.                                                                                                                    |                          |
| 6e.                                                                                                                    |                          |
| <b>7. Additional Comments</b>                                                                                          |                          |
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## Vita

Tammy Marie Stewart was born in Detroit, Michigan, but has essentially lived her entire life in Tennessee. Upon graduating from high school in Livingston, Tennessee in 1985, she attended Tennessee Technological University (TTU). Ms. Stewart aspired toward accomplishing commendable academic achievement and succeeded in earning a bachelor's degree with a double major in elementary education and in English at the secondary level, a master's degree in instructional leadership, and a Specialist in Education (Ed.S.) with a major in instructional leadership from the Tennessee Technological University.

In 2008, Ms. Stewart entered the doctoral program in educational leadership and policy studies offered by the College of Education, Health, and Human Sciences at The University of Tennessee (UT). While in graduate school, she served as liaison between Cumberland County Schools and the UT Educational Leadership Program Steering Committee. Ms. Stewart co-authored and presented a research paper at the American Educational Research Association (AERA) international conference in San Diego, California in 2009. While pursuing her doctoral studies, Ms. Stewart received the Billie Cannon DeMont Award in 2008, 2009, and 2010. She has served on numerous educational and policy committees for organizations such as the Governor's Books from Birth Foundation and the Upper Cumberland Reading Foundation. Ms. Stewart is a member of the National Association of Professional Women.