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Faculty and Staff Perceptions of Stress, Efficacy, Personality, and Health Practices During Implementation of Comprehensive Educational Change at One Secondary School

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ABSTRACT

FACULTY AND STAFF PERCEPTIONS OF STRESS, EFFICACY, PERSONALITY, AND HEALTH PRACTICES DURING IMPLEMENTATION OF COMPREHENSIVE EDUCATIONAL CHANGE AT ONE SECONDARY SCHOOL

by

Virginia Mae Lonser

Chair: Larry D. Burton

ABSTRACT OF GRADUATE STUDENT RESEARCH

Dissertation

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Title: FACULTY AND STAFF PERCEPTIONS OF STRESS, EFFICACY, PERSONALITY, AND HEALTH PRACTICES DURING IMPLEMENTATION OF COMPREHENSIVE EDUCATIONAL CHANGE AT ONE SECONDARY SCHOOL

Name of researcher: Virginia Mae Lonser

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Problem

Private faith-based schools have experienced a severe drop in enrollment over the past few years contributing to perceptions of job insecurity. Especially in the realm of residential secondary education has this observation been true. This descriptive case study investigated perceptions of stress of secondary-school faculty and staff involved with a school-based systemic change implementation in an attempt to turn around the attenuation in enrollment.

Method

This research study followed a bounded mixed-methods case design using data collected as participant observations of the 24 residential secondary-school faculty and

staff and tests were performed to show relationships between variables. Tools were selected in an attempt to specify stress symptoms, Efficacy Beliefs, Personality Type, and Health Practices, which might identify and/or contribute to stresses devolving on faculty and staff: Derogatis's *Brief Symptom Inventory*, Gibson and Dembo's *Teacher Efficacy Scale*, Myers-Briggs' *Personality Type Indicator-Form M*, and Pender's *Health Promoting Lifestyle Profile II*. The *Brief Symptom Inventory* was administered at three intervals during one academic year.

Results

Although the population studied was small and predominantly White, Asians, Blacks, and Hispanics were represented. The other demographics were surprisingly evenly spread on the basis of age, gender, education, and experience. Fifty-one statistically significant correlations were discovered between stress symptoms and the other parameters of the study. Similar to other studies related to teacher stress, self-reported stress levels were elevated in spite of efforts to compensate by changes in lifestyle. After the initial testing at Time 1, two personality types indicated statistically significant correlation with elevated stress at Time 2. These changes evaporated at Time 3. The data suggested an attempt to conceal or deny stress symptoms by some participants. Major findings are the shared planning of the innovation and its implementation resulted in buy-in and teacher engagement, teacher collaboration, and teacher initiation of learning opportunities with administration, which appeared to result in a reduction of teacher stress.

Conclusions

There were no correlations between Stress levels and Personality Type at the beginning of the year and at the end of the year, when Stress levels were the lowest. However, during the middle of the school year, when Stress levels were the highest, some correlations were found which indicated a protective effect for those scoring in the Feeling component of Personality Type.

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A Dissertation

Presented in Partial Fulfillment

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Doctor of Philosophy

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APPROVAL BY THE COMMITTEE:

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Member: Elvin Gabriel	
_____	_____
External: Ruth Horton	Date approved

DEDICATION

I dedicate this work to my indomitable mother, Evaline Mae Woods Youngberg, for the complex psychological techniques she used successfully on my siblings and me. I am grateful for the emotional support of my four siblings (Eunice Mentges, Robert Richard Youngberg, Nancy Davison, and Martha Brooks McNabb) and for mother's good sense in accepting our father, Robert Raleigh Youngberg, as her mate. He loved her and loved us. God used him to secure a strong, solid foundation for our lives. His death left a huge tear in the fabric of our family.

I also dedicate this work to another woman who stretched me and gave me wings professionally. Ruth Davidhizar, Dean of Nursing, School of Nursing, Bethel College, Mishawaka, Indiana, helped me grow up and prodded me to write. I miss her as deeply as I miss my father.

While some persons learned all they needed to know in Kindergarten, I had to repeat Kindergarten and didn't master some lessons until I had children. I dedicate this work to Dr. Alfred Roland Lonser and Naomi Ramsey. They both continue to teach me!

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LIST OF ABBREVIATIONS

Adventist	Seventh-day Adventist
ANX	Anxiety Subscale
BSI	Brief Symptom Inventory
CAPE	Council for American Private Education
CEI	Center for Educational Innovation
CINAHL	Cumulative Index to Nursing and Allied Health Literature
CSI	Christian Schools International
DAI	Dissertation Abstracts International
DEP	Depression Subscale
EBSCO	Academic Search Complete
ERIC	Educational Resources Information Center
GAS	General Adaptation Syndrome
GC	General Conference of Seventh-day Adventists
GDP	Gross Domestic Product
GSI	Global Severity Index
GTE	General Teacher Efficacy
HOS	Hostility Subscale
HPLP	Health Promoting Lifestyle Profile II
IBM	International Business Machines
IS	Interpersonal Sensitivity Subscale

MA	Midwest Academy
MBPTI	Myers-Briggs Type Indicator, Form M
NAD	North American Division of Seventh-day Adventists
NCES	National Center for Education Statistics
NYC	New York City
OC	Obsessive Compulsive Subscale
OCLC	First Search
OECD	Organization for Economic Cooperation and Development
PAR	Paranoid Subscale
PEA	Public Education Association
PEEL	Project for Enhanced Educational Learning
PHOB	Phobic Anxiety Subscale
PST	Positive Symptom Total
PSY	Psychoticism Subscale
PTE	Personal Teacher Efficacy
PSDI	Positive Symptom Distress Index
SOM	Somatization Subscale
SPSS	Statistical Package for the Social Sciences
TES	Teacher Efficacy Scale

ACKNOWLEDGMENTS

This study would not have occurred without Dr. Randall Siebold's persistent pleading to pursue this study. His willingness to work closely with me during data collection made this study more robust. I am grateful for the support he gave me.

I am thankful the Lord gently overrode my refusal to request an educational leave from my beloved boss and for working out the details. That He bypassed my reluctance and prompted Dr. Ruth Davidhizar to release me from my responsibilities continues to amaze me. I am aware she did this at no small personal cost to herself. I am grateful she was able to recruit and train others to fill the responsibilities I lifted from her shoulders.

Also this study could not have been completed without the cooperation and collaboration of the faculty and staff of Midwest Academy. Their acceptance of me as a participant observer in their meetings during the redesign of the entire curriculum made it much easier to get acquainted with them, work with them, and survey them the subsequent year.

This document would never have been written without the patient encouragement of my professors: Dr. Lee Davidson, Dr. Elvin Gabriel, and especially my persistently patient chair, Dr. Larry Burton.

And my balcony people: Dr. Zerita Hagerman, Dr. Jackie Kinsman, Dr. Willis & Doris Bartlett, Ron Davidhizar, Josephine Katenga, Cheryl Logan, Drs. John & Millie Youngberg, Dr. C. C. Nwosu, Joan Howard, Ivy Freeman, Dr. Leona Running, Michelle Bacchiocchi, Anne Oyerly, and Nafeesa Abdel-Aziz.

CHAPTER 1

BACKGROUND TO THE PROBLEM

Introduction

Working in a faith-based setting, the Dean of Nursing asked me to orient, support, and assist new nursing faculty. This experience exposed me to Teacher Stress (Kyricou, 2001). As I studied new faculty and ways of supporting them while they expanded into their new role, I became intrigued with a possible connection between Stress (Seyle, 1956), Efficacy Beliefs (Tschannen-Moran & Hoy, 2007), Personality Type (Myers-Briggs Type Indicator Trust, 1998), and Health Practices (Pender, Murdaugh, & Parsons, 2006). I noticed faculty who believed strongly in their ability to teach were confident and successful. These observations were reinforced by my coursework.

The opportunity arose to serve as participant-observer in a faith-based secondary-school setting, which was poised for systemic change. Recognizing the potential to study Teacher Stress in a setting replete with systemic educational change, I accepted. The resulting close-up view of Teacher Stress at this school did not disappoint me and laid the framework for this descriptive and inferential bounded case study.

As declining enrollment related to parental reluctance to enroll their student was the impetus for the proposed systemic change in this school, I looked to see if enrollment decline was an issue in other faith-based schools. First it was necessary to learn about the context of faith-based schools in the United States.

History of American Faith-based Schools

Faith-based schools began in the original American colonies initiated by the Church of England (Calvert, 2012; Forbes, 1993; Jeynes, 2007). After the transformation into Episcopal schools after the Revolutionary War, other church entities added to the diversity of faith-based schools. With the formation of free public schools early in the 1800s, other dissenting traditions produced additional private schools (Carper & Hunt, 2007). However, a general downward trend in enrollment and numbers of faith-based schools has developed over the past few years (B. Cooper, personal communication, April 21, 2008). Enrollment in private PK-12 schools was 5,268,000 in 2011-2012 according to the National Center for Education Statistics (NCES, 2013) quoted by the Council for American Private Education (CAPE, 2016). This amounts to 10% of all U.S. students; however, according to the 2010-2011 Private School Universe Survey performed by the National Center for Education Statistics, the total number of PK-12 private schools was 30,861 (Broughman & Swaim, 2013), making up 24% of total PK-12 schools in the United States (Digest of Educational Statistics, 2012). This implies that private schools tend to be smaller schools than their public counterparts.

Challenges of Faith-based Schools

Some faith-based schools are facing challenges related to enrollment and closings while others are experiencing growth in enrollment. Calvinist schools are currently climbing in enrollment (DeBoer, 1993; Vryhof, 2009a). Traditionally these schools in the Christian Schools International (CSI) organization are referred to as “Christian schools.” In protest of the secularization of public schools, Christian day schools have proliferated since the 1960s. They are also experiencing a drop in enrollment in their American

Association of Christian Schools and paradoxically an enrollment climb in their Association of Christian Schools International (Carper, 2009; Carper & Daignault, 1993). Although Islamic school enrollment has risen dramatically (Keyworth, 2009; Layman, 1993) from the first school in 1934 to 240-250 schools (Huus, 2011) with a steep climb in enrollment to 100,000 students (Cooper & Zhu, 2015), and Jewish schools have doubled from 1965 to 2006 (Cooper, 1986, 2009), Catholic student numbers dropped by 3.4 million between 1964 and 2005, an astonishing 57% drop in enrollment (Cattaro & Cooper, 2007). This trend continues (Cooper & Zhu, 2015). From a high of 5.66 million in the 1960s, current enrollment in Catholic schools stands at 1.7 million (B. Cooper, personal communication, March 27, 2016). Enrollment in Episcopal (Forbes, 1993; Vryhof, 2009b), Lutheran (Diefenthaler, 1993; Vryhof, 2009c), and Adventist K-12 schools is also dropping (Furst, 2009; Knight, 1993). As some of these faith-based schools, large and small, close their doors, more students are thrown on the public school system, which exacerbates the pressure and shortages of resources in terms of personnel and materials in the venue of public education (Nuzzi, 2009; Smarick, 2009). The snowball effect sends ripples throughout the American educational system.

Challenges of Seventh-day Adventist Secondary Schools

In the North American Division (NAD) of Seventh-day Adventists, composed of Adventist members in Bermuda, Canada, and the United States, there are 111 secondary schools (General Conference [GC], 2015, p. 67), of which 33 are residential secondary schools (Mundall, 2015). See Table 1. The number of NAD schools went from a high opening enrollment for students in 9th-12th grades in 1976 of 22,534 to 15,749 students enrolled in 1990 (NAD, 2007, p. 7) and 21,529 in 2013-2014 (GC, 2015, p. 67).

Table 1

North American Division Residential Secondary Schools, 2015

Union (Region)	Number	Residential Secondary School
Atlantic	2	Pine Tree, Union Springs
Canada	3	Kingsway College, Parkview, Sandy Lake
Columbia	4	Blue Mountain, Highland View, Pine Forge, Shenandoah Valley
Lake	3	Great Lakes, Indiana, Wisconsin
Mid-America	4	Campion, Dakota, Maplewood, Sunnydale
North Pacific	5	Auburn, Gem State, Milo, Mount Ellis, Upper Columbia
Pacific	5	Hawaiian Mission, Monterey Bay, Newbury Park*, Rio Lindo, Thunderbird*
Southern	5	Bass Memorial, Forest Lake, Georgia Cumberland, Highland, Mount Pisgah
Southwestern	2	Ozark, Valley Grande
Total	33	

Note. *Students may go home each weekend.

While enrollment issues are a major challenge to private faith-based schools in the United States, Seventh-day Adventist (Adventist) residential secondary schools are the settings in which this problem seems acute (R. Siebold, personal communication, June 7, 2005). The past two decades have witnessed the curtailment of family finances and the commitment to Christian education, which have subsequently impacted student enrollment. The survival of many remaining resident secondary schools is questionable. Downsizing has occurred at several Adventist 9-12 residential schools related to dropping enrollments, aging facilities, high time and energy demands on faculty and staff for 24/7 adolescent supervision. School closings are not uncommon. Two Adventist residential secondary schools have closed since 2007. The challenges are immense and daunting.

Midwest Academy: A School in Jeopardy

One residential secondary school, Midwest Academy (MA), near a major metropolitan area, was the only such school for an Adventist conference in the Midwest. With tightened fiscal constraints the conference (churches grouped by geographical boundaries of states or parts of states) was unable to subsidize the school as it had in the past due to circumstances beyond the control of church leadership. Because of the financial complications of the conference and dropping enrollment at the school, rumors and opinions regarding school closure proliferated.

Since tuition alone was insufficient to maintain the MA campus and the school program, more than half the acreage was sold in a desperate attempt to salvage the school itself. The remaining property not directly used by campus was leased as farm land, but not much funding was generated in this manner. Funds generated by the sale of the property to a local businessman (who donated the land to the Forest Preserve) were used to repair and operate the school. Faculty, especially the principal position, experienced high turnover. Student behavior was challenging, with a larger proportion of the student body coming from the nearby inner city which changed student body dynamics from the previous largely rural or suburban population as the surrounding community characteristics evolved impacting student enrollment from 350 residential students to less than 100. In addition to socioeconomic changes in the communities served by this institution, ethnic dynamics had also been vastly altered. Hispanics, African-American, and Asians became larger segments of the student population with Hispanics in a slight majority, which reflected changing dynamics in the surrounding population of the metropolitan area.

Statement of the Problem

In a last-ditch effort to save MA, the conference, with input from the union and the division, hired a new principal. The new principal, an educational change theorist, had most recently been a faculty member in a school of education. While embracing a new principal with an innovative approach was a radical move, the NAD gave him permission to "change everything." Essentially educational leaders realized something had to change. Past modes of operation were not working. They recruited the principal saying, "You've been teaching innovative educational approaches, giving speeches about it, and writing and publishing on the topic. Here's a school in trouble. Go put it into practice" (L. Burton, personal communication, May 19, 2005). The openness to systemic change attracted the new principal's interest. He accepted the opportunity to apply current research regarding how students learn. And he did this on the foundation of counsel to educators in the writings of Ellen White, a major influence on Adventist education.

Given this permission to institute changes from the traditional approach to a free form of Christian education, the new principal accepted all faculty and staff who wished to remain at the school. He recruited additional new faculty and staff to fill vacant positions and encouraged families of current and potential students to enroll in the program. I accepted the principal's invitation to participate in the program related to the potential for the existence of heightened stress levels since all components of the program were up for change.

To initiate the change process, faculty began with the end in mind (Wiggins & McTighe, 1998) and developed a consensus concerning their vision regarding the desired

graduate. The entire curriculum was arranged around an acronym: MA (Midwest Academy) CARES: C=centered in Christ; A=active and healthy; R=ready for life; E=engaged in learning; S=socially responsible. From their pooled ideas they crystallized the concepts into those captured by the acronym they designed and selected.

With this as a background, the following questions surfaced in my mind: How would such massive change (in such a short time frame) influence faculty and staff health practices? What would it do to faculty stress levels? Did personality play a role? What about their efficacy beliefs?

Purpose of the Study

The primary purpose of this case study was to investigate perceptions of stress of faculty and staff involved with school-based systemic change implementation at MA. In order to more fully understand these perceptions, it was necessary to study the total redesign and implementation of this residential secondary school program by its faculty. To fulfill this purpose I explored and elaborated the relationship between key variables for participants engaged in the program (see Research Questions below). Key variables included: Stress, Teacher Efficacy Beliefs, Personality Type, and Health Practices. These perceptions of stress and possible contributing factors to the perceptions of stress on the part of faculty and staff were elicited by surveys at three junctures in and surrounding the 2005-2006 school year. In the context of systemic change, relationships between Stress and Efficacy and Stress and Health Practices were anticipated to demonstrate inverse polarities. Personality was anticipated to demonstrate relationships related to some specific of personality types.

Research Questions

This study investigated perceptions of Stress, Teacher Efficacy Beliefs, Personality Type, and Health Practices of faculty and staff involved with school-based systemic change implementation at MA. This descriptive case study attempts to answer the following research questions:

1. What context did the systemic change process at MA create for impacting Stress?
2. What were faculty and staff perceptions of Stress?
3. What relationships exist between key variables in the study: Stress, Teacher Efficacy, Personality Type, and Health Practices?

Among the faculty and staff participating in the systemic change at MA, the research hypotheses are:

1. There is a relationship between Stress and Teacher Efficacy beliefs.
2. There is a relationship between Stress and Personality Type, which varies by type.
3. There is a relationship between Stress and Health Practices.

Delimitation

The study was delimited to one school and one group of faculty and staff participating in the systemic educational change effort at MA.

Conceptual Framework

Educational Change and Its Association With Stress, Efficacy, Personality, and Health

The climate in American education is stressful, complex, and chaotic (Doll,

Fleener, Trueit, & St. Julien, 2005). One of the most stressful occupations is that of teacher (Borg, 1990; Hillman, 2015; Mearns & Cain, 2003; Wiggins, 2015). Several studies have been performed to document the ubiquitous nature of stress in this occupation, which is endemic and crosses cultures since it extends to different countries (Borg & Riding, 1991). For this study Teacher Stress is investigated in the context of systemic change with anticipated relationships to Teacher Efficacy, Personality Type, and Health Practices (see Figure 1).

Educational Change

Change figures prominently in the educational landscape of reform and restructuring. Against this backdrop of change in education, American teachers are four times more likely to report they lack job satisfaction (Markow, Macia, Lee, & Harris Interactive, 2013) than they did five years ago. Over the past three years, DeWitt (2012) stated that his state, New York, cut his rural/suburban school district budget over more than $10,000,000. Studies performed in England and the Soviet Union (Poppleton, Gershunsky, & Pullin, 1994) documented one-third of the teachers of both countries expressed dissatisfaction with their occupation and two-thirds reported job-related stress so this problem is not limited to the United States.

Apparently the response was not related to whether centralization or decentralization was being instituted but rather implied this response was related to the change itself. Thus educational change contributes to the drain of teacher energy and escalating stress levels (Agrawal, 2004; Cohen, n.d.; Duffield & Moore, 2006; Engstrom & Tinto, 2008; Flett & Wallace, 2005; Frick, 1995; Garcia, Flores, & Gallegos, 2005; Giacardi, 2006; Gibson, 2008; Gooya, 2007; Gustafson, 2008; Hall & Hord, 1987, 2001;

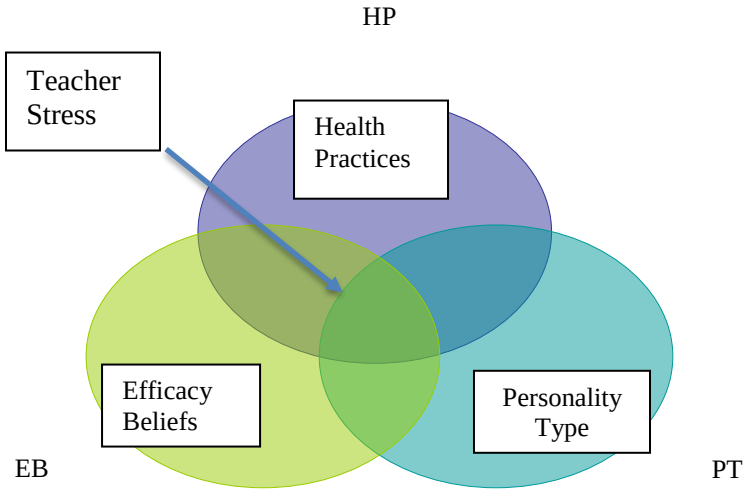

Figure 1. Teacher Stress and related variables.

Hubbard & Datnow, 2000; Johannesson, Geirsdottir, & Finnbogason, 2002; Kort & Reilly, 2002; Marton, 2006; Nilan, 2003; Olson, 2002; Poppleton, 1999; Smyth, 2006; Stickney, 2006; Traver, 2006; Van Driel, Bulte, & Verloop, 2008; Van Veen & Sleegers, 2006; Whitehead, 2000; Wilson, 2002). To counteract some of the stress involved for teachers, Bezzina (2006) recommends the formation of professional communities in secondary schools.

Stress

While "stress can be translated into a four-letter word—pain" (Cartwright & Cooper, 1996, p. 2 as cited by Cooper, Cooper, & Eaker, 1988), an influential person who widened the focus of stress research from the physiological domain of Selye's efforts (1936, 1937, 1946, 1952, 1956, 1964, 1965, 1976, 1980, 1991) to include the

psychological was Lazarus (1966). The development of the stress construct has met with some debate (Armstrong & Olatunji, 2009; Hegadorn, Lasiuk, & Coupland, 2006; Lasiuk & Hegadoren, 2006; Long et al., 2008; McFarlane, 2004) since uniformity regarding responses to stress is difficult to achieve. Unusual human experience may not produce symptoms in every person exposed to it. Not everyone exhibits fear, horror, and helplessness as an aftermath of the same incident producing a sometime intense controversy over the stressor criterion definition. That attitudes and subjective norms are subject to change is an assumption of the Theory of Reasoned Action (Fishbein & Ajzen, 1975; Pender et al., 2006). Since health beliefs impact illness, disease prevention, and preservation of high-level wellness (Pender et al., 2006), many are aware of the importance of Health Practices to mitigate the effect of Stress on health.

The Stress construct used in this study is composed of self-identified stress symptoms as a reaction style (Guenole, Chernyshenko, Stark, McGregor, & Ganesh, 2008) to the environmental stressors posed by the massive educational change innovation.

The term, Teacher Stress (Kyriacou & Sutcliffe, 1977a), was coined to describe the occupational syndrome of the professional reaction to multiple and conflicting demands placed upon teachers. The teacher-stress construct definition used in this study is that of Kyriacou (2001): "The experience by teachers of unpleasant, negative emotions, such as anger, anxiety, tension, frustration, depression, resulting from some aspect of their work as a teacher" (p. 28). Sir Cary Cooper, a psychology professor at the University of Manchester, is quoted as finding that teaching is one of the most stressed positions in the British work force (Wiggins, 2015). Teaching is often considered "the

single most stressful job there is" (Hillman, 2015).

But not every teacher is stressed. Although Adams (2013) reported that university professors were the third least stressed of the occupations available in the United States, this report is based on the condition that the professor is not assigned to summer school and is related to the assumption that professors enjoy much autonomy and low stress. Due to heavy faculty load and even overload, this finding is hotly contested in some quarters (Jaschik, 2013).

Efficacy

Efficacy Beliefs impact an individual's thinking, motivation, and behavior and determine the capacity to achieve levels of performance influencing life events (Bandura, 1977a, 1977b, 1982, 1983, 1997; Bandura & Adams, 1977; Bandura, Taylor, Williams, Mefford, & Barchas, 1985; Blasé, 1986). Self-regulation and perceptions of Efficacy as described in Bandura's Social Cognitive Theory (Bandura, 1986) may be tapped to exercise control of behavior. Bandura's definition of Efficacy is "people's judgments of their capabilities to organize and execute courses of action required to attain designated types of performance" (p. 391). Efficacy is related to Rotter's (1954) Social Learning Theory and the locus of control construct (Rotter, 1966). The term "Teacher Efficacy" was first used by a Barfield and Burlingame (1974) study. They defined efficacy as "a personality trait that enables one to deal effectively with the world" (p. 10). Also the term "Teacher Efficacy" subsequently surfaced in a report (Armor et al., 1976; Berman, McLaughlin, Bass, Pauly, & Zellman, 1977) on a Los Angeles elementary reading program. A more current definition of Teacher Efficacy is "the teacher's perception of his or her ability to (a) perform required professional tasks and to regulate relations involved

in the process of teaching and educating students (classroom efficacy), and (b) perform organizational tasks, become part of the organization and its political and social processes (organizational efficacy)" (Friedman & Kass, 2002, p. 684).

Constructs differ slightly based on whether the theory of Rotter or Bandura is used as a foundation for the Teacher Efficacy construct (Skaalvik & Skaalvik, 2007). Using Rotter's concept distinction of control issues, Teacher Efficacy Beliefs in the value of education are perceived to be influential for student behavior and achievement increasing Teacher Efficacy. If teachers believe home environments and student abilities are more influential, Teacher Efficacy is assumed to decrease based on beliefs of the impact of these external factors. Whereas using Bandura's concept of belief in personal capability results in a conceptualization of Teacher Efficacy as belief in their abilities to deliver instruction needed to attain educational goals. Most definitions of "Teacher Efficacy" contain the belief held by teachers concerning their ability to influence student performance (Ashton, 1984; Ashton, Buhr, & Crocker, 1984; Ashton, Webb, & Doda, 1982, 1983; Berman et al., 1977; Guskey & Passaro, 1994; Tschannen-Moran & Woolfolk-Hoy, 2001, 2007; Tschannen-Moran, Woolfolk-Hoy, & Hoy, 1998a; Tucker et al., 2005).

Personality

Personality influences a person's health and ability to deal with Stress (Kobasa, Maddi, & Kahn, 1982; Levin, 1996; Scheier & Carver, 1987; Watson & Pennebaker, 1989) since Personality modulates individual response to stressors. Physical and psychosocial responses to stressors are individualized. Actions to compensate for stressors preserve a healthy equilibrium (Miller, 1980; Pender et al., 2006).

Some recent studies on post-traumatic stress disorder and potentially traumatic events document psychological resilience as a construct in various sample populations (Bonanno, Galea, Bucciarelli, & Vlahov, 2006, 2007; Coifman, Bonanno, & Rafaeli, 2007; Kruczek & Salsman, 2006; Mancini & Bonanno, 2006; Westphal & Bonanno, 2007). Empathy also surfaces in another study (Kishon-Barash, Midlarsky, & Johnson, 1999).

Studies of Norwegian and Taiwan medical interns and residents found personality factors to be the greatest predictor of stress levels (Huang, 1998; Tyssen, Vaglum, Grønvold, & Ekeberg, 2005). Vulnerability figured as a personality trait in two studies (Feldman, Cohen, Hamrick, & LePore, 2004; Tyssen et al., 2005).

Personality contributes to variations in expressive behavior and is not infrequently in variance to behavior from self-report (Lippa, 1978). Personality Type may be related to self-reported Stress in some teacher samples and contribute to burnout (Bakker, 2009; Baloglu, 2008; Burchielli & Bartram, 2006; Chan, 2002, 2008a, 2008b; Moriana & Herruzo, 2006; Stoeber & Rennert, 2008; Teven, 2007; Wang, Lin, & Cao, 2009; Wilson, Mutero, Doolabh, & Herzstein, 1989; Yoon, 2002).

Health

Communities, environment, and society have a marked impact on health (Pender et al., 2006). Although health originally in AD 1000 meant "being safe or sound and whole of body" (p. 17), the term transitioned to a definition of a disease-free state in the context of the scientific era. The World Health Organization (1974) proposed a new definition: "Health is a state of complete physical, mental, and social wellbeing and not merely the absence of disease and infirmity" (p. 17). Critical indicators in Healthy People

2010 (U.S. Department of Health and Human Services, 2000) used to define health status include: physical activity, overweight, obesity, tobacco use, substance abuse, sexual behavior, mental health, injury and violence, environmental quality, immunizations, and access to health care.

The antithesis of disease is described as "a balanced state, a growth phenomenon, functional capacity, goodness of fit, wholeness, wellbeing, transcendence, and empowerment" (Pender et al., 2006, p. 18). In 2006, health was described as a multidimensional concept recognized as intertwined with individuals, families, communities, and nations. Health is also described in terms of stability and actualization.

Significance of the Study

This study was significant in that it provided an opportunity for participants to identify their perceptions of health and become more aware of the role their beliefs played in their perception of health. Educational leadership may find the results instructive. Those studying the trends in private secondary education should be informed of these findings.

Researchers in educational change and secondary education are interested in trends and explanations, which would help anticipate trouble spots that need particular attention. Findings of this study could prompt further confirmation or disconfirmation of similar developments in other study populations as they are included in subsequent research-study designs.

Leaders in education are searching for ways and means of smoother functions and operations as they work with administration to improve learning and work climates. Simple steps taken to foster the commitment to lifestyle change in health promoting

behaviors and the formation of social-support structures may prove beneficial to administrators and practitioners.

Practitioners in the field of faith-based education are searching for solutions to challenges in the workplace environment. They are dedicated to enhancing learning opportunities both inside and outside the classroom setting. Some of the findings in this study may provide inspiration for changes, which would empower them and their colleagues.

Summary

Change whether viewed as positive or negative induces Stress into the environment for the teacher with a negative impact on the teacher's health. Some of the impact may be diluted with a change in lifestyle and Health Practices.

Overview of Research Methodology

This descriptive case study (Merriam & Tisdell, 2016) used a convergent mixed-methods design (Creswell, 2011). The quantitative research protocol involved establishing baseline data on factors of Stress symptoms, Efficacy Beliefs, Personality, and Health Practices through the use of the following instruments: *Brief Symptom Inventor*y (BSI) (Derogatis, 1983), *Teacher Efficacy Scale* (TES) (Gibson & Dembo, 1984), *Myers-Briggs Type Indicator, Form-M* (MBTI) (Myers-Briggs Type Indicator Trust, 1998), and *Health Promoting Lifestyle Profile II* (HPLP) (Walker, Sechrist, & Pender, 1987). The qualitative portion of the study was composed of concurrent participant observations.

Overview of the Dissertation

Chapter 1 Background to the Problem

Chapter 2 Review of Related Literature

Chapter 3 Method

Chapter 4 Context of Midwest Academy: A Case Study of the Innovation and Its Implementation

Chapter 5 Tools and Analysis

Chapter 6 Discussion, Conclusions, and Recommendations

For a detailed description of the innovation, see Chapter 4.

CHAPTER 2

REVIEW OF RELATED LITERATURE

Introduction

This study focused on the intersection between Stress and Efficacy with systemic educational change as a context. Stress was limited to Teacher Stress defined by Kyriacou and Sutcliffe (1978a) as the reactions of teaching professionals to the competing and conflicting demands on teachers' time and energy as a syndrome related to the occupation. Teacher Stress for this study was further limited to secondary school settings in accordance with the staff and faculty population of the study.

Efficacy is defined by Bandura (1997) as "beliefs in one's capabilities to organize and execute the courses of action required to produce given attainments" (p. 3). This concept was encapsulated in this study by the term teacher efficacy. Efficacy Beliefs were examined since they may impact coping practices.

"The extent to which the teacher believes he or she has the capacity to affect student performance" (Berman et al., 1977, p. 137) has been used to define Teacher Efficacy.

Systemic change is described by Reigeluth (1994) as "often called paradigm shift which entails replacing the whole thing" (p. 3). Such a comprehensive change in education prompted Reigeluth to refer to Banathy's work in 1991, describing changes made in classrooms, buildings, communities, the learning experiences and systems

involving instruction, administration, and governance. With this in mind, a search for relevant literature was performed.

Among a battery of available search engines, Andrews University James White Library offered the following: Dissertation Abstracts International (DAI), Educational Resources Information Center (ERIC), Academic Search Complete (EBSCO), the Cumulative Index to Nursing and Allied Health Literature (CINAHL), First Search (OCLC), PsychInfo, PubMed, and MedLine. The following descriptors were used as key words in the computerized literature searches: Teacher Stress, secondary school, Teacher Efficacy, and systemic educational change. As appropriate articles and texts were located, their references were scanned for further helpful resources. These were examined in hardcopy form as retained in the library and available by interlibrary loan. Others were obtained in electronic formats.

This chapter begins with contextual material concepts of which were deemed helpful to understand the task of curriculum redesign. Then available literature and research studies are described in the following order: Educational Change, Stress, Efficacy, Personality Type, and Health.

The Context of the Modern School

Today's schools face challenges unique and/or similar. This review focuses on the challenges inherent for faculty and staff engaged in secondary education.

Stages of Development or Improvement

Several distinct stages of school development are identified in a report of educational research of alternative secondary schools (Deal, 1975). Stage 1 Euphoria gives way to Stage 2 Psychic Upheaval. Then Stage 3 Dissatisfaction sets in. The initial

bliss and excitement deteriorates to depression, tears, and crisis. “This is no better than anything else” follows. As a result the school may dissolve, become conventional, or resolve its difficulties and remain alternative in nature. Most innovative schools “fail.” They cease to exist. The schools that “made it” developed a sophisticated organization with the capacity to support the complex instructional program by compromise on their democratic participatory approach and maintained the integrity of other elements in the instructional program (Deal, 1975).

School improvement moves through three phases: planning, implementation, and institutionalization (Lindahl, 2006). Planning involves identifying a need, considering the nature of inherent changes, selecting an approach, assessing the capacity or willingness to engage in change, and deciding to go ahead. Implementation involves: change, motivation, professional development, and consensus building. Institutionalization involves transformation. Time and daily effort is required. Invitations for participation must be offered repeatedly, experimentation encouraged and empowered. Storytelling is helpful when done selectively to emphasize actions exemplifying desired assumptions, beliefs, and values. Also rites and rituals to celebrate new assumptions, beliefs, and values may embed them in the climate and cultural change.

Alternative Schools

Educational alternatives may include alternative schools, independent schools, charter schools, juvenile detention schools, and home schools (Foley & Pang, 2006). Zimmer and Buddin (2007) reported nearly 1 million students attended more than 3,500 charter schools. Although charter schools have opened over 5,250 sites, since 1992, of these 657 have closed (Allen, Consoletti, & Kerwin, 2009). All told 10,900 alternative

schools and at-risk student programs were operational in public education during the 2000-2001 school year (Kleiner, Porch, & Farris, 2002).

Historically freedom schools were begun and operated in church basements and storefronts by those who protested the oppressive education offered through public education (Lange & Sletton, 2002). This movement spilled out of the civil rights movement and was the beginning of community control of education. A parallel non-public movement was expressed in the free school movement, which emphasized achievement and fulfillment of the individual instead of the emphasis on community. Niell's Summerhill is an example of such a private alternative school and the best known of the free schools. These freedom and free schools prompted public educators to create an alternative public school resulting in the advent of open schools. A diverse offering of alternative schools resulted: schools without walls, schools within a school, multicultural schools, continuation schools, learning centers, fundamental schools, magnet schools (Young, 1990).

Alternative schools have evolved today to hold the following characteristics in common: small size, student-teacher interaction, supportive environment, relevant opportunities for student success, flexibility in structure, and student self-determination (Lange & Sletton, 2002). The usual target audience for alternative schools consists of dropouts, students with disabilities, and students with high-risk health behaviors.

A service-learning model was used for one alternative school (Nelson & Eckstein, 2008). The focus was on creating and preserving a youth "voice." Content was split three ways into the development of academics, career, and personal and social dimensions.

The landscape is populated with a broad variety of alternative schools, which

have been divided into three types: Type I=schools of choice, Type II=last chance schools, Type III=remedial focus (Raywid, 1994). Twilight Academy is an alternative public school for 60 selected high school students who were not fitting into the traditional public high school curriculum (D'Angelo & Zemanick, 2009). Scheduled from 3-7pm Monday through Friday, the venue was designed as a safety net to prevent student failure. Although most students demonstrated behavioral challenges, the worst behaviors (fighting or physical altercations) did not materialize in the school setting as anticipated. Researchers proposed the drop in audience size (from 2,900 to 60) played a significant role along with the seldom before respect extended to students. Any discipline administered was accompanied with counseling. Of the 60 two students were expelled.

Other innovative secondary schools are exploring other delivery options. Service learning is the model for an alternative program revolving around grant-writing, role-modeling, and developing youth "voice" (Nelson & Eckstein, 2008). Attendance is mandated and usually of short term.

Declining Enrollment

In the current economic climate, even traditional public schools close for a variety of reasons. Declining enrollment is one (Korn, 2014; Spellman, 2012). However, it is not the only one. The closing of three alternative schools in the United Kingdom (UK) was based on administrator perceptions that the two academies, which would result from the ashes of the three schools would improve standards (Baron, 2010). Some school closings stem from financial concerns as enrollment drops with shifts to suburban schools and funding shrivels (Fisher & Hollingsworth, 2010).

Private schools also are haunted with the specter of school closings (Pandey,

Sjoquist, & Walker, 2007). Of the 29, 273 total private schools in 2001 (Broughman & Pugh, 2004), over 15,000 returned surveys to researchers who selected a random sample of 2000 of the returned surveys for follow-up. Between 1980 and 2004 432 schools closed from this sample of 2000. The research team discovered a correlation between smaller, newer schools and school closure.

The topic of school culture, organizational climate, and its relationship to administrative concerns has been addressed in the context of school improvement (Deal, 1985, 1993; Deal & Peterson, 1993, 1994, 2003, 2009; Lindahl, 2006).

School Size

Largely due to the push for school reform, the Center for Educational Innovation (CEI) merged in 2000 with the Public Education Association (PEA) (CEI-PEA, 2007) to promote the development of small schools in New York City. This movement is not limited to New York City. Alternative schools have proliferated to the point where Kleiner et al. (2002) report 48% of the unified or secondary school districts in the nation administer at least one.

Curriculum Concerns

Size of school is not the only concern. Concerns regarding the curriculum also drive school reform (Agrawal, 2004; Cohen, n.d.). Decentralization and teacher collaboration to facilitate the development of a professional learning community has also gained attention (Bezzina, 2006). Society's need for a more fluent technology sector has also driven the reform movement and curriculum decisions (Cohen, n.d.; Duffield & Moore, 2006; Flett & Wallace, 2005). Merely providing access is insufficient to ensure academic success; support is also a valid concern (Engstrom & Tinto, 2008).

Educational Reform

A call for systemic educational change requires understanding of the principles of systemic thinking and the dynamic cycles involved in the dissemination of changes (Frick, 1995; Rogers, 2005; Senge, 1990/2009).

Language used in the curricular reform framework requires attentive and close analysis in order to avoid exclusion, the appearance of exclusion, or attrition of some learners (Gustafson, 2008). Although words are important, modeling is perhaps an even more effective learning strategy for students (Higgs & McMillan, 2006).

Educational Change

In order to be successful in the dissemination and the utilization of educational change and increase the development of desirable student outcomes, Hord (1992) noted the necessity of the presence of someone to serve as a supportive change agent. The three dimensions of thinking about restructuring, student outcomes, designing situations for teaching and learning, and systemic change to accommodate the changes will require that roles, relationships, rules, and policies be revamped by facilitative leadership. Hord also recommended the following actions:

1. Creating an atmosphere and culture for change
2. Developing and communicating the vision
3. Planning and providing resources
4. Providing training and development
5. Monitoring and checking progress
6. Continuing to give assistance.

Often a specific educational change is referred to as an educational innovation.

Tobin (2009) defines educational innovation as, “an idea or practice that reflects an emergent trend and offers an optimistic alternative for a current situation of dissatisfaction” (p. 406).

Although teachers are often viewed as “the centerpiece of educational change” (Hubbard & Datnow, 2000, p. 115), the gender of those advocating educational change has implications for adoption. Male teachers may resist reform if women were overrepresented.

Propositions for effective change in schools of education (Joyce & Clift, 1984) included: “remove the permanent certificate and develop a lifelong professional education system” (p. 14), “restrict accreditation to knowledge-producing institutions that are linked to experimental school sites” (p. 15), “develop realistic and continuous national assessment of the competence of graduates” (p. 15). Although published almost 30 years ago, these have yet to be implemented.

Other professional curriculums have followed suit with educational innovations of their own (Kaufman et al., 1989). Initial resistance came from faculty concerns regarding the dilution of the curriculum. Outcomes of the learner-centered, problem-based, community-oriented curriculum overcame these voiced fears. The process of implementation included a small parallel track, which made the innovation more palatable and easily protected by nurturers. Faculty with more traditional practices were allowed to adopt any aspects they perceived as attractive and relevant. Barriers were overcome by encouragement of broad ownership, invitations to participate, new alliances forged, and reward sharing.

Reengineering educational pedagogy is challenging. Kort and Reilly (2002) posit

that a positive affect enhances learning. Teaching the learning process includes making mistakes (confusion), recovering (conquering frustration), "deconstructing what went wrong" (p. 1) (overcoming discouragement), and beginning again (hopefully with enthusiasm). Observable behaviors, which provide clues to affect, are: posture (leaning forward vs. slumping and fidgeting), eye-gaze (looking toward problem vs. elsewhere), facial expressions (eyes widening or tightening, smile, raised eyebrows vs. lowered eyebrows, wrinkling nose, or lower lip depressed at corner), head motion (up-down nod vs. sideways shake), and hand action (typing, clicking vs. not on keyboard or mouse).

Educators have faith in the social engineering capacity in the face of systemic change (Olson, 2002). While the complex expectations of Canadian educational reform require a systemic approach for the play of diverse interests on the field of action, government entities call for pure and simple cost-cutting Draconian or Olympian changes in attempts to develop accountability. The challenge is to measure outcomes to gain knowledge of the systemic change and its effects. Although pressing for uniformity may be dangerous, changes may not address appropriate issues due to the variance in school cultures. Also regressive uniformity may result in deskilling the teacher with an imposed curriculum. Under-resourcing also poses problems. Though teachers' traditional theories may not be well codified, teachers need to be able to use their theories in the change context to engage the change itself in order to facilitate improvement via dialogue between professional groups.

Reform of education, as advocated by Ted Sizer (1992, 1994, 1996, 2004), is replete with charges of blame on the "bureaucracy." Mayor Bloomberg abolished the Board of Education and chose to apply business principles of efficient scientific

management to the schools of New York City (NYC) (Traver, 2006). Coercive and mimetic isomorphism occurs when organizations are forced to accept a similar structure by legislation or mandate in a context of uncertainty. Although market-based ideologies may have the potential to limit creativity and spontaneity of teachers, NYC school scores have increased from 40% meeting state standards in 2002 on primary reading to 69% meeting the standard in 2009 and an increase from the 2002 35% for math to 82% on 2009 math (NYC Department of Education, 2010; Traver, 2006). As useful as some statistics may be, some are decrying the volatility of scores for NYC schools where over half elementary school scores varied over 50 percentage point when 2006, 2007, and 2008 scores were reviewed and 43% of middle schools revealed a similar swing in scores over these three same years (Banjo, 2010).

Innovation Adoption

Roger's (2005) innovation adoption stages: knowledge, persuasion, decision, implementation, confirmation also inform anticipated levels of Teacher Stress. Innovation attributes: rate of adoption, relative advantage, compatibility, complexity, trialability, observability may be helpful in predicting and anticipation of Teacher Stress. Since adopter categories: innovators (venturesome), early adopters (respect), early majority (deliberate), late majority (skeptical), laggards (traditional) indicate varying involvement in the innovation, they may be useful in determining levels of anticipated Teacher Stress as well. Organizational process stages: agenda-setting, matching, redefining /restructuring, clarifying, routinizing might also contribute to Teacher Stress.

Connoisseurship

Eisner (1998) connoisseurship involves epistemic seeing in qualitative inquiry.

This would be a useful method in the examination and identification of symptoms of Teacher Stress. Dimensions are intentional, structural, curricular, pedagogical, and evaluative. All five dimensions are useful perspectives from which to examine Teacher Stress.

Systems Thinking

Senge's (1990/2009) laws have applicability to the project. The most important component in systems thinking is leverage, identifying where structural action and change has the potential to make significant and enduring improvements. Often related to the economy of means, small well-focused actions are more successful than large-scale efforts. Personal mastery and resistance in achieving are combined. Systems thinking consists of three levels: practices, principles, and essences. Determining faculty involvement at each level might be predictive of Teacher Stress. Disciplines: systems thinking, personal mastery, mental models, building shared vision, and team learning, would be another helpful modality in examining individual Teacher Stress and compensatory efforts.

Marquardt's (2002) systems learning organization model includes learning (central circle), organization, people, knowledge, and technology (peripheral circles). All five components are needed to enhance and augment learning. This model might prove useful in categorization and organization of Teacher Stress.

Educational change is not merely international; it is global. According to Friedman (2005), traditional practices in several fields flattened the world. This is one of the developments which prompted the United Nations to push global education endeavors

to prepare students to participate, create, or at least use information and communication technologies (Gibson, 2008).

More than one educator is protesting the ubiquitous international neoconservative accountability movement with what may be perceived as increasingly negative repercussions (Stickney, 2006). Purported to be a new paradigm, some adherents adhere with the convictions of conversion or the intensity of Moses descending the mountain with universal principles. The aura of mystique surrounding agents of change congers up mental pictures of "avatars of a new reality" (Stickney, 2006, p. 335). Stickney advises withholding wonderment and the need to engage in critical thinking and to teach critical thinking skills to students, not to be blind compulsive followers of others' thoughts.

International Educational Change

Albania

Educational change invades distant portions of the planet. Even Albania is engaged in reform of teacher education by moving it into university settings (Whitehead, 2000). The initial step involved visits to Great Britain and other European nations to observe teacher education programs in these locations on individual scholarships. The second step the following year involved a six-week course provided in Great Britain. A feasibility study was conducted. In an analysis of implementation, regional differences surfaced. Some individuals involved in initial steps served as agents of change in positions as Rector and Vice-Rector so were able to lend powerful assistance to the restructuring effort. This essentially bottom-up process allowed reform on a historical background of deeply entrenched centralized control.

Australia

Australia has been working at improving education for some time. The Project for Enhanced Educational Learning (PEEL) was devised and implemented, encouraging teachers to stop traditional lecturing and hand over the reins for learning to their students (Baird & Mitchell, 1986). Baird (1999) also advocated "teacher-led and school-based" (p. 92) groups for social support.

Australia similarly shares concerns about teacher education but the situation is more recently presented as dire, subtle, covert hijacking of higher education by politicians using apparently logical rational arguments to corrupt, corrode, and coerce with "the mantra of supposed need for enhanced accountability" (Smyth, 2006, p. 302). The ability to think and being allowed to think is at risk. Adhering to government prescription may not raise educational standards. The accusation is that manic-paced deliberately constructed crisis conditions have allowed the acceptance of the political concept of accountability. All this in order to preempt "awful thoughts" (Smyth, 2006, p. 305), the capacity for letting go of certainty and learning to live with our fragile insufficiency, self-doubt, ambiguity, contradiction, and wonderment in willingness to engage in thinking independently.

Whereas accountability meant mutual dependence, its meaning has been changed as now used in education. The distorted, corroded, and tarnished concept is lopsided with support being absent and withdrawn by current political policy and is no longer reciprocal in nature. The system of payment by results and a "high stakes" process and testing disdains, belittles, and degrades teachers and education. The insulation of outmoded managerial practices abandoned by successful businesses has been foisted on

education. The overt political interference continues to serve up hyped hysteria with complaints about teachers and teaching masquerading as rational analysis. What is desperately needed is space, dignity, and respect in order to manage the daily complexities of schooling with sound professional judgment.

Bali

Educational reform in North Bali is fitted with a backdrop of a rapid influx of secondary students (Nilan, 2003). Enrollment doubled in five years requiring two shifts and large class cohorts. Only the six years of primary grades are free and mandatory. The six years of junior and senior secondary studies are plagued with large classes but not usually involving two shifts/day. With the requirement of three additional years being also mandated, secondary schools are stretched to the maximum to accommodate all learners. Teacher qualifications are a concern as the government has turned from a focus on access to a focus on quality.

With the government investing only 2.6% of its Gross Domestic Product (GDP) on education, teacher salaries are minimal, especially when compared with neighboring countries investing nearly double their GDP on education. This is a poor reward for the agent of change in the community as public intellectual and primary assistant with attempts to move society from a subsistence or poverty level to a more stable or sustainable economic level. Often teachers purchase necessary supplies out of their own meager resources. Some families are able to reimburse the teacher for these expenses but not all. With the exception of a few private schools at the top end, private schools enroll about 50% of the student population because of a shortage at the public school; however, the generally the quality of private education is considered to be poorer than that of the

public school. Although the centrally controlled schooling system is archaic in its emphasis, the schools in Bali prepare their students for entry into their tourist economy. The reform needed is a systemic change with a greater focus on English as a second language and technology; however, the funds to provide computer labs are not present, nor forthcoming.

China

A study of occupational stress in primary and secondary teachers in China found males reporting significantly higher stress levels than female teachers (Wang, Lan, Li, & Wang, 2001). Teachers reported significantly higher stress when compared with a cohort of mental health workers. While stress reports increased with age, secondary teachers reported high stress levels than primary teachers.

A reform process for secondary education regarding the geography curriculum in Shanghai schools in China utilized several phases (Marton, 2006). The planning phase included: investigation and research, drafting the plan in writing, examination and approval of the plan. The preparation phase included: writing the teaching plans and materials needed for the new curriculum including textbooks and supplementary resources. Implementation involved dissemination of the curriculum and materials during scheduled professional development meetings. Implementation may have been handicapped by the lack of involvement by teachers with the planning and preparation phases. A centralized policy-making system and lower qualifications may have contributed to a lack of enthusiasm also.

When a random sample of 3,000 primary teachers and 3,000 secondary teachers in Hong Kong were mailed a questionnaire, only 1,710 returned them (Chan & Chong,

2010). They reported increased levels of stress related to a heavy workload, time pressures, educational reforms, external school reviews, pursuing further education, and managing students' behavior.

Germany

The stress levels of teachers at two German public high schools were compared to teachers at two similar British public high schools (Dunham, 1980). The British teachers reported more stress related to poor staff communication and disruptive pupil behavior. German teachers claimed more participation in decisions and more role expectation certainty.

After the fourth year of compulsory elementary school, German students have options for secondary courses of study (Pischke & Von Wachter, 2008). Vocational content is included in the basic level (*Hauptschule*) with students doing apprenticeships after Grade 8 or 9. The middle level (*Realschule*) includes more academic rigor. These graduates after Grade 10 usually do apprenticeships or continue in a vocational school. Only qualified students are allowed entrance into the most academic rigorous program (*Gymnasium*). All schools are under state rather than federal control. Transfers between different states are more easily accomplished for students now than in prior eras. Placement in the type of school tends to be permanent with few students moving to a different track. Graduates may leave at Grade 12 for a technical school or Grade 13 for university. As is true for most of Europe, only the most capable students are allowed to proceed in academic studies.

German teachers also have experienced challenges in their venue (Schwarzer, Schmitz, & Daytner, 1999). Research findings were obtained from 300 teachers with

repeated data collection at one year and two years after the initial survey. A later study comparing German teachers with Syrian teachers revealed stress with the amount of change in the educational systems of both countries (Schwarzer & Hallum, 2008). The study was replicated one year later as well.

Iceland

The small Icelandic educational system is compulsory for elementary level; however, attendance at secondary schools has risen since the legal age was increased to 18 (Johannesson et al., 2002). Since the Icelandic students scored far behind their East Asian counterparts and even below most Nordic students, the national curriculum gave greater emphasis on natural science and math. Students with disabilities are mainstreamed as "full inclusion" complicating the teaching task for Icelandic teachers. The presence of immigrant children who do not speak nor understand the language or the culture further complicates the task.

Iran

Educational curriculum reform has invaded Iran with dramatic changes in how geometry is presented in secondary education (Gooya, 2007). While the first 8 years of education are mandated, secondary education is not. The focus in math education changed from memorization to a sequential presentation of concrete concepts with a progression to abstract concepts. The change team collaborated in writing new textbooks for student work in small groups prior to discussing findings with the whole class with enhancement of metacognitive abilities as an intentional outcome. The team also designed a professional development program to facilitate implementation of the new curriculum.

Israel

Education reform is at work in Israel, too (Gilad-Hai & Somech, 2016). Of the 75 schools in the study, 23 were non-experimental, 25 were in process during the experiment, and 27 were post-experiment. Higher levels of implementation of the innovation, higher social cohesion, and lower levels of conflict when compared to the controls were some of the findings.

Italy

Italy required 5 years of "classical" secondary school study with an additional 3 years prior to enrollment in the university only for the elite males (Giacardi, 2006). Traditionally mathematics and physics assigned to technical schools required only 3 "lower" years and 3 "higher" years which led to university studies only in the case of math and physics. Attempts at reform of education for all future citizens in general and scientific education in particular generated a lot of debate but little change.

A comparison between British teacher and Italian teachers was performed which determined that British teachers reported higher test scores than inpatient psychoneurotics (Zurlo, Pes, & Cooper, 2007). Although Italian teachers reported more depression than British teachers, they appear to exhibit a lower incidence of mental ill-health. Italians balance their stressors with autonomy in spite of lower perceived status.

Mexico

Mexico has increased the years of mandated education by requiring attendance for an additional 3 years instead of merely six years of elementary education with a massive change in science instruction (Garcia et al., 2005).

Netherlands

The educational change process was used in a study of high science teachers in the Netherlands (Van Driel et al., 2008). In support of freedom for chemistry teachers "to plan and execute their own teaching" (p. 108), researchers designed a tool to elicit teacher beliefs about curriculum emphases so they could be accounted for in the design of the new curriculum to make concepts more meaningful and relevant to students' daily lives. Researchers recommended this theory-based approach to curriculum innovation.

Another Netherland study found the beliefs held by teachers largely determined their response and participation in educational reform programs (Van Veen & Sleegers, 2006). Teacher orientation to teaching was divided into student/learning-centered versus content/teacher-centered. Teacher orientation to school organization was also bifurcated into restricted versus extended, focused on pedagogy or personal teaching activities versus involvement in the organization with a wider teaching scope than mere limited to the classroom. The three primary components of appraisal were used as mediating processes: goal relevance, goal congruence, and goal content. Orientation largely influenced the manner in which the teachers responded to educational reform.

United Kingdom

In the UK the quality of teacher education appears to be the pivotal concern of proposed reform in education (Poppleton, 1999). Whereas most European countries give teachers the status of civil servants with lifetime employment guarantees, there are differences. France's educational system is highly centralized. Germany's is highly decentralized. The UK system is neither. Instead it is a quasi-decentralized system using quasi-non-governmental organizations, which are appointed and government controlled.

In contrast to other nations, the UK has removed teacher education from higher education.

Because stress seems to be an endemic portion of the educational scene, its antecedents and derivatives will be examined next.

Stress

Although Hans Seyle first identified the stress concept in 1936, he continued to examine physiological responses to stress for many years. Hans Seyle identified three stages of stress in his General Adaptation Syndrome (1936, 1946, 1956): alarm, resistance, and exhaustion. The initial stage of stress, *alarm*, involves physical changes. Seyle's experiments found the alarm reaction to stress resulted in the release of stress hormones from the adrenal cortex into the blood stream causing concentration in blood serum and depleting glandular stores of the stress hormones. Body weight dropped significantly. If the stress agent is very damaging, death ensues in a matter of hours or days. As the body response moved into the second stage, *resistance*, blood concentrations were diluted and weight returned to normal levels as the adrenal cortex replaced its hormone reserves. The stage of *exhaustion* presented similar symptoms to that of alarm as hormone reserves were again depleted.

Stress was redefined by introducing the concept of allostasis (Sterling & Eyer, 1988). The process to achieve and maintain homeostasis (balance or stability) through either a change in physiology, behavior, or environmental mechanisms or stimuli is identified as allostasis (McEwen & Wingfield, 2003). The concept incorporated circadian and circannual changes defined as "constancy through change" (Romero, Dickens, & Cyr, 2008). A model, which includes wear and tear, is the Reactive Scope Model. Its four

ranges of the various physiological parameters are (1) Predictive Homeostasis which encompasses variation related to seasons and circadian rhythms, (2) Reactive Homeostasis, which is the range required to respond to threatening or unpredicted changes, (3) Homeostatic Overload, concentrations above reactive levels, and (4) Homeostatic Failure, concentrations below predictive levels.

Allostatic load figures in studies of researchers interested in how the body responds to stress (Ganzel, Morris, & Wethington, 2010; McEwen & Seeman, 1999, 2003). Stress mediators are protective as well as damaging (McEwen, 1998, 2002, 2008, 2012). Current studies of oxidative stress explain the critical role of mitochondria in the development of disease states (Beal, 2005; Yao et al., 2009). Besides physiological manifestations of stress, psychological manifestations of stress also abound (Griffith, Steptoe, & Cropley, 1999; Jin, Yeung, Tang, & Low, 2008). Exhaustion studies demonstrate a link to psychological and physiological stress indications in teachers including links to depression and coronary artery disease (Bellingrath, Weigl, & Kudielka, 2009; Bennett, Lane, & Lip, 2008; Kudielka, Bellingrath, & Von Kanel, 2008; Von Kanel, Bellingrath, & Kudielka, 2009).

Early Discoveries of Stress Symptoms

As a novice medical student, Seyle (1936) was intrigued with the similarities between all the sick persons he examined. His eminent professor ignored the generalities and concentrated on the precise details, which differentiated diagnosis in each patient. He considered the general symptoms of illness as insignificant. Having a high curiosity index and being uninformed of the "right way" to analyze disease entities, Seyle pursued his

questions as to why so many symptoms and conditions were commonly present in the ill and absent in those who were well.

General Adaptation Syndrome

Seyle's biochemical studies (1956) at McGill University renewed his questions regarding the general state of being ill. His observations of a nonspecific response to a stressor were termed General Adaptation Syndrome (GAS). His goal was not to discover, to see, nor to understand, but to uncover enough so others could see. Later he discovered the role of the endocrine system and its impact on the immune system. He discovered stress is ubiquitous and even essential to living. The GAS he described explains the adjustments made by various internal organs to the constant changes surrounding individuals as the body mobilized defenses to cope with and defend itself from the harmful effects of the stress hormones.

Assumptions

Assumptions underlying research on psychosocial factors and health include that these may, "precipitate or counteract ill health, influence wellbeing, and modify the provision, acceptance, use, and outcome of health action" (Levi & Kagan, 1980, p. 119). To avoid possible confusion, assumptions need to be closely examined and accurately defined.

Group norms vary regarding stressful life events and their relationship to health. The critical stressfulness characteristics identified were: change in life activities or patterns (pleasant or unpleasant), undesirability, and upsettingness (Dohrenwend & Dohrenwend, 1980).

Definitions of Stress

"Stress is essentially the rate of all the wear and tear caused by life" (Selye, 1956, p. 3). An operational definition for stress is "the state manifested by a specific syndrome which consists of all the nonspecifically-induced changes within a biologic system" (Seyle, 1978, p. 64). Another definition is "Stress is the state manifested by a specific syndrome which consists of all the nonspecifically induced changes within a biologic system" (p. 54). Stress is defined as "a process of transactions between the individual and his environment (cf. Lazarus, 1966, 1977), and hormonal measurements are seen as tools by which new insights can be gained into the dynamics of these transactions" (Frankenhaeuser, 1980, p. 47). "Stress is the body's reaction to wear and tear" (Kerner, 1961, p. 57).

Some researchers use "Stress" merely to identify pressures and demands encountered and the term "strain" to refer to the reaction to Stress (Boardman & Bozeman, 2007; Lease, 1999). Others use Stress to identify a mismatch between coping abilities and demands encountered. Implications of the use of the term Stress need to be carefully delineated.

Some researchers consider Stress a vague construct without a clear framework. Although much attention and research has focused on Stress and its links to lived experience, mental wellbeing, and physical health, interest in the topic is not limited to academia. After reviewing developments on the term Stress through the work of Cannon, Selye, and others, Hobföll (1989) proposes a new stress model, which he identifies as the Model of Conservation of Resources as an alternative. This model includes stimulus definitions of Stress as well as event-perception viewpoints. It also allows for

homeostatic and transactional models but considers the conservation of resources as a more comprehensive and adaptive model, which reflects current knowledge regarding Stress better.

Homeostasis

The groundwork for the concept of homeostasis was developed by Hippocrates who taught Grecian students disease was not only suffering, it was also toil for the body in its attempt to restore a state of health. Claude Bernard (1865/1949) took these concepts a step further by explaining to French medical students how to recognize the body's ability to achieve internal constancy in spite of environmental changes. Walter Cannon (1932) introduced the term homeostasis to describe this state. Disease is the toil, fight, or Stress to maintain homeostasis. Three principles to achieve homeostasis are: determine personal natural stress level and run with it, practice altruistic egoism, and earn the love of your neighbor (Selye, 1980).

Prevalence and Impact

"Emotional stress is almost five times as prevalent in heart attack victims as it is in persons with normal hearts" (Seyle, 1956, pp. 21-22). "The secret of health, therefore, lies in the successful adjustment to changing stresses" (Seyle, 1956, p. 64). More than a few studies have been performed to study the impact of physiologic Stress. Several studies demonstrate the ability to learn and compensate for the effects of stressful stimuli as in pain and fear (Miller, 1980). Learning may also change the responses to these stressors.

Relationships

Unraveling the complex relationships in adaptations to stress is best performed on three levels: social, psychological, and physiological (Lazarus, Cohen, Folkman, Kanner, & Schaefer, 1980). The individual appraisal of situations also has an impact: benign, neutral, or stressful. If stressful, the response can be categorized in three forms: harm-loss, threat, and challenge. "Cognitive appraisal, emotions, and coping are interdependent processes. For example, cognitive appraisal influences the quality and intensity of the emotional response, while appraisal and emotion together influence the choice of coping strategy and its effectiveness. Coming full circle, feedback about the success of coping can mold subsequent cognitive appraisals" (Lazarus et al., 1980, pp. 112-113).

Effects of Stress

Stress impacts mission, strategy, market dynamics, program quality, morale, organization and leadership, faculty role, and short budget horizons. The environment is more pressured with heavier workloads, landscaping and buildings deteriorate since early detection is not in place, classrooms and libraries are crowded, degrees are completed in extended schedules, costs escalate, conflict intensifies and becomes more frequent, uncertainty increases, morale lowers, personnel commitment drops with a decreased sense of validity (Leslie & Fretwell, 1996). Conflict seems to characterize decision making in times of fiscal stress.

While internal communication, which is open and honest, may produce common understandings; it may also increase conflict. Breaking the traditional approach (changing faculty responsiveness, dysfunctional resistance to change, change too forced or too restrained, or a process too open or too closed) contributes to conflict. A balance between

open conflict and resistance versus an institutional culture characterized by delay and evasion is needed.

Organizational stress at work can contribute to personal stress levels. Irritation mediated the effect of the stress of social relationships at work on depressive symptomology (Dormann & Zapf, 2002) demonstrating the important of social relationships at work. Results of the research indicate grumpiness and irritation at work may serve as a early warning system for depression.

Economical constraints added stress to decision making. With change the current mode of operation, continuous adaptation is adamant (Leslie & Fretwell, 1996). The crisis is not only about resources; it is about values and confidence. Achieving consensus in a setting of opposition regarding focus and mission (as is not uncommon on many campuses) is a challenge. Resistance and risks related to change need to be addressed with transparent honesty. Since the power to decide is often widely dispersed, conflict often drives decisions. Schools face multiple challenges.

For example, teaching and learning theory at Bloomfield College (NJ) included the support and challenge of students to the point of disturbing them, a tactic which improved their six-year graduation rate of 9%. The school's budget is generated predominantly from tuition (70%) (Leslie & Fretwell, 1996). With changing demographics and catering to first-generation college students, one student's response to diversity rhetoric was, "I don't want to be celebrated; I want to be educated!" (p. 155).

In addition to redefining faculty roles and defining quality, adding value to the undergraduate program was given a high priority while monitoring effectiveness by assessing outcomes. Some critical indicators watched as an early warning system were

external trends, fiscal health, management effectiveness, educational vitality, and the interactions between these factors. While triaging allocation of scarce resources, qualitative data from involved persons can be extremely useful in conjunction with other objective indices. Accountability must figure in decision-making.

Accountability

Although society perceives undergraduate education at the core of accountability for higher education, fiscal solvency is directly related to public perception in terms of the ratio of tax dollars and tuition to perceived value of undergraduate education. The dilemma is determining what value to add and its effective delivery. Triage is essential to determine the most appropriate distribution of scarce resources. Continuous adaptation is the norm when one-shot strategies will not be effective. Balancing planning with learning from experience is also essential. While quality will be paid for in both times of lean means or in affluence, resilience is related to commitment to quality.

All stakeholders expect service, quality, and accountability. Since tradition and expertise are no longer satisfactory explanations, results are required. Often quality is defined by measures of student learning. Teaching well and helping students learn well is essential in the unpredictable environment and national economy. More than seven hundred American colleges and universities failed before 1860 (Leslie & Fretwell, 1996). Having a clear sense of mission and achieving consensus regarding that mission is conducive to fiscal health. “Being distinctive and purposeful is better than being all things to all people” (p. 17).

In a time of national fiscal stress, the federal government under Reagan’s leadership gradually withdrew aid to the disenfranchised and education. This legislative

strategy shifted the burden for health, education, safety, and welfare programs to states (Leslie & Fretwell, 1996). These additional requirements, obligations to provide basic services in health, education, safety, and welfare the awareness that raising taxes is political suicide, and deadlock over pork-barrel projects sponsored by powerful persons squeeze state funding in a vicegrip.

As an example of what this situation means for education in 2002, University of Massachusetts experienced a 22% cut in state appropriations. Fourteen budget cuts in five years resulted in a loss of $33 million. Tuition and fees rapidly escalated to replace $17 million of the total loss. From an operating budget of $62.1 million in 1987, that budget was trimmed to $38.7 million (Leslie & Fretwell, 1996). External stress included unpredictable changes such as economic recession, demographics, the complexities of multiple funding sources, macropolitics, micromanagement by states, political disaffection, and legal requirements. Internal stressors include deferred maintenance, tuition discounts, analytical capacity, and management challenges.

Against this background, stress for teachers is no surprise.

Teacher Stress

While Hans Seyle (1937, 1956, 1964, 1965, 1976, 1980, 1991) described three stages of stress—alarm, resistance, and exhaustion, the term, Teacher Stress, was coined by Chris Kyriacou (1977). Kyriacou and Sutcliffe (1977b, 1978b, 1979a, 1979b) used the term, Teacher Stress, to identify the physical and emotional symptoms in this occupational cohort. However, teacher health has been a concern since Terman (1913) published a book by that title. Teacher Stress is a frequent component of the educational venue.

While teaching secondary math in a disadvantaged British community in 1972, Kyriacou received a salary enhancement intended to reduce high teacher turnover rates at such schools, which teachers identified as their "stress allowance." He used the term Teacher Stress to define negative and unpleasant emotions linked to perceived threats to self-esteem and wellbeing derived from the role and work of a teacher (Kyriacou, 1980a, 1980b, 1980c, 1981, 1993, 2000, 2001, 2011; Kyriacou & Pratt, 1985). As many as a third of the teachers surveyed reported they were very or extremely stressed (Brown, Ralph, & Brember, 2002; Gold, 2001a; Gold & Roth, 1993; Kyriacou, 1987; Tellenback, Brenner, & Lofgren, 1983; Van Dick & Wagner, 2001). Teacher Stress is defined as a negative affect response syndrome in response to a teacher's job placement with inputs from demands perceived as a threat to self-esteem and activated coping mechanisms designed to reduce threats (Bucklew, 1981). Another study defined Teacher Stress as a multidimensional concept; initial Teacher Stress was defined as anxiety with chronic Teacher Stress defined as depression (Hargens, 1983).

Risks of Teacher Stress

Crippling levels of Teacher Stress prevent faculty from being efficient in their use of time, energy, and other resources. In addition to spilling into other areas of life, such teacher-stress levels also obstruct effective teaching and hamper learning (Flook, Godberg, Pinger, Bonus, & Davison, 2013). While protecting and maintaining health status is critical for an educator, being efficient and effective is difficult when health and wellbeing are compromised. High stress levels may lead to teacher attrition (Hasty, 2007). Massive change climates in a context of environmental threats cause stress levels to escalate.

Although the percentage of the American workforce complaining of excessive levels of stress is over 80 % (Eliot, 1988), only a little over half of American university faculty report stress (Gmelch, Wilke, & Lovrich, 1986). Among white-collar workers, teachers have been found to be most exposed to stress related to their occupation (Wahlund & Nerell, 1976). Instruments have been designed to study Teacher Stress specifically (Fimian, 1984; Greene, Abidin, & Kmetz, 1997; Schutz, & Long, 1988). One researcher designed a teacher-stress model after studying two random samples of secondary vocational teachers (Adams, 2001). Other researchers have developed more generic occupational stress scales but have also found teachers to be experiencing high stress levels (Osipow, 1998; Osipow & Davis, 1988; Pithers & Fogarty, 1995; Pithers & Soden, 1999, 2011).

Identified sources of faculty stress include: recognition, rewards, influence, identity, time constraints, and interactions with students (Gmelch, 1993). The faculty stress cycle consists of four stages: stressors, perceptions, responses, and consequences.

Teacher Stress has been studied in many populations of North America. Findings have been in conflict at times; for example, size of organization has significant impact on Teacher Stress versus no significance whatsoever. Classroom or organizational climate has been the topic of some teacher-stress studies (Barineau, 1981; Hubert, 1984; Hung, 2008; Ramos, 1983). Some use mixed methods for data collection (Boyer-Colon, 2009). Some studies report symptoms, sources, and prevalence (Broiles, 1982; Carico, 1985; Defabiis, 1985; Ferguson, 2006; Schlansker, 1986; Tsai, 1992; Walton, 1982). Some focused on predictors (Boyle, Borg, Falzon, & Baglioni Jr., 1995; Calder, 1984; Fisher, 2011; Ishofsky, 1998; Meehling, 1982). Occasionally a study included a health

component (Cartee, 1992; Hackett, 1982; Kinnunen, 1989; Salo, 2002). Some studies focused on a correlation between Personality Type and Teacher Stress (Herst, 2002; Lee, 2001). Efficacy figured in some of these studies (Hung, 2008; Woosley, 2000).

Australian secondary teachers also experience Teacher Stress (Burchielli & Bartram, 2006; Richardson, 1997). Unique school characteristics with conflict, inadequate resources, and tensions lead the charge. Proactive responses by teachers and schools may ameliorate the stress in a systemic response.

To determine the relationship between physical health, mental health, role overload, role responsibility, teacher efficacy, and stress, Beckley (2011) examined a random sample of 131 secondary teachers in 13 New Zealand schools. Stress and mental health levels were directly influenced negatively by role overload and role responsibility. A direct positive influence was exerted by physical health. No influence on stress and mental health level was exerted by teacher efficacy. Although researchers reported New Zealand teachers were now equipped with better academic qualifications and mentoring as additional support, an increase of 13.6% of teachers since a similar study with almost an identical random sample of participants in 1996 for a total in 2011 of 39% of teachers identified themselves to be very or extremely stressed.

Teacher Stress is not limited to English speaking areas of the globe. Nigerian secondary teachers prefer to avoid situations and persons, which cause stress to escalate (Arikewuyo, 2004). Four types of coping strategies were identified. Inactive behavioral strategies encompassed escape and avoidance tactics. Active behavioral strategies involved confrontation and attempts at changing stress sources, e.g. exercising or devoting more time and energy to the task. Inactive cognitive strategies involved

conformance with expectations of supervisors, perception of helplessness, and expression of resentment. Active cognitive strategies involved problem appraisal, verbalizing stress sources, and information seeking to restructure priorities, clarify, and discover methods to manage and reduce stress. Most Nigerian teachers indicated they preferred the first three and neglected the fourth. Rethinking the situation in active cognitive strategies did not come naturally perhaps to cultural constraints and inexperience in their use.

South African teachers also experience Stress (Boshoff, 2011). In addition to administering a teacher-stress tool, Boshoff investigated general and mental health. The team performed a physiological check-up, transporting purposively selected teachers to a metabolic unit where the surveys were administered before and after dinner and then bedded down and awakened for blood tests before breakfast and return to their schools. EKGs were taken during 6 resting cycles. Noninvasive continuous blood pressures were taken every 30 minutes during the day and every 60 minutes during the night. BMIs were calculated and recorded. In addition to the fasting glucose, GGT levels were also obtained. Data collection continued for 50 days with a maximum of participants processed at 4 per day per group. One group was Caucasian; the other group was African with the gender distribution almost equal (108 vs. 101 and 99 vs. 101).

A significant majority of African teachers reported flourishing in spite of high stress scores in a subsequent study (Boshoff, Potgieter, Van Rensburg, & Ellis, 2014). Boshoff et al. recommends further study to determine protective factors, which contribute to such resilience.

Although Teacher Stress has an inverse correlation with job satisfaction, absences, career intention, and career commitment have positive correlations in a Malta

sample where 36.6% indicated they felt stressed as teachers (Borg & Riding, 1991). Married and those who are female teachers in Istanbul also report high stress levels than singles and male teachers (Kiziltepe, 2007).

Researchers recommended that stress identification and management be inserted into a capstone course in teacher training (Brember, Brown, & Ralph, 2002). They found teacher trainees were anxious and the UK researchers believed that prevention was an improvement over attempts to cure or ameliorate symptoms after the fact.

Teachers in the UK found school inspections to contribute severely to their perceptions of stress (Brimblecombe, Ormston, & Shaw, 1995). Much of this response stems from the extra work involved in preparing documents for the inspection. A paced proactive approach on the part of administration appeared to reduce Teacher Stress in general; however, individual response is predicated on more personal terms.

A study in the UK found teachers reluctant and even afraid to discuss stress issues (Brown, Ralph, & Brember, 2002). Themes which emerged from focus group interviews included the following sources of stress: teacher-pupil relations, colleague relations, parent and community relations, change issues, school management and administration, time factors, school environments, and personal perceptions and feelings. Direct quotes preserved the perspectives of individual teachers, giving an audience to ignored or silent voices in the turbulence. Expectations (which are rising), greater workloads, and increased responsibilities contribute to teachers' feelings of inadequacy and helplessness.

Hong Kong teachers also perceive Stress to the extremity of teacher suicide (Chan, 1998). Findings indicated teachers' use of avoidant coping should be discouraged; instead active coping, confronting, and appraising stressors as challenging are skills,

which need to be encouraged. Additional training may be required with further evaluation.

In an effort to discover effective ways to assist Israeli teachers, a study was performed to determine what strategies might be identified as most helpful by the teachers themselves. Because role conflict and ambiguity were found to be antecedents to burnout in a prior research setting (Maslach, Jackson, & Leiter, 1997), Cinamon, Rich, and Westman (2007) investigated the contribution of work-family or family-work conflict to burnout (the primary component being emotional exhaustion) and the contribution of vigor (an important component of work engagement). Vigor is described as persistence, resilience, energy, and effort invested in work interactions (Schaufeli, Bakker, & Salanova, 2006). The study was designed based on the work of the above researchers assessing teachers' work-family conflict, burnout, and vigor. Although predicted by different variables, results suggested vigor and burnout as related but distinct concepts. Assisting teachers with behavioral problems of students was seen to be effective. Constructive interaction with parents of students was seen as an effective strategy to assist teachers to cope.

Malaysian teachers identified pupil misbehavior as their primary source of stress but by no means their sole source of stress (Yahaya, Hashim, & Kim, 2006). Because of reported stress levels, nearby Sabah measured the influence of a professional program and also measured self-efficacy and Teacher Stress (Madzlan, Abdullah, & Johari, 2013). While another team measured stress levels among special education teachers in Malaysia and found pupil misbehavior to be the most compelling source of stress for these teachers (Ghani, Ahmad, & Ibrahim, 2014), another team studied the stress levels of technical and

vocational education teachers in Malaysia (Rabindarang, Bing, & Yin, 2014). They found that distributed leadership had a significant inverse relationship with Teacher Stress.

Effects of Systemic Educational Change in Selected Countries Around the World

Several of the above studies have been performed in other nations to investigate contributing factors to and predictors of Teacher Stress (Ho, 2003; Hui & Chan, 1996; Hung, 2008; Kinnunen, 1989; Lee, 2001; Salo, 2002; Tsai, 1992; Vaezi & Fallah, 2011). In another study university faculty in China and Japan revealed differences in sources of major stressors. Whereas Chinese faculty stress focuses on professional evaluation, Japanese faculty identify lack of time to fulfill demands and complete tasks as their greatest stress (He et al., 2000).

Because stress is self-identified by means of signs and symptoms, these may be objectively examined and discussed. The BSI (Derogatis, 1993) is structured to elicit responses on three levels: global, dimensional, and discrete symptom. The design is intended to integrate and describe the nature and intensity of psychological distress in the respondent. The Derogatis tool is intended as a screening device and may be diagnostic. One research team (Benishek, Hayes, Bieschke, & Stoffelmayr, 1998) found the Global Severity Index (GSI) to be the most reliable score. It must be noted that the sample (453 substance abusers) is a very different population from the one in this study.

Because a research team (Skeem et al., 2006) discovered increased hostility scores in high-risk patients predicted the significant higher risk of community violence the following week, a research team at University of Pittsburgh (Center for Research on Health Care Data Center, 2015) conducted a study of over 1300 incarcerated teens in Phoenix, AZ and Philadelphia, PA, enrolling participants at least 14 years of age and no

more than 18 years old at the start of the research project, guilty of felonies, with parental consent. Males with drug charges were capped at 15%. All females were recruited. The declination rate was 20%. Participants qualified for $50 to $115 per interview period. The initial baseline interview was conducted in two two-hour sessions. A battery of instruments (of which the BSI was an integral component) was administered along with a focused interview. Collateral baseline interviews were conducted usually with parents. Subsequent collateral interviews were usually peers. These additional interviews were discontinued after three years related to rising cost and the declining value of corroborated information. Follow-up interviews were conducted at six-month intervals for the first two years, which were continued annually for an additional five years. The first baseline interview was conducted in November 2000. The final follow-up interview was completed March 31, 2010.

Lamb (2010) reported on the use of the BSI to identify problems and to design and individual interventions for high-risk students and their families in 3 Kindergarten cohorts: 1991, 1992, and 1993. The four participating universities screened 10,000 children for a sample of 891. They reported low attrition with 80% of their sample with continued participation in Year 20 of the study. Normative and control cohorts were used at matching schools in the four geographic areas of the United States.

An additional study (Stewart et al., 2010) was performed on over 1300 Canadian male inmates screened from February 2008 to April 2009 to determine the need for additional evaluation using the BSI.

After the report of Skeem et al., a team in Iran examined a sample of behavior medical patients and validated the use of the BSI in this population (Mohammadkhani,

Dobson, Amiri, & Ghafari, 2010). Drug users in the states of Ohio, Arkansas, and Kentucky were participants in a study to examine an abbreviated form of the BSI pared down to only 18 items (Wang et al., 2010). Findings were invariant across the populations. This study was later replicated in China (Wang, Kelly, Liu, Zhang, & Hao, 2013). Although the results from the 18-item BSI were highly skewed in the Chinese drug-user population, tentative support for a single general psychological distress index was supported.

The 53-item BSI was used to assess and structure interventions for two large cohorts of felonious teens in Phoenix and Philadelphia (Mulvey, 2015). In addition to following this high-risk population who were paid $50 to $115 depending on the interview period, collateral informant interviews were also performed over the course of seven years.

Efficacy Beliefs

Efficacy Beliefs involve four processes: cognitive, motivational, affective, and selection (Bandura, 1994). The state of arousal, an affective process, would be interpreted as facilitating performance for the individual with high Efficacy Beliefs; whereas, this state would be viewed as debilitative by those with low efficacy. Chan (2005) considers Efficacy Beliefs a powerful tool for improving education.

To explore the role of Efficacy, several studies have been performed (Cerit, 2010; Chan, 2008c; Cheng, 2006; Dunn-Wisner, 2004; Goddard, Hoy, & Hoy, 2000; Goor, 1990; Harmon-Bowman, 1981; Ho & Hau, 2004; Hyson, 1991; Melvin, 1991; Slack-Williams, 1996). Teachers achieving high performance demonstrated high levels of Efficacy. Statistically significant correlations between hardiness, satisfaction, and

efficacy were documented using Stress as the dependent variable. In one of the studies school climate was a significant predictor of Teacher Stress (Dunn-Wisner, 2004). In this study the relationship between Efficacy and teacher-stress levels was inverse. Another study discovered not only did Teacher Efficacy portend better results, negative affect also played a role resulting in a recommendation for professional guidance programs designed to encourage teacher efficacy development and to improve negative emotion management for teachers (Everaert & Van der Wolf, 2007). Internal locus of control has also been found to impact Efficacy and Stress (Parkay, Greenwood, Olejnik, & Proller, 1988).

The TES (Gibson & Dembo, 1984) was selected to determine Efficacy Beliefs of faculty and staff at MA. Several other constructs play a minor role in the study of Teacher Stress. For this reason the following tools were selected with brief descriptions of the rationale for their inclusion.

Teacher Burnout

Teacher burnout refers to a severe negative state in which coping resources are depleted including physical, emotional, mental, and attitudinal exhaustion (Evers & Tomic, 2003; Gold, 2001a, 2001b). Although limited to a sample of elementary teachers, Kijai and Totten (1995) found attitudes toward students, coping ability related to employment, and satisfaction with teaching were predictors of teacher burnout in a national study. An effective means of preventing teacher burnout is reported by Waddell (2007) in the strong link between resiliency and efficacy. High expectations for student achievement, confidence, and a strong sense of ownership contributed to student success and increased resilience in teachers as they shared responsibility for student success with their students. Perhaps the most important expectation is the one teachers hold for

themselves since Whitaker (2004) found that higher expectations of teachers for themselves mattered the most.

Attitudes are strategic in the development of resilience according to White (1951). “Courage, hope, faith, sympathy, love, promote health and prolong life. A contented mind, a cheerful spirit, is health to the body and strength to the soul” (p. 344).

Resilience

Resilience is defined with three components: distinctiveness, effectiveness in mission, and quality. Quality is defined as providing students what they need in order to become autonomous, achieving adults in terms of knowledge, skills, and values (Leslie & Fretwell, 1996). Increased resilience is the product of purposeful change.

Conceptualization of the Study Framework

The following conceptions were used as a contextual background in designing the study.

Personality Theory

Personality theory implies some relationship between traits and health. Myers and Briggs (n.d.) applied and popularized the concepts of Carl Jung’s *Psychological Types* (1921/1971). The purpose of this personality theory is to promote personal growth and development while appreciating individual differences and increasing productivity. From the several tools available by Myers and Briggs, the MBTI was selected.

Lewis Goldberg’s (1993) Big Five Model is a similar framework from which to examine personality type. Using the acronym, OCEAN, it consists of openness to experience, conscientiousness, extraversion, agreeableness, and neuroticism.

Personality dispositions influence job satisfaction through core self evaluations constructed from self-esteem, locus of control, efficacy, neuroticism (Dormann, Fay, Zapf, & Frese, 2006). Dispositional influences have been criticized and hotly debated (Dormann & Zapf, 2001).

Health Practices

Health or wellness is preserved on the basis of beneficial behaviors, which are practiced, engaged in, or harmful behaviors which are avoided.

Health Promotion Model

The Health Promotion Model encourages the examination of variables impacting health-behavior choices (Pender et al., 2006) as a disease prevention theory drawing on the work of Florence Nightingale (1860). The tool has been validated by a confirmatory factor analysis on a Taiwanese sample of middle-aged women (Meihan & Chung-Ngok, 2011). It has also been used for dealing with adult health in a sample of 11,144 Chinese college students (Bi et al., 2014) and in 1,350 Iranian women of reproductive age (Baheirael et al., 2011). The customary health practices of faculty and staff at MA were elicited by Pender's HPLP instrument (Walker et al., 1987).

Wellness is neglected in studies of teachers (Lau, Chan, Yuen, Myers, & Lee, 2008); yet wellness is a critical component of their resistance to stress. The tendency of change to induce stress is well known. Some researchers define wellness in terms of work engagement (Van Wyk, 2006). South African secondary teachers demonstrated that optimism and efficacy predicted health.

These concepts are in the background of this study as contextual concepts driving

the entire educational change project. A mixed methods approach was planned with concurrent procedures since qualitative and quantitative data is collected simultaneously.

Examining Teacher Stress in an Educational Change Project

The impact of participation in such extensive change was examined by observing faculty perception of health and their health practices as an indication of Teacher Stress. This was designed as a form of action research in health (Stringer & Genat, 2004). (Data obtained from individuals was used to inform groups, organizations, and communities.) To extract this data the Health Promotion Model (Pender et al., 2006) was used to examine health-specific and behavior-specific outcomes measures as elicited in her revised tool in order to determine efforts to compensate for anticipated Teacher Stress.

The tool was derived from constructs obtained from expectancy-value theory and social cognitive theory. Social cognitive theory (Bandura, 1986—symbolization, forethought, vicarious learning, self-regulation, self-reflection) is based on the expectancy-value model regarding motivation (Feather, 1982). This model describes behavior as rational and economical.

Behavior is engaged based on personal perception regarding the extent of the anticipated outcome of positive value and personal perception of the degree the behavior has in the likely achievement of desired outcome. The premise is persons will not invest time and energy in goals of no value to themselves nor will they invest in attractive goals, which are perceived as impossible to attain. Subjective value and subjective expectancy are at the basis of personal change. The more dissatisfaction with the person's current situation, the more motivational significance there is in the subjective value of change, described as perceived benefits. Motivational significance is also involved in the

subjective expectancy of successful achievement of change. This would be based on prior personal success or the success of others coupled with confidence that similar or superior success is achievable. Avoidance-oriented (threat) models have not been useful in changing health practices (Pender et al., 2006).

Motivation for Study

When I was invited to be a part of the research team at MA, I obtained an educational leave from Bethel College to participate in this opportunity. I welcomed the opportunity to obtain answers to my research questions and participate in the innovation. In the position of a participant observer, I functioned as an assistant to the principal, while studying the implementation of educational change and concurrently studying potential Teacher Stress among the faculty and staff.

In my experience with orienting, supporting, substituting for, and co-teaching with nursing faculty at Bethel College, I observed Teacher Stress. I want to be an effective educational administrator and help others to avoid a state of decompensation related to Teacher Stress as well.

This paper first presents signs, symptoms, and components of Teacher Stress. Second, contributing factors of Efficacy Beliefs and Personality Type are enumerated. Third, compensatory options in choice of Health Practices are explored and examined for possible relationships. Last, recommendations are presented.

CHAPTER 3

DATA COLLECTION METHODOLOGY

Introduction

The purpose of this study convergent mixed-methods case study (Creswell, 2011) with simultaneous quantitative-qualitative segments was to investigate perceptions of stress of faculty and staff involved with school-based systemic change implementation at MA. The relationship between self-reported stress symptoms, Efficacy Beliefs, Personality Type, and Health Practices of all faculty and staff at a residential secondary school engaged in the process of comprehensive systemic change were examined. A simultaneous quantitative-qualitative design was adopted for the study with self-report surveys and participant observations. This design gathers quantitative data from surveys and uses quantitative techniques and methods (Creswell, 2014). Numbers are used along with statistics and analysis. Also both deductive and inductive logic were used to examine data collection producing reports in this model. A case study is defined as "an in-depth description and analysis of a bounded system" (Merriam & Tisdell, 2016, p. 37). Case study research furnishes "an up-close . . . understanding of a single [case set] in [its] real-world context" (Yin, 2012, p. 4), and is useful when "a desire [arises] to understand complex social phenomena" (Yin, 2014, p. 4).

Seven features of participant observation are:

1. Interest in obtaining meaning and interaction from the perspective of insiders of a particular setting
2. Every day location in the here and now
3. Theorizing on the understanding and interpretation of existence
4. Flexible, open-ended inquiry in concrete setting
5. Qualitative in-depth case study design
6. Participant role that maintains relationships with insiders (natives)
7. Direct observation along with other data collection modes (Jorgensen, 1989).

Although participant observation is a very common mode of qualitative research, Iacono, Brown, and Holtham (2009) explore its criticisms. They report it lacks breadth; consequently, it lacks generalizability. Participant observation has a potential lack of objectivity, and the potential complication posed by the influence of the presence of the investigator. Its findings may be cloyed by the relationship with the investigator. Some participants may be suspicious, reluctant to participate; others may be too eager to please.

The quantitative method of data collection and data analysis permits a view of the statistical and numerical sides of a problem. The anticipation is that this approach would provide confirmation of the accuracy of the data. The use of quantitative research and analysis fits a deductive method. A quantitative approach yields correlations in the statistical report produced.

The intended outcome of a mixed-methods research design is heightened accuracy in data collection and interpretation.

> Basically, qualitative researchers are interested in understanding the meaning people have constructed; that is, how people make sense of their world and the experiences they have in the world. . . . The focus is on process, understanding, and meaning; the researcher is primary instrument of data collection and analysis;

> the process is inductive; and the product is richly descriptive. (Merriam & Tisdell, 2016, p. 15)

This study used participant observation as the qualitative portion of the study. Participant observation is defined as "research in which the researcher observes and to some degree participates in the action being studied, as the action is happening" (Lichterman, 2002, p. 120).

> Participant observation is a qualitative research method. It is an inductive form of research and generally very helpful in the generation and modification of hypotheses. In deduction, hypotheses or experimental results will be accepted or rejected based on tests. Participant observation is used while formulating hypotheses and collecting data to check for exceptions. (Krishnaswamy, Sivakumar, & Mathirajan, 2006, p. 172).

> Participant observation is a method in which a researcher takes part in the daily activities, rituals, interactions, and events of a group of people as one of the means of learning the explicit and tacit aspects of their life routines and their culture. (DeWalt & DeWalt, 2011, p. 1)

Since some report "six out of seven cases" (Iacono et al., 2009, p. 6) of qualitative research use participant observation, this is a common technique of data collection.

Participants

The participants for this study were the faculty and staff of a Midwest resident secondary school. Of the 28 adults associated with the school, four did not participate in any way due to the peripheral nature of their involvement: a marketing director, a bus driver who seldom drove the bus, a public high school teacher who did Driver's Education for students on a limited part-time basis, and a full-time work supervisor off site in a neighboring community.

Of the remaining 24 study participants, five were full-time teaching faculty and ten were part-time teaching faculty while four full-time staff carried no officially

assigned teaching assignments, and five part-time staff also were without teaching assignments. Some of the ten part-time teaching faculty carried other responsibilities: five of them were also full-time staff, one was part-time staff in addition to teaching, and four carried no responsibilities in the program other than their part-time teaching load.

Data Collection

Quantitative data were obtained by surveys administered at the beginning of the school year in September 2005 to establish baselines. Data collection for this descriptive case study continued during the 2005-2006 academic year. Surveys were re-administered at intervals during the school year to determine the presence of any changes.

Quantitative Data: Instrumentation

Quantitative data collection was obtained using four well-known scales commonly used in educational research. These instruments were selected for their ability to measure specific constructs or concepts as standardized instruments: Stress—BSI (Derogatis, 1975), Efficacy Beliefs—TES (Gibson & Dembo, 1984), Personality Type—MBTI (Myers-Briggs Type Indicator Trust, 1998), and Health Practices—HPLP (Walker et al., 1987). These questionnaires and school-specific data (e.g., monthly parental reports) served as sources for quantitative data collection.

Symptoms of Stress

Symptoms of Stress were elicited or disconfirmed by using Derogatis' (1975) BSI. Designed for the general adult population, the BSI uses a 5-point Likert-scale (0="not at all" to 4="extremely") to determine response to the activities of daily living. The BSI reliability is reported at .71 on psychoticism to .85 on depression. At least two

studies have validated comparable internal consistency coefficients (Aroian & Patsdaughter, 1989; Croog et al., 1986). The GSI tested at a coefficient of .90 for consistency. Other global indices include Positive Symptom Distress Index (PSDI) and Positive Symptom Total (PST). The subscales include: Somatization (SOM), Obsessive Compulsive (OC), Interpersonal Sensitivity (IS), Depression (DEP), Anxiety (ANX), Hostility (HOS), Phobic Anxiety (PHOB), Paranoid Ideation (PAR), Psychoticism (PSY), and the above indices. Values for PST range between 0 and 53; other values range between 0.00 and 4.00. Internal reliability averages above .7 for each of the scales. Test-retest reliability was .68 to .91 (Derogatis, 1993).

Efficacy Beliefs

Efficacy Beliefs were measured using Gibson and Dembo's (1984) instrument. While using a Likert-scale to elicit response to 30 items, the TES has been used extensively for twenty years to provide indicators of a teacher's sense of empowerment with implications for reaction to change. This tool includes two subscales: Personal Teacher Efficacy (PTE) and General Teacher Efficacy (GTE). Gibson and Dembo's (1984) PTE corresponds to the self-efficacy dimension described by Bandura (1977); whereas, their GTE clearly corresponds to his outcome expectancy dimension. The PTE's alpha coefficient was .78 while the GTE's was .75 as reported by Gibson and Dembo. Internal consistency reliabilities were .83 for PTE and .73 for GTE when replicated in a study performed by Kurz and Knight (2004). Factor analysis was performed by Deemer and Minke (2001).

Another definition of self-efficacy ("an individual belief that one is capable of performing the specific behavior with the purpose to achieve the particular goal") is

quoted by Hassan, Pheng, and Yew (2013, p. 111, as cited in Duffy & Lent, 2009).

Basic Personality Type

Basic personality type was identified by administering the MBTI (Myers-Briggs Type Indicator Trust, 1998). The MBTI, based on Jung's theories, uses pairs of responses to elicit self-reported data about multiple personality traits with implications for reaction to change. The MBTI contains four opposite pairs referred to as dichotomies: These may be organized in 16 different combinations. The eight dichotomies are: Extraversion, Introversion, Sensing, Intuition, Thinking, Feeling, Judging, and Perceiving. Some discussion exists about the reliability of this tool; however, the *Form M*'s scores are higher than previous versions as reported in the MBTI manual.

Although exactly half the 118 university students tested in an introductory psychology course ranked their same Personality Type as their first choice for accuracy and only 27% rated their own Personality Type as very true of themselves, Carskadon and Cook (1982) found patterns of rankings to be exactly as predicted and confirmed as nonrandom by Chi-square analysis with further confirmation of significance by a Friedman two-way ANOVA. Although the instrument was birthed in a living room instead of academia, numerous studies and dissertation research have used the MBTI. Cunningham (2012) reported at least 2 million take the MBTI annually. Grant (2013) reports this number to exceed 2.5 million annually. One study attempted to determine if resident assistants at three higher education institutions shared a dominant MBTI profile (Krouse, 2006). No one particular personality type dominated this research study; however, some significant differences in profile type appeared related to type of institution and gender. These differences didn't relate to race or ethnicity.

The MBTI was used to determine the existence of a relationship between the MBTI and college search related coping behaviors (Golden, 2009). Differences in relation to disengagement did appear between the 285 introverts and extraverts in the 11th and 12th graders participating in the study. But regression model effect sizes were small overall.

The MBTI was also used to determine the most common preferred learning style among technology graduate students (Hogan, 2009). Interestingly technology graduate students at one university preferred ESTJ (Extraversion, Sensing, Thinking, Judging) while technology graduate students at another university preferred ENTJ (Extraversion, Intuition, Thinking, Judging). Researches used the information from the 121 participants to improve the curriculum with the aim of increasing student satisfaction and to develop effective approaches to recommend to other teachers based on these personality type preferences.

Health Practices

Usual and customary health practices were identified by means of Pender's (Walker et al., 1987) HPLP instrument. This instrument measures perceptions of self-initiated behavior to maintain or enhance wellness, self-actualization, and fulfillment in a Likert-scale format. Six scales are contained in this tool: Health Responsibility, Physical Activity, Nutrition, Spiritual Growth, Interpersonal Relations, and Stress Management. Researchers reported reliability and construct validity in Pinar, Celik, and Bahcecik's (2009) report of using the tool with a Turkish population.

Protecting Human Subjects

Faculty and staff signed a consent form explaining participation was not required.

Although they were assured they would not be penalized for refusal to participate, all faculty and staff chose to participate. The intensity of their participation varied depending on their job descriptions. For example, classroom teachers tended to be more involved in the refinement of the innovation than the support staff members in the cafeteria or other settings based on self-requested admission to additional meetings with the principal.

I reviewed the consent form with each participant. The document was then signed and witnessed by another individual in addition to myself. All consents and data were stored in a locked file in my office. The key was kept in my possession at all times.

Original data for all research participants were maintained with confidentiality as described above and reported anonymously. Quantitative and statistical analyses were performed on aggregated data. No personal identification was attached to any specific data for articles or presentations of the research findings.

Data Analysis

The data was analyzed using the Statistical Package for the Social Sciences (SPSS) version 15, an International Business Machines (IBM) product produced in Chicago, Illinois. Participant observations were organized into a narrative to enhance reader understanding of the data collection situation and experiences.

Identification of Variables

Four variables were investigated for correlation relationships: Stress symptoms, Teacher Efficacy, Personality Type, and Health Practices. Operational definitions of Stress are any elevations recorded on the Derogatis' (1975) BSI by participants. The operational definition of Teacher Efficacy is significant factor loading on any of the items of Gibson and Dembo's (1984) TES resulting in a designation of high or low Teacher

Efficacy rating. Bandura (1977) identified two kinds of efficacy. One was a personal efficacy, which he used to describe the belief in successful behavior execution for desired outcomes. The second described outcome expectancy. These operate in tandem. Belief that behavior will produce the desired outcome is separate from belief in ability to perform necessary behavior. If a person lacks conviction in their performance, relevant behavior is not attempted, initiated, nor engaged in with persistence. The operational definition of Personality Type is defined by the MBTI. The operational definition of Health Practices is the self-initiated health practices of participants as identified on Pender's (Walker et al., 1987) HPLP.

Among the faculty and staff participating in the systemic change at MA, the null hypotheses are:

1. There is no relationship between Stress and Efficacy Beliefs.
2. There is no relationship between Stress and Personality Type.
3. There is no relationship between Stress and Health Practices.

Summary

Faculty and staff perceptions of Stress, Efficacy, their Personality Type, and Health Practices were obtained by surveys.

CHAPTER 4

SETTING THE STAGE FOR STRESS: EDUCATIONAL SYSTEMIC CHANGE AT MIDWEST ACADEMY

Introduction

A faith-based residential secondary school, MA, was located not far from a large metropolitan area. Originally purchased as 48 acres of farmland in 1909, the property was converted into a school. After the 1934 merger with three other similar faith-based day schools in the area, the original acreage was sold in 1958 due to the industrial, business, and residentially dense suburb then surrounding the school. A larger farm property farther away from the city center was purchased and the process was begun again in constructing a larger facility to accommodate the expanding student population (www.midwestacademy.org/history).[1]

Although at its heyday MA accommodated 350 students, enrollment was below 100 at the time of this study. The facility was not fully used so in some building unused wings were blocked off and unheated in an attempt to keep expenses at a minimum.

The educational change initiative of the residential secondary school program began with a session scheduled after the 2005 graduation.

Initial Planning Session

When faculty and staff met with the new principal less than a week after the end

[1]Obviously this is not the name of the organization. I changed it to preserve anonymity.

of year ceremonies in early June, planning began in earnest. Opening on Friday evening in the principal's residence, the entire house was empty with the exception of folding chairs and a few tables brought in for the session. The president of the local sponsoring organization, the educational director of the regional organization, guest speakers (two university professors from Florida), three new faculty members, and I were present in addition to other faculty and staff already on site.

After introductions were made, the conference president presented a devotional opening the session. Several presentations set the stage for the implementation of a major educational change during the Friday evening, Sabbath, and Sunday hours. Titles were: Unique Philosophy of Adventist Education: Reaching the Adolescent Heart, Explosive Growth in History of Adventist Education, Building a Great Organization, Communication: The Currency of Relationships, Purpose of Adventist Schools, The Value of Student-centered Teachers.

At the close of Sunday evening session, the air was electric with potential possibilities with the faculty and staff eager to explore them but expressing dismay that they would never be allowed to attempt them. At this point the principal provided copies of the letter from the NAD Department of Education granting him permission to adopt something new and different for the curriculum at MA. The faculty and staff exited buoyant with enthusiasm.

In preparing faculty and staff for the task at hand, the principal reviewed the history of Christian education, shared research findings on student learning, and examined biblical models and concepts of education in constructing the foundation for the task of redesigning the educational program of MA. A summary follows.

Biblical Models for Education

The Eden School

Contemplation of the first faculty and the first pupils in the first school on the planet, the garden classroom "eastward in Eden" (Gen 2:8) is a place to begin for a Christian educator. The benevolent, accessible faculty of this ideal school, the epitome of perfection in education, was comprised of heavenly beings. God met with the two learners in the cool of the day in the garden classroom characterized with sunshine, fresh air, nutritious food, water, exercise, temperance, rest, and trust in their educators (White, 1952).

Although angels counseled and instructed the learners, their education was under the direct supervision of their Creator, the Master Educator. The curriculum is not identified in Genesis; however, the reader is led to believe the sessions were student-centered and perhaps initiated by student-generated questions, which arose from the hours invested in the practicum experience. These Problem-Based Learning (Barrows, 1996) activities were designed "as a blessing, to strengthen the body, to expand the mind, and to develop the character" (White, 1952, p. 21).

Old Testament Models

While the initial educational system used God Himself as faculty, the expulsion of the first learners interrupted this plan. Years after the flood which Bishop James Ussher estimated to be in 2349BC (Robinson, 2005), few enslaved parents were adequately prepared to educate their children. So the next curricular model used the wilderness as the classroom. For textbook, God encapsulated His character in stone. While this law taught what learners were powerless to attain, the tabernacle taught pardon and power through

the Lamb of God. Learners pooled their resources, time, and energy in the project of constructing the sanctuary in cooperative learning (Johnson & Johnson, 1999). Training, discipline, and organization were celebrated in practice and in song.

After the settlement of the Promised Land, three annual trips to Jerusalem for education, celebration, and worship completed the curricular cycle centered in the care of plants and animals—similar to the Eden school. Agricultural pursuits were suspended every seventh year devoted to education, worship, and benevolence. Since God's plan for the family homeschool was imperfectly implemented, Samuel established the schools of the prophets: one at Ramah, his home, the other at Kirjath-jearim. The intended outcome was qualified God-fearing leaders for the nation. While the young men were taught a trade, learners and faculty supported themselves by agriculture or mechanical employment. Topics in the curriculum were prayer, "the law of God, with the instruction given to Moses, sacred history, sacred music, and poetry" (White, 1952, p. 47).

The School of Christ

While schools of Christ's day belittled great things and magnified small things (White, 1952), His education derived from useful work, Bible memorization, nature study, and life experiences. With these credentials this Teacher bound learners "to His heart by the ties of love and devotion; and by the same ties He bound them to their fellow men" (p. 80). Although He discerned infinite possibilities in each human being, "Christ was a faithful reprover. Never lived there another who so hated evil; never another whose denunciation of it was so fearless" (p. 79).

Christ used the curriculum from the first Eden school in the preparation of His disciples. They were His family and accompanied Him everywhere. Their classroom was

the mountainside where they sat together, the seaside, a fisherman's boat, or the path as they walked. Unity was the desired outcome for these budding teachers and potential leaders. Although reproved, they did not leave Him and He did not withdraw from them because of their errors. The gospel was carried to every nation under heaven in a single generation because of the efforts of these graduates (White, 1952).

Implications for Modern Schools

In view of the effectiveness of Christ's methods, White (1968) encouraged teachers to pattern their instruction after the model Christ left, to draw close to people, to treat calamities as "disguised blessings" (p. 272), to plant hope in place of despair, to represent Christ as a sacred privilege. "As teachers strive to do this, they may cherish the reassuring conviction that the Savior is close beside them, giving them words to speak for Him, pointing out ways in which they can show forth His excellence" (p. 274). Faculty require symmetrical characters and well balanced minds (White, 1923) that bind the hearts of learners to their own. Faculty who are thoughtful, considerate, and in touch with their own weakness and infirmities will not oppress nor discourage learners.

These thoughts guided the ensuing discussion as faculty and staff identified and crystallized their vision of desired educational outcomes in terms of what an ideal MA graduate would be in appearance and behavior.

Group Discussion and Task Work

The general focus of the desired outcomes was determined by whole group discussion, which resulted in the acronym, MA Cares. While initially these concepts were articulated in nebulous terms, they were refined further in small group activities with additional whole group discussion to achieve consensus until the concepts were crisp and

clear to all. Although some group activities had been used during the weekend, these did not require relocation of group members. As the complexity of group activities intensified during the following week, more space was needed. The principal not only clarified each task while the group was still together, he reminded groups they were working on pieces of the program for the whole faculty and staff in order to diffuse territorialism and increase group sense of ownership. Small groups of three and four faculty worked together in carpeted basement, first, and second floor rooms, drafting ideas and preparing them for presentations to other faculty. After a short delay to permit groups to assemble in various areas of the empty house, the principal visited each group to answer questions and reiterate assigned tasks and explicit forms of demonstrating task completion.

Usually task work was evidenced in recording ideas and decisions on sheets of easel paper posted on the walls in the central areas of the home. These were recorded by digital photo shots capturing the work as it progressed. General curricular goals evolved into more specific format. A campus daily schedule was drafted. Groups initially were formed by direct assignment linking new and previous faculty together. By midweek groups were formed by self-selection. Faculty and staff were deeply invested in the process, as was demonstrated by the commitment to meet deadlines by working late into the night hours with their teammates.

Student and Parental Involvement

At the end of the week, curricular products were refined and presented to a group of students and parents at the close of the Thursday session. As questions surfaced and were directed to the principal, his head turned and his eyes surveyed the faculty and staff,

"Who would like to answer this question?" and he waited silently until a faculty member spoke. The time lapse diminished as faculty sensed the principal's commitment to shared ownership of the program.

At student expression of anxiety regarding the perceived hazards to seniors implied in the implementation of the new curriculum, the principal offered to return to the previous curricular program. This offer was met with a instantaneous resounding and adamant "No" in unison from several students present. Although a wealth of supporting literature had been provided to faculty, the principal fielded the one question directly relating to the prior use of similar changes in educational circles. The principal referenced the materials shared with faculty regarding Ted Sizer's (Coalition of Essential Schools, 1984) essential schools and assured the worried parent that many of the ideas proposed by faculty were being implemented in other schools of the nation.

Task Progress

Friday morning saw a scurry of activity as documents were edited and polished and plans finalized and submitted. These were admired by all present and further edits were accepted as concepts became further refined and clarified. Although the principal acknowledged much work had been accomplished, he recruited several faculty and staff to assist with further refinement over the course of the summer. He alerted faculty and staff to the need to continue refinement during the school year as well when students and faculty joined forces refining and working the curriculum together.

Concurrent Sessions

Admission committee meetings occurred as needed during the week's sessions. The principal met with each student and family to determine readiness and willingness to

participate in the educational innovation on campus. A notebook-format student handbook was devised to present the curricular program with student and faculty expectations and commitments delineated. These were issued to each student and family.

The School Year Begins

Teams of alumni and interested persons met on campus in early August to ready the grounds and buildings for the beginning of school. Registration occurred late August and classes began the following day. The schedule began at 6:30 am breakfast with worship at 7:10 am and first class at 7:40. Although during the previous school year breakfast attendance had been only 10% of the student body, 98% of the students attended breakfast as the school year began since materials to fill lunch sacks were prepared and packed during breakfast. With the incentive of possible starvation, motivation to get up was high since lunch availability rested solely with the individual student. The sack lunches were delivered at 11:20 am to the classroom-building lobby but none materialized for those few sleepyheads who failed to get up and pack their own. As the weather became cold, hot soup and bread or crackers were provided for all in addition to their packed lunch. Those who failed to pack a lunch filled out the roll sheet to obtain the hot soup. Supper, a hot meal, was served at 5:00 pm.

Class Time

Instead of discrete class sessions, most of the day was filled with project time after time allotted for personal devotions and breakfast with time also allocated to family groups for worship and supervision of projects. At 8:16 am formal project time began with Period A, followed by B, C, and D. These were 50-minute internals separated by

3-minute breaks indicated by a hallway bell-system. A 40-minute lunch break began at 11:45am.

Students were either at work assignments or in Period E project time from 12:45pm to 3:45 pm. After a 10-minute assembly for announcements and campus news, a 47-minute project time ensued to enable students to work together in groups accompanied by much talking, teasing, and laughing. At 5:03pm music groups met on individual days: such as choir and band. Students who did not participate in the respective musical groups remained in the project room under assigned faculty supervision. (Voice and instrument lessons were sprinkled throughout the day as arranged for individual students.) These rehearsals were scheduled impinging on the supper hour so students hurried across campus to enjoy the last meal of the day with their nonmusical peers who were already ingesting the evening delicious menu.

Recreation and club meetings began at 6:15pm for 45-minute sessions. Respective dorm worships began 15 minutes later and were usually only 10 minutes in duration. Study hall from 8-10pm consumed the remaining waking hours.

Although most courses were structured to occur in an individualized format between teacher and student on an as needed basis, group sessions began to materialize as second semester challenges indicated a demand for similar knowledge in various groups of students in order to complete their projects. Those students who kept timely in project progress and completion were not required to attend these additional more formal teaching sessions; however, these self-initiating students sometimes chose to attend as well. Keyboarding, Spanish, and math courses were scheduled in firm time commitments from the beginning of the academic year.

Before school began, tabletops were divided into study cubicles for individual students who were able to self-select their preferred spot in the "Commons." A wall between two classrooms had been removed to provide a large area for the project room. Two faculty offices were located within this space with large plate glass windows positioned on all sides for ready location of faculty and students.

The classroom across the hall was opened and designed to accommodate group projects. The culinary classes met in this large room on Friday mornings. Friday had a more relaxed schedule. Weekly sessions were scheduled for art, health, and cooking with time allocated to projects also.

The computer lab was used for keyboarding courses, math remediation, word processing/study, and web surfing.

Developments

Three weeks into the semester, the librarians reported low usage of space (since most students remained in their assigned study carrels in the Project Room) but check out of materials had already tripled the entire amount of loaned materials the previous year. Even the video library resources were in high demand.

Use of new software for registration and record keeping and the resulting unfamiliarity with the software complicated tracking attendance records to the point that attendance became an issue. Related to this inattention to the attendance policy, students began to consider skipping class and especially project time "didn't matter." To correct the attendance situation, the policy was revamped, clarified, and announced by the principal prior to the October home leave. By mid-December several students had accumulated 19-25 absences. In an attempt to rectify this attendance issue, the Dean of

Students counseled students with ten or more absences and scheduled a follow-up conference with the principal immediately prior to the December home leave to persuade students to mend their inattending ways. Consequences were designed and instituted, most of which required students to study under the direct supervision of the faculty or staff from their assigned small "family" group which met every morning to share a short devotional and track the progress of each student prior to the commencement of that day's school work.

Modifications

As the first midterm point approached in mid-October, some faculty expressed anxiety regarding the lack of structure in the project time schedule (see Table 2). They felt out of control since their perception was the responsibility for learning had been removed from their hands and handed to their teenaged students. They noted the seeming constant and heavy involvement with their peers and the apparent lack of progress with schoolwork.

After sensing the need for an incentive to enhance the development of internal motivation to study, two faculty asked to speak with the principal. These two full-time teaching faculty began regularly planning modifications in conjunction with the principal to increase student motivation to engage in scholarly work. These sessions were scheduled on Friday mornings while students were involved in a class in culinary arts (the most popular course offered since eventually every student was enrolled in this course taught by one of the cafeteria staff). Because the principal's office included a glass wall on one side, which extended almost to the floor, anyone using the sidewalk outside could easily see within and identify persons meeting with the principal.

Table 2

Daily Schedule at Midwest Academy

#	Duration	Start		End	Period	On-duty	Chao	Lukens	Peterson
1	0:25	6:15 AM	-	6:40 AM	Personal Devotions	Dorms			
2	0:25	6:45 AM	-	7:10 AM	Breakfast	Cafeteria			
3	0:15	7:15 AM	-	7:30 AM	Morning Worship	Family Group			
4	0:40	7:33 AM	-	8:13 AM	Family Group Project Time	Family Group			
5	0:50	8:16 AM	-	9:06 AM	Period **A**/Project Time	Peterson	*Geometry*	*Spanish II*	
6	0:50	9:09 AM	-	9:59 AM	Period **B**/Project Time	Berglund	*Algebra I*	*Spanish I*	
7	0:50	10:02 AM	-	10:52 AM	Period **C**/Project Time	Keplinger	*Algebra II*		
8	0:50	10:55 AM	-	11:45 AM	Period **D**/Project Time	Calvert	*Physics*	*Keyboarding*	
9	0:40	11:45 AM	-	12:25 PM	Lunch (*12:15 Leave for PAC)*	Cafeteria			
10	3:00	12:45 PM	-	3:45 PM	WORK – Period **E**/Project Time	Keplinger			
11	0:10	4:00 PM	-	4:10 PM	Assembly	Berglund			
12	0:47	4:13 PM	-	5:00 PM	All School Project Time	Berglund			
13	0:57	5:03 PM	-	6:00 PM	Music/Project Time	Teams/Dorm			
14	0:30	5:45 PM	-	6:15 PM	Supper	Teams			
15	1:15	6:15 PM	-	7:30 PM	Recreation/Clubs	Teams			
16	0:10	7:45 PM	-	7:55 PM	Dorm Worship	Dorms			
17	2:00	8:00 PM	-	10:00 PM	Study Hall	Dorms			

One by one faculty approached me in my capacity as assistant to the principal, and asked if it was possible to obtain an invitation to join this additional faculty meeting. As other teaching personnel noticed the group growing, they also requested permission to join this additional faculty meeting. Eventually almost all teaching faculty were attending this Friday morning faculty meeting at their own request, a stunning development.

Together during an early-in-the-year Friday meeting, faculty planned a monthly session during which students were able to showcase their learning in a presentation format prior to home leave. Parents, friends, and community members were invited to attend these oral and poster presentations. Also faculty designed a progress report form to be mailed monthly to parents after being reviewed with the student. Students were granted 72 hours to add additional completed academic work to these reports prior to mailing to their parents. These sessions provided deadlines and greatly increased motivation to engage in completion of learning tasks.

Spanish, math, and physics largely retained the class session format instead of converting to the project time format. Science courses were based in project mode with science faculty immediately available for consultation. Bible, English, and social studies class sessions began to materialize as faculty chose to model presentations and conserve time spent one-to-one with much of the same materials being recited over and over with individual students.

Second Semester Modifications

As second semester got under way, faculty continued to search for a way to accurately communicate requirements to students. Competencies were drawn up for each course. As soon as these were presented to students, students suddenly concentrated on

minimum requirements to achieve competency completion status for each course. Students became more focused on preparing for the monthly oral or poster presentation and titrated their investment of time and energy into what seemed most salient to them and their personal goals.

As a corollary to competency achievement, grand projects were adopted and students recruited each other to fill needed roles. The Easter Pageant was one of these and included almost everyone associated with the school in preparation and presentation of the play for the community.

Faculty Qualifications

Of the 24 faculty and staff who participated in the study, one had an earned PhD in addition to the PhD-prepared college professor turned principal. One was a doctoral candidate at an out-of-state university. Four had master's degrees. Another faculty was two courses away from completing a master's degree. An additional eleven participants had baccalaureate degrees. Two of these had some graduate work completed but no graduate degree at the juncture of the study. In addition to the sole high school diploma qualified staff member, five others had some college work completed and at least one of these was actively engaged in coursework to complete a degree.

Faculty and Staff Profiles

The entire faculty and staff were comprised of 14 females and 14 males. Fifteen were employed full-time. Nine were part-time employees. Two were essentially volunteers with small stipends. Many hours were invested in working on the campus in gratitude for housing for the family and their student's tuition aid. Another one was involved minimally related to other full-time employment with the sponsoring

organization. Another one was in full-time retirement and assisted as able. Sixteen were involved with direct instruction. Content areas which were provided in the curriculum were: Bible, English, English as a Second Language, Spanish, social studies, mathematics, algebra, geometry, physics, chemistry, biology, earth science, computer technology, accounting, health, art, physical education, gymnastics, culinary arts, choir, band, and private music lessons on all instruments including piano and voice. Twelve were not involved in direct instruction. Three males and one female had only marginal involvement with the program and were not included in the study population. While one was divorced, six were never married and seventeen were married.

Summary of Major Findings for Participant Observations

1. Buy-in of participants as the principal provided and shared space for engagement and participation in the redesign project of the entire educational program of MA.

2. Participant initiation of creating learning opportunities for themselves in requesting permission to observe other programs utilizing a portion of the program they helped design for MA but lacked experience in implementation.

3. Participant initiation of request for additional faculty meetings with the principal as they continued to refine the educational innovation.

4. Collaborative efforts to track student progress and create conditions to elicit internal motivation for student academic progress increased cohesiveness in the faculty.

CHAPTER 5

IMPACT OF COMPREHENSIVE CHANGE

Introduction

In the effort to elicit stress symptoms and determine possible correlations with other personal, interpersonal, and environmental factors, data were obtained from MA faculty and staff engaged in the massive innovation via survey instruments. Data were collected during September 2005, March 2006, and June 2006. Although participants sometimes chose to take the instruments home and return them to my faculty mailbox in a sealed envelope which I furnished, most chose to complete the tools in their offices on campus and often hand delivered them to my office instead of using the sealed envelope and my mailbox. Both blank and completed questionnaires were stored in a locked file cabinet in my locked office on the campus.

Quantitative data were solicited using the following surveys: Derogatis' (1975) BSI, Gibson and Dembo's (1984) TES, Myers-Briggs' (1998) MBTI, and Pender's (Walker et al., 1987) HPLP.

Descriptive Results

The population was split almost 50% along gender lines (46% male, 54% female). As to age, five participants were in their 20s, three participants were in their 30s, six participants were in their 40s, six participants were in their 50s, and four participants were 60 years old and older. Although the majority of the participants were Caucasian

(79%), 2 participants were Asian (8%), two participants were African-American (8%). One Hispanic participant (4%) rounded out the total (see Table 3).

Participants were well prepared for their roles in the residential secondary program and its curriculum. One participant had an earned doctorate (PhD); another participant was writing a dissertation. Four participants had appropriate master's degrees. Of the four participants who had done graduate work, one participant lacked only 2 courses to complete the degree. Eight had bachelor's degrees and 5 had some college work completed with one of those actively engaged in degree completion. One staff participant had no further education since high school (see Table 4).

Fourteen teachers were involved in the program on a part-time basis and may or may not have held additional responsibilities as staff. Those teaching faculty who also carried staff responsibilities also were deeply invested in the philosophy of the program and innovative curriculum at MA. These part-time faculty collaborated easily and frequently with the full-time faculty and the principal. Five participants carried full-time teaching responsibilities while 5 support staff carried no teaching responsibilities in the classroom but were fully engaged in supporting the curriculum in the course of their work with student labor (see Table 5).

Instrument Results

The BSI (Derogatis, 1975) is an instrument with 53 items, which takes 8-12 minutes to complete. The vocabulary of the tool and its instructions are restricted to the reading level of the American sixth grader to make it easy to understand by the majority of readers. The inventory was designed from the Symptom CheckList-90-Revised by Derogatis (1975) and widely used as a screening tool with studies supporting its utility,

Table 3

Demographics (*n*=24)

Demographics	*N*	Percentage
Gender		
Male	11	46
Female	13	54
Total	24	100%
Age		
20-29	5	21
30–39	3	12
40–49	6	25
50–59	6	25
60 or older	4	17
Total	24	100%
Ethnicity		
Asian	2	8
Black	2	8
Hispanic or Latino	1	4
White	19	80*
Total	24	100%

Note. *Percentage adjusted related to rounding errors.

validity, and reliability from large samples in several other countries: Australia (Greenway, Milne, & Clarke, 2003), China (Ng et al., 2006), Iran (Mohammadkhani et al., 2010), Israel (Shahar, Soffer, & Gilboa-Shechtman, 2008), Spain (Pereda, Forns, & Pero, 2007), Switzerland (Cain, Pincus, & Holtforth, 2010), Turkey (Ceyhan, 2006; Turkum, 2005), the Netherlands (Van Horn, Schaufeli, & Taris, 2001), the United Kingdom (Derisley, Libby, Clark, & Reynolds, 2005; Ryan, 2007) in addition to the

Table 4

Educational Levels (*n*=24)

Educational Level	*N*	Percentage
Doctorate	1	4
Masters Plus	1	4
Masters	4	17
Some Graduate	4	17
Bachelors	8	33
Some College	5	21
High School	1	4
Total	24	100

Table 5

Roles (*n*=24)

Current Role	*N*	Percentage
Full-time Teacher	5	21
Part-time Teacher	14	58
Support Staff	5	21
Total	24	100

United States (Johnson, Brems, Mills, & Fisher, 2007; Mullins, Aniol, Boyd, Page, & Chaney, 2002).

Items concerning the nine primary symptom dimensions are distributed throughout the instrument. Results can be compared to several groups: adolescents, adult psychiatric in-patient, adult psychiatric out-patient, and adult non-patient populations.

The constructs or subscales are described below:

Somatization items reflect distress arising from bodily dysfunction whether cardiovascular, respiratory, autonomic, muscular, or gastrointestinal.

Obsessive Compulsive items reflect distress arising from unwanted thoughts or actions.

Interpersonal Sensitivity items reflect distress arising from feelings of uneasiness, inadequacy, and inferiority.

Depression items reflect distress arising from dysphoric affect and mood such as hopelessness and futility, prompted by a loss of interest in activities of daily living and a decrease in energy.

Anxiety items reflect distress arising from restlessness, tension, and nervousness.

Hostility items reflect distress arising from thoughts, feelings, and actions such as urges to break things, irritability, uncontrollable temper displays, and arguments.

Phobic Anxiety items reflect distress arising from fears regarding travel, crowds, and public places.

Paranoid Ideation items reflect distress arising from suspiciousness and the fear of the loss of autonomy.

Psychoticism items reflect distress arising from social alienation.

Four additional items are included in the instrument reflecting important clinical indicators, which are not unique to any single dimension above.

Three global indices are included in the instrument. The measure most frequently used to represent the level or depth of distress is the General Severity Index (GSI) since it has been determined to be "the single best indicator of current distress levels" (Derogatis & Melisaratos, 1983, p. 597). The manner of the report of the respondent is measured by

the PSDI. The PSDI measures intensity in the response style whether the respondent is augmenting (exaggerating) or attenuating (minimizing) her or his report of distress (Derogatis & Melisaratos, 1983). The number of positive responses of any degree of experience is reflected in the PST and can be used to imply the generalized extent of emotional distress.

Responses were tabulated and organized and then converted to *t*-scores using the appropriate non-patient adult table, which includes percentile information as well. Missing items which have been left blank were taken into account and do not compromise the validity of the GSI unless they involve 25% of the items. The nine primary dimensions are not compromised with the omission of any one item. Corrections were made by dividing the obtained score by actual responses instead of the total possible responses. The estimate of what the score would have been if all items were completed is considered to be still fairly accurate and not distorted when meeting these conditions (Degorgatis, 1993).

Clinical significance is defined by a GSI *t*-score of 63 or above or two primary dimension *t*-scores of 63 or above (Derogatis, 1993). These scores are at the 88th percentile of their respective norming populations. Derogatis uses these parameters (with acceptable levels of error in false positives and false negatives) to determine a positive diagnosis or clinical case.

Participants were instructed to identify the frequency of the distress item over the past 7 days on a 5-point Likert scale using 0=not-at-all, 1=a little bit, 2=moderately, 3=quite a bit, 4=extremely. The adult non-patient score sheets were used to derive raw scores and *t*-scores. The instrument was administered initially within the first two weeks

of the start of classes (Time 1) on the campus of MA. While the third administration (Time 3) occurred during the middle of June after the end of classes for the academic year, the second administration (Time 2) occurred in March about the middle of the second semester.

At Time 1, 19 participants completed the self-report BSI questionnaire (see Table 6). Although only 6 participants demonstrated a score of 63 or above for the GSI, two additional participants (see Table 7) met the conditions of clinical significance on two of the primary dimensions (Derogatis, 1993). Also five participants' *t*-scores for the PSDI imply a minimization of their manner of reporting distress (with scores below 50) while five other participants may have exaggerated their reported distress indicated by clinically significant PSDI *t*-scores (score of 63 and above). The primary dimensions, which demonstrated significant *t*-scores by 8 of the 19 participants completing the instrument during Time 1, were: Somatization, Obsessive Compulsivity, Interpersonal Sensitivity, Paranoid Anxiety, and Psychoticism. Two participants completed the entire instrument selecting "not-at-all" as their only response perhaps implying a desire to not disclose any information about their distress levels. These two participants obtained a GSI *t*-score of 33 (see Table 7). The majority of the participants responded with *t*-scores of 50 and above.

The range of responses captured by the BSI instrument at Time 2 is distilled in Table 8. In the results obtained, six of the 14 participants who completed the self-report BSI questionnaire demonstrated clinically significant *t*-scores for the GSI while three additional participants joined this group by virtue of high *t*-scores on two of the primary dimensions (see Table 9). The PSDI *t*-scores imply at least two and possibly a third may

Table 6

BSI Subscale t-Scores in Terms of Ranges, Time 1 (*n*=19)

Case	Range	<50	≥50	<63	≥63
Somatization	41-80	4	15	10	5
Obsessive Compulsivity	38-80	3	16	8	8
Interpersonal Sensitivity	41-71	8	11	5	6
Depression	42-73	8	11	7	4
Anxiety	38-72	6	13	10	3
Hostility	39-62	4	15	15	0
Phobia	45-70	14	5	1	4
Paranoid Anxiety	43-75	4	15	10	5
Psychoticism	46-78	9	10	4	6
Global Severity Index	33-73	4	15	9	6
Positive Symptom Distress Index	41-67	6	13	8	5
Positive Symptom Total	30-74	4	15	9	6

have exaggerated their distress since their *t*-scores were at least 1 standard deviation elevated from the norm. The primary dimensions which demonstrated clinically significant *t*-scores by 9 of the 14 participants completing the instrument at Time 2 were: Somatization, Obsessive Compulsivity, Interpersonal Sensitivity, Depression, Anxiety, Paranoid Anxiety, and Psychoticism. As at Time 1, the majority of the participants responded with *t*-scores of 50 and above with the exception of Phobia.

In the results obtained by the BSI at Time 3, ranges are presented in Table 10. The majority of participants ranked themselves with scores of 50 and above with the exception of the primary dimensions of Anxiety and Phobia where the majority of participants ranked themselves with scores below 50. Three of the 9 participants who completed the self-report BSI questionnaire demonstrated clinically significant *t*-scores for the GSI (see Table 11) while one additional participant joined this group by virtue of high *t*-scores on two of the primary dimensions. The PSDI *t*-scores imply one participant

Table 7

BSI Subscale t-Scores, Time 1 (*n*=19)

Case	1	2	3	4	5	6	7	8	10	11	12	13	14	15	16	19	21	22	24
Somatization	**63**	53	59	41	**69**	**80**	**63**	53	59	**67**	56	51	56	42	41	56	49	56	51
Obsessive Compulsivity	**67**	57	**80**	38	**64**	**66**	**67**	53	55	**69**	55	**64**	61	55	38	61	45	**74**	53
Interpersonal Sensitivity	**63**	49	**71**	41	**63**	**66**	**64**	49	44	41	54	59	55	44	41	60	41	**63**	59
Depression	57	50	**73**	42	60	**69**	**68**	50	44	42	44	**71**	50	44	42	57	42	61	44
Anxiety	58	55	59	38	59	**64**	**72**	55	55	38	49	59	55	49	38	51	45	51	**63**
Hostility	55	51	62	39	57	62	59	51	51	55	51	60	62	40	39	59	39	59	57
Phobia	**65**	45	**64**	45	47	**64**	**70**	60	47	45	47	47	45	47	45	45	45	45	47
Paranoid Anxiety	61	55	**75**	43	**67**	**67**	**63**	61	51	43	56	59	59	59	43	55	43	**71**	51
Psychoticism	**66**	46	**78**	46	58	**71**	**65**	**64**	46	46	46	**68**	58	58	46	46	46	62	46
Global Severity Index	62	52	**73**	33	**65**	**71**	**71**	56	52	57	52	**64**	56	49	33	57	42	**63**	53
Positive Symptom Distress Index	52	43	**65**	43	56	**65**	**63**	52	53	**67**	44	54	55	51	41	48	43	**63**	56
Positive Symptom Total	**68**	54	**70**	30	**66**	**70**	**74**	56	51	51	54	**66**	55	49	30	60	43	61	52

Note. Clinical significance is achieved at a GSI *t*-score of 63 or a *t*-score of 63 in any two of the primary dimensions. This *t*-score value is equivalent to the 88th percentile. *T*-scores have been adjusted by gender by tables provided by the designer/researcher, Leonard Derogatis.

Table 8

BSI Subscale t-Scores in Terms of Ranges, Time 2 (*n*=14)

Case	Range	<50	≥50	<63	≥63
Somatization	42-69	4	10	9	1
Obsessive Compulsivity	38-78	2	12	2	10
Interpersonal Sensitivity	41-71	3	11	4	7
Depression	42-76	6	8	4	4
Anxiety	38-73	4	10	5	5
Hostility	39-68	2	12	10	2
Phobia	45-61	12	2	2	0
Paranoid Anxiety	43-70	2	12	6	6
Psychoticism	46-77	3	11	5	6
Global Severity Index	36-71	2	12	6	6
Positive Symptom Distress Index	52-69	0	14	12	2
Positive Symptom Total	30-72	2	12	7	5

may have exaggerated his or her distress since the *t*-score is 2 standard deviations elevated from the norm. The primary dimensions, which demonstrated clinically significant *t*-scores by 4 of the 9 participants completing the instrument at Time 3, were: Obsessive Compulsivity, Interpersonal Sensitivity, and Paranoid Anxiety. The majority of the participants responded with *t*-scores of 50 and above in the nine primary dimensions with the exception of Anxiety in addition to the previous predominantly low *t*-scores for Phobia (see Table 11).

Hypothesis Testing

Stress and Efficacy

Among the faculty and staff participating in the systemic change at MA, the first null hypothesis stated: There is no relationship between stress and Efficacy Beliefs. This hypothesis was tested through Pearson's correlation, as all variables were scaled.

Table 9

BSI Subscale t-Scores, Time 2 (*n*=14)

Case	1	3	4	5	6	8	12	13	15	16	17	18	22	23
Somatization	49	56	53	**69**	56	49	42	42	51	53	56	51	62	61
Obsessive Compulsivity	**69**	**71**	45	55	58	**64**	**64**	**69**	**69**	38	**69**	**68**	**78**	**74**
Interpersonal Sensitivity	**64**	**66**	41	54	55	**63**	54	**66**	**63**	41	54	44	**64**	**71**
Depression	42	**65**	42	**64**	62	42	44	**76**	60	42	**68**	57	42	53
Anxiety	55	**63**	51	**63**	55	45	49	**63**	55	38	49	59	**71**	**73**
Hostility	51	57	51	57	54	55	40	**64**	57	39	57	51	**68**	62
Phobia	45	47	45	47	45	60	47	61	47	45	47	47	45	47
Paranoid Anxiety	61	**64**	43	**69**	52	55	59	**63**	**63**	43	56	62	**70**	**67**
Psychoticism	58	**77**	58	**70**	62	46	58	**70**	**77**	46	**66**	46	62	**74**
Global Severity Index	59	**67**	49	**66**	56	56	52	**70**	**63**	36	61	59	**66**	**71**
Positive Symptom Distress Index	54	58	54	60	52	57	56	56	52	**65**	53	59	**69**	59
Positive Symptom Total	58	**67**	48	**64**	57	53	51	**72**	**66**	30	62	57	61	**70**

Note. Clinical significance is achieved at a GSI *t*-score of 63 or a *t*-score of 63 in any two of the primary dimensions. This *t*-score value is equivalent to the 88th percentile. *T*-scores have been adjusted by gender by tables provided by the designer/researcher, Leonard Derogatis.

Table 10

BSI Subscale t-Scores in Terms of Ranges, Time 3 (*n*=9)

Case	Range	<50	≥50		<63	≥63
Somatization	41-63	4	5		4	1
Obsessive Compulsivity	38-70	2	7		3	4
Interpersonal Sensitivity	41-64	2	7		5	2
Depression	42-61	3	6		6	0
Anxiety	38-68	6	3		2	1
Hostility	39-66	3	6		5	1
Phobia	45-60	6	3		3	0
Paranoid Anxiety	43-75	1	8		4	4
Psychoticism	46-64	3	6		5	1
Global Severity Index	36-65	2	7		4	3
Positive Symptom Distress Index	53-70	2	7		6	1
Positive Symptom Total	36-66	3	6		2	4

Stress

Often used as a preadmission instrument by behavioral medicine units in the United States, the BSI instrument was designed to be used with adolescent, in-patient and out-patient psychiatric and general adult non-patient populations. It has been normed for both male and females in each of these populations. Its 5-point Likert-scaled statements with possible ratings of 0=“not at all” to 4=“extremely” determine the frequency of occurrence of various stressful thoughts, feelings, and behaviors over the previous 7 days.

Efficacy Beliefs

Gibson’s and Dembo’s (1984) TES is a brief one-page tool containing two subscales: PTE and GTE. Extensive use for the past twenty-five years has documented its applicability to teachers in many different settings.

Table 12 identifies the participant mean scores in the PTE subscale and the GTE subscales of Gibson and Dembo’s (1984) TES. While individual PTE mean scores ranged

Table 11

BSI Subscale t-Scores, Time 3 (*n*=9)

Case	1	2	4	5	6	8	16	23	24
Somatization	56	49	41	51	62	**63**	49	56	42
Obsessive Compulsivity	**70**	61	38	**68**	57	**65**	50	**69**	39
Interpersonal Sensitivity	**64**	60	49	**63**	60	55	41	54	59
Depression	58	61	42	60	60	54	42	60	44
Anxiety	45	58	38	59	45	45	38	**68**	41
Hostility	59	62	39	57	55	59	39	**66**	40
Phobia	60	60	45	47	45	60	45	47	47
Paranoid Anxiety	**63**	59	52	**69**	52	59	43	**67**	**75**
Psychoticism	**64**	62	46	62	59	58	46	62	46
Global Severity Index	**63**	60	36	**63**	57	60	39	**65**	52
Positive Symptom Distress Index	52	60	43	57	51	52	43	56	**70**
Positive Symptom Total	**65**	**63**	36	**63**	59	62	39	**66**	46

Note. Clinical significance is achieved at a GSI *t*-score of 63 or a *t*-score of 63 in any two of the primary dimensions. This *t*-score value is equivalent to the 88th percentile. *T*-scores have been adjusted by gender by tables provided by the designer/researcher, Leonard Derogatis.

from 1.75 to 4.13, GTE mean scores ranged from 2.50, to 4.36, surprisingly consistently higher than the PTE scores. Individual PTE scores were: 1.75, 1.88, 2.13(2), 2.38, 2.47, 2.50, 2.75(2), 2.81, 2.88(2), 2.94, 3.13(2), 3.19(2), 3.44(2), 4.13. Individual GTE scores were: 2.50, 2.71, 2.93(2), 3.00, 3.14, 3.21, .36(2), 3.43(2), 3.64(2), 3.86, 4.07, 4.14(2), 4.21(2), 4.36. Mean score frequency was one unless otherwise identified in parentheses.

Teachers' efficacy scores were found to indicate how likely they were to be confident in their dealings with students and in their focus on academics (Tschannen-Moran et al., 1998, as cited in Brouwers, Tomic, & Stinjnen, 2002). High scorers "are less likely to criticize a student giving an incorrect response and they are more likely to persist in helping students who are considered to be failures" (p. 212).

Personality Type

The MBTI is often used as a tool to assist with self-awareness. The statements are cast in an either-or format. There are no wrong answers, merely descriptive ones. Occasionally participants are ambivalent about selections. Tool completion requires a choice made of the two available options.

Table 13 identifies the scores of participants in the various parameters of the nonparametric (non-Likert scaled) MBTI instrument: E=Extraversion (outgoing), I=Introversion (reserved), S=Sensing, N=Intuition, T=Thinking, F=Feeling, J=Judging, P=Perceiving. Whereas seven participants identify themselves as introverted, 13 identify themselves as extraverted. Eight lay claim to intuiting while 12 claim to be more sensing than intuitive. Nine identify themselves as Thinking while 11 claim to focus more on Feeling. Similarly 9 claim a more Judging focus than the 11 who claim Perceiving to be their preferred type. Three participants obtained identical scores in Thinking and Feeling.

Table 12

Teacher Efficacy Mean Scores (*n*=20)

Case	1	3	4	5	6	7	8	10	12	13	14	15	16	17	18	19	21	22	23	24
Personal Teacher Efficacy	2.88	3.44	2.13	3.19	2.88	2.47	1.75	3.44	2.75	2.94	4.13	2.81	1.88	3.19	2.13	2.75	3.13	2.38	2.50	3.13
General Teacher Efficacy	3.43	2.93	2.50	4.14	2.93	4.07	3.86	3.64	4.21	4.21	3.21	3.36	2.71	4.36	3.36	3.00	3.14	4.14	3.43	3.64

Table 13

Myers-Briggs Scores (*n*=21)

Case	1	2	3	4	5	6	7	8	10	11	12	13	14	15	16	17	18	19	22	23	24
Extraversion	11	12	1	5	12	19	15	18	6	2	2	5	**20**	15	18	16	**21**	10	15	13	17
Introversion	10	9	**20**	16	9	2	6	3	15	19	18	16	1	5	3	5	0	11	6	8	3
Sensing	6	19	**21**	17	18	**25**	9	12	**26**	**23**	**21**	16	15	14	7	14	3	3	**20**	2	12
Nutrition	**20**	6	7	9	8	0	17	14	0	3	5	10	11	12	19	12	**23**	**23**	6	**24**	14
Thinking	8	5	15	9	8	16	12	15	**21**	18	12	**21**	11	**21**	5	12	3	8	10	19	17
Feeling	16	18	9	15	16	8	12	9	3	6	12	3	13	3	19	12	**21**	16	14	5	6
Judging	9	16	4	7	11	**20**	18	19	**22**	**21**	6	**21**	15	19	**22**	7	4	4	10	12	**20**
Perceiving	13	5	17	15	11	2	4	3	0	1	16	1	7	3	0	15	18	18	12	10	1

As per scoring instructions regarding such a tie, these three were identified as Feeling (instead of Thinking or some nirvana in between the two). One other participant obtained identical scores in Judging and Perceiving. As per scoring instructions regarding this particular tied score, this individual was identified as Perceiving. Correlations are discussed later in this chapter.

The frequency of the personality types are as follows: ESTJ(2), ESTJ(0), ESFP(3), ESFJ(1), ENTJ(3), ENTP(0), ENFJ(2), ENFP(2), INFP(1), INFJ(0), INTJ(0), INTP(0), ISTJ(3), ISFP(2), ISTP(1), ISFJ(0). See Table 14. See page 97 for definitions.

Health Practices

Pender's (Walker et al., 1987) HPLP was designed to identify usual and customary Health Practices and perceptions of self-initiated behavior to maintain or enhance wellness, self-actualization, and fulfillment in a Likert-scale format to elicit frequency of practice. This instrument has had some international exposure as well (Pinar et al., 2009).

Pender's HPLP was administered 3 times to pick up any changes in Health Practices during the course of the study. See Table 15 for a quick look at the averages demonstrated as a comparison between the three administrations of the tool. Mean scores in the Health Responsibility subscale were 1.10, 1.17, and 1.51. Mean scores in the Physical Activity subscale were 1.05, 1.23, and 1.30. Mean scores in the Nutrition subscale were: 1.49, 1.68, and 1.68. Mean scores in the Spiritual Growth subscale were: 2.06, 2.06, and 2.05. Mean scores in the Interpersonal Relations subscale were: 1.93, 1.90, and 1.91. Means scores in the Stress Management subscale were: 1.36, 1.35, and 1.41. These mean subscale scores were quite stable over time. The specific mean scores

Table 14

Personality Type Indicator Formula Frequency

Formula	Frequency
ESTJ	2
ESTP	0
ESFP	3
ESFJ	1
ENTJ	3
ENTP	0
ENFJ	2
ENFP	2
INFP	1
INFJ	0
INTJ	0
INTP	0
ISTJ	3
ISFP	2
ISTP	1
ISFJ	0
Total	20

of individual participants are captured in Tables 16-19 for the three administrations. Mean scores are: 1=never, 2=sometimes, 3=often, and 4=routinely.

Correlations

Stress and Efficacy Beliefs

None of the correlations obtained between the BSI subscales and the Efficacy subscales during Time 1 demonstrated statistical significance (see Table 19). The situation changed for the BSI and the TES at Time 2. Table 20 shows a .553 correlation between Depression and PTE and a .555 correlation between Paranoid Ideation and GTE.

The correlation between Depression and PTE was effaced in the BSI and the TES instruments at Time 3 (see Table 21). Instead a significant correlation was demonstrated

Table 15

Scale and Subscale Means for Health Promoting Lifestyle II (HPL) by Administration

	Time 1	Time 2	Time 3
Health Promoting Lifestyle (total)			
Health Responsibility	1.1049 (SD 0.56202)	1.1746 (SD 0.74180)	1.5060 (SD 0.70144)
Physical Activity	1.0486 (SD 0.53402)	1.2283 (SD 0.59565)	1.3036 (SD 0.81284)
Nutrition	1.4938 (SD 0.35796)	1.6825 (SD 0.59574)	1.6825 (SD 0.31051)
Spiritual Growth	2.0556 (SD 0.61363)	2.0625 (SD 0.72915	2.0476 (SD 0.65689)
Interpersonal Relations	1.9313 (SD 0.50444)	1.9048 (SD 0.62832)	1.9147 (SD 0.57245)
Stress Management	1.3611 (SD 0.48675)	1.3482 (SD 0.70571)	1.4107 (SD 0.71703)

Note. 1=never, 2=sometimes, 3=often, 4=routinely
$p<0.05$ level (2-tailed)

between Interpersonal Sensitivity and PTE of .786. The significant correlation continued between Paranoid Ideation and GTE at .710. In addition the GSI demonstrated a significant correlation with GTE at .752. These correlations are significant at the $p<0.05$ level (2-tailed).

The first null hypothesis is rejected by findings of the second and third administration of the stress and efficacy tools. Thus, the first research hypothesis, there is a relationship between Stress and Teacher Efficacy Beliefs, was supported with two statistically significant correlations at Time 2 and three correlations at Time 3.

Stress and Personality Types

Among the faculty and staff participating in the systemic change at MA, the second null hypothesis stated: There is no relationship between Stress and Personality

Table 16

Lifestyle Profile II Subscale Mean Scores, Time 1 (*n*=18)

Case	1	2	3	4	5	6	7	8	10	12	13	14	15	16	21	22	23	24
Health Responsibility	1.22	1.00	0.44	0.67	1.11	0.89	1.11	1.44	1.11	1.00	0.22	1.11	1.33	**2.89**	1.67	0.67	1.00	1.00
Physical Activity	1.25	0.38	1.13	0.63	0.13	1.75	1.00	1.25	0.75	0.50	1.13	1.25	1.63	2.13	0.63	0.63	1.75	1.00
Nutrition	2.11	1.22	1.00	1.67	1.67	1.22	1.44	1.78	1.67	0.89	1.56	1.56	1.78	2.11	0.89	1.44	1.56	1.33
Spiritual Growth	**2.67**	1.22	1.00	**3.00**	2.00	1.78	1.89	1.89	2.22	1.78	1.22	2.33	**2.78**	**3.00**	**2.78**	1.44	2.00	2.00
Interpersonal Relations	2.11	1.88	1.22	2.11	2.22	1.11	1.78	1.56	2.11	1.56	1.00	2.44	2.22	**2.89**	2.44	2.11	2.33	1.67
Stress Management	1.63	1.13	1.25	0.63	1.63	1.00	1.13	1.63	1.63	1.38	0.75	1.25	1.63	**2.88**	1.38	1.00	1.13	1.50
Total HPLP II	1.85	1.14	1.00	1.48	1.48	1.29	1.40	1.60	1.60	1.19	0.98	1.67	1.90	**2.65**	1.65	1.23	1.63	1.42

Note. 1=never, 2=sometimes, 3=often, 4=routinely

Table 17

Lifestyle Profile II Subscale Mean Scores, Time 2 (*n*=14)

Case	1	3	4	5	6	8	12	13	15	16	17	18	22	23
Health Responsibility	1.33	0.56	0.44	0.89	1.56	1.56	0.89	0.11	1.11	**3.22**	1.56	1.33	0.67	1.22
Physical Activity	1.50	0.75	0.75	0.50	1.25	0.75	0.75	1.38	1.13	**2.88**	1.63	1.00	1.38	1.57
Nutrition	2.22	1.00	1.11	1.78	1.22	2.11	1.22	1.22	1.33	**3.00**	1.78	**2.56**	1.56	1.44
Spiritual Growth	**2.67**	0.78	2.22	2.00	2.11	1.78	1.88	1.11	**2.89**	**3.56**	1.56	**2.78**	1.78	1.78
Interpersonal Relations	2.22	0.89	1.78	2.33	1.78	1.56	1.56	1.00	1.89	**3.44**	1.78	2.44	2.11	1.89
Stress Management	1.38	1.50	0.63	1.63	0.63	1.13	1.38	0.88	1.63	**3.50**	1.50	0.88	1.13	1.13
Total HPLP II	1.90	0.90	1.17	1.54	1.44	1.50	1.27	0.94	1.67	**3.27**	1.63	1.87	1.44	1.51

Table 18

Lifestyle Profile II Subscale Mean Scores, Time 3 (*n*=7)

Case	1	2	6	8	16	20	24
Health Responsibility	2.11	1.88	2.44	**3.11**	**3.78**	2.33	1.89
Physical Activity	1.13	0.25	0.63	1.25	2.25	1.13	**2.50**
Nutrition	1.89	1.22	1.33	1.89	1.89	1.56	2.00
Spiritual Growth	**2.67**	1.11	1.56	1.67	**3.00**	2.11	2.22
Interpersonal Relations	2.33	1.63	1.33	1.56	**3.00**	1.89	1.67
Stress Management	1.50	0.88	0.63	1.25	**2.88**	1.38	1.38
Total HPLP II	1.79	1.00	1.17	1.63	**2.63**	1.58	1.77

Note. 1=never, 2=sometimes, 3=often, 4=routinely

Type. This hypothesis was tested through Spearman's *rho* correlation, as the personality variables were nominal or categorical without any intrinsic ranking between the two options offered.

No correlations were detected between the BSI factors and the Personality Types in *t*-scores at Time 1 (see Table 22). However, statistically significant correlations materialized during Time 2 of the BSI and in the Thinking and Feeling personality types on the MBTI (see Table 23) at the $p<0.05$ level (2-tailed). The triggers for these correlations resided in Hostility and Psychoticism. The statistically significant correlations between Thinking and Feeling with Hostility were positive .587 and negative -.587 respectively. Similar statistically significant correlations materialized between Thinking and Feeling with Psychoticism at positive .585 and negative -.585 respectively.

These correlations evaporated into insignificance as demonstrated by Time 3 (see Table 24). The implication is that Personality failed to be a significant factor in the diminishing Stress as the academic year ended.

Table 19

BSI t-Score and Efficacy Belief Mean Correlation, Time 1 (*n*=17)

	Personal Teacher Efficacy	General Teacher Efficacy
Somatization		
Pearson *r*	.238	.234
Sig. (2-tailed)	.357	.365
Obsessive Compulsivity		
Pearson *r*	.220	.358
Sig. (2-tailed)	.396	.158
Interpersonal Sensitivity		
Pearson *r*	.106	.279
Sig. (2-tailed)	.684	.278
Depression		
Pearson *r*	-.021	.220
Sig. (2-tailed)	.935	.397
Anxiety		
Pearson *r*	.119	.394
Sig. (2-tailed)	.649	.118
Hostility		
Pearson *r*	.248	.351
Sig. (2-tailed)	.336	.168
Phobic Anxiety		
Pearson *r*	-.251	.069
Sig. (2-tailed)	.331	.792
Paranoid Ideation		
Pearson *r*	.039	.388
Sig. (2-tailed)	.881	.123
Psychoticism		
Pearson *r*	-.063	.187
Sig. (2-tailed)	.809	.472
Global Severity Index		
Pearson *r*	.165	.435
Sig. (2-tailed)	.527	.081
Positive Symptom Distress Index		
Pearson *r*	.135	.273
Sig. (2-tailed)	.607	.289
Positive Symptom Total		
Pearson *r*	.171	.478
Sig. (2-tailed)	.511	.052

Although at Time 1 and Time 3 the stress tool did not identify statistically significant correlations with Personality Type, the second null hypothesis was rejected on the basis of the four statistically significant correlations discovered at Time 2. So the

Table 20

BSI t-Score and Efficacy Belief Mean Correlation, Time 2 (*n*=14)

	Personal Teacher Efficacy	General Teacher Efficacy
Somatization		
Pearson *r*	.066	-.055
Sig. (2-tailed)	.822	.853
Obsessive Compulsivity		
Pearson *r*	.442	.519
Sig. (2-tailed)	.113	.057
Interpersonal Sensitivity		
Pearson *r*	-.021	.398
Sig. (2-tailed)	.943	.159
Depression		
Pearson *r*	.553*	.218
Sig. (2-tailed)	.040	.453
Anxiety		
Pearson *r*	.411	.185
Sig. (2-tailed)	.145	.528
Hostility		
Pearson *r*	.161	.354
Sig. (2-tailed)	.583	.215
Phobic Anxiety		
Pearson *r*	-.211	.479
Sig. (2-tailed)	.469	.083
Paranoid Ideation		
Pearson *r*	.519	.555*
Sig. (2-tailed)	.057	.039
Psychoticism		
Pearson *r*	.233	.093
Sig. (2-tailed)	.423	.752
Global Severity Index		
Pearson *r*	.456	.452
Sig. (2-tailed)	.102	.105
Positive Symptom Distress Index		
Pearson *r*	-.152	.097
Sig. (2-tailed)	.605	.742
Positive Symptom Total		
Pearson *r*	.483	.407
Sig. (2-tailed)	.080	.149

Note. *$p<0.05$ level (2-tailed)

Table 21

BSI t-Score and Efficacy Belief Mean Correlation, Time 3 (*n*=8)

	Personal Teacher Efficacy	General Teacher Efficacy
Somatization		
Pearson *r*	-.149	.354
Sig. (2-tailed)	.726	.389
Obsessive Compulsivity		
Pearson *r*	.106	.565
Sig. (2-tailed)	.802	.144
Interpersonal Sensitivity		
Pearson *r*	.786*	.598
Sig. (2-tailed)	.021	.117
Depression		
Pearson *r*	.410	.499
Sig. (2-tailed)	.313	.209
Anxiety		
Pearson *r*	.308	.473
Sig. (2-tailed)	.458	.236
Hostility		
Pearson *r*	.160	.555
Sig. (2-tailed)	.705	.154
Phobic Anxiety		
Pearson *r*	-.183	.527
Sig. (2-tailed)	.664	.179
Paranoid Ideation		
Pearson *r*	.668	.710*
Sig. (2-tailed)	.070	.048
Psychoticism		
Pearson *r*	.324	.527
Sig. (2-tailed)	.433	.179
Global Severity Index		
Pearson *r*	.452	.752*
Sig. (2-tailed)	.261	.032
Positive Symptom Distress Index		
Pearson *r*	.665	.622
Sig. (2-tailed)	.072	.100
Positive Symptom Total		
Pearson *r*	.335	.675
Sig. (2-tailed)	.417	.066

Note. *$p<0.05$ level (2-tailed)

Table 22

BSI t-Score and Personality Correlation, Time 1 (*n*=18)

	Extraversion	Introversion	Sensing	Intuition	Thinking	Feeling	Judging	Perceiving
Somatization								
Spearman's rho	-.022	.055	.305	-.296	-.015	.023	-.101	.128
Sig. (2-tailed)	.932	.829	.219	.234	.952	.927	.690	.612
Obsessive Compulsivity								
Spearman's rho	-.190	.224	-.219	-.185	.038	-.032	-.277	.302
Sig. (2-tailed)	.451	.372	.383	.463	.880	.901	.266	.224
Interpersonal Sensitivity								
Spearman's rho	.122	-.111	-.065	.097	-.142	.130	-.429	.424
Sig. (2-tailed)	.631	.662	.799	.703	.574	.606	.076	.079
Depression								
Spearman's rho	.099	.069	-.017	.040	-.084	.078	-.262	.285
Sig. (2-tailed)	.697	.787	.946	.876	.741	.757	.293	.252
Anxiety								
Spearman's rho	.369	-.373	-.166	.168	.047	-.071	-.022	.000
Sig. (2-tailed)	.132	.128	.510	.506	.854	.779	.932	1.000
Hostility								
Spearman's rho	.080	-.064	.114	-.074	.110	-.114	-.226	.234
Sig. (2-tailed)	.751	.801	.651	.769	.664	.653	.367	.349
Phobic Anxiety								
Spearman's rho	.161	-.136	-.158	-.196	.017	-.017	-.127	.129
Sig. (2-tailed)	.524	.589	.530	.436	.946	.946	.615	.610
Paranoid Ideation								
Spearman's rho	.193	-.180	.083	-.051	.007	-.015	-.350	.355
Sig. (2-tailed)	.444	.475	.744	.841	.977	.952	.154	.149
Psychoticism								
Spearman's rho	.147	-.130	-.004	.056	.202	-.202	-.125	.135
Sig. (2-tailed)	.562	.608	.986	.825	.421	.421	.622	.593
Global Severity Index								
Spearman's rho	.005	.024	.103	-.077	.018	-.019	-.248	.265
Sig. (2-tailed)	.985	.924	.683	.761	.945	.940	.322	.287
Positive Symptom Distress Index								
Spearman's rho	.374	-.355	.037	-.056	.094	-.094	.205	-.187
Sig. (2-tailed)	.139	.162	.887	.831	.720	.720	.429	.473
Positive Symptom Total								
Spearman's rho	.005	.024	.103	-.077	.018	-.019	-.248	.265
Sig. (2-tailed)	.985	.924	.683	.761	.945	.940	.322	.287

Table 23

BSI t-Score and Personality Correlation, Time 2 (*n*=14)

	Extraversion	Introversion	Sensing	Intuition	Thinking	Feeling	Judging	Perceiving
Somatization								
Spearman's rho	.331	-.305	.055	-.062	-.052	.052	.207	-.215
Sig. (2-tailed)	.248	.289	.852	.834	.861	.861	.477	.460
Obsessive Compulsivity								
Spearman's rho	-.201	.212	-.182	.182	.344	-.344	-.202	.192
Sig. (2-tailed)	.491	.467	.534	.534	.228	.228	.489	.511
Interpersonal Sensitivity								
Spearman's rho	-.241	.244	-.083	.083	.527	-.527	.163	-.181
Sig. (2-tailed)	.408	.401	.779	.779	.053	.053	.577	.536
Depression								
Spearman's rho	-.014	.010	.234	-.179	.462	-.462	.070	-.078
Sig. (2-tailed)	.963	.972	.420	.541	.096	.096	.812	.791
Anxiety								
Spearman's rho	-.260	.273	.126	-.122	.203	-.203	-.083	.076
Sig. (2-tailed)	.370	.345	.667	.679	.487	.487	.778	.796
Hostility								
Spearman's rho	-.017	.030	.122	-.131	.608*	-.608*	.279	-.289
Sig. (2-tailed)	.953	.919	.677	.655	.021	.021	.333	.316
Phobic Anxiety								
Spearman's rho	.029	-.029	-.112	.112	.391	-.391	.422	-.421
Sig. (2-tailed)	.922	.922	.703	.703	.167	.167	.133	.134
Paranoid Ideation								
Spearman's rho	-.283	.286	-.035	.036	.156	-.156	-.226	.219
Sig. (2-tailed)	.327	.321	.906	.904	.595	.595	.437	.452
Psychoticism								
Spearman's rho	-.436	.413	.270	-.224	.650*	-.650*	.025	-.050
Sig. (2-tailed)	.119	.142	.351	.442	.012	.012	.934	.865
Global Severity Index								
Spearman's rho	-.243	.247	.013	-.009	.484	-.484	.089	-.104
Sig. (2-tailed)	.403	.394	.964	.976	.080	.080	.761	.724
Positive Symptom Distress Index								
Spearman's rho	-.104	.104	.172	-.172	-.276	.276	.035	-.034
Sig. (2-tailed)	.725	.725	.556	.556	.339	.339	.907	.907
Positive Symptom Total								
Spearman's rho	-.307	.313	.159	-.148	.376	-.376	-.010	-.004
Sig. (2-tailed)	.286	.275	.588	.615	.186	.186	.973	.988

Note. *p<0.05 level (2-tailed)

Table 24

BSI t-Score and Personality Correlation, Time 3 (*n*=9)

	Extraversion	Introversion	Sensing	Intuition	Thinking	Feeling	Judging	Perceiving
Somatization								
Spearman's rho	.464	-.383	-.081	.081	.155	-.154	.132	-.077
Sig. (2-tailed)	.209	.309	.835	.835	.691	.693	.734	.845
Obsessive Compulsivity								
Spearman's rho	-.097	.163	-.388	.388	-.008	-.008	-.325	.345
Sig. (2-tailed)	.803	.675	.302	.302	.983	.983	.394	.364
Interpersonal Sensitivity								
Spearman's rho	-.203	.175	.378	-.378	-.172	.120	-.279	.299
Sig. (2-tailed)	.601	.653	.316	.316	.657	.758	.467	.434
Depression								
Spearman's rho	.009	.009	.416	-.416	-.113	.052	-.121	.173
Sig. (2-tailed)	.982	.982	.266	.266	.772	.894	.756	.657
Anxiety								
Spearman's rho	-.104	.132	.026	-.026	070	-.121	-.269	.293
Sig. (2-tailed)	.789	.735	.947	.947	.859	.756	.485	.444
Hostility								
Spearman's rho	-.086	.127	-.185	.185	.103	-.155	-.253	.274
Sig. (2-tailed)	.825	.745	.634	.634	.791	.691	.511	.476
Phobic Anxiety								
Spearman's rho	-.184	.233	-.046	.046	-.368	.321	-.183	.183
Sig. (2-tailed)	.635	.546	.907	.907	.330	.400	.637	.638
Paranoid Ideation								
Spearman's rho	-.237	.133	-.215	.215	-.411	-.439	-.232	.176
Sig. (2-tailed)	.539	.733	.578	.578	.272	.237	.548	.650
Psychoticism								
Spearman's rho	-.345	.372	-.126	.126	-.140	.096	-.474	.494
Sig. (2-tailed)	.363	.325	.746	.746	.720	.807	.197	.177
Global Severity Index								
Spearman's rho	-.101	.128	-.395	.395	.135	-.164	-.294	.301
Sig. (2-tailed)	.795	.742	.293	.293	.729	.674	.442	.431
Positive Symptom Distress Index								
Spearman's rho	.207	-.210	-.413	.413	.483	-.413	.000	.000
Sig. (2-tailed)	.593	.588	.270	.270	.188	.270	1.000	1.000
Positive Symptom Total								
Spearman's rho	-.050	.077	-.402	.402	.210	-.243	-.243	.250
Sig. (2-tailed)	.897	.845	.284	.284	.587	.529	.529	.516

second research hypothesis, there is a relationship between stress and personality type, which varies by type, was supported. However, since the participant population was small, this significance may be a dubious finding.

Stress and Health Practices

Among the faculty and staff participating in the systemic change at MA, the third null hypothesis stated: There is no relationship between Stress and Health Practices. This hypothesis was tested through Pearson's correlation.

Health Practices and Stress symptoms showed statistically significant negative correlations at Time 1 (see Table 25) at the $p<0.05$ level (2-tailed) and the $p<0.01$ level. The GSI documented statistically significant correlations with Health Responsibility, Spiritual Growth, and Interpersonal Relations at -.564, -.685, and -.639 respectively.

Statistically significant correlations with Health Responsibility, Spiritual Growth, and Interpersonal Relations were demonstrated in seven of the nine primary dimensions of the BSI. SOM showed no statistically significant correlations. OC correlations were found significant with Health Responsibility, Spiritual Growth, and Interpersonal Relations at -.594, -.696, and -.510 respectively. IS had statistically significant correlations with Health Responsibility, Spiritual Growth, and Interpersonal Relations at -.542, -.630, and -.578. DEP showed three statistically significant correlations with Health Responsibility, Spiritual Growth, and Interpersonal Relations at -.549, -.649, and -.639 respectively. ANX showed statistically significant correlations with only Health Responsibility and Interpersonal Relations at -.548 and -.606. HOS showed three statistically significant correlations with Health Responsibility, Spiritual Growth, and Interpersonal Relations at -.589, -.711, and -.586. PHOB showed no statistically

Table 25

BSI t-Score and Lifestyle Profile II Mean Correlation, Time 1 (*n*=17)

	Health Responsibility	Physical Activity	Nutrition	Spiritual Growth	Interpersonal Relations	Stress Management
Somatization						
Pearson *r*	-.314	-.105	-.210	-.406	-.427	-.206
Sig. (2-tailed)	.220	.688	.419	.106	.088	.427
Obsessive Compulsivity						
Pearson *r*	-.594*	-.096	-.221	-.696**	-.510*	-.343
Sig. (2-tailed)	.012	.714	.393	.002	.036	.177
Interpersonal Sensitivity						
Pearson *r*	-.542*	-.046	-.220	-.630**	-.578*	-.303
Sig. (2-tailed)	.025	.861	.395	.007	.015	.237
Depression						
Pearson *r*	-.549*	.063	-.150	-.649**	-.639**	-.391
Sig. (2-tailed)	.025	.810	.565	.005	.006	.121
Anxiety						
Pearson *r*	-.548*	-.118	-.151	-.470	-.606**	-.400
Sig. (2-tailed)	.023	.653	.564	.057	.010	.112
Hostility						
Pearson *r*	-.589*	-.075	-.212	-.711**	-.586*	-.369
Sig. (2-tailed)	.013	.775	.415	.001	.013	.145
Phobic Anxiety						
Pearson *r*	-.138	.306	.020	-.182	-.465	-.050
Sig. (2-tailed)	.597	.232	.938	.485	.060	.850
Paranoid Ideation						
Pearson *r*	-.515*	-.030	-.141	-.664**	-.505*	-.274
Sig. (2-tailed)	.034	.910	.590	.004	.038	.287
Psychoticism						
Pearson *r*	-.432	.305	.027	-.466	-.561*	-.265
Sig. (2-tailed)	.083	.235	.919	.059	.019	.305
Global Severity Index						
Pearson *r*	-.564*	-.054	-.228	-.685**	-.639**	-.338
Sig. (2-tailed)	.018	.836	.379	.002	.006	.184
Positive Symptom Distress Index						
Pearson *r*	-.503*	.116	-.133	-.504*	-.499*	-.303
Sig. (2-tailed)	.040	.658	.610	.039	.041	.236
Positive Symptom Total						
Pearson *r*	-.538*	-.091	-.200	-.641**	-.617**	-.326
Sig. (2-tailed)	.026	.728	.442	.006	.008	.201

Note. *p<0.05 level (2-tailed); **p<0.01 level (2-tailed)

significant Correlations. PAR showed statistically significant correlations with Health Responsibility, Spiritual Growth, and Interpersonal Relations at -.515, -.664, and -.505. PSY showed only PST similarly showed 27 statistically significant correlations with Health Responsibility, Spiritual Growth, and Interpersonal Relations, this finding is not necessarily diagnostic since it reflects merely the number of positive responses recorded by each participant. Several of the correlation scores climbed to more confidently significant levels at the $p<0.01$ level (2-tailed). PSDI showed a significant negative correlation with Stress Management.

At Time 2 (see Table 26), the protective nature of health practices was perhaps waning under the continuing high levels of stress experienced by faculty and staff in the middle of the school year. The GSI showed negative correlations with Health Responsibility and Spiritual Growth at -.661 and -.540. The PSDI showed no significant correlation with any of the HPLP subscales. No statistically significant correlations were discovered in SOM, OC, IS, DEP, PHOB, and PAR. One negative correlation was demonstrated between ANX and Health Responsibility at -.651. HOS also showed a negative correlation with Health Responsibility at -.565. PSY showed a negative correlation with Health Responsibility and Nutrition at -.564 and -.710. The PST demonstrated negative correlations with Health Responsibility at -.674. These 7 negative correlations are significant at the $p<0.05$ level (2-tailed) and some are significant at the $p<0.01$ level.

The continuing erosion of the protective value of the health practices is seen in Table 27. The GSI demonstrated only one negative correlation involving Stress Management at -.786. The PSDI and the PST revealed no statistically significant

Table 26

*BSI t-Score and Lifestyle Profile II Mean Correlation, Time 2 (*n=*14)*

	Health Responsibility	Physical Activity	Nutrition	Spiritual Growth	Interpersonal Relations	Stress Management
Somatization						
Pearson *r*	.047	-.021	-.020	-.015	.392	.101
Sig. (2-tailed)	.874	.943	.945	.959	.165	.730
Obsessive Compulsivity						
Pearson *r*	-.442	-.107	-.208	-.406	-.374	-.394
Sig. (2-tailed)	.113	.717	.475	.150	.188	.163
Interpersonal Sensitivity						
Pearson *r*	-.405	-.024	-.351	-.487	-.445	-.208
Sig. (2-tailed)	.150	.936	.218	.077	.111	.476
Depression						
Pearson *r*	-.318	-.100	-.334	-.468	-.444	-.169
Sig. (2-tailed)	.268	.733	.243	.091	.111	.563
Anxiety						
Pearson *r*	-.651*	-.148	-.385	-.368	-.147	-.442
Sig. (2-tailed)	.012	.615	.174	.195	.616	.114
Hostility						
Pearson *r*	-.565*	-.086	-.368	-.487	-.322	-.463
Sig. (2-tailed)	.035	.771	.196	.077	.262	.095
Phobic Anxiety						
Pearson *r*	-.244	-.171	-.013	-.438	-.513	-.219
Sig. (2-tailed)	.401	.559	.964	.118	.061	.451
Paranoid Ideation						
Pearson *r*	-.489	-.248	-.177	-.321	-.150	-.186
Sig. (2-tailed)	.076	.392	.545	.263	.609	.524
Psychoticism						
Pearson *r*	-.564*	-.135	-.710**	-.454	-.431	-.116
Sig. (2-tailed)	.036	.644	.004	.103	.124	.693
Global Severity Index						
Pearson *r*	-.661**	-.265	-.403	-.540*	-.420	-.455
Sig. (2-tailed)	.010	.360	.153	.046	.135	.102
Positive Symptom Distress Index						
Pearson *r*	.115	.272	.294	.014	.429	.386
Sig. (2-tailed)	.694	.347	.308	.963	.126	.173
Positive Symptom Total						
Pearson *r*	-.674**	-.287	-.478	-.529	-.503	-.494
Sig. (2-tailed)	.008	.319	.084	.052	.067	.073

Note. *p<0.05 level (2-tailed); **p<0.01 level (2-tailed)

Table 27

BSI t-Score and Lifestyle Profile II Mean Correlation, Time 3 (*n*=7)

	Health Responsibility	Physical Activity	Nutrition	Spiritual Growth	Interpersonal Relations	Stress Management
Somatization						
Pearson *r*	.241	-.512	-.243	-.294	-.310	-.374
Sig. (2-tailed)	.602	.240	.600	.523	.498	.409
Obsessive Compulsivity						
Pearson *r*	-.081	-.568	-.342	-.253	.053	-.307
Sig. (2-tailed)	.863	.184	.453	.584	.910	.504
Interpersonal Sensitivity						
Pearson *r*	**-.848***	-.538	-.240	-.456	-.653	**-.796***
Sig. (2-tailed)	**.016**	.213	.605	.304	.112	**.032**
Depression						
Pearson *r*	-.507	**-.843***	**-.754***	-.687	-.531	**-.779***
Sig. (2-tailed)	.245	**.017**	**.050**	.088	.220	**.039**
Anxiety						
Pearson *r*	-.462	-.340	-.676	-.582	-.301	-.493
Sig. (2-tailed)	.297	.456	.096	.170	.511	.261
Hostility						
Pearson *r*	-.396	-.695	-.602	-.629	-.430	-.653
Sig. (2-tailed)	.380	.083	.152	.130	.336	.112
Phobic Anxiety						
Pearson *r*	-.230	-.544	.015	-.278	-.155	-.244
Sig. (2-tailed)	.620	.207	.974	.546	.740	.598
Paranoid Ideation						
Pearson *r*	**-.767***	.214	.162	-.206	-.446	-.451
Sig. (2-tailed)	**.044**	.644	.728	.658	.316	.309
Psychoticism						
Pearson *r*	-.438	**-.783***	-.571	-.515	-.360	-.636
Sig. (2-tailed)	.326	**.037**	.181	.237	.428	.125
Global Severity Index						
Pearson *r*	-.609	-.430	.297	-.083	-.449	-.337
Sig. (2-tailed)	.147	.335	.518	.859	.313	.460
Positive Symptom Distress Index						
Pearson *r*	-.657	.550	-.400	-.586	-.593	**-.786***
Sig. (2-tailed)	.109	.201	.374	.167	.161	**.036**
Positive Symptom Total						
Pearson *r*	-.512	-.698	-.503	-.601	-.512	-.734
Sig. (2-tailed)	.240	.081	.250	.153	.240	.060

Note. *p<0.05 level (2-tailed); **p<0.01 level (2-tailed)

correlations. Neither did the following primary dimensions: SOM, OC, ANX, HOS, and PHOB. IS documented a significant negative correlation with Health Responsibility and Stress Management at -.848 and -.796. Negative correlations materialized for DEP with Physical Activity, Nutrition, and Stress Management at -.843 and -.754, and -.779 respectively. PAR was negatively correlated with Health Responsibility at -.767. PSY had a negative correlation with Physical Activity at -.783. A total of 8 statistically significant correlations materialized during this last administration of the BSI.

The third null hypothesis is rejected on the basis of all three administrations of the stress and health practices tools related to the significant negative correlations documented in the study. Therefore, the third research hypothesis, there is a relationship between Stress and Health Practices, is supported.

Implications

Although any change is stressful, Personality, Efficacy Beliefs, and Health Practices are able to modulate Stress levels for teachers to a small degree. While Personality is seldom amenable to manipulation, beliefs and practices are accessible to knowledge and opportunities to put into practice what is learned.

Major Findings

A majority of respondents ranked themselves higher than average in Stress ratings at all three points of data collection.

At the beginning of the school year, there were no correlations between Stress levels and PTE scores or GTE scores. However, this changed over time. By the end of the school year, teachers who reported higher Stress levels as indicated by the GSI were also more likely to score higher on the GTE subscale. This indicates that in spite of the Stress

the teachers experienced, they still had strong convictions about the capacity of teaching in general to impact student learning in a positive way.

There were no correlations between Stress levels and Personality Type at the beginning of the year and at the end of the year, when Stress levels were the lowest. However, during the middle of the school year, when Stress levels were the highest, some correlations were found which indicated a protective effect for those scoring in the Feeling component of Personality Type.

The protective effects of Health Practices diminished over time.

CHAPTER 6

DISCUSSION, CONCLUSIONS, AND RECOMMENDATIONS

Introduction

Many demands are placed on teachers. Keeping teachers teaching in the stressful environment of the educational context spills over into the setting of faith-based schools. Student achievement is closely watched and adds to the stress teachers experience in the classroom. Faith-based schools also have experienced dropping enrollments, which add to the stressful situation for these schools and their faculty.

The purpose of this study was to investigate perceptions of stress of faculty and staff involved with school-based systemic change implementation at MA. The relationship between self-reported stress symptoms, Efficacy Beliefs, Personality Type, and Health Practices of all faculty and staff at a secondary school engaged in the process of comprehensive systemic educational change was explored in order to reveal possible correlations with levels of perceived Stress.

Overview of the Literature

Hans Selye began to write about stress in the mid-1930s using his lab at McGill University in Montreal, Canada for research (Selye, 1936; Szabo, Tache, & Somogyi, 2012). Lazarus expanded on Selye's framework from the merely physiological studies that Selye was performing by including psychological factors in his studies. Pender and associates picked up the gauntlet and expanded the field by searching for possible

connections between perceived levels of Stress and health beliefs and practices. The motive was to increase the ability of persons who perceive high levels of Stress to mitigate its effects on their health.

Kyriacou (1977) first identified and described Teacher Stress as an occupational construct in the UK. Many related studies (Zane, 2012) have been performed on various beliefs related to human response to performance demands, namely Bandura's (1977, 1982, 1983, 1986, 1995, 1997) presentation of social cognitive theory and Efficacy Beliefs. Several researchers have explored the influence of personality factors on individual response to stress as well as gender differences; however, no significant pattern has been found (Bermejo-Toro & Prieto-Ursua, 2014). World health is another area of factors, which impact the workplace from the role of communities, environment, and society. Systemic change occurs against just such a backdrop.

Method

A descriptive convergent case study design was adopted for the study. This data collection design gathers quantitative data from participants for analysis in standard quantitative techniques and methods. The participants for this study were the faculty and staff of a Midwest resident secondary school. Of the 28 adults associated with the school, four did not participate in any way due to the peripheral nature of their involvement.

Quantitative data were obtained by surveys administered at the beginning of the school year in September 2005 (Time 1) to establish baselines. Data collection for this descriptive study continued during the 2005-2006 academic year. Surveys were re-administered at intervals (Time 2 and Time 3) during the school year to determine the presence of any changes.

Quantitative data collection was obtained using four well-known scales commonly used in educational research. These instruments were selected for their ability to measure specific constructs or concepts as standardized instruments: Stress—BSI (Derogatis, 1975) which provided a glimpse of the presence of symptoms of Stress, Efficacy Beliefs—TES (Gibson & Dembo, 1984) which provided a snapshot of beliefs related to professional empowerment, Personality Type—MBTI (Myers-Briggs Type Indicator Trust, 1998) which identified possible personality factors, and Health Practices—HPLP (Walker et al., 1987), which served to identify usual and customary health practice. These questionnaires served as sources for quantitative data collection.

Results

Among the faculty and staff participating in the systemic educational change at MA, all three research hypotheses were supported by the findings. Although sample size was small, fifty-one statistically significant correlations were found between the stress symptoms and other parameters of the study.

Demographics

The population for the study was quite evenly spread over gender and age categories. Females barely outnumbered men at 13 to 11. The twenty-somethings registered 5 participants. A fairly even spread showed up in the other age categories: three were in their thirties, six each made up the forties and fifties with an additional 4 at 60 and above. Ethnicity was overwhelmingly White at 19 participants with 2 Asians, 2 Blacks, and 1 Hispanic or Latino (see Table 3).

The educational levels were also spread across the spectrum. One high school graduate with lots of appropriate experience was on team. Five had some college work

already completed. Eight had bachelor's degrees. Four had some graduate work completed. An additional four had completed a master's degree. One had taken additional graduate work. And one had completed a doctorate (see Table 4). Five of these were full-time teachers. Fourteen were part-time teachers and five were support staff (see Table 5).

Major Findings in the Context

A university professor accepted the responsibility of leading a residential secondary educational program and designing a curriculum attractive and challenging to adolescents. He recruited faculty and staff and co-designed and implemented the program with their total involvement and assistance. His function as principal was eliciting collaboration between faculty, staff, students, and parents.

Buy-in was amazingly thorough as faculty and staff planned and implemented the program. Although unfamiliar with the innovation at the start of the planning sessions, one of the major findings was that faculty became fully engaged, articulate, and deeply invested in the program. Stress levels were anticipated to be elevated as the curriculum and program was developed and implemented since the responsibility for learning was entrusted to the adolescent student. Faculty and staff planned and designed strategies to induce internal motivation for mastery of the learning tasks. Adolescents were treated with respect and accountability strategies were designed which enhanced student initiative for accessing teaching resources in terms of personnel and materials.

Perceptions of Stress

The BSI designed by Derogatis (1983) was used to elicit symptoms of Stress from faculty and staff engaged in the curriculum redesign and implementation. Data collection included the HPLP by Pender (1987) to elicit information regarding health practices.

These two instruments were used at Time 1, Time 2, and Time 3 during one academic year. The MBTI (to detect possible personality factor involvement in perceived stress) was administered at Time 1 as was the TES (Gibson & Dembo, 1984) to capture possible contribution or protective influence from Efficacy Beliefs regarding teaching and teacher impact on learning. A majority of respondents ranked themselves higher than average at all three points of data collection.

Guskey and Passaro (1994) noted that the PTE items were positive statements and the GTE statements were negative. They felt the two were on a different continuum, one of internal versus external orientation. "Tschannen-Moran et al. (1998) . . . disagreed with Gibson and Dembo's claim that the PTE and GTE subscale of the TES reflect Bandura's (1997) self-efficacy and outcome expectancy dimensions of social cognitive theory" (Henson, Kogan, & Vacha-Haase, 2001, p. 406). The PTE appears to be less maligned by the critics. Henson et al. challenged both the construct and the psychometrics.

Correlations Between Factors

The BSI scores were elevated at Time 1 (as the school year began), became more elevated at Time 2 (after the start of second semester), and dropped at Time 3 (after the school year ended). No statistically significant correlations were detected between the BSI and Efficacy during Time 1. Time 2 detected a statistically significant correlation between DEP and PTE and PAR and GTE. The correlation between DEP and PTE did not reappear in Time 3. However, the PAR and GTE correlation appeared to strengthen at Time 3. A significant correlation between IS and PTE also materialized at Time 3. At the beginning of the school year, there were no correlations between stress levels and PTE or GTE scores. However, this changed over time. By the end of the school year, teachers

who reported higher stress levels as indicated by the GSI were also more likely to score higher on the GTE subscale. This indicates that in spite of the Stress the teachers experienced, they still had strong convictions about the capacity of teaching in general to impact student learning in a positive way.

No correlation between BSI factors and Personality Types surfaced in Time 1; however, HOS and PSY showed some correlation with Thinking and Feeling Personality Types at Time 2. The Time 2 correlations vanished at Time 3. There were no correlations between stress levels and Personality Type at the beginning of the year and at the end of the year, when stress levels were the lowest. However, during the middle of the school year, when stress levels were the highest, some correlations were found which indicated a protective effect for those scoring in the Feeling component of Personality Type.

Stress and Health Practices showed significant negative correlations at all three data collections times; however, the intensity of the correlation faded over time implying that the protective effects of health-practice benefits diminished over time. Although faculty kept up their exercise programs, the practice lost the protective effect these practices had at the beginning.

In participant observations I noted that as the faculty requested and continued to participate in additional faculty meetings with the principal, stress levels began to subside as refinement of the educational innovation occurred and student academic progress was documented.

Discussion

A majority of respondents ranked themselves higher in stress levels than average at all three points of data collection on the BSI. The finding of PSY at Time 2 is

supported by Fontana and Abouserie's 1993 study in which they found a significant positive correlation between Stress and Psychoticism in a study of 95 teachers. The best predictors of stress levels in their study were Extraversion and Neuroticism. Pithers and Soden (1998) found similar results in their study of 332 Scottish and Australian vocational teachers. In their study, teachers who were teaching in technical and further educational venues were found to have relatively high stress in both groups of teachers, especially as it relates to perceived work overload.

Griffith, Steptoe, & Cropley (1999) found high stress levels also in London elementary and secondary teachers. Kourmousi, Darvri, Varvogli, and Alexopoulos (2015) reported higher stress in female Greek teachers. Mearns and Cain (2003) found high occupational stress predicted greater distress in Orange and Los Angeles County elementary and secondary teachers. Likewise, while Kiziltepe (2007) found high stress levels in a sample of 152 secondary teachers in Istanbul, Turkey; Boshoff, Potgieter, Van Rensburg, and Ellis (2014) found high stress levels in Black South African teachers.

Antoniou, Ploumpi, and Ntalla (2013) found high levels of stress in elementary and secondary teachers in Greece. However, Rabindarang, Bing, and Yin (2014) found only moderate levels of stress in Malaysian vocational teachers. Although some teachers in Tamil Nadu, India report high stress (17.7%), 19.2% of the government school teachers report low stress along with 14.6% of the aided school teachers (Jeyaraj, 2013). Only moderate stress is reported among teachers in the Southeastern United States (Johannsen, 2011); whereas, although 31,342 American teachers continue to "report high levels of stress and low levels of autonomy," they are not threatening to abandon the classroom (Layton, 2015). Turkish teachers reported only mild stress (Eres &

Atanasoska, 2011) in comparison to Macedonian teachers. In India almost half the sample reported low stress (Aftab & Khatoon, 2012). These secondary teachers had only 0-5 years experience teaching, many of whom were untrained to teach. Female teachers were less stressed than males.

Career.com lists information systems analyst as the lowest stress occupation in 2016. University professor is third lowest but attached comments protest vehemently. That is the only teacher occupation listed at all. The highest stress level is given to enlisted military recruits, followed by firemen and policemen. No one else is willing to identify teachers as experiencing low stress levels.

An interesting study of Pakistan women teachers indicated of the 100 participants, 34 reported mild stress, 32 reported moderate stress, and only 34 reported high stress (Pervez & Hanif, 2003). The researchers did not explore the cause of the low and moderate stress level reports in any detail, choosing to focus on causes of high stress instead. Secondary teachers in India were found to report less stress if they were untrained with less than 5 years experience (Aftab & Khatoon, 2012) whereas trained graduate teachers reported significantly high stress levels. A study (Eres & Atanasoska, 2011) comparing stress levels between Turkish and Macedonian teachers discovered Turkish teachers had mild stress; whereas, Macedonia teachers had moderate stress.

While Griffith et al. (1999) and Kyriacou (2001) proposed that teachers who have strong social support, close relations with their colleagues, and use problem solving techniques may have low stress levels, other researchers (Eres & Atanasoska, 2011) suggested a link to chronic laziness. Then they noted Turkish teachers only lose their jobs if convicted of a serious crime; whereas, Macedonia teachers are expected to meet high

levels of performance related to pupils' academic achievement in a changing environment since the Ministry of Education reported new roles for teachers in frequent innovations with constant changes. The researchers anticipated high levels of stress for Turkish teachers in view of the "very low level of success" (p. 62) for 15-year-old Turkish students on the Program for International Student Assessment (PISA), a study launched by the Organization for Economic Cooperation and Development (OECD) in 2000 and scheduled every three years since then. The most recent study was in 2015 (OECD, 2016). A map showing the results from the 76 participating countries in 2015 is available (targetmap.com/viewer.aspx?reportId=41941). Against that backdrop, others are reporting 51% of the teachers in the United States report experiencing great stress on the job (Frey, 2013; MetLife, 2013). Another set of researchers reported they found negative psychological stress was predicted by Efficacy Beliefs and positive psychological stress was predicted by external locus of control (Cascio et al., 2014).

Reliance on subjective self-report measures was seen as troublesome. Guglielmi and Tatrow (1998) recommended further research using theory-based investigations and the adoption of theoretical framework to guide empirical research. Panari, Guglielmi, Ricci, Tabanelli, and Violante (2012) developed a protocol incorporating subjective and objective measures assessing risk factors in the workplace and used it on employees or retail shops in Italy. When presented with the opportunity to participate in the research study, all 1731 employees volunteered. After random and stratified selection 113 were enrolled. The team used a structured self-report questionnaire linked to a structured observational checklist, called the Stress Assessment and Research Toolkit, resulting in the discovery that linked self-report and observational measures were able to predict

psychosocial health and emotional exhaustion.

After discovering 59% of workers in Europe (mostly workers in healthcare and education) report working at high speed with 22% reporting stress related to work, Guglielmi et al. (2013) discovered musculoskeletal disorders headed the problem list. Bova, De Jonge, and Guglielmi (2015) triple-matched demands, resources, and outcomes to discover that physical job demands and job resources were related to musculoskeletal disorders in 422 Italian healthcare employees and 1629 Dutch employees in education and healthcare.

This study investigated the possible links between Teacher Stress as self-reported symptoms, Personality Type, Teacher Efficacy, and Health Practices of faculty and staff at one faith-based residential secondary educational program.

Although there were no correlations between stress levels and PTE or GTE scores at the beginning of the year, teachers who reported higher stress levels as indicated by the GSI were also more likely to score higher on the GTE by the end of the school year. In spite of the Stress the teachers experienced, they still had strong convictions about the capacity of teaching in general to impact student learning in a positive way. In view of the many studies documenting correlations between Efficacy and Stress, amazingly Beckley (2011) found no correlation between Teacher Efficacy and Stress.

Although no correlations were found between stress levels and Personality Type at the beginning and at the end of the academic year, when stress levels were the lowest, during the middle of the school year, when stress levels were the highest, some correlations surfaced which indicated a protective effect for those scoring in the Feeling component of personality type. Steyn and Kamper (2006) also found individual

differences such as personality characteristics and Type A behavior influenced the expression of Stress. Golden (2009) also found differences in responses to Stress dependent on Personality Type.

Although health-practice benefits diminished over time for participants in this study, Jeyaraj (2013) found regular exercise a healthy diet and adequate rest effective in reducing Stress for teachers in the Tamil Nadu area of India.

Some of the BSI scores of the first battery of testing were elevated implying high levels of stress in anticipation of the innovation and the risks of such sweeping changes and the perception that the reins of learning (Baird & Mitchell, 1986) had been handed over to the students with the almost complete cessation of traditional lecturing.

The second administration of the symptom inventory in March resulted in a slightly narrower range of scores (see Table 8). Twelve of the 14 participants have elevated scores. Three of the twelve have only one elevated score so they don't meet the significance criteria set by the author of the tool. Six of these have elevated GSI scores (see Table 9). Participant #16 is a surprise since no individual score is elevated but one of the indices is: the PSDI. However, this elevated score does not meet the significance criteria.

The third administration resulted in a wide range of scores from 36 to 70 (see Table 11). Of the nine participants, six demonstrated elevated scores (see Table 12); however, Participant #2 did not achieve significance since only one score was elevated. This participant reached an elevated score on an index (PST) without any single score of the primary dimensions being elevated. Only the GSI score is significant. However, it is puzzling.

Some interesting developments materialized during the course of the study. Faculty begged to be included in additional faculty meetings indicating an eagerness to learn and participate in the ongoing refining of the educational innovation. This demonstration of ownership was an amazing development in the teaching environment of education. It also coincided with the drop in stress indicators.

Limitations of the Study

The small population size is a limitation from the start at Time 1, as is the decreasing number of participants who were willing to invest the time to complete the additional data entry for Time 2 and Time 3.

Conclusions

Overwhelmingly this study documents that sweeping changes and educational innovation increases Stress, putting health at risk along with teacher retention, and steps need to be taken when improving education to support faculty. In an effort to offset Stress, steps need to be taken to encourage buy-in, collaboration, and participation in all levels of the innovation. Steps to enhance Teacher Efficacy Beliefs and encourage good Health Practices will reap benefits in reducing the negative effects of Stress as will social support.

Recommendations

1. Involve teachers and staff in designing curriculum and its implementation to enhance participative buy-in, collegiality, and collaborative trouble-shooting.

2. Provide heightened support to counteract climbing pressure, anxiety, and uncertainty to prevent escalating stress levels (Evans, 1996).

3. Provide meaningful recognition “to improve performance, morale, and the climate for change” (Evans, 1996, p. 254).

4. Delegate responsibility and autonomy as appropriate.

5. Teach teachers and staff the importance of Efficacy Beliefs and Health Practices and their potential to impact quality of life for teachers both inside and outside the classroom.

6. Encourage practitioner-research involving multiple methods to allow transparency, flexibility, collaboration, and social support (Hussain, 2010).

This study needs to be replicated with a larger population to warrant substantive conclusions.

APPENDICES

APPENDIX A

LETTERS

Andrews University

Department of Teaching, Learning, and Curriculum

Implementing Educational Change
Research Consent Form

June 22, 2005

Dear Broadview Faculty & Staff:

You are an important person to Broadview Academy, its constituents and its students. As you work to recreate Broadview Academy, a research team is helping track the process. The purpose of this study is to document the change that occurs at Broadview and the perceptions of the different stakeholders toward that change. The Research Team will use this information to help improve the change process in other Adventist academies. We will do this by sharing what we learn in this study with other educators through publications and presentations.

We need your permission to use your responses and reflections. We promise you confidentiality and assure you that data collected from this study will be reported without your name attached. All research data will be kept in a locked file in the researchers' offices.

You are not required to grant us permission to use your responses in our research. Your status with Broadview Academy will not be affected if you choose not to participate in the research project. Participation in this study is voluntary. If you have any questions you would like answered before giving your consent to participate in this study, you may discuss them with the one of the research team members or the Broadview principal.

If you have questions after today, or if you would like a copy of one of the papers or articles that result from this research, contact your principal or either of the principal investigators in this research study:

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Choose one of the following options: I understand that if I participate in this study all data will be reported anonymously.

_____ I am at least 18 years of age and I AGREE to participate in this study.

_____ I am at least 18 years of age and I do NOT agree to participate in this study.

_____ _____
Signature of Subject Date

_____ _____
Witness Date

"I have reviewed the contents of this form with the person signing above. I have explained potential risks and benefits of the study."

_____ _____ _____
Signature of Investigator Telephone Number Date

APPENDIX B

QUESTIONNAIRES

PERSONAL DATA

Please respond to the following questions about yourself so that we may know the characteristics of the individuals participating in this study.

1. Your age: ___ years

2. Gender:
   ___ Male (1)
   ___ Female (2)

3. Marital Status:
   ___ Married (1)
   ___ Widowed (2)
   ___ Divorced/Separated (3)
   ___ Never married (4)

4. Current Employment Status:
   ___ Employed full-time (1)
   ___ Employed part-time (2)
   ___ Full-time student (3)
   ___ Homemaker (not employed outside home) (4)
   ___ Unemployed (5)
   ___ Retired (6)

5. Educational Level:
   ___ Completed high school (1)
   ___ Completed some college (2)
   ___ Completed associate degree (3)
   ___ Completed baccalaureate degree (4)
   ___ Completed some graduate work (5)
   ___ Completed graduate or professional degree (6)

6. Ethnic Background:
   ___ Filipino (1)
   ___ Puerto Rican (2)
   ___ Chinese (3)
   ___ Caucasian (4)
   ___ Brazilian (5)
   ___ South African (6)
   ___ Other (7) _____

7. I consider my present health to be:
   ___ Excellent (1)
   ___ Good (2)
   ___ Fair (3)
   ___ Poor (4)

8. In general what language(s) do you read and speak?
___ Spanish (1)
___ Chinese (2)
___ Portuguese (3)
___ Tagalog (4)
___ English (5)

9. What was the language(s) you used as a child?
___ Spanish (1)
___ Chinese (2)
___ Portuguese (3)
___ Tagalog (4)
___ English (5)

10. What language(s) do you usually speak at home?
___ Spanish (1)
___ Chinese (2)
___ Portuguese (3)
___ Tagalog (4)
___ English (5)

11. In what language(s) do you usually think?
___ Spanish (1)
___ Chinese (2)
___ Portuguese (3)
___ Tagalog (4)
___ English (5)

12. What language(s) do you usually speak with your friends?
___ Spanish (1)
___ Chinese (2)
___ Portuguese (3)
___ Tagalog (4)
___ English (5)

TEACHER EFFICACY SCALE

Please indicate the degree to which you agree or disagree with each statement below by circling the appropriate numeral to the right of each statement.

	Strongly disagree	Moderately disagree	Disagree slightly more than agree	Agree slightly more than disagree	Moderately agree	Strongly agree
1. When a student does better than usual, many times it is because I exerted a little extra effort.	1	2	3	4	5	6
2. The hours in my class have little influence on students compared to the influence of their home environment.	1	2	3	4	5	6
3. If parents comment to me that their child behaves much better at school than he/she does at home, it would probably be because I have some specific techniques of managing his/her behavior which they may lack.	1	2	3	4	5	6
4. The amount that a student can learn is primarily related to family background.	1	2	3	4	5	6
5. If a teacher has adequate skills and motivation, she/he can get through to the most difficult students.	1	2	3	4	5	6
6. If students aren't disciplined at home, they aren't likely to accept any discipline.	1	2	3	4	5	6
7. I have enough training to deal with almost any learning problem.	1	2	3	4	5	6
8. My teacher training program and/or experience has given me the necessary skills to be an effective teacher.	1	2	3	4	5	6
9. Many teachers are stymied in their attempts to help students by lack of support from the community.	1	2	3	4	5	6
10. Some students need to be placed in slower groups so they are not subjected to unrealistic expectations.	1	2	3	4	5	6
11. Individual differences among teachers account for the wide variations in student achievement.	1	2	3	4	5	6
12. When a student is having difficulty with an assignment, I am usually able to adjust it to his/her level.	1	2	3	4	5	6
13. If one of my new students cannot remain on task for a particular assignment, there is little that I could do to increase his/her attention until he/she is ready.	1	2	3	4	5	6
14. When a student gets a better grade than he usually gets, it is usually because I found better ways of teaching that student.	1	2	3	4	5	6
15. When I really try, I can get through to most difficult students.	1	2	3	4	5	6
16. A teacher is very limited in what he/she can achieve because a student's home environment is a large influence on his/her achievement.	1	2	3	4	5	6

Teacher Efficacy Scale, *continued*

	Strongly disagree	Moderately disagree	Disagree slightly more than agree	Agree slightly more than disagree	Moderately agree	Strongly agree
17. Teachers are not a very powerful influence on student achievement when all factors are considered.	1	2	3	4	5	6
18. If students are particularly disruptive one day, I ask myself what I have been doing differently.	1	2	3	4	5	6
19. When the grades of my students improve it is usually because I found more effective teaching approaches.	1	2	3	4	5	6
20. If my principal suggested that I change some of my class curriculum, I would feel confident that I have the necessary skills to implement the unfamiliar curriculum.	1	2	3	4	5	6
21. If a student masters a new math concept quickly, this might be because I knew the necessary steps in teaching that concept.	1	2	3	4	5	6
22. Parent conferences can help a teacher judge how much to expect from a student by giving the teacher an idea of the parents/\' values toward education, discipline, etc.	1	2	3	4	5	6
23. If parents would do more with their children, I could do more.	1	2	3	4	5	6
24. If a student did not remember information I gave in a previous lesson, I would know how to increase his/her retention in the next lesson.	1	2	3	4	5	6
25. If a student in my class becomes disruptive and noisy, I feel assured that I know some techniques to redirect him quickly.	1	2	3	4	5	6
26. School rules and policies hinder my doing the job I was hired to do.	1	2	3	4	5	6
27. The influences of a student's home experiences can be overcome by good teaching.	1	2	3	4	5	6
28. When a child progresses after being placed in a slower group, it is usually because the teacher has had a chance to give him/her extra attention.	1	2	3	4	5	6
29. If one of my students couldn't do a class assignment, I would be able to accurately assess whether the assignment was at the correct level of difficulty.	1	2	3	4	5	6
30. Even a teacher with good teaching abilities may not reach many students.	1	2	3	4	5	6

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LIFESTYLE PROFILE II

DIRECTIONS: This questionnaire contains statements about your *present* way of life or personal habits. Please respond to each item as accurately as possible, and try not to skip any item. Indicate the frequency with which you engage in each behavior by circling:

N for never, **S** for sometimes, **O** for often, or **R** for routinely

	NEVER	SOMETIMES	OFTEN	ROUTINELY
1. Discuss my problems and concerns with people close to me.	N	S	O	R
2. Choose a diet low in fat, saturated fat, and cholesterol.	N	S	O	R
3. Report any unusual signs or symptoms to a physician or other health professional.	N	S	O	R
4. Follow a planned exercise program.	N	S	O	R
5. Get enough sleep.	N	S	O	R
6. Feel I am growing and changing in positive ways.	N	S	O	R
7. Praise other people easily for their achievements.	N	S	O	R
8. Limit use of sugars and food containing sugar (sweets).	N	S	O	R
9. Read or watch TV programs about improving health.	N	S	O	R
10. Exercise vigorously for 20 or more minutes at least three times a week (such as brisk walking, bicycling, aerobic dancing, using a stair climber).	N	S	O	R
11. Take some time for relaxation each day.	N	S	O	R
12. Believe that my life has purpose.	N	S	O	R
13. Maintain meaningful and fulfilling relationships with others.	N	S	O	R
14. Eat 6-11 servings of bread, cereal, rice, and pasta each day.	N	S	O	R
15. Question health professionals in order to understand their instructions.	N	S	O	R
16. Take part in light to moderate physical activity (such as sustained walking 30-40 minutes 5 or more times a week).	N	S	O	R
17. Accept those things in my life which I can not change.	N	S	O	R
18. Look forward to the future.	N	S	O	R
19. Spend time with close friends.	N	S	O	R
20. Eat 2-4 servings of fruit each day.	N	S	O	R
21. Get a second opinion when I question my healthcare providers' advice.	N	S	O	R
22. Take part in leisure-time (recreational) physical activities (such as swimming, dancing, bicycling).	N	S	O	R
23. Concentrate on pleasant thoughts at bedtime.	N	S	O	R
24. Feel content and at peace with myself.	N	S	O	R
25. Find it easy to show concern, love, and warmth to others.	N	S	O	R
26. Eat 3-5 servings of vegetables each day.	N	S	O	R

	NEVER	SOMETIMES	OFTEN	ROUTINELY
27. Discuss my health concerns with health professionals.	N	S	O	R
28. Do stretching exercises at least 3 times per week.	N	S	O	R
29. Use specific methods to control my stress.	N	S	O	R
30. Work toward long-term goals in my life.	N	S	O	R
31. Touch and am touched by people I care about.	N	S	O	R
32. Eat 2-3 servings of milk, yogurt, or cheese each day.	N	S	O	R
33. Inspect my body at least monthly for physical changes/danger signs.	N	S	O	R
34. Get exercise during usual daily activities (such as walking during lunch, using stairs instead of elevators, parking car away from destination and walking).	N	S	O	R
35. Balance time between work and play.	N	S	O	R
36 Find each day interesting and challenging.	N	S	O	R
37. Find ways to meet my needs for intimacy.	N	S	O	R
38. Eat only 2-3 servings from the meat, poultry, fish, dried beans, eggs, and nuts group each day.	N	S	O	R
39. Ask for information from health professionals about how to take good care of myself.	N	S	O	R
40. Check my pulse rate when exercising.	N	S	O	R
41. Practice relaxation or meditation for 15-20 minutes daily.	N	S	O	R
42. Am aware of what is important to me in life.	N	S	O	R
43. Get support from a network of caring people.	N	S	O	R
44. Read labels to identify nutrients, fats, and sodium content in packaged food.	N	S	O	R
45. Attend educational programs on personal health care.	N	S	O	R
46. Reach my target heart rate when exercising.	N	S	O	R
47. Pace myself to prevent tiredness.	N	S	O	R
48. Feel connected with some force greater than myself.	N	S	O	R
49. Settle conflicts with others through discussion and compromise	N	S	O	R
50. Eat breakfast.	N	S	O	R
51. Seek guidance or counseling when necessary.	N	S	O	R
52. Expose myself to new experiences and challenges.	N	S	O	R

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VITA

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1973-1975	AS, Nursing, Kettering College of Medical Arts, Kettering, OH
1964-1966, 1967-1968	BA, French & Organ, Walla Walla University, College Place, WA
1966-1967	French & Organ, Collonges-sous-Salève/Conservatoire de Genève
1963-1964	Piano, Southern Adventist University, Collegedale, TN

Selected Experience:

2012-2015	Nurse (surgicenter), Alaska Spine Center, Anchorage, AK
2004-2005	Assistant to the Principal, Broadview Academy, La Fox, IL
2002-2006	Assistant to the Dean of Nursing, Bethel College, Mishawaka, IN
1987-2000	Nurse (L&D, med-surg, & ICU), Oroville Hospital, Oroville, CA
1990-1992	Director of Nurses, Eye Life Institute, Surgicenter, Paradise, CA
1985-1987	Nurse (med surg & ICU), Feather River Hospital, Paradise, CA
1984	Assisted medical director in teaching community health workers, Mugonero Adventist Hospital, Kibuye, Rwanda
1973-1982	Unit Clerk, Nurse (med-surg, ICU, L&D), Kettering Medical Center, Kettering, OH
1969-1971	English III (11th grade), Blue Mountain Academy, Hamburg, PA

Selected Professional Organizations

2014-2015	Member	American Guild of Organists
2005-2015	Member	American Educational Research Association
2005-2015	Member	Associates for Research on Private Education
2005-2015	Member	International Assn for the Advancement of Curriculum Studies
2005-2015	Member	American Assn for the Advancement of Curriculum Studies
2005-2015	Member	Andrews Community of Curriculum & Instruction Scholars
2004-2005	President	Sigma Theta Tau Nu Omicron Chapter
2003-2015	Member	Phi Lambda Theta
2002-2015	Member	Sigma Theta Tau Eta Zeta Chapter
2002-2010	Member	National League for Nursing

Publications:

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