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UNIVERSITY OF ALBERTA

SELF-DEFEATING BELIEFS AND STRESS IN TEACHERS

BY

LINDA A. CHORNEY

A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES AND RESEARCH IN

PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF

DOCTOR OF PHILOSOPHY

IN

COUNSELLING PSYCHOLOGY

DEPARTMENT OF EDUCATIONAL PSYCHOLOGY

EDMONTON, ALBERTA

FALL 1997

UNIVERSITY OF ALBERTA

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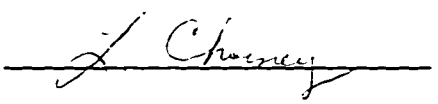

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The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies and Research for acceptance, a thesis entitled SELF-DEFEATING BELIEFS AND STRESS IN TEACHERS submitted by LINDA A. CHORNEY in partial fulfillment of the requirements for the degree of DOCTOR OF PHILOSOPHY in COUNSELLING PSYCHOLOGY.

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Wisdom
is not to be found at the top
of the graduate school mountain,
but rather in the sand pile
at Sunday school.

adapted from R. Fulghum

ABSTRACT

The goals of this research were to identify the self-defeating beliefs of teachers, determine the incidence of those beliefs, and examine the relationship between self-defeating beliefs and teacher stress. Self-defeating beliefs were defined as those beliefs teachers have about being a good teacher that are unfounded by logical or empirical evidence, and have a strong likelihood of causing a teacher to have unrealistic expectations for their performance in the work environment.

Forty-one teachers generated 365 statements in response to the sentence stem "In order to be a good teacher, I believe that I . . . . . ." Ninety-two percent of the generated statements were stated in absolute terms (i.e., must, should, have to, need/need to). Ratings of the belief statements by 3 judges were used to arrive at a list of 45 self-defeating beliefs. Underlying themes in the self-defeating belief statements were determined using multidimensional scaling and hierarchical cluster analysis. The themes identified were Upgrading/Curriculum Issues, Work Requirements, Support, Working With Students, and Time/Energy Commitment. Two statements were classified as being in a Miscellaneous category.

Endorsement of the 45 self-defeating beliefs was found to be wide-spread among the 297 teachers who rated the belief statements. High endorsement of the belief statements was associated with high stress levels. Teachers with high beliefs scores reported significantly more time management stress. High stress teachers rated beliefs from the Support theme with significantly greater strength of agreement than did low stress teachers.

ACKNOWLEDGMENTS

A warm thank you goes to my supervisor, Dr. Peter Calder, for the many hours he gave of his time to help me with this research. I leave this university with writing skills that have improved tremendously thanks to his unrelenting call for clarity.

A sincere thank you also goes to Dr. Beth Young and Dr. Bob Mulcahy, my supervisory committee, for their time and input during the course of this study. A special thank-you to Dr. Beth Young in this regard for her calming influence during difficult times, and for her support. Thanks also to the other members of my committee, Dr. Fern Snart, Dr. Henry Janzen, and Dr. Norman Amundson for their considered and constructive critiques.

Finally, a very special thank you goes to both my family and to Jamie Dyce who gave me the precious gift of time as I worked to complete this project. Your thoughtfulness and support during the summer of 96 were very much appreciated!

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INTRODUCTION

> I have never worked in a coal mine, or a uranium mine, or in a herring trawler; but I know from experience that working in a bank from 9:15 to 5:50, and once in four weeks the whole of Saturday, with two weeks holiday a year, was a rest cure compared to teaching in a school.
>
> T. S. Eliot

Statement of the Problem

Teacher stress is a topic of research and concern. Tuettemann and Punch (1992b) note that "teachers are leaving their profession in increasing numbers, and a high proportion of those who remain in their job freely admit their dissatisfaction and distress" (p. 181). Farber (1991) reports that "although teacher stress has certainly existed as long as teaching, recognition of a serious morale problem among teachers in this country has become more explicit in the last twenty to thirty years" (p. 2). Interest in the topic would appear to be widespread, as evidenced by the fact that studies are being conducted throughout the world (e.g., Australia [Sarros & Sarros, 1992], Israel [Friedman & Farber, 1992], Zimbabwe [Wilson & Mutero, 1989], Barbados [Payne & Furnham, 1987], Finland [Salo, 1995], Malta [Boyle, Borg, Falzon, & Baglioni, Jr., 1995], Sweden [Brenner, Sorbom, & Wallius, 1985], Singapore [Soh, 1986], Britain [Capel, 1991], the U. S. A. [French, 1993], Canada [King & Peart, 1992]).

The effects of teacher stress are increasingly being documented. Halpin, Harris, and Halpin (1985) state that "stress has become a recognized occupational hazard of teaching" (p. 136). Schonfeld (1990a, 1990b) reports

elevated scores on a depressive symptom scale in teachers compared to general population samples, and Solman and Feld (1989) note that "teachers are more likely than other professionals to need the intervention of a trained health expert" (p. 65). In looking at the effects of teacher stress on students, Blase (1986) reports that "while under stress, teachers behave differently with students; they become less tolerant, less patient, less caring, and, overall, less involved" (p. 32). He further notes the following:

> As two-way interaction between teachers and students decreases, teachers tend to exercise greater control over instruction, using, for example, specific questions and allowing only brief responses in turn. Humor, elaboration of subject matter, and creative involvement are noticeably lacking when the teacher is experiencing significant stress. All in all, the interaction between teacher and student is depreciated. (p. 33)

Similar findings have been reported by other researchers (Kyriacou, 1987; Manthei & Solman, 1988; Starnaman & Miller, 1992; Whiteman, Young, & Fisher, 1985).

Given the above information, it would appear that teacher occupational stress is an issue of concern to various stakeholders. As Farber (1991) notes, "teacher stress and burnout have affected and will continue to affect the lives of teachers and their families, administrators and their families, students and their families, and all of society" (p. 313). It is a topic that seems to warrant investigative attention.

Previous Research

Stress researchers (e.g., Brief & George, 1991; Kelloway & Barling, 1991) note that there are "certain job conditions [that] adversely affect the well-being of most workers" (Brief & George, 1991, p. 17). Such conditions

have been well-documented in teaching. As Hiebert (1985) reports, "the main thrust [of teacher occupational stress research] has been to identify tasks or role-related responsibilities that teachers find stressful" (p. 13). Consistent with this report is the finding by the author that only 18% of the 150 teacher occupational stress articles listed on the PsycINFO database (American Psychological Association, January 1984 - June 1996) focus on personal variables. Worrall and May (1989) report on the importance of "breaking out of the circle of endlessly listing 'sources of teacher stress'" (p. 184), and Hiebert and Farber (1984) note the following: "Research on teacher stress must undergo a change in focus if we are to obtain the kind of knowledge that will enable teachers to control their stress and be more effective in the classroom" (p. 22). As Hiebert (1985) notes:

> Adopting an environmental perspective poses at least one potential hazard for teachers. If one assumes that teaching is stressful, the way to reduce stress is to identify and remediate certain environmental conditions. In this view, the teacher is delegated essentially to a passive role in controlling stress. (p. 14)

Consistent with the position of Lazarus (1993b) who emphasizes that individual differences in reaction to stressors is a topic that warrants researchers' attention, teacher stress researchers are increasingly calling for investigations with an interactional focus.

As conceptualized in cognitive psychology, beliefs play an important role in the stress levels experienced by individuals. Lazarus and Folkman (1984) note that "beliefs determine what is fact, that is, 'how things are' in the environment, and they shape the understanding of its meaning" (p. 63). Ellis postulates that beliefs contribute to stress levels because the holding of some beliefs can prevent flexibility and adjustment to the

changing demands of one's environment (Ellis & Bernard, 1986). Findings in the stress literature point to a consistent and significant relationship between irrational/dysfunctional beliefs (e.g., beliefs that are unfounded by logical or empirical evidence and are absolute) and stress (e.g., Gillis, 1992; Harran & Ziegler, 1991; Hart, Turner, Hittner, Cardozo, & Paras, 1991; Kassinove, 1986; Morin, Stone, Trinkle, Mercer, & Remsberg, 1993; Woods, 1987; Zuroff, Igreja, & Mongrain, 1990).

In reviewing the literature on teachers, one finds that the importance of beliefs with regard to what and how teachers learn in teaching education programs is well documented (Kagan, 1992; Nespor, 1987; Pajares, 1992; Richardson, 1996). Acknowledgment of a relationship between beliefs and teacher stress, and research into the topic, is more limited, however. Researchers who have investigated the relationship between beliefs and stress in teachers have examined (a) beliefs about control - locus of control (e.g., Hipps & Halpin, 1991; Parkay, Greenwood, Olejnik, & Proller, 1988; Pierce & Molloy, 1990) (b) beliefs about ability to accomplish tasks - efficacy (e.g., Brissie, Hoover-Dempsey, & Bassler, 1988; Finneran, 1990; Tuettemann & Punch, 1992b) (c) general irrational beliefs (Bernard, 1988a, 1988b; Jevne & Zingle, 1992; Zingle & Anderson, 1990). As a result of their 1990 study of irrational beliefs and teacher stress, Zingle and Anderson suggest the need for an investigation of the beliefs specific to teaching: "Perhaps a more specific measure that examines the prevalence of irrational beliefs related to one dimension of a person's life would prove more useful in designing programs for counselling in that dimension" (p. 448).

Rationale For The Focus of This Research

A theme that runs through the teacher occupational stress literature is that expectations placed upon teachers cause stress. Flett, Hewitt, and Hallett (1995) found a positive association between socially prescribed perfectionism (perception that others have unrealistically high expectations for oneself) and various facets of teacher stress. King and Peart (1992) report (based on a study involving over 14,000 teachers) that "an overwhelming number of teachers" (p. 122) feel pressure from societal expectations. Similarly, Byrne (1991) found that teachers (n = 642) expressed concern about the "intense pressure they experienced from trying to meet the demands of many masters - principal, parents, students, school board officials; they felt drained from the pull in many directions" (p. 205). Given these findings, it is not surprising that the Alberta Teachers' Association recently reported that "the job of teaching has become increasingly unmanageable because society's expectations for schools have expanded to a point where they can no longer be met" (1994, p. 1). Jevne notes that "the entire (education) system, as well as individuals, are paying a heavy price for unrealistic expectations" ("Broken Dreams," 1992, p. E1).

Jevne and Zingle (1992) report that "teaching is a profession which chronically invites individuals and systems to overextend" (p. 239). Further, on the topic of self-expectations, they note that "health and willingness to temper expectations are related" (p. 239). Shinn, Rosario, Morch, and Chestnut (1984) found a relationship between stress and "unrealistic expectations fostered by the professional role" (p. 874). Given these research findings as well as the substantial number of findings in the general stress literature that support the notion of a significant

relationship between beliefs and stress, the topic of teacher occupational stress and unrealistic self-expectations would seem to warrant investigation. As Flett, Hewitt, Blankstein, and Koledin (1991) note, "it is generally accepted that a belief in perfectionistic, high self-expectations is a core cognition that may lead to emotional distress" (p. 197). Trower, Casey, and Dryden (1988) also report that "when people hold unrealistic and negative beliefs about themselves or their experiences, an emotional upset will result" (p. 1). To date, the author has found no research that investigates the relationship between teacher stress and the unrealistic expectations individuals may have for themselves in their role as teacher.

Purpose of the Study

The present study was undertaken to examine the relationship between teacher stress and self-defeating beliefs. For the purposes of this research, self-defeating beliefs are defined as beliefs teachers have about being a good teacher that are unfounded by logical or empirical evidence, and have a strong likelihood of causing unrealistic expectations for their performance in the work environment. In this study, the following questions are posed:

(a) What are the self-defeating beliefs of teachers?

(b) What are the themes of the self-defeating beliefs ?

(c) What is the incidence rate of self-defeating beliefs?

(d) What is the relationship between self-defeating beliefs and teacher stress?

The findings of this research will contribute to our understanding of the relationship between beliefs and stress. A unique feature of this research will be the recording of performance related beliefs espoused by practicing teachers. Having knowledge of such beliefs may prove

beneficial in designing effective stress reduction programs for educators seeking to maximize the flexibility and options at their disposal. The findings of the proposed research may also encourage an examination of current teacher education programs to determine if such programs are inadvertently helping to create self-defeating beliefs through their instructional methods.

Delimitations

Participants in this study were volunteers. They consisted of Alberta public school teachers (Kindergarten to Grade 12) who had been given the option of participating in this study by their school principal.

Definition of Terms

Stress

Stress is defined as the perceived physical and emotional distress manifestations that result from experiences in the workplace as measured by the Teacher Stress Inventory (Fimian, 1988).

Self-Defeating Beliefs

Self-defeating beliefs are defined as those beliefs teachers have about being a good teacher that are unfounded by logical or empirical evidence, and have a strong likelihood of causing a teacher to have unrealistic expectations for their performance in the work environment.

In the next chapter, the literature on stress, beliefs and stress, and teacher occupational stress is reviewed. In addition, the use of concept mapping as a tool for facilitating conceptualization is discussed, and a rationale for the study is given. In Chapters 3 and 4, the method and results of the study are described. A summary and discussion of the results follow in Chapter 5. Chapter 5 also contains conclusions drawn from the study, study limitations, practical implications, and implications for further research.

Chapter 2

LITERATURE REVIEW

This chapter begins with a brief overview of the stress concept. Next the literature on beliefs and stress is examined, followed by a review of the teacher occupational stress literature. The chapter continues with a review of concept mapping. Finally a summary, which includes a rationale for the research, is presented.

An Overview of the Stress Concept

With tongue-in-cheek, psychotherapist Ethel Roskies refers to stress as "a shorthand symbol for explaining much of what ails us in the contemporary world" (Lazarus & Lazarus, 1994, p. 219). Indeed, stress is a word that is frequently heard in a variety of contexts in modern society, leading many to conclude we live in an "age of stress" (Selye, 1982, p. 7). Not surprisingly, it is a topic that has been the focus of a great deal of research. Over 27,000 articles on stress are listed on the PsycINFO database (American Psychological Association, January 1984 - May 1996), 8,000 of which appeared during the first four months of 1996 alone.

Despite the proliferation of studies on the topic, a clear definition of the term is lacking. As Breznitz and Goldberger (1993) note, "different scholars have different definitions [of stress] and oftentimes abide by those most suitable to the pursuit of their particular interests" (p. 4). These authors go on to report that while some may view the lack of consensus about a definition as a paradigm crisis, it more accurately reflects an expansion of stress research into diverse areas (e.g., research on individual differences and on coping). In the opinion of Breznitz and Goldberger, this expansion has the potential to facilitate future theorizing, thus preventing premature closure on the topic.

According to stress researchers (Appley & Trumbull, 1967; Derogatis & Coons, 1993; Kahn, 1986; Lazarus, 1966), theories of stress can be grouped into three categories - stimulus-oriented theories, response-oriented theories, and interactional (or transactional) theories. In each grouping, a particular component of the stress equation is focused upon. It is this difference in investigative emphasis that has led to the variations in the definition of stress currently found in the literature.

Stimulus-Oriented Theories

Stimulus-oriented theories have their roots in Hooke's late seventeenth century engineering model and were the driving force behind the stress research that dominated the literature until the 1960s (consistent with the rule of behaviorism in the social and biological sciences [Mahoney, 1991]). In Hooke's model, stress is defined as the ratio of pressure on an object (created by an external force or load) to the size of the area affected (Hinkle, 1973).

In stimulus-oriented theories, it is thought that "those aspects of the environment that increase demands upon or disorganize the individual impose stress upon him or her" (Derogatis & Coons, 1993, p. 201). Stress is therefore seen as a potential that exists in environmental stimuli, and is defined as those external conditions that have negative effects on an organism (Kahn, 1986). The goal of research with this focus is to measure and analyze the characteristics of the environment in an attempt to determine their capacity to induce stress. Contemporary stimulus-oriented researchers have investigated such aspects of environmental stress as the differences between variables that are time-limited versus chronic, stressor sequences (Elliott & Eisdorfer, 1982), and the impact of "daily hassles" (Wekking, Vingerhoets, VanDam, Nossent, & Swaak, 1991).

Response-Oriented Theories

In contrast to the conceptualization of stress presented above, response-oriented theories define stress as a disturbance resulting from a load. Attention is focused on the response of an organism or individual to noxious external stimuli. The nature of such a response may be "neurobiological (e.g., levels of monoamines, neuropeptides, corticosteroids), physiological (e.g., galvanic skin response, blood pressure, muscle tension), or psychological (e.g., negative affect states, degree of symptomatic distress)" (Derogatis & Coons, 1993, p. 202).

Response-oriented theories have origins in Bernard's (1879) exploration of homeostasis, and in Cannon's (1939) investigations of the responses of organisms to varying physical environmental conditions (Lazarus, 1993b). Selye (1956), a response-oriented theorist, is commonly regarded as the father of stress research. His investigations into the body's reaction to stress launched thousands of studies on stress and stress reactions (Lefton, 1994). As defined by Selye, stress is the "nonspecific (that is, common) result of any demand upon the body, be the effect mental or somatic" (1982, p. 7). Selye found that organisms experience the same physiological stress reactions (distinct bodily and chemical changes that occur in stages [alarm, resistance, and exhaustion]) when exposed to very different situations. He called this phenomena the general adaptation syndrome (GAS). Research into the link between stress responses and the development of disease is ever increasing and includes investigations on such topics as infectious diseases (Cohen & Williamson, 1991; McKinnon, Weisse, Reynolds, Bowles, & Baum, 1989; Stone et al., 1992) and heart disease (Clover, Abell, Becker, Crawford & Ramsey, Jr., 1989; Elliott, 1995).

Interactional/Transactional Theories

In interactional theories, stress is defined as a negative emotional experience that results when the demands of a situation tax or exceed an individual's resources (Lazarus, 1993b). Interactional stress theories were born amid growing criticism of the ability of stimulus and response theories to fully explain stress reactions in humans (Derogatis & Coons, 1993; Goldberger, 1986), and now find wide acceptance (Croyle, 1992). As King, Stanley, and Burrows (1987) note, "while stress depends to some extent upon the direct impact of environmental demands, in humans the stress response is also strongly dependent on the mediating role of each person's interpretation and appraisal of the situation" (p. 4). Although researchers conceptualize the appraisal process in different ways (e.g., Cox, 1978; Lazarus & Folkman, 1984; Schonpflug, 1986), there is a general consensus that the act of perceiving a stressor as stressful "is nearly as essential in its ability to generate symptoms in some individuals as is its raw stressfulness" (Tomb, 1994, p. 246). Theorists who are transactional additionally contend that the "perceptual, cognitive, and emotional mediating processes of the individual actively affect the demand characteristics of the environment, thus resulting in a system that is constantly changing" (Derogatis & Coons, 1993, p. 202).

In stress research based on interactional/transactional theories, individual differences are the focus of investigation. Research into personality traits (Brosschot, Gebhardt, & Godaert, 1994; Parkes, 1994; Westra & Kuiper, 1992) and coping styles (Koeske, Kirk, & Koeske, 1993; Kohn, Hay & Legere, 1994, Wallbott & Scherer, 1991) are examples of such investigations.

In their review of the stress literature, Derogatis and Coons (1993) note a common theme in several interactional/transactional theories. They report that importance is often placed on individuals' beliefs - "an individual's private beliefs about the event play a central role" (p. 203). An increasingly common investigative focus in stress research is the relationship between beliefs and stress. It is this relationship that is examined next.

Beliefs and Stress

A Definition of Beliefs

Beliefs are defined as propositions, understandings or premises that are accepted as true (Richardson, 1996). Kant (1929/1961) distinguishes between beliefs and knowledge by noting that while believing involves subjectively holding that something is true, knowing includes both subjective and objective components (i.e., includes factual evidence) (p. 646). This distinction is in keeping with the definition of the word as used in cognitive psychology. As Trower, Casey, and Dryden (1988) note, "at the heart of CBC [cognitive-behavioral counselling] lies the idea that our interpretations of our experiences are hypotheses or beliefs rather than facts, and as such may be correct or incorrect to varying degrees" (p. 1).

Traditionally, beliefs have been viewed as the driving force behind individuals' actions (Combs, 1982; LaGrand, 1988; Rokeach, 1968; Scheibe, 1970). In a recent review of the literature, Richardson (1996) found that the relationship now tends to be seen in a more interactive fashion. That is, while beliefs are thought to drive actions, it is believed that "experiences and reflection on action may lead to changes in and/or additions to beliefs" (p. 104).

Conceptualizations of the Beliefs-Stress Relationship

Research into the relationship between beliefs and stress arises from the cognitive branch of psychology, a field "specifically concerned with thinking processes and their products" (Masters, Burish, Hollon, & Rimm, 1987, p. 385). Three cognitive theorists - Albert Ellis, Aaron Beck, and Richard Lazarus - have been prolific in their writing, and influential in their theorizing about the relationship between beliefs and stress. It is their conceptualizations that are detailed on the pages that follow.

Albert Ellis's Conceptualization.

According to Albert Ellis, "irrational beliefs are the foundation of the prolonged arousal and the emotional anguish that has been shown to be the prime cause of most ills associated with stress" (Abrams & Ellis, 1994, p. 41). Ellis defines irrational beliefs as cognitions of personal significance that are unempirical or unrealistic (Ellis, 1977), or are "absolute (or dogmatic) in nature and are expressed in the form of 'musts,' 'shoulds,' 'oughts,' 'have-to's,' etc." (Dryden & Ellis, 1990, p. 6) (also referred to as musturbatory statements). Ellis hypothesizes that at the core of most psychological disturbances are irrational beliefs that take the form of life rules (Ellis & Harper, 1975).

In Ellis's view, irrational thought comes naturally to human beings, and is the product of both innate characteristics and learning. He defines irrationality as "any thought, emotion, or behavior that leads to self-defeating or self-destructive consequences - that significantly interferes with the survival and happiness of the organism" (Ellis, 1976/1990, p. 54).

Ellis has expanded upon his eleven original irrational beliefs (Ellis, 1962) to include numerous obvious and subtle irrational beliefs grouped under the headings (a) competence and success (b) love and approval

(c) being treated fairly (d) safety and comfort (Ellis, 1987). As conceptualized in the ABC model of emotional disturbance (Ellis, 1977; Ellis & Bernard, 1986), beliefs (B) serve as mediators between activating events (A) and cognitive, emotional and behavioral consequences (C). When the mediating beliefs are rational (preferential rather than absolute in nature), a healthy reaction such as frustration, sadness, or disappointment results (a reaction that does not preclude the pursuit of the goal under consideration). However, when the mediating beliefs are irrational, negative emotions ensue. These emotions are thought to exacerbate matters, making "obnoxious conditions and frustrations worse, rather than to help overcome them" (Ellis & Bernard, 1986, p. 8). In Ellis's conceptualization, it is at the point where beliefs become "absolutistic, dogmatic shoulds, oughts, musts, commands, demands and necessities" (Ellis, 1987, p. 366) that a significant problem results (Ellis & Harper, 1975, p. 203). An example of a teacher belief that would, at first glance, be characterized as irrational using Ellis's conceptualization is "I must always have a written lesson plan."

Ellis (1989) notes that "irrational in RET [rational-emotive therapy] mainly means self-defeating. Musturbatory statements will usually but not always lead to self-defeating feelings and behaviors " (p. 208). The goal of his rational-emotive therapy is to put an end to self-defeating feelings and behavior. In an attempt to bring an "unreasonable and antiempirical belief system" (Sutton-Simon, 1981, p. 66) into awareness, an individual's philosophical stance is focused upon. Clients are given "how-to" instructions for examining the rationality of their beliefs, and are encouraged to acquire a philosophy that makes them "maximally nondependent, individualistic, and nonconformist" (Ellis, 1980, p. 335).

Aaron Beck's Conceptualization.

According to Aaron Beck, "specific beliefs incorporated into relatively stable structures - schemata" (Beck, 1993, p. 196) lead to "dysfunctional behavior, excessive distress, or both" (p. 196). He hypothesizes that dysfunctional beliefs produce bias/distortions in the processing of information. Resultant distortions in thinking include personalization (incorrectly attributing an external happening to oneself), polarized thinking (dichotomous either/or, all/none), selective abstraction (focusing on a detail while ignoring the context), arbitrary inference (drawing a conclusion without sufficient evidence) and overgeneralization (formulating a general rule on the basis of a single incident). In Beck's view, the deviant meanings that result from such distortions in thinking are at the core of emotional disorders (Beck, 1976).

Like Ellis, Beck (1976) theorizes that beliefs form the basis of basic, fundamental rules. According to Beck, these rules determine the interpretations one makes and the expectations one has, and they give rise to automatic thoughts. In contrast to Ellis, however, Beck does not view dysfunctional beliefs as necessarily irrational. Rather, dysfunctional beliefs are seen as problematic because normal cognitive processing is disrupted (Beck & Weishaar, 1989). Beck (1976) notes that although beliefs may appear to be irrational, they generally make sense "within the patient's conceptual framework" (p. 16). It is therefore essential to determine the specific content of the patient's "erroneous beliefs" (Beck, 1976, p. 17). This is accomplished by carefully examining the sequence of events (including thoughts) leading up to the problematic situation.

In Beck's model of cognitive-behavioral therapy, the initial goal is to identify automatic thoughts (described by Beck as "brief signals at the

periphery of consciousness" [Yapko, 1991, p. 10]). Then emphasis is placed on examining the "unrealistic premises" (Beck, 1976, p. 17) of an individual's belief system, and correcting misconceptions. This is typically accomplished through collaborative empiricism (Hollon & Beck, 1979; Wright & Beck, 1994), a process in which the therapist and client act as "active collaborators" (Hollon & Beck, 1979, p. 180) in testing dysfunctional beliefs both logically and empirically. In this process, "clients are encouraged to treat their beliefs as hypotheses to be tested and are trained to use their own behaviors as experiments to examine the accuracy of those beliefs" (Hollon & Beck, 1994, p. 429). In this model, a teacher espousing the beliefs "I am a terrible teacher," "I'm so incompetent" would be encouraged to examine the evidence for such beliefs.

Richard Lazarus's Conceptualization.

According to Richard Lazarus, stress is best conceptualized as a subset of emotion rather than a unidimensional concept because stress encompasses several negative emotions (Lazarus, 1990, 1993a, 1993b). Lazarus (1993b) postulates that cognitive appraisal (subjective evaluation) of the person-environment relationship is "essential to the generation of an emotion" (p. 25), and further, that it is such an appraisal that determines both the content of an emotion (e.g., guilt, anxiety, anger) and its intensity. In his model, the three major variants of psychological stress are harm/loss, threat and challenge (Lazarus, DeLongis, Folkman, & Gruen, 1985).

Beliefs play an important role in Lazarus's cognitive appraisal model. As he notes, "in appraisal, beliefs determine what is fact, that is, 'how things are' in the environment, and they shape the understanding of its meaning" (Lazarus & Folkman, 1984, p. 63). In Lazarus's view, beliefs

become even more important as a factor in the appraisal process when cues from the environment are ambiguous (Lazarus, 1966).

Appraisal is defined by Lazarus (1990) as the process that "reconcile[s] two sets of factors, the personal agendas (e.g., goal commitments, beliefs about self and world) characterizing each of us as individuals, and the objective conditions creating jeopardy for these agendas in any given individual" (p. 8). Succinctly put, appraisal is "an evaluation of the significance of what is happening in terms of one's well-being" (Lazarus, 1993b, p. 25). Cognitive appraisal includes both primary and secondary components. Primary appraisal involves an evaluation of (a) goal relevance (b) goal congruence/incongruence (harm, threat, or benefit) (c) type of ego involvement. Secondary appraisal involves an evaluation of (a) attributions (blame or credit) (b) coping potential (c) future expectations (Lazarus, 1993b).

A unique element in Lazarus's cognitive theory of emotions is the notion of coping as a causal factor. In his view, "the coping process generated by the appraisal of harm, threat, or challenge can modify the original appraisal and thus change the subsequent emotional state" (Lazarus, 1989, p. 50). Modification can occur prior to an emotional reaction from an individual in response to a circumstance. Coping is viewed as contextual, and is either problem-focused or emotion-focused (Lazarus, 1993a, 1993b). In problem-focused coping, actions are employed to change the environment or one's behavior in it. In emotion-focused coping, changes are made in the way an individual thinks about a situation either by "modifying the pattern of attention (as in avoidance) or by modifying the appraised meaning of the relationship (as in denial or distancing)" (Lazarus, 1989, p. 51). For Lazarus (1993b), "the bottom line of

how coping influences emotion is always a change in appraisal . . . to change an emotion one must change the appraisal" (p. 35). An example of a teacher belief in which appraisal plays a key role is "I can't cope with class sizes larger than 25."

This concludes a brief overview of conceptualizations of the beliefs-stress relationship. The theorists who were presented are in agreement with the tenet that beliefs play an important role in the stress experience. These theorists also note the importance of knowing what an individual's beliefs are in order to alleviate the experience of stress. Currently, little is known about the job-related beliefs of teachers.

In order to further investigate the beliefs-stress relationship, research on the topic will now be examined.

Research into the Relationship Between Beliefs and Stress

Instruments Used.

In a 1981 review of the beliefs literature, Sutton-Simon notes that most research instruments used for assessing beliefs are based on Ellis's (1962, 1977) concept of irrationality. This continues to be true. The commonly utilized belief measures such as the Irrational Beliefs Test (Jones, 1968a, 1968b), the Rational Behavior Inventory (Shorkey & Whiteman, 1977), and the Personal Beliefs Test (also referred to as the Survey of Personal Beliefs) (DeMaria, Kassinove, & Dill, 1989; Kassinove, 1986) are all derived from Ellis's work. In addition, the belief instruments designed for and used in individual studies are typically based on Ellis's concept of irrationality.

Instruments used to measure stress in beliefs-stress research are usually self-report measures. Various aspects of emotional distress have been investigated. Depression is typically measured by the Beck Depression Inventory (Beck, 1972). The Hamilton Rating Scale (Endicott,

Cohen, Nee, Fleiss, & Sarantokos, 1981) and the Multiple Affect Adjective Check List: General Form (Zuckerman, 1960; Zuckerman, Lubin, & Robins, 1965) are also used. Trait anxiety is typically measured by the State-Trait Anxiety Inventory: Trait Scale (Spielberger, Gorsuch, & Lushene, 1970) and the Fear of Negative Evaluation Scale (Watson & Friend, 1969). In obtaining a measure of state anxiety, the State-Trait Anxiety Inventory: State Scale (Spielberger, Gorsuch, & Lushene, 1970) seems to be the instrument of choice. Anger is measured by the State-Trait Anger Inventory (Spielberger, Jacobs, Russell, & Crane, 1983), and general negative life stress is often measured with the Life Experiences Survey (Sarason, Johnson, & Siegel, 1978). Measures of neuroticism are obtained with the Eysenck Personality Inventory: Neuroticism Scale (Eysenck & Eysenck, 1968) and the Maudsley Personality Inventory: Neuroticism Scale (Eysenck, 1962). The Social Avoidance and Distress Scale (Watson & Friend, 1969) is sometimes used as an overall measure of stress.

In the results that follow, some of the bibliographic information contained above will not be repeated. Readers are encouraged to refer back to this section should such information be required.

Results of Studies.

The most common method used to investigate the relationship between beliefs and stress are studies in which scores on irrational belief measures and stress measures are correlated. Smith (1982) notes that "the results of this type of research have consistently indicated that measures of irrational beliefs reliably correlate with a variety of measures of emotional distress" (p. 511). The results presented on the following pages from both early and more recent studies support this statement.

In beliefs-stress research, depression is a commonly measured emotional response. Based on their review of the depression literature, Haaga, Dyck and Ernst (1991) report there is "suggestive evidence of a main effect of dysfunctional beliefs in predicting increased symptoms" (p. 231). Two early studies used depression as the sole distress variable. Nelson (1977) found a significant correlation between overall scores on the Irrational Beliefs Test (Jones, 1968a, 1968b) and the Beck Depression Inventory ($\underline{r}$ =.53) in undergraduate students (n = 156). Depression was found to be related most strongly to the following irrational beliefs: Anxious Over-Concern (obsessive worry about future events; $\underline{r}$ = .54), Frustration Reactivity (the idea that it is terrible when things as not as one would like; $\underline{r}$ = .51), High Expectations (need to excel in all areas in order to feel worthwhile; $\underline{r}$ = .46, and Helplessness (belief regarding the difficulty in overcoming the impact of past history; $\underline{r}$ = .45).

In a refinement of the research design of the study presented above, LaPointe and Crandell (1980) investigated irrational beliefs (Irrational Beliefs Test [IBT] [Jones, 1968a, 1968b]) in 85 students. On the basis of scores on the Beck Depression Inventory and the Maudsley Personality Inventory: Neuroticism Subscale, participants were assigned to three categories: (a) normal individuals (b) not depressed/psychologically distressed (c) depressed/psychologically distressed. The mean IBT score for the depressed group was significantly higher than the mean scores for the other two groups. The depressed group also scored as "significantly more irrational" than the normal group on all subscales of the IBT. Likewise, the mean IBT score for the not depressed/psychologically distressed group was significantly higher than for the normals, and this group scored significantly higher than the normal group on most subscales. The

researchers conclude that "depressed persons may be especially prone to setting such high expectations that failure and hence emotional distress are inevitable" (p. 250).

Correlational studies looking at the relationship between beliefs and anxiety are also commonly undertaken. Sutton-Simon and Goldfried (1979) used the Irrational Beliefs Inventory (Jones, 1968a, 1968b) with a population of adults seeking psychotherapy at a New York community clinic (n = 58). They found a significant correlation (r = .40) between irrational beliefs scores and scores on the Social Anxiety and Distress Scale. In another examination of beliefs and anxiety, Witmer, Rich, Barcikowski, and Mague (1983) found a poor coping group to be higher in irrational beliefs (Common Beliefs Survey III [Bessai, 1976, 1977]) than a good coping group. (The low coping group had higher trait and state anxiety scores [State-Trait Anxiety Inventory], and more reporting of physical symptoms.) Hart, Turner, Hittner, Cardozo, and Paras (1991) also examined anxiety and beliefs. Using the Type A Irrational Beliefs Inventory (Thurman, 1985), an instrument that provides a measure of "those specific irrational beliefs theoretically related to the Type A behavior pattern" (p. 558), they found significant positive correlations between irrational beliefs and trait anxiety (r = .25 on the Spielberger et al. inventory) in college students (n = 138). Significant correlations between irrational beliefs and anger were also found (r = .33). Based on the results of this study, these researchers conclude that "specific types of beliefs interact with build ups of life stress to produce specific types of dysfunctional emotional reactions" (p. 559).

In a study based on Lazarus's notion of stress, Harran and Ziegler (1991) investigated the relationship between irrational beliefs and the tendency to appraise situations as stressful. Undergraduate students (n =

240) completed the Irrational Beliefs Test (Jones, 1968a, 1968b) and the Hassles Scale (Kanner, Coyne, Schaefer, & Lazarus, 1981). The top irrational beliefs group reported significantly more hassles, and hassles of greater intensity than the bottom irrational beliefs group, $F(1, 232) = 4.64$ and $F(1, 232) = 18.55$ respectively. Based on their findings, the researchers conclude that "the greater the number and variety of irrational beliefs an individual holds, the greater the number and variety of events he or she is likely to cognitively appraise as stressful" (p. 270) due to "believing demandingly that so many things should be a certain way" (p. 269).

Muran, Kassinove, Ross, and Muran (1989) compared a population of clinic patients (n = 45) and university undergraduate students (n = 60), hypothesizing that as "the basic premise of RET [rational-emotive therapy] is that irrational ideas are causative of emotional distress, it seems likely that clinic patients and others in distress would be more likely to hold such ideas" (p. 188). For the entire sample (n = 105), there was a significant relationship between overall irrational scores and (a) trait anger ($r = -.41$ on the State-Trait Anger Inventory) (b) total guilt ($r = -.35$ on the Problematic Situations Questionnaire [Klass, 1982]). (A high score equals greater rationality on the Survey of Personal Beliefs [Kassinove, 1986].) However, no significant differences were found between the patient and student groups in overall irrational belief scores. In comparing their population to similar ones, the researchers report that "some clinical subjects were 'too low' on anxiety and depression and some normal students were 'too high' on these measures" (p. 192). In addition, some of the clinic patients had attended several therapy sessions. It would appear that this research design included several confounding variables that likely impacted upon the results.

In some investigations, there has been an attempt to link specific beliefs to specific emotional outcomes. Deffenbacher, Zwemer, Whisman, Hill, and Sloan (1986) undertook such research with a population of undergraduate students. In two studies (n = 451, n = 189), they found that certain irrational beliefs (Irrational Beliefs Test [Jones, 1968a, 1968b]) were predictive of certain anxieties (e.g., Demand for Approval, Anxious Over-Concern, and Personal Perfection were most predictive of fear of negative evaluation while speech anxiety was best predicted by Problem Avoidance, Anxious Over-Concern, and Helplessness). Similarly, Persons, Burns, Perloff, and Miranda (1993) examined the relationship between dependency/attachment beliefs (scales developed by David D. Burns) and symptoms of depression and anxiety (selected items from the Beck Depression Inventory and the SCL-90 [Derogatis, Lipman, Rickels, Uhlenhuth, & Covi, 1974]). In their population of 293 psychiatric outpatients, only limited support was found for the symptom specificity hypothesis (the hypothesis that "relationships between symptoms and beliefs are diagnosis specific" [p. 518]). While achievement beliefs were related to all achievement symptoms in a statistically significant manner (as were dependency beliefs related to dependency symptoms), achievement beliefs were not more strongly related to achievement symptoms than were dependency beliefs. Likewise, dependency beliefs were found to be more strongly related than achievement beliefs to only 2 dependency symptoms (loneliness and crying).

In contrast to the studies presented above, some researchers' examination of stress is global in perspective. Using Ellis's (1962) model, Forney, Wallace-Schutzman, and Wiggers (1982) categorized many of the thoughts generated in interviews with 24 career development

professionals and arrived at 7 myths (e.g., "I must be totally competent, knowledgeable, and able to help everyone"). The researchers report that "individuals who were coping well with their jobs and combating burnout had learned to use rational thinking to confront these myths" (p. 438).

In another more general stress investigation, Morin, Stone, Trinkle, Mercer, and Remsberg (1993) tested the hypothesis that "cognitive distortions can trigger emotional arousal and feed into an insomnia problem" (p. 463). Using a specialized measure of dysfunctional beliefs (the Dysfunctional Beliefs and Attitudes About Sleep Scale [Morin, 1993]), these researchers found a significant difference in the beliefs of insomniacs and good sleepers (n = 74, n = 71, age = 55-88 yrs.) on 4 out of 5 themes. The insomniacs endorsed "stronger dysfunctional beliefs and attitudes about sleep than good sleepers" (p. 466) (e.g., "I am worried that if I go for 1 or 2 nights without sleep, I may have a 'nervous breakdown'"), leading the researchers to conclude that there is a need to "broaden the scope of clinical interventions for late-life insomnia" (p. 466).

Research on the association between beliefs and physiological stress reactions is uncommon in the beliefs-stress research literature. A study by Kirk and Spillane (1984) (n = 14 business executives) included an examination of the role of irrational beliefs (Irrational Beliefs Test [Jones, 1968a, 1968b]) in adrenal hormone excretion. As chronic stress is hypothesized to suppress adrenal hormone output to below normal levels (Selye, 1956; Weitzman, Fukushima, Nogeire, Roffwarg, Gallagher, & Hellman, 1971), the results of this study lend some support to the theory that irrational beliefs and chronic stress are associated. In a non-stressful situation, irrational beliefs were found to correlate negatively with measures of cortisol, adrenaline, and noradrenaline; the correlation with

noradrenaline was significant (r = -.71). A finding reported by these researchers is that "physiology and irrational beliefs predict hormonal levels" (p. 10). In another study that examined physiological outcomes, Roberts and Lovett (1994) found larger changes in digit skin temperature in academically gifted students following failure. The students reported significantly greater endorsement of Ellis' irrational beliefs (Common Belief Inventory for Students [Hooper & Layne, 1983]) than both academically achieving peers and nongifted peers, and "larger negative [subjective] reactions to scholastic failure in general" (p. 250).

A study by Forman, Tosi, and Rudy (1987) also included some attention to physiological factors. Irrational thinking (Common Beliefs Survey III [Bessai, 1976, 1977]) was investigated in a medical control group (n = 150) and a group of patients with a psychosomatic condition (low back pain, peptic ulcers, or migraine headaches) (n = 114). The psychosomatic patients showed significantly greater perfectionism and self-downing than the control group (F = 8.51 and F = 4.96 respectively).

In investigating the beliefs-stress relationship, some research designs go beyond a simple correlational analysis to take into account such features as the effects beliefs have as a moderating variable, the variance accounted for by beliefs, etc. These additional analyses introduce a degree of uncertainty into the findings of beliefs-stress research that is not found when looking at correlational results alone, as evidenced in the review that follows.

In psychiatric patients, Persons and Rao (1985) found a stable relationship between irrational beliefs (21 items taken from the works of Ellis [1962] and Beck [1976]) and a measure of depression (Beck Depression Inventory) (BDI). At the time of admittance, discharge, and 7 month

follow-up, correlations were significant (r = .68, .68, and .56 respectively). In hierarchical multiple regression analysis, irrational beliefs were found to predict 36% of the variance in the BDI.

Gillis (1992) investigated the relationship between dysfunctional thinking and distress in 97 undergraduate students. Using the Dysfunctional Attitudes Scale (DAS) (Weissman, 1979; Weissman & Beck, 1978), an instrument derived from Beck's (1976) work, significant correlations were found between irrational thinking and measures of emotional distress (Beck Depression Inventory, r = .40; state and trait anxiety, r = .38 and r = .51 respectively on the State-Trait Anxiety Inventory). In a series of regression analyses, the scores on a measure of life stress (Life Experiences Survey) significantly predicted distress. When irrational thinking scores were added, the researchers report that "predictability was significantly increased" (p. 82). The degree to which predictability increased is not reported however. In a similar study by Gillis and Lanning (1989), significant correlations were also found between scores on the DAS and measures of distress (Beck Depression Inventory and State-Trait Anxiety Inventory) (n = 125 Middle East students). Dysfunctional attitudes were not found to moderate the relationship between life stress and subjective distress, however.

Zuroff, Igreja, and Mongrain (1990) used the Dysfunctional Attitude Scale (Weissman, 1979; Weissman & Beck, 1978) in their study of undergraduate students (n = 63). They found that these scores added significantly to the prediction of Beck Depression Inventory (BDI) scores for a "worst period" depression, even when previous BDI scores were controlled for. It should be noted that the significant contribution accounted for only 6% of the variance.

Smith, Boaz, and Denney (1984) examined irrational beliefs in undergraduate students (n = 136) using the Rational Behavior Inventory (RBI: Shorkey & Whiteman, 1977). They found that while RBI scores were associated with emotional distress (RBI scores accounted for 15-18% of the unique variance in psychological distress as measured by the Psychological Screening Inventory: Discomfort Scale [Lanyon, 1970]), the RBI scores did not moderate the relationship between life change and emotional distress. Conversely, while the unique contribution of irrational beliefs to a measure of physical distress was lower but significant (accounting for 4-7% of the variance), irrational beliefs moderated the relationship between life change and physical distress. The researchers hypothesize that "individuals with a comparatively high level of emotional distress may be characterized by both a greater tendency to endorse irrational beliefs and a greater tendency to develop and/or report physical symptoms following stressful life change" (p. 369).

In a study of Alzheimer caregivers (n=89), McNaughton, Patterson, Smith, and Grant (1995) used the 11 item irrational beliefs scale that Alden and Safran (1978) adapted from Ellis and Harper (1975). They found irrational beliefs to be one of the factors making a significant contribution to depression (Hamilton Rating Scale) and poor health (Interim Medical Survey [Grant, Patterson, & Yager, 1988]) at both baseline and 6 month follow-up (respective loadings of .61 and .60 in canonical correlation analyses). When the relationship between variables was explored separately, irrational beliefs were found to be "a significant factor in predicting subjective health over 6 months" (McNaughton, Patterson, Smith, & Grant, 1995, p. 83). However the variance accounted for was small

(McNaughton, 1991), differing little from the results reported as non-significant for objective health.

Anderson and Arnoult (1989) developed a six item irrational beliefs scale based on the work of Ellis (1977). The population for this study consisted of college students (n = 159). While correlations between irrational beliefs and two measures of negative stress (the Life Experiences Survey and the Multiple Affect Adjective Check List) reached significance ($\underline{r}$ = .23 and .24 respectively), irrational beliefs were not found to moderate the effects of negative stress on physical health.

A study of 61 mature university students (Power, 1988) included an investigation into the link between dysfunctional attitudes and emotional distress. A significant correlation was found between scores on the Dysfunctional Attitude Scale (DAS) (Weissman, 1979; Weissman & Beck, 1978) and both initial and 4 month follow-up scores on the Irritability-Depression-Anxiety Scale (Snaith, Constantopoulous, Jardine, & McGuffin, 1978) ($\underline{r}$ = .69 and $\underline{r}$ = .46 respectively). Although the variance accounted for by DAS scores was significant, it was low (9%), and it was not significant in a subsequent analysis in which initial distress scores were partialed out. The researcher concludes that "although the expression of more extreme attitudes measured by the DAS may provide a cognitive marker for a possible episode of anxiety or depression, the DAS does not provide a good vulnerability marker because the scores are dependent on psychological state" (p. 139). This conclusion is in keeping with Beck's (1976) notion that stress has the effect of activating dysfunctional beliefs in certain individuals, leading to psychological problems.

Finally, Muran and Motta (1993), and Muran (1990) investigated cognitive dysfunctions in post-traumatic stress disorder (PTSD) individuals,

clinical patients diagnosed with anxiety or depressive disorders and non-clinical individuals (n = 31, n = 24, n = 40). Significant relationships were found between irrational beliefs (Survey of Personal Beliefs [Kassinove, 1986]) and depression, state anxiety, and trait anxiety. However. when cognitive measures were controlled for, the PTSD and clinical group still scored significantly higher than the non-clinical group on the measures of depression and anxiety, leading to a query about the causal role of irrational beliefs in emotional disturbance. In addition, there were no significant differences found in irrational beliefs between the PTSD group and the non-clinical group (despite significant differences on the depression and anxiety measure). These results suggest that either (a) "another element besides dysfunctional cognition is in play in the development and maintenance of PTSD" (Muran, 1990, p. 112) (e.g., classically conditioned fear) or (b) as suggested by Beck's (1976) specificity hypothesis, "there may be specific cognitive distortions associated with PTSD" (Muran, 1990, p. 110) not tapped by the measurement used.

Some beliefs-stress investigations have examined the affective correlates of irrational beliefs following the presentation of stimuli. In the next two studies presented, the stimuli is naturally occurring.

Malouff, Schutte, and McClelland (1992) used a measure of irrational beliefs designed to reduce possible overlap with anxiety measures (Malouff & Schutte, 1986). College students (n = 37) were tested for anxiety (State-Trait Anxiety Inventory) under conditions of low stress (second week of semester) and high stress (week before finals). Initial belief scores were significantly correlated with both trait anxiety and follow-up state anxiety after social desirability responding had been partialed out ($\underline{r}$ = .34 and $\underline{r}$ = .21 respectively). The change in state anxiety was also significantly

associated with initial irrational beliefs (r = .35) after partialing out initial state anxiety scores.

Tobacyk and Downs (1986) investigated the role of cognitive factors in performance anxiety in college music majors (n = 33). Irrational beliefs scores (Irrational Belief Questionnaire [Newmark, Frerking, Cook, & Newmark, 1973]) and scores on a modified instrument based on Kelly's (1955) personal construct theory (the Threat Index [Krieger, Epting, & Hays, 1979]) significantly predicted scores on the State-Trait Anxiety Inventory prior to juries (7% and 24% of the unique variance respectively).

A common approach in beliefs-stress research is to compare the responses of groups that have been categorized as high irrational/low irrational based on belief scores. Smith, Houston, and Zurawski (1984) undertook such a study with undergraduate students (n = 62). Individuals from high and low irrationality groups (Irrational Beliefs Test [IBT] [Jones, 1968a, 1968b]) were subjected to either a stressful or non-stressful interview. The beliefs Need for Approval and Perfectionistic Self-Expectations were associated with higher levels of negative cognitive activity. In particular, high levels on the belief Perfectionistic Self-Expectations produced significantly greater levels of "self- or performance denigration in the stress conditions" (p. 197) than was seen in the high belief/no-stress group or in the low belief/high stress group. Irrational belief endorsements were not predictive in this study of scores on the physiological measures (heart rate, finger pulse volume) or scores on a self-reported anxiety measure (Holmes, 1981). The researchers report that "endorsement of irrational beliefs as measured by the IBT was associated

most closely with those aspects of distress characterized by negative, ruminative cognitive activity" (p. 198).

In a similar research design, Westra and Kuiper (1992) investigated the effects of a "belief-impinging situation" on low and high Type A undergraduate students (n = 85). In a previous study, the researchers had identified some beliefs of particular importance to Type A individuals (e.g., belief that self-worth is contingent upon personal accomplishments, belief that resources are in scarce supply). Participants in this study were asked to perform an arithmetic task under two conditions - one in which relevant Type A beliefs were highlighted, and the other in which relevant Type A beliefs were minimized. High Type As in the belief-impinging situation reported significantly greater stress levels than high Type As in the non-impinging situation, as well as significantly greater stress levels than low Type As in either the impinging or non-impinging situation. An interesting finding of this research is that "individuals who chose to devote their time exclusively to the highly belief-relevant conditions had higher Type A scores than those individuals who chose to remain exclusively in the nonimpinging condition" (p. 18). This finding suggests to the researchers that "Type As may actively contribute to the construction of a more stressful environment for themselves; electing to place themselves in situations which elicit greater negative affect" (p. 18).

Goldfried and Sobocinski (1975) applied a similar research design to a more select group of participants. In their study, significant correlations were found in a population of 77 undergraduate students between irrational beliefs (Irrational Beliefs Test [IBT] [Jones, 1968a, 1968b]) and various measures of emotional arousal (e.g., $\underline{r}$ = .51 on the Social Avoidance and Distress Scale, and $\underline{r}$ = .54 on the Personal Report of Confidence as a

Speaker Scale [Paul, 1966]). Individuals in the top and bottom 18% of the IBT Need for Approval Subscale (n = 18) were subsequently asked to imagine themselves in various scenarios in which disapproval by others was a theme. Measures of anxiety, hostility and depression (all assessed by the Multiple Affect Adjective Checklist), and tests of cognitive ability (distance approximation, word association, writing speed) followed the presentation of each scenario. The high irrational group showed significant increases on anxiety, hostility and depression whereas the low irrational group showed a significant increase in depression only. No significant differences were found on the tests of cognitive ability in either group.

Cramer and Kupshik (1993) used the 20 item Irrational Beliefs Scale (Malouff & Schutte, 1986) in their test of the assumption that rational statements mitigate emotional distress. Two groups of out-patients (n = 13, n = 14) repeated a short series of statements about their psychological condition. The rational treatment group repeated statements like "although I do not like it, it is not the worst thing that can happen to me" while the irrational treatment group recited statements like "It is awful. It is terrible. I can't stand it" (p. 322). Patients repeating rational statements showed a small but significant decline ($t = 2.36$) for both appropriate and inappropriate emotions (Ellis & Harper, 1975), confirming the researchers' hypothesis that rational statements decrease emotional stress. No significant increase in distress was found in patients repeating irrational statements, suggesting to the researchers that irrational types of thoughts were already in their minds. Similarly, based on their findings with 140 phobic patients, Marks, Basoglu, Alkubaisy, Sengun, and Marks (1991) report that catastrophic cognitions determine the form that anxiety

symptoms take. A criticism of studies involving self-referent speech, however, is that there are important conceptual differences between beliefs and self-statements (Smith, 1982; Smith, 1989; Smith & Allred, 1986). As Smith, Houston, and Zurawski (1984) note, "self-statements could be involved in the cause of emotional distress with or without irrational beliefs playing a role in the process" (p. 191).

Some researchers have looked at the beliefs-stress relationship following treatment. In reviewing RET outcome research (rational-emotive therapy, a therapy that targets irrational beliefs), Haaga and Davison (1989) note that statistically significant change is frequently reported, in contrast to the more beneficial clinically significant change which is rarely reported. The studies contained on the next two pages look at statistically significant change. Lipsky, Kassinove and Miller (1980) found significant treatment effects in adult multisymptomatic outpatients of a New York community health centre (n = 50) following 12 weeks of RET. Participants demonstrated a significant reduction in endorsement of irrational beliefs as measured by the Idea Inventory (Kassinove, Crisci, & Tiegerman [1977]), a 33 item inventory based on the work of Ellis (1962). In addition, significant reductions in scores were obtained for depression (Multiple Affect Adjective Check List: General Form), trait anxiety (State-Trait Anxiety Inventory: Trait Anxiety Scale), and neuroticism (Eysenck Personality Inventory: Neuroticism Scale). Reductions that reached significance were not found on these measures for either the alternative treatment group or the no-therapist-contact control group.

In a re-analysis of the results reported above, Smith (1983) correlated changes in endorsements of irrational beliefs with changes in each outcome measure. Following procedures to eliminate possible artifacts in

results due to initial levels on measures and group membership, Smith found "reliable correlations between changes in beliefs and changes in emotional distress" (p. 156). This researcher points to a need to qualify the previously reported direct association between RET and beliefs change. In his analyses, some changes in beliefs occurred in the control groups (which were also accompanied by changes in emotional distress).

As in the above study, Woods (1987) examined change scores, noting the importance of doing so in studies of irrational beliefs and emotions. Using the Irrational Beliefs Inventory (IBI) (Jones 1968a, 1968b) with a group of corporation employees (n = 49), Woods found significant irrational beliefs changes ($\underline{t}$ = 5.23) in post testing conducted 3-4 months after a 4 week RET (rational-emotive therapy) workshop series. The largest changes in irrational beliefs scores occurred on the scales Demand for Approval, High Self-Expectations, Anxious Over-Concern and Frustration Reactive. Significant changes were not found on the scales Problem Avoidance, Dependency and Perfectionism. Significant correlations were found between the overall change score for irrational beliefs and the change scores for post test measures of anxiety and anger ($\underline{r}$ = .44 and $\underline{r}$ = .30 on the respective Spielberger et al. inventories), and illness ($\underline{r}$ = .36 on checklist devised by researcher). Woods concludes that his findings "are compatible with the fundamental assumption of RET, that emotional and behavioral disturbances are caused by contemporary irrational belief systems, and that such disturbances can be reduced by changes in these irrational beliefs" (p. 234).

In another treatment outcome study, Kushnir and Malkinson (1993) investigated the effects of RET (rational-emotive therapy) training on safety officers. Baseline statistics for the training group (n = 22) and

control group (n = 18) revealed a significant correlation between measures of irrational beliefs (a shortened version of the Belief Inventory [Davis, 1982]) and cognitive weariness, r = .39, suggesting to the researchers that "dysfunctional thought processes and behavioral tendencies are related to the depletion of cognitive resources" (p. 201). Immediately following a five week workshop series, significant changes were reported in the training group for irrational beliefs (r = -.33) and somatic complaints (r = -.14). At testing 18 months later, the changes in irrational beliefs were still significant, although less than at immediate follow-up (r = -.24).

Summary of Research Results.

In beliefs-stress research, a relationship between the endorsement of irrational/dysfunctional beliefs and self-reported negative affect is consistently found. In the studies cited in this review, correlations of significance between belief measures and various measures of negative emotions range from r = .23 (Anderson & Arnoult, 1989) to r = .69 (Power, 1988). In addition, results of studies of rational-emotive therapy (a therapeutic intervention that specifically targets irrational beliefs) (Kushnir & Malkinson, 1993; Lipsky, Kassinove & Miller, 1980; Woods, 1987) suggest that such treatment is effective (Oei, Hansen, & Miller, 1993; Smith 1983). What remains unclear, based on research findings, is whether the role of beliefs in the stress equation is primary, as Ellis (1962) would assert, or whether beliefs are "contributory and/or secondary to other causes" (Kassinove, 1986, p. 129). In treatment outcome research, belief change has yet to be identified as the sole or main variable in affective outcomes. In addition, results of correlational investigations indicate that while beliefs are generally found to account for a statistically significant amount of variance in affect (e.g., 36% [Persons & Rao, 1985], 6% [Zuroff, Igreja, &

Mongrain, 1990]), much variance is left unaccounted for. Kassinove (1986) notes that such variance may be "truly accounted for by factors other than the endorsement of irrational ideation" (p. 129). The explanation may also lie in the measures used in such research. The above researcher reports that errors in "measurement in the predictor and/or the criterion" (p. 129) may lead to variance being untapped. In the section that follows, issues that pertain to the measurement of beliefs are discussed.

Issues Regarding Measurement of Beliefs.

A major criticism of the results of beliefs-stress research is the lack of discriminate validity. Measures of beliefs frequently correlate so highly with measures of distress as to be indistinguishable (Smith, 1989). In order for a belief measure to demonstrate discriminate validity, it must correlate more highly with other belief measures than it does with distress measures. As Smith (1982) notes, "the ability to assess beliefs independently of the constructs to which they relate (i.e., emotional distress) is obviously crucial to . . . empirical evaluation" (p. 509). In an examination of the Irrational Beliefs Test (Jones, 1968a, 1968b) and the Rational Behavior Inventory (Shorkey & Whiteman, 1977), Zurawski and Smith (1987) found that while these belief measures were highly correlated, they were "equally highly correlated with self-report measures of depression and anxiety" (p. 224). Some significant partial correlations between irrationality and distress were found after controlling for negative affectivity, prompting the researchers to report that "improved measures of beliefs may provide more compelling evidence of the relation between beliefs and emotion predicted by the rational-emotive model" (p. 227).

In further examining the discriminate validity issue, researchers note that irrational belief instruments typically include affect words. This

feature encourages correlational significance due to content similarity rather than relational factors (Kassinove, 1986; Kienhorst, VanDenBout, & DeWilde, 1993; Smith, 1982, 1989; Smith & Allred, 1986). Kassinove (1986) investigated the relationship between beliefs and stress using the Personal Beliefs Test (PBT), an instrument specifically developed to avoid the problem of content similarity. Significant correlations were found between irrational beliefs/neuroticism and irrational beliefs/negative feelings ($r = -.61$ and $r = -.44$ respectively on the Eysenck Personality Questionnaire: Neuroticism Scale). Based on these findings, Kassinove reports "it would not seem that the concern that prior correlations have been spuriously elevated by similarity of content in the test of irrational thinking used and the criterion is valid" (p. 127).

In conclusion, results of research support the notion of a beliefs-stress relationship, lending support to this author's plan to conduct a study of teachers' self-defeating beliefs and stress. Given the discriminant validity issue discussed above, particular attention will need to be paid to the beliefs instrument used in the study. Ramanaiah, Heerboth, and Schill (1987) note that items on beliefs measures need to be "unambiguously stated as beliefs" (p. 54) rather than being composed of descriptions of feelings or behaviors from which beliefs are inferred.

Teacher Occupational Stress

In the preface to a special job stress issue of the Journal of Social Behavior and Personality, Schuler (1991) notes the following: "Work occupies a significant proportion of most people's lives and can be an exciting challenge for many individuals. Unfortunately, work can also be a tremendous source of experienced stress" (p. vi). This assertion is consistent with an announcement made by the U. S. National Institute for

Occupational Safety and Health (1988) regarding work stress. The agency reports that psychological disorders are among the 10 leading work-related diseases and injuries.

Occupational stress is associated with various behavioral and medical states such as "illness, distress and burnout, work dissatisfaction, performance, and absenteeism" (Lazarus, 1991, p. 1). Jones and Boye (1992) also point to a connection between job stress and counterproductivity. The human services sector has been a major focus of occupational stress investigations (Jackson, Schwab, & Schuler, 1986). Teacher occupational stress constitutes a substantial proportion of that research.

Before presenting the results of studies on this topic, it should be noted that some researchers have conducted research into teacher stress, while others have focused on teacher burnout. Greenglass, Fiksenbaum, and Burke (1994) describe burnout as a "process which emerges gradually over a period of time in reaction to several stressful events" (p. 220). It is further described as a condition that results from ongoing stress/prolonged job strain (Blase, 1982), producing such symptoms as emotional exhaustion, depersonalization, and decreased sense of personal accomplishment (Maslach, 1982). In Maslach's conceptualization, burnout refers to the stress that arises in helping professionals as a result of experiences in the workplace. It involves an alteration in feelings about oneself and one's work.

Stimulus-Oriented Teacher Stress Research

Lazarus (1991) reports that in work stress research, "attention has been given mainly to the organizational arrangement of work as stressful" (p. 1). This statement certainly applies to the more specific area under review. Teacher occupational stress investigations have a decidedly

stimulus focus. As Hiebert (1985) notes in his review of the literature, "the main thrust has been to identify tasks or role-related responsibilities that teachers find stressful" (p. 13). He reports that several earlier detailed reviews of teacher stress research failed to uncover any studies conducted from a response or interactional perspective, noting "it seemed that researchers assumed that teaching was stressful and that their task was to identify the situations that teachers found stressful so that these situations could be changed" (p. 13). The trend towards stimulus-oriented research continues. Of the 150 teacher occupational stress articles listed on the PsycINFO database (American Psychological Association, January 1984 - June 1996), this author found that only 18% focus on personal variables.

The various stimulus-oriented studies into teacher stress have highlighted situational commonalities that teachers find stress producing. In an extensive review of the literature, Hiebert (1985) found the "strongest and most consistently perceived teacher stressors" (p. 25) were (a) time pressures (work overload) (b) interactions with disruptive students (c) interactions with administrators (d) parent-teacher interactions (e) role ambiguity (f) varied and extensive demands. In the research that has been conducted in the years since this review, these variables continue to be identified by teachers as significant stressors, although, as previously, variation exists in the ranking of "top stressors."

Appley and Trumbull (1967) refer to time as a neglected variable in understanding stress. Blase (1986) notes that when looking at stress in organizations, time control is a critical variable as it impacts upon the relationship of perceived demand and perceived coping ability. Time pressures/work overload is a variable that is identified as being a significant stressor by teachers through-out the world. In a nation-wide

survey of over 14,000 Canadian teachers, King and Peart (1992) found that excessive workload and time demands ("defined primarily as out-of-class marking and lesson preparation" [p. 129]) were the biggest contributors to teacher stress. In two studies of New Zealand teachers (Dewe, 1986, n = 800; Manthei & Solman, 1988, n = 640), teachers reported overload to be their primary stressor. Similar results were found in studies of 204 Australian teachers (Smith & Bourke, 1992), and 917 teachers from Norway (Mykletun, 1984). Borg, Riding, and Falzon (1991) found a strong association between teacher stress and time/resource difficulties in 710 Maltese teachers. French (1991) found time pressures and paperwork to be the greatest rated stressors by 233 U. S. teachers, and Starnaman and Miller (1992) found overload to be a major source of stress in another sample of U. S. teachers (n = 182). In the latter study, work overload was found to be "most strongly and directly related to role conflict, $\underline{r}$ = .46, and emotional exhaustion, $\underline{r}$ = .41" (p. 50), consistent with the finding by Capel (1987) that "taking work home to do" was more frequently associated with higher emotional exhaustion and depersonalization. Findings of a strong relationship between work overload and teacher occupational stress/burnout are reported by other researchers as well (Blase, 1986; Byrne, 1991; Cooper & Kelly, 1993; DeFrank & Stroup, 1989; Friesen, Prokop, & Sarros, 1988; Jenkins & Calhoun, 1991; Klas, 1994; Mo, 1991; Montalvo, Bair, & Boor, 1995; O'Connor & Clarke, 1990; Payne & Furnham, 1987; Pierce & Molloy, 1990; Tokar & Feitler, 1986).

In further examining the work load variable, Mykletun (1984) found that part-time teachers and teachers with fewer students were less distressed by work load, while teachers of lower grades were impacted more by this variable. Mykletun reports that this variable impacts senior

teachers less, however, Harris, Halpin, and Halpin (1985) note an association between being older and reporting job overload as a significant stressor. Payne and Furnham (1987) note that more females than males reported work overload to be an issue.

Using the Occupational Stress Inventory (Osipow & Spokane, 1987), an instrument that allows comparison of stress factors across occupational groups, Pithers and Fogarty (1995) found 83 vocational teachers to have a significantly higher score on role overload than 71 business and professional men and women. These results suggest that as an occupational stress variable, work overload has the potential to be a particularly salient factor for members of the work force who are teachers.

Interactions with students is another variable that is frequently identified by teachers as causing stress. In a study by Pierce and Molloy (1990), Australian teachers in the high burnout group rated student concerns as causing them greatest stress. Classroom management and discipline was the stressor that received the highest mean rating in a study of 543 Newfoundland and Labrador teachers (Klas, 1994), and "disruptive students" was the item reported as most stressful in a study by Montalvo, Bair, and Boor (1995). Borg, Riding, and Falzon (1991) found a strong association between pupil misbehavior and teacher stress (n = 710 Maltese teachers). Payne and Furnham (1987) report that student behavior (poor work attitudes of students) was highly related to stress in 444 teachers in Barbados. Interactions with disruptive students were reported as the third greatest contributor to teacher stress in a Canadian study by King and Peart (1992), and the third most frequently occurring stressful situation in a New Zealand study by Dewe (1986). Other researchers have found interactions with students to be linked to teacher stress (Blase, 1986; DeFrank & Stroup,

1989; Manthei & Solman, 1988; O'Connor & Clarke, 1990; Salo, 1995; Tokar & Feitler, 1986; Tuettemann & Punch, 1992b). Manthei and Solman (1988) note that in their study, more concern was expressed about interactions with students by teachers with less than 5 years of experience.

Interactions with administrators is a variable that is frequently highlighted as a factor in the stress levels experienced by teachers. King and Peart (1992) found this variable to be the second largest contributor to teacher stress. Jackson, Schwab, and Schuler (1986) report that lack of support from one's principal is associated with depersonalization. Other researchers note an association between perceived lack of support from administrators and teacher stress (Byrne, 1991; Greenglass, Fiksenbaum, & Burke, 1994; O'Connor & Clarke, 1990; Russell, Altmaier, & VanVelzen, 1987; Sarros & Sarros, 1992). Blase, Dedrick, and Strathe (1986) found that "a school principal's leadership style characterized by a high level of structure and consideration was related to lower levels of perceived teacher stress" (p. 166), and Starnaman and Miller (1992) report principal support to be related to decreases in both role ambiguity ($r = -.50$) and role conflict ($r = -.25$).

Role ambiguity is defined as the "lack of clear, consistent information regarding the rights, duties, and responsibilities of the job and how these duties/responsibilities can best be performed" (Schwab, Jackson, & Schuler, 1986, p. 16). Eskridge and Coker (1985) add that it also involves "not knowing the criteria by which one's work is to be judged" (p. 388). Several researchers report an association between role ambiguity and teacher stress (Capel, 1987; Mo, 1991; Pierce & Molloy, 1990; Schwab, Jackson, & Schuler, 1986).

Role conflict is defined as the "simultaneous occurrence of two or more sets of inconsistent, expected role behaviors" (Schwab, Jackson, & Schuler, 1986, p. 16). Findings of associations between this variable and teacher stress are reported (Pierce & Molloy, 1990; Schwab, Jackson, & Schuler, 1986). The latter researchers note that "after controlling for sex and age, role conflict explained the largest percentage of variance in emotional exhaustion and depersonalization (24% and 12% respectively)" (p. 24).

Other variables that have been found to contribute to teacher stress are large class sizes (Byrne, 1991; Mo, 1991), and negative community attitudes (O'Connor & Clarke, 1990). Parent-teacher interactions are also reported as a source of stress. Dewe (1986) found parent-teacher interactions to be the second most frequently occurring stressful situation, and Friesen, Prokop, and Sarros (1988) note that attitudes of parents contribute to emotional exhaustion.

In summary, there appear to be unique variables associated with the occupation of teaching that contribute to the experience of stress in those working in the profession (Solman & Feld, 1989). While there are commonalities in the variables reported by teachers, there are also differences in the rank ordering of these. Hiebert (1985) notes that "variation would be expected because the coping repertoires of teachers and their working conditions . . . vary across school districts" (p. 25).

Teacher Stress Research - Demographic Variables

Some teacher stress research designs have included analyses of demographic variables. Overall, the findings from such analyses tend to be inconclusive. While many researchers report that factors such as age, sex, and years of teaching experience did not contribute to stress/burnout in

their sample populations (Burke & Greenglass, 1989a, 1994; Manthei & Solman, 1988; Morgan & Krehbiel, 1985; Schonfeld, 1990b; Sigler & Wilson, 1988), others report differences. Some researchers report that while differences were found for one demographic variable, no significant differences were found on others. The following paragraphs highlight differences reported in various studies.

With regard to sex differences in teacher stress, King and Peart (1992) report "there was a slightly greater tendency for female respondents to score in the high stress category" (p. 111). While Ratsoy and Friesen (1985) and Laughlin (1984) report similar findings, Anderson and Iwanicki (1984) report that the males in their sample reported significantly more burnout. Long and Gessaroli (1989) also found males to be more stressed.

Some researchers report variations in responses between males and females on stress/burnout measures. In some cases, this variation occurs even though no significant differences are found in overall stress levels. Student misbehavior has been found to contribute more to female teacher stress (Borg, Riding & Falzon, 1991; Dewe, 1986; Laughlin, 1984; O'Connor & Clarke, 1990; Payne & Furnham, 1987; Tuettemann & Punch, 1992b), as has "excessive societal expectations" (Tuettemann & Punch, 1992b) and unsupportive parents (Dewe, 1986). Borg, Riding, and Falzon (1991) and O'Connor and Clarke (1990) report time/resource difficulties to cause greater stress for female teachers, and Greenglass and Burke (1988) report that marital satisfaction predicted burnout in women only, as did role conflict (work versus personal) and boss support. Male teachers have scored higher on depersonalization in various studies (Gold, 1985; Greenglass & Burke, 1988; Russell, Altmaier, & VanVelzen, 1987; Sarros &

Sarros, 1992; Schwab & Iwanicki, 1982). Dewe (1986) found that male teachers experienced higher anxiety over having little individual control over different school events, and Borg, Riding, and Falzon (1991) report that male teachers reported greater stress due to professional recognition needs. In a study by Laughlin (1984), males reported more stress related to curriculum demands. Tuettemann and Punch (1992a) found that support for male teachers was a more powerful factor in psychological distress than for females. The researchers note that males "appear to be more dependent than female teachers for their wellbeing on 'satisfying interaction' between superiors and colleagues as 'mates' and supporters" (p. 52).

Age related differences in teacher stress levels have been examined. King and Peart (1992) report that "greater proportions of younger teachers than teachers over 51 years of age experienced high stress" (p. 111), and Schwab and Iwanicki (1982) found that teachers 20-39 had more intense feelings of emotional exhaustion than teachers 50 years and older. Similarly, Farber (1984) notes that "teachers in the 21-33 and 34-44 year old age group perceived themselves as more burned out and less committed to teaching than did teachers in the 45-65 year-old age category" (p. 329). Feitler and Tokar (1982) also found that higher stress levels were associated with being in the 31-44 year age range. Other researchers have found that stress/burnout is higher for younger teachers (Anderson & Iwanicki, 1984; Gold, 1985; Russell, Altmaier, & VanVelzen, 1987; Sarros & Sarros, 1992). In examining differences in responses on stress/burnout measures for teachers of different ages, Laughlin (1984) reports that teachers under 26 reported significantly more stress from pupil recalcitrance, and that young university graduates were least affected by curriculum demands. In

this same study, older groups reported significantly more stress from time and resource difficulties, and curriculum demands.

In examining years of experience as a variable in the stress equation, Pierce and Molloy (1990) report that "teachers in the low burnout group tended to have more overall teaching experience" (p. 45). Other researchers have also found fewer years of experience to be associated with higher stress levels (Capel, 1987; McMurray, 1986; Mo, 1991; Okebukola & Jegede, 1992). In contrast, Borg, Riding, and Falzon (1991) found that greater stress levels were reported by the more experienced teachers in their study. Ratsoy and Friesen (1985) similarly report that the lowest burnout scores "were, on average, reported by first and second year teachers and the highest levels by those with 16 to 25 years of experience" (p. 160). Parkay, Greenwood, Olejnik, and Proller (1988) report that "the levels of stress experienced by teachers increased with the amount of experience" (p. 19) until 20 years. Lowest stress levels were found in the teachers with over 20 years of experience.

Grade level as a variable has also been examined. Ratsoy and Friesen (1985) note "a slight tendency for higher average stress scores to be associated with the elementary grades (1-6)" (p. 160). Similar findings are reported by King and Peart (1992) and Malik, Mueller, and Meinke (1991). In contrast, some researchers have reported that higher stress levels (particularly as measured by depersonalization) are associated with teaching at the junior and senior high levels (Anderson & Iwanicki, 1984; Burke & Greenglass, 1989a; Farber, 1984; Feitler & Tokar, 1982; Gold, 1985; Russell, Altmaier, & VanVelzen, 1987; Schwab & Iwanicki, 1982). In examining particular stressors for teachers at various grade levels, Laughlin (1984) found that curriculum demands caused greater stress for

elementary teachers. In this study, pupil recalcitrance was the greatest reported stressor for junior high teachers.

Finally, other demographic variables that have been associated with higher teacher stress levels are teaching in an urban school (Feitler & Tokar, 1982), and large class sizes (French 1993; Russell, Altmaier, & VanVelzen, 1987). A finding that relates to the demographic variable of class size is reported by Hiebert (1985) in his review of the literature. He notes that class size is associated with student discipline problems. (As noted earlier, discipline problems have been associated with higher levels of teacher stress.)

In conclusion, in reviewing the findings of investigations into the relationship between demographic variables and teacher occupational stress, variation is found. Byrne (1991) notes that the influence of demographic variables varies with the "specific burnout facet under study" (p. 197). He further indicates that stress/burnout is a multidimensional construct, "the facets of which are differentially affected by particular background variables" (p. 207). Given that research designs often focus on different aspects of stress/burnout, variation in research results is not surprising. In addition, confounding variables may be adding to the inconsistencies in results. For example, while Burke and Greenglass (1989a) note that elementary teachers reported less stress, this particular group of teachers also had significantly more years of teaching experience than the other teachers. Teaching experience has been linked to lower stress levels by some researchers.

Teacher Stress Research - Personal Variables

In the teacher occupational stress literature, investigations with an interactional focus are much less common than stimulus-oriented ones. Of

the personal variables that have been studied, locus of control has received the most attention.

As conceptualized by Rotter (1966), locus of control concerns outcome expectations. He notes that people differ in the degree to which they believe a behavioral reinforcement "follows from, or is contingent upon, [one's] own behavior or attributes versus the degree to which [one] feels the reward is controlled by forces outside of himself" (p. 1). In the former belief condition, one is said to have an internal locus of control while in the latter, one is said to have an external locus of control. In applying these terms to the occupation of teaching, Harris, Halpin and Halpin (1984) report the following:

> "The internal teacher apparently believes that he/she is influential in the classroom, accepts the responsibility for her/his actions and works hard to achieve education goals. The external teacher, on the other hand, feels that he/she has little control over what happens, does not seem to value planning, ability, or effort, but instead attributes educational outcomes to luck, fate, and chance." (p. 13)

Several researchers have found an association between teacher stress/burnout and an external locus of control (Capel, 1987; Halpin, Harris, & Halpin, 1985; Hipps & Halpin, 1991; Kyriacou, 1980; Kyriacou & Sutcliffe, 1979; Pierce & Molloy, 1990; Soh, 1986, 1988). Correlations in these studies range from $\underline{r} = .23$ (Halpin, Harris, & Halpin, 1985) to $\underline{r} = .36$ (Kyriacou, 1980). Parkay, Greenwood, Olejnik, and Proller (1988) found that internal locus of control for student success was negatively correlated with stress (Wilson Stress Profile for Teachers, [Wilson, 1979]). The researchers report that teachers with a high internal locus of control "had less difficulty with student behavior, more positive relations with both school administrators

and their colleagues, and fewer symptoms of psychological and emotional stress" (p. 16). Likewise, Hammen and DeMayo (1982) report that the "strongest cognitive correlates of depressive symptoms were teachers' beliefs that they and others had little control in dealing with unchangeable stress-producing factors" (p. 99). Kyriacou (1980) found that a belief in external control was greater in younger and less experienced teachers.

In a closer look at locus of control and stress in teachers, Arney (1988) investigated the influence of environment structure (centralization, formulation, complexity). Results of this study indicate that stress levels in internals and externals are not consistent across different environment structures. For example, under high centralization ("limited participation in decision-making as it relates to school policy and classroom and curriculum issues" [p. 8]), stress levels were significantly higher in internals. These results lend support to a personality-environment (fit-misfit) conceptualization of job stress. Findings with similar implications have been reported in the general stress literature. Krause (1986) found that while older individuals with an extreme internal focus generally were able to avert stressful events, they were particularly vulnerable to psychological stress (self-blame, guilt) when faced with unavoidable stressful events. Heaney (1993) reports that "employees' perceptions of control are determined by their own skills and attitudes, as well as by organizational norms, structure, and policies" (p. 194).

Efficacy is a construct that is related to locus of control. According to Bandura (1984), "perceived self-efficacy is concerned with people's judgments of their capabilities to execute given levels of performance" (p. 232). He notes further that "variation in how adequately people judge they

can perform given activities accounts for much of the variance in the types of outcomes they come to expect" (p. 235). In teacher occupational stress literature, teacher efficacy is conceptualized as consisting of general teaching efficacy (beliefs about the extent to which teachers in general can impact upon students) and personal teaching efficacy (beliefs about one's own ability to influence student performance) (Gibson & Dembo, 1984; Ross, 1994). Finneran (1990) found that teacher efficacy explained significant amounts of variance in total teacher stress and sources of teacher stress (20% and 34% respectively). Tuettemann and Punch (1992b) report that efficacy correlated negatively with psychological distress (r = -.27). In this study, efficacy served as a moderator for distress associated with inadequate access to facilities and intrusion of school work into out-of-hours time. Greenwood, Olejnik, and Parkay (1990) found significantly higher teacher stress scores (Wilson Stress Profile for Teachers [Wilson, 1979]) in teachers that fit Pattern I (I can't; teachers can't) than in either Pattern 2 teachers (I can't; teachers can) or Pattern 3 teachers (I can; teachers can). Brissie, Hoover-Dempsey, and Bassler (1988) also found a negative correlation (r = -.43) between burnout and personal teaching efficacy. These results are consistent with those reported in the general stress literature. For example, Wiedenfeld, O'Leary, Bandura, Brown, Levine, and Raska (1990) report that the development of "strong perceived self-efficacy to control phobic stressors had an immunoenhancing effect" (p. 1082).

In examining general beliefs and teacher occupational stress, Bernard (1988a, 1988b) found that teachers high in irrationality reported more stress (Teacher Irrational Belief Scales developed by the researcher based on Ellis [1962]). Bernard also reports that experienced teachers endorsed

fewer irrational beliefs than those with little experience, and that irrationality was more strongly associated with stress levels than coping skills. In a population of 122 teachers, Zingle and Anderson (1990) found a significant correlation (r = .31) between irrational beliefs (Adult Irrational Ideas Inventory [Davies & Zingle, 1970] [based on the work of Ellis]) and stress (Teacher Occupational Stress Factor Questionnaire [Clark, 1980]). The researchers report that "the level of perceived job-related stress . . . varied directly with the level of irrational beliefs" (p. 447). In contrast, Jevne and Zingle (1992) found significant differences on only 10 of the 60 items on the Adult Irrational Ideas Inventory in their sample population. A healthy group and a long-term disability group (physical illness) endorsed fewer of these 10 beliefs than did a long-term disability group (psychological illness) and a transitional group (functioning teachers who attended a career transition workshop). Forman (1981, 1982, 1990, 1994) reports reductions in teacher stress following interventions that include RET (rational-emotive therapy, a technique that targets irrational thinking). However, measures of irrational thinking were not taken prior to or following such interventions, and other stress-reducing techniques were introduced along with RET.

Flett, Hewitt, and Hallett (1995) looked at the relationship between perfectionism and teacher stress (Teacher Stress Inventory [Fimian, 1988]). A positive association was found between socially prescribed perfectionism (perception that others have unrealistically high expectations for oneself) and stress. Frequency correlations on the stress factors Professional Distress, Emotional Manifestations, and Physiological Manifestations were r = .39, .59 and .41 respectively. Intensity correlations on the same indices were r = .35, .63 and .48.

Some researchers have investigated the relationship between discipline style and teacher stress. Morgan and Krehbiel (1985) found a significant negative correlation (r = -.57) between burnout and a low to non-existent humanistic orientation to teaching (humanistic orientation defined as incorporating an emphasis on self-esteem, self-understanding and understanding of others - nonhumanistic defined as focusing on academic changes, and using behavior modification solely with students). Harris, Halpin, and Halpin (1984) found that high stress in teachers (Teacher Occupational Stress Factor Questionnaire [TOSFQ][Clark, 1980]) was associated with an authoritarian pupil control orientation. Similarly, Albertson and Kagan (1987) found that high stress scores on the TOSFQ were associated with endorsing an authoritarian attitude towards pupil control. They report that "to mitigate the stress inherent in teaching, it may be just as important for teachers to understand the dynamics of their own temperament as it is for them to understand the psychology of learning" (p. 74).

In investigating the relationship between cognitive style and teacher stress, Borg and Riding (1993) found that teachers fitting the analytic profile (goal seeking, requiring greater control of people and situations) reported greater stress on the factors Pupil Misbehavior and Poor Working Conditions. Teachers that fit the wholist profile (so committed that they do more than required, are particular about their work) reported greater stress on the factors Poor Staff Relations and Time Pressures. Kagan (1989) found that teachers who fit the pragmatist profile (tend "to evaluate situations in terms of subjective costs and benefits" [p. 301]) obtained higher scores on three scales of the Teacher Occupational Stress Factor Questionnaire (Clark, 1980) - Lack of Administrative Support, Working With

Teachers, and Task Overload. Kagan reports that "more idealistic teachers may have been unaware of this pressure or may have been relatively unstressed by it, perhaps due to a greater concern with the moral or ethical implications of their jobs" (p. 301).

Burke and Greenglass (1988, 1989b) examined the relationship between career orientations (Cherniss, 1980) and psychological burnout in teachers. In a study of 833 teachers (1988), the following career orientations were found: 60% Artisans (value challenge and mastery of new skills), 18% Social Activists (primary focus is to bring about change in the institution), 12% Careerists (desire conventional success such as financial renumeration, promotions, etc.), and 10% Self-investors (focus energies outside of work). Social Activists reported significantly more stress than Artisans. Social Activists and Careerists showed significantly greater burnout than did Artisans. In their 1989b investigation of 467 teachers, Burke and Greenglass found that "male teachers were significantly more likely than female teachers to see themselves as Careerists and female teachers were significantly more likely than men to see themselves as Artisans or Social Activists" (p. 58).

Another personal factor that has been investigated by teacher occupational stress researchers is self-concept. According to Rogers (1951), self-concept consists of the perceptions one has of his or her abilities and traits in relation to others and the environment. Anderson and Iwanicki (1984) found a significant correlation between scores on the emotional exhaustion and depersonalization subscales of the Maslach Burnout Inventory (Maslach & Jackson, 1981) and lack of self-esteem in teachers (r = .44 and .34 respectively). Hughes, McNelis, and Hoggard (1987) found that "teachers with high self-concepts . . . were more resistive

to stress and more likely to maintain a sense of personal accomplishment while working under pressure" (p. 10).

Friedman and Farber (1992) also examined the relationship between burnout and self-concept, however rather than conceptualizing the latter construct as unidimensional, they investigated various components of teachers' self-concepts in the burnout equation (n = 641). While a significant negative correlation was found between overall self-concept and burnout ($\underline{r}$ = -.45), the factor found to have the strongest negative correlation to burnout ($\underline{r}$ = -.71) was Professional Satisfaction (how teachers feel about the gratification they receive from their work). The researchers concluded that "teachers who feel satisfied by their work are least likely to feel burned out" (p. 33) and "teachers who feel that they are 'consequential,' and that their work is making a difference in the lives of their students, are able to tolerate a great deal of the stresses inherent in teaching and to avoid burnout" (p. 33). The discrepancy between teachers' views of themselves as professionally competent and professionally satisfied had the highest correlation with burnout ($\underline{r}$ = .47), leading the researchers to conclude that "those with greater confidence in their professional abilities are the unexpected victims of burnout in situations where even expert work fails to yield gratifying results" (p. 34). They go on to note that teachers need to be reminded by such people as school administrators and college professors that "sometimes extraordinary efforts do not engender the educational benefits predicted or expected" (p. 34). The data suggested that as a factor in burnout, how teachers perceive themselves is a more important consideration than how they feel they are perceived by others.

Other investigations have focused on personal variables and teacher occupational stress. Innes and Kitto (1989) and Wilson and Mutero (1989) report a significant relationship between stress and the personality trait neuroticism (Eysenck Personality Questionnaire [Eysenck & Eysenck, 1968]). Mo (1991) found that "Type A teachers were less burned out" (p. 3), and Soh (1988) found significant correlations between teacher stress (Wilson Stress Profile for Teachers [Wilson, 1979]) and scores on an instrument designed by the researcher to measure "teachers' sense of responsibility, willingness to take on additional, new duties, and their perception of being assigned additional duties" (p. 3) (correlations on various factors ranged from $\underline{r}$ = -.27 to -.33). Anderson and Iwanicki (1984) examined teacher motivational factors (an adaptation of Maslow's hierarchy of needs - perceived security, social, esteem, autonomy, and self-actualization need deficiencies). Self-actualization and esteem need deficiencies were significant predictors of the different burnout facets (e.g., accounting for over 20% of the variance in emotional exhaustion). Finally, in a study based on Lazarus's (1966) conceptualization of stress, Prakash (1991) found a significant difference between perceived demand and perceived capability in high and low stress teachers. The researcher concluded that "high perceived demand and low perceived capability produce a feeling of stress" (p. 29).

In summary, the results of investigations into personal variables and teacher occupational stress suggest that such variables warrant attention in teacher stress investigations. Significant correlations have been found between stress and such personal variables as external locus of control ($\underline{r}$ = .36; Kyriacou, 1980), efficacy ($\underline{r}$ = -.27; Tuettemann & Punch, 1992b), irrational beliefs ($\underline{r}$ = .31; Zingle & Anderson, 1990), and self-

concept (r = -.45; Friedman & Farber, 1992). Beliefs specifically related to teaching have not been investigated, however. Consequently, this researcher has undertaken such an investigation. In this study, participants will be asked to supply self-generated, comprehensive information about their teaching beliefs. Concept mapping, a method that enables the researcher to bring statistical order to descriptive data, will be used to analyze the generated statements. A review of the concept mapping method follows.

Concept Mapping

Concept mapping is a relatively new statistical method of analyzing data in which the ideas generated by participants are clustered into underlying themes and ultimately represented in the form of a picture or map. It has been described as "an alternative methodological approach that is particularly appropriate for applications in which researchers are seeking to clarify the domain, constituent elements, and underlying structure of a phenomenon as experienced within the population of interest" (Daughtry & Kunkel, 1993, p. 317).

Concept mapping has been used by researchers investigating various areas in the field of psychology. It was used by Daughtry and Kunkel (1993) as they investigated the experience of depression in college students, and by Phillips (1993) in her exploration of the themes underlying the problems reported by adolescents, mothers, and stepfathers living in stepfamilies. This method was used to investigate the dysfunctional beliefs of battered women (Deby, 1993) and to explore the issues that college students perceive as important (Trochim, 1989a). Trochim, Cook and Setze (1994) used concept mapping in their analysis of a supported employment program for individuals with severe mental illness.

This method was also used by Linton (1989) to aid in the conceptualization of feminism, and by Shern, Trochim, and LaComb (1995) in investigating a psychiatric rehabilitation program.

As outlined by Trochim (1989b), concept mapping involves a sequence of steps designed to give statistical order to descriptive data. Trochim suggests that in following the sequence of steps, the researcher is provided with a tool for dealing with descriptive data in a more objective manner than has been possible in the past. Themes are arrived at based on a statistical analysis of the sort data provided by participants. Hence, rather than being defined by the researcher, the themes represent a consensus of the groupings made by participants. Rosenberg and Kim (1975) note that the potential for bias and subjectivity is reduced when using such a method: "The identification of underlying dimensions can take place from the structures obtained by scaling and clustering, leaving the respondents' judgments uncontaminated by an investigator's preconceptions" (p. 490).

In following the concept mapping process outlined by Trochim (1989b), participants are selected and a focus for brainstorming is established. Then statements are generated that "ideally should represent the entire conceptual domain for the topic of interest" (p. 4). Next, information about interrelationships is obtained by conducting an unstructured card sort. Immediately prior to this procedure, participants are selected for the sorting task. They may consist of the individuals who generated the statements, or they may be new participants. Each participant selected for the sorting task is asked to sort the statements into piles "in a way that makes sense to you" (p. 5). With regard to card sorting, Weller and Romney (1988) note:

> The outstanding strength of the pile sort task is the fact that it can accommodate a large number of items. We know of no other data collection method that will allow the collection of judged similarity data among over 100 items. (p. 25)

In the next phase of the concept mapping process, the computer program The Concept System (Trochim, 1993a) is utilized. The results of the card sort are inputted and the computer program produces individual sort matrices (i.e., summaries of the groupings made by individuals). The information obtained from the individual sort matrices is aggregated to form a combined group similarity matrix (a summary of how the statements were grouped by all sorting participants). Multidimensional scaling (MDS) analysis utilizing a two-dimensional solution produces a point map showing each of the statements generated by participants as a dot on the map. The MDS analysis uses the information contained on the group similarity matrix and "iteratively places points on a map so that the original table is as fairly represented as possible" (Trochim, 1989b, p. 7). As Daughtry and Kunkel (1993) explain, "MDS arranges points representing items along orthogonal axes such that the distance between any two points reflects the frequency with which the items were sorted together" (p. 319). A stress value provides a measure of the stability of the MDS solution (0 = perfectly stable, 1 = perfectly unstable) (Daughtry & Kunkel, 1993). Finally, hierarchical cluster analysis of the MDS point map utilizing Ward's algorithm (Everitt, 1980) places sorted items into clusters that are internally consistent. Cluster solutions are superimposed onto the point map. The cluster solution best suited to the "conceptualization task at hand" (Trochim, 1989b, p. 11) is then selected and used. In making such a selection, the bridging index value of the items with the groupings is

examined. The bridging index (a number between 1 and 0) is a statistical measure of an item's relationship to other items in the group (Trochim, 1993b). The lower the bridging index value, the more likely it is that the statement was sorted primarily with the statements that are close to it on the map. The higher the bridging index value, the more likely it is that the statement was sorted with other statements in addition to those that are close to it on the map.

The utility of concept mapping as a tool for organizing descriptive data is documented in the literature. The method is seen as an appropriate one to use in the present study as it enables a researcher to derive themes based on the responses of the population of interest. The process, which has been outlined above, is elaborated upon in the next chapter as the method used to analyze the data collected in this study is detailed, and in Chapter 4 with the presentation of results.

Summary

Teacher occupational stress is a topic of research and concern (Farber, 1991). The "destructive environmental demands" (Lazarus, 1993b, p. 21) of this particular workplace have been extensively investigated (e.g., Borg, Riding & Falzon, 1991; Byrne, 1991; DeFrank & Stroup, 1989; Dewe, 1986; French, 1991; King & Peart, 1992; Klas, 1994; Starnaman & Miller, 1992; Tokar & Feitler, 1986). Consistent with research being done in the general stress field, teacher stress researchers are increasingly calling for investigations with an interactional focus (Hiebert, 1985; Hiebert & Farber, 1984; Worrall & May, 1989). Interactional stress theories currently find wide acceptance due, in large part, to the growing criticism of the ability of stimulus and response theories to fully explain stress reactions in humans (Derogatis & Coons, 1993; Goldberger, 1986). As Lazarus (1966) notes, "stress

cannot be defined exclusively by situations because the capacity of any situation to produce stress reactions depends on characteristics of the individual" (p. 5).

Beliefs play an important role in the stress levels experienced by individuals. Beck (1993) reports that "specific beliefs incorporated into relatively stable structures - schemata" (p. 196) lead to distress. Lazarus (1966) notes that "general beliefs about the environment and [one's] capacity to deal with it guide every specific interpretation" (p. 133). Researchers in the general stress field have consistently found significant correlations between beliefs and stress in their investigations (e.g., Gillis, 1992; Harran & Ziegler, 1991; Hart, Turner, Hittner, Cardozo, & Paras, 1991; Kassinove, 1986; Morin, Stone, Trinkle, Mercer, & Remsberg, 1993; Woods, 1987; Zuroff, Igreja, & Mongrain, 1990).

While the relationship between beliefs and stress has been extensively explored in the general stress field, research of this type is more limited with regard to teacher occupational stress. Researchers have examined the relationship between teacher stress and belief constructs such as locus of control (e.g., Hipps & Halpin, 1991; Parkay, Greenwood, Olejnik, & Proller, 1988; Pierce & Molloy, 1990), efficacy (e.g., Brissie, Hoover-Dempsey, & Bassler, 1988; Finneran, 1990; Tuettemann & Punch, 1992b), and general irrational beliefs (Bernard, 1988a, 1988b; Jevne & Zingle, 1992; Zingle & Anderson, 1990).

A common theme found in the teacher occupational stress literature is that unrealistic expectations lead to increased levels of stress (Byrne, 1991; Flett, Hewitt, & Hallett, 1995; Jevne & Zingle, 1992; King & Peart, 1992; Shinn, Rosario, Morch, & Chestnut, 1984). This researcher has found no research published to date, however, that examines the relationship between teacher

occupational stress and unrealistic self-expectations that teachers may hold for themselves in the workplace. Consequently, this research will examine the relationship between teacher stress and self-defeating beliefs. Self-defeating beliefs are defined as those beliefs teachers have about being a good teacher that are unfounded by logical or empirical evidence, and have a strong likelihood of causing a teacher to have unrealistic expectations for their performance in the work environment. In this study, participants will be asked to generate beliefs that are job specific.

In this research, the following questions are posed:

(a) What are the self-defeating beliefs of teachers?

(b) What are the themes of the self-defeating beliefs ?

(c) What is the incidence rate of self-defeating beliefs?

(d) What is the relationship between self-defeating beliefs and teacher stress?

Concept mapping as outlined by Trochim (1989a, 1989b) and Trochim, Cook, and Setze (1994) is viewed as an appropriate method to use in bringing statistical order to the descriptive data generated in this study. It is also seen as an appropriate method of deriving themes for further analyses and for presenting the study findings.

In the next chapter, a comprehensive description of the method used in this investigation is provided.

Chapter 3

METHOD

The purpose of this study was to examine the relationship between self-defeating beliefs (i.e., teacher beliefs that are unfounded by logical or empirical evidence, with a strong likelihood of causing unrealistic self-expectations in the workplace) and teacher stress. The specific objectives of the research were to determine (a) the self-defeating beliefs of teachers (b) the themes of the self-defeating beliefs (c) the incidence rate of self-defeating beliefs in the sample population (d) the relationship between self-defeating beliefs and teacher stress in the sample population.

In order to meet the objectives outlined above, the study was conducted in two parts. Part one involved eliciting teachers' beliefs about being a good teacher (initial questionnaire), selecting self-defeating beliefs from the generated beliefs based on ratings provided by independent judges, and structuring the self-defeating beliefs into (a) a questionnaire (b) themes. Part two involved administering the beliefs questionnaire described above and a stress measure to a sample population. This part of the study also included analyses of the beliefs and stress data by demographic variables, and an examination of the relationship between beliefs and stress scores.

The proposed study was approved by the Ethics Review Committee of the Department of Educational Psychology, University of Alberta, prior to commencement of the research.

Part One

Instrument

Participants were asked on the initial questionnaire (Appendix C) to respond to the sentence stem "In order to be a good teacher, I believe that I ....." In keeping with Ramanaiah, Heerboth, and Schill's

(1987) recommended procedure for minimizing discriminant validity problems in beliefs-stress research, the wording of the sentence stem was specifically designed to elicit beliefs. The sentence stem was also worded in the first person so as to minimize stereotypic responses (Rotter & Rafferty, 1950). An open-ended questionnaire was selected over interviews. Kidder (1981) notes advantages to this method such as more freedom on the part of participants to answer due to greater anonymity, adequate time for respondents to consider their answers, and the elimination of potential interviewer bias (p. 148).

On the questionnaire used in part one of the study, participants were also asked to supply information on sex, age, grade level taught, years of teaching experience, workload assigned to teaching, highest teacher training level, school location, average class size, and school size.

Sample

Twenty schools were randomly selected from the 2,155 names listed in Alberta Education's (1995) List of Operating Schools in Alberta. Cover letters (Appendix A and Appendix B) and the initial questionnaires (Appendix C) were sent to school principals of the selected schools.

Participation in the study was voluntary and participants were not asked to identify themselves. Principals chose whether or not to distribute the questionnaires to their staff (cover letter - Appendix A), and individual teachers chose whether or not they wanted to participate (cover letter - Appendix B).

Forty-one questionnaires were returned, mailed back in 11 separate envelopes. (As participants completed the questionnaires anonymously, it is not possible to determine with certainty how many of the 20 selected schools were represented.) Of the 41 teachers who responded, 39% were

male and 61% were female. They represented various grade levels/school sizes, and both urban and rural locales. Their ages ranged from 27 years to 53 years (mean = 41.49 years), and they reported 1 to 28 years of teaching experience (mean = 15.44 years). The reported percentage of workload assigned to teaching ranged from 30% to 100% (mean = 86.21%), and the reported average class size varied from 2 students to 32 students (mean = 22.45 students). The majority of the 41 participants (71%) reported completing 4 years of university. Two percent reported completing 1 year of graduate training, and 15% reported completing a Master's degree. Twelve percent of this sample reported other training levels - one person reported having less than four years of university training, and the remainder reported having 5 or 6 years.

The ratio of males to females in the sample population, and the mean age, average years of teaching experience and average class size were similar to corresponding statistics for the 1995/1996 Alberta teaching population (35% male/65% female, mean age = 41.02 yrs., average yrs. teaching experience = 14.97 yrs, average class size = 22.6 students). A summary of the demographic variables for the sample population is contained in Appendix D.

Procedure

Identifying Self-Defeating Beliefs.

Twenty Alberta schools were randomly selected to receive the cover letters and questionnaire shown in Appendices A, B, and C. As completed questionnaires were received, the beliefs about being a good teacher supplied by participants were copied as they appeared on the returned questionnaires (Appendix F). Three hundred sixty-five belief statements were generated by the 41 participants in response to the sentence stem "In

order to be a good teacher, I believe that I . . . . . ." The list of belief statements was then edited so that each numbered line contained one belief statement only (e.g., the statement "should be prepared and flexible" became "should be prepared" and "should be flexible"). In addition, statements were reworded for clarity and/or brevity (e.g., "need to spend more time teaching rather than being involved in so many committees" became "need to spend less time on committees"). The resulting 404 statements appear in Appendix G. In the final step, redundant items were removed. When faced with multiple statements for the same idea (e.g., "should meet the students' needs," "must meet the students' needs"), the statement that contained the verb used most often for that group of ideas was selected. In addition, statements more operational in nature were chosen over more general ones (e.g., the statement "should provide a safe learning environment in which all students are given the opportunity to succeed" was chosen in place of "must enable children to do their best work"). Statements descriptive of a teacher's role were eliminated (e.g., "must frequently monitor student progress"). A final list of 169 distinct belief statements was arrived at (Appendix H).

The 169 belief statements were examined in order to arrive at a list of self-defeating teacher beliefs (i.e., beliefs unfounded by logical or empirical evidence, with a strong likelihood of causing unrealistic self-expectations in the workplace). Upon initial examination, 165 of the 169 belief statements had the potential to be labeled self-defeating based on Ellis's (1987) conceptualization - 121 belief statements contained the word "must," 25 contained the words "need to/need," 16 contained "should," 3 contained "have to." Oei, Hansen, and Miller (1993) report difficulty in classifying beliefs as unempirical or illogical as beliefs frequently "lie

outside the realm of logical empiricism" (p. 196). These authors go on to note, however, that beliefs can be "refuted on pragmatic grounds, namely that they lead to inappropriate emotions which sabotage life goals" (p. 196). In order to arrive at an estimation of the likelihood that the generated beliefs would cause unrealistic expectations for teachers in the workplace, the 169 statements were rated (Appendix I) by 3 independent judges, two of whom were currently employed as teachers. (The other had been employed as a teacher within the past 4 years.) All had a Master's degree in either Counselling, School Psychology, or School Counselling. As a group, they had 55 years of teaching experience (35 at the elementary level, 11 at the junior high level, and 9 at the senior high level). The judges were asked to provide a rating as to the likelihood (Low, Medium, High) that holding such a belief would be problematic due to the creation of unrealistic self-expectations. Those belief statements considered by the judges to have the greatest potential to be problematic were selected for use in (a) the sorting activity described below (b) the questionnaire used in part two of the study. Statements that at least 2 of the 3 judges rated to have Medium or High probability of causing problems due to unrealistic expectations for performance in the work environment were selected, as long as the statements had been rated by at least one judge as High. Forty-five statements met this criteria. A summary of the ratings given to each of the 169 belief statements is contained in Appendix J. The 45 beliefs selected as self-defeating follow in Appendix K, listed in the order in which they appear on the beliefs questionnaire used in part two of the study. As each of the 45 belief statements selected in the rating process was absolute in nature (i.e., contained the words must, need/need to, should, have to), and referred to activities not merely descriptive of a teacher's role, all 45 were

judged by this researcher to be unfounded by logical or empirical evidence.

Sorting Activity.

The forty-five beliefs identified as having a strong likelihood of being problematic (i.e., self-defeating beliefs) were used for the sorting activity that preceded the analysis of the data using the computer program The Concept System (Trochim, 1993a). In order to facilitate the sorting activity, each self-defeating belief (Appendix K) was printed on a card. Independent sorters were asked to place the 45 cards into piles that seemed to go together, that had a common theme. It was stressed that there was no correct or incorrect way to do the sorting. Sorters were told that conceivably they could have as many themes as they had items. At the end of the sorting task, they were instructed to staple together the items that seemed to belong together. Participants were encouraged to label their sorted piles with a name that described the theme of the items.

Twenty-seven individuals completed the sorting activity. All were teachers at either the elementary, junior high, or senior high level. Fifteen of the 27 completed sorts were used in the data analysis. Six sorts were not used as participants included a pile that suggested a sorting scheme not consistent with the sorting task at hand (e.g., piles entitled "statements I do not agree with" or "off the wall statements"). Further clarification appeared to have been needed to facilitate sorting by the themes suggested by the statements rather than by endorsement or non-endorsement of the statements. Six other sorts were also excluded as more than one third of the 45 statements had been placed into one pile. Sorting of this type may reflect a lack of commitment to the task or a misunderstanding of the sorting instructions. It may also reflect the

thematic conceptualizations of the sorter. Weller and Romney (1988) note that difficulties can arise when sort data is completed by a combination of "lumpers" (individuals who create "larger, more generic categories" [p. 22]) and "splitters" (individuals who create "smaller categories with finer distinctions" [p. 22]). As they report, "by its nature, the pile sort task cannot accommodate many dimensions of discrimination at once" (p. 24). As a relatively small number of sort participants were involved in this study, the six latter sorts were not included to prevent possible interpretability problems on the multidimensional scaling map. Trochim, Cook and Setze (1994) report eliminating sorts containing more than one third of the statements for this reason.

Data Analyses

In order to determine the themes of the generated self-defeating beliefs, concept mapping as outlined by Trochim (1989b) was used. This method allows a researcher to arrive at themes based on a statistical analysis of the data obtained from the sorting activity. Sort data (derived in the manner described above) is entered into The Concept System, Trochim's (1993a) computer program. Individual sort matrices are produced, as well as a combined group similarity matrix that provides a summary of how the statements were grouped by the participants. Multidimensional scaling uses the information contained on the group similarity matrix to produce a point map showing each of the statements as a dot on the map. The location of the dot representing each statement is determined entirely by the sort data (e.g., if many sorters place two statements together in the same group, those statements will likely be near each other on the map). Hierarchical cluster analysis of the point map then places sorted items into clusters that

are internally consistent. Specified cluster solutions are superimposed on the point map to produce concept (cluster) maps.

In this study, the goal was to end up with a concept map and an accompanying cluster solution that would be useful in analyzing and presenting the beliefs data obtained in the second part of the study. The following procedure was followed in analyzing each concept map and accompanying cluster solution selected for analysis. First, each grouping within the clusters was examined for conceptual consistency. Then the bridging index value of items within the groupings was examined. One concept map and accompanying cluster solution were chosen as being optimal for grouping the data in this study because they appeared to best cluster the data in conceptually clear groups. Each group was assigned a name. The assigned names were chosen to reflect the nature of the items composing each grouping.

Part Two

Instrument

In part two of the study, participants were presented with a questionnaire (Appendix N) that included a beliefs portion (the self-defeating beliefs identified in part one of the study). Participants were asked to rate each belief about being a good teacher on a 7 point scale (1 = strongly disagree, 2 = moderately disagree, 3 = slightly disagree, 4 = neutral, 5 = slightly agree, 6 = moderately agree, 7 = strongly agree). In this beliefs-stress study, it was deemed important to use self-generated, work-related beliefs. Belief instruments are typically based on hypothesized constructs (e.g., Ellis's [1962] work provides the basis for most irrational belief scales) or the instruments are derived from a review of the literature (e.g., Persons, Burns, Perloff & Miranda [1993] selected items for their belief

scales from previously designed measures). In both cases, the beliefs presented on such instruments are predetermined by the researcher. Richardson (1996) refers to instruments constructed in such a manner as "constraining," and notes that the theories the instruments are based on may not "map on to teachers' beliefs" (p. 107). Cases of failures to "map on to beliefs" of participants in studies are reported in the literature. For example, Maertz (1990), using the Rational Behavior Inventory (an instrument which measures general irrational beliefs), found that abused women endorsed significantly fewer irrational beliefs than the norm population. Tobacyk and Downs (1986), investigating irrational beliefs as predictors in increased musical performance anxiety, found that scores on the Irrational Belief Questionnaire were significant predictors of increases in state anxiety in one study but not in another. The researchers noted that the items on the questionnaire appear to assess general rather than domain-specific irrational beliefs and this may have influenced the results in the highly contextualized situation of the second study. Similarly, Thurman (1985) found that an irrational belief measure consisting of beliefs unique to Type As detected changes in participants not detected by a more general measure.

In addition to rating the beliefs generated by Alberta teachers, participants in the second part of the study were asked to record any beliefs they had about being a good teacher that were not included on the questionnaire. Although a total of 51 beliefs were generated by the 297 participants in the second part of the study, this list did not include any beliefs not supplied by participants who responded to the original sentence stem. It was concluded that the belief statements on the questionnaire were adequately representative.

The questionnaire used in part two of the study also included a stress measure. The Teacher Stress Inventory (Fimian, 1988) was selected after a review of the literature. Kyriacou (1987) notes that "attempts to estimate how widespread and how severe . . . teacher stress and burnout [is] have been plagued with problems of measurement" (p. 147). Indeed, reports of teacher stress are often based on a single questionnaire item (e.g., McMurray, 1986). Pithers and Fogarty (1995) report that "the difficulty with interpreting data on teacher stress is that the measuring instruments used are often neither standardized nor sometimes focused on stressors pertinent to the occupational roles of teachers" (p. 3). These researchers go on to note that "the relative level of teacher stress needs to be determined as accurately as possible using measures which are sufficiently valid and reliable to allow fair comparison with other reference groups" (p. 6). Similarly, Schonfeld (1992) notes "there are advantages for teacher stress researchers when they use instruments standardized in other samples" (p. 157), and Cooper (1995) reports a need for the utilization of a "teacher-specific measure" (p. 69) in teacher stress research.

The Teacher Stress Inventory (TSI) (Fimian, 1988) was selected to measure teacher stress in this study as it seemed to address the issues raised above. The inventory has been used in several investigations (Cecil & Forman, 1990; Fimian, 1984; Fimian & Krupicka, 1987; Flett, Hewitt, & Hallett, 1995; Vance, Nutter, & Humphreys, 1989). The TSI is a 49 item, 10 factor measure of teacher stress that "assesses numerous stressful teaching events experienced on the job and in the schools" (Fimian, 1988, p. 8). Five of the factors examine sources of stress and the other five examine manifestations of stress. Subscale stress scores and a total stress score can be obtained. Consistent with Lazarus's (1990) call for intensity measures in stress

research, the Teacher Stress Inventory uses intensity ratings (a five-point rating from "no strength, not noticeable" to "major strength, extremely noticeable"). Norms are available for regular and special education teachers, for elementary, middle, and secondary teachers, and for male and female teachers. Alpha reliabilities range from .70 to .92 (Fimian, 1988).

Participants in part two of the study were additionally asked to supply information on sex, age, grade level taught, years of teaching experience, school employment status, workload assigned to teaching, highest teacher training level, school location, average class size, and school size.

Sample

The materials for part two of this study (Appendices L, M, and N) were distributed to school principals by 20 teachers enrolled in a Master's program in School Counselling. Each of the teachers was employed at a different school in north-central Alberta.

Participation in the study was voluntary and participants were not asked to identify themselves. Principals chose whether or not to distribute the questionnaires to their staff (cover letter - Appendix L), and individual teachers chose whether or not they wanted to participate (cover letter - Appendix M).

Three hundred three questionnaires were returned, representing a 53% return rate. Major portions of either the beliefs or stress measure were left uncompleted on 6 questionnaires. Data from these questionnaires was not included in subsequent analyses. Two hundred ninety-seven questionnaires were utilized, eleven of which did not include demographic data.

Of the 297 participants who completed the demographic portion of the questionnaire, 42% were male and 58% were female. They represented

various grade levels/school sizes, and both urban and rural locales. The ages of the participants ranged from 22 years to 60 years (mean = 40.62 years); they reported 0 to 35 years of teaching experience (mean = 14.61 years). Eighty-five percent of the sample population reported being employed full-time by their school board. The workload assigned to teaching ranged from 0% to 100% (mean = 84.49%), and the reported average class size varied from 2 students to 35 students (mean = 25.02 students). A majority of the participants (59%) reported completing 4 years of university. Thirteen percent reported completing 1 year of graduate training, and 16% reported completing a Master's degree. Thirteen percent of this sample reported other training levels - 6 people reported completing a Ph.D. degree, 2 reported completing 2 Master's degrees, and the remainder reported between 5 and 7 years of university.

The ratio of males to females in the sample population, and the mean age, average years of teaching experience and average class size were similar to corresponding statistics for the 1995/1996 Alberta teaching population. A summary of the demographic variables for the sample population is contained in Appendix E.

Procedure

Twenty teachers enrolled in a Master's program in School Counselling distributed the materials for this part of the study (Appendices L, M, and N) to their school principals. Completed questionnaires were returned in a sealed envelope to a central deposit location in the school and returned to the researcher by the distributors of the material. Provision was made for participants to mail their completed questionnaires back individually.

Data Analyses

An item by item frequency count was conducted on the beliefs data, and descriptive statistics (means, standard deviations and frequency distributions) were calculated. Group comparisons on various demographic variables were made using t tests as the research suggests that demographic variables are pertinent in analyzing some belief constructs. Ross (1994) notes that females frequently report higher levels of personal teaching efficacy than do males, and that general teaching efficacy declines with experience. With regard to control beliefs, Heaney (1993) reports that while "perceived control was associated with reduced distress for both sexes" (p. 209), this factor did not buffer women against stress as it did men, and in fact lead to aggravation effects under high stress conditions.

Descriptive statistics were calculated for the stress data, and the results were compared to the norms provided by Fimian (1988). Group comparisons were made on various demographic variables using t tests. T-test analyses were also utilized in comparing stress scores in the high and low beliefs groups, and comparing belief scores in the high and low stress groups. As multiple calculations were executed in the analyses in this study, the alpha level to achieve significance was adjusted using the Bonferroni correction (Morin, Stone, Trinkle, Mercer, & Remsberg, 1993; Rosenthal & Rubin, 1984). Pearson product-moment correlations were computed for the scores obtained on the beliefs and stress measures.

The results obtained from the analyses of the data are presented in the next chapter.

Chapter 4

RESULTS

The purpose of this study was to examine the relationship between teacher self-defeating beliefs (i.e., beliefs that are unfounded by logical or empirical evidence, with a strong likelihood of causing unrealistic self-expectations in the workplace) and stress. Specifically, the aims of this research were to determine (a) the self-defeating beliefs of teachers (b) the themes of the self-defeating beliefs (c) the incidence rate of self-defeating beliefs in the sample population (d) the relationship between self-defeating beliefs and teacher stress in the sample population. In this chapter, results of the statistical analyses outlined in Chapter 3 are related to the research questions.

Teachers' Self-Defeating Beliefs

Teachers were asked to respond to the sentence stem "In order to be a good teacher, I believe that I . . . . . ." Forty-one teachers generated 365 belief statements. Few new beliefs were reported after the 27th questionnaire. The belief statements were edited to a list of 169 distinct beliefs. These beliefs were rated by 3 independent judges, and based on their ratings, a list of 45 self-defeating beliefs was derived (Table 4-1).

Themes of the Self-Defeating Beliefs

Concept mapping as outlined by Trochim (1989b) was used in order to identify themes in the 45 self-defeating beliefs. A multidimensional scaling map (point map) was produced from the sort data (Appendix O), providing a pictorial representation of the manner in which sort participants grouped the self-defeating belief statements. The final stress value for this two-dimensional solution was .25 (0 = perfectly stable, 1 = perfectly unstable). The obtained value represents a satisfactorily stable solution. Daughtry and

Table 4-1

Self-Defeating Beliefs Generated By Teachers

In order to be a good teacher, I believe that I . . . . . .

1. must continually change and evolve as a teacher.
2. should be involved in extra-curricular activities.
3. have to love my job.
4. must know students' family backgrounds.
5. must constantly reflect on the success of my teaching.
6. must be able to motivate students to learn enthusiastically.
7. must be professional in all that I do and say.
8. must constantly re-work and revise unit and year plans so as never to get in a rut.
9. need a dedicated and experienced staff to draw from.
10. need good, strong, effective leadership.
11. must devote my whole life to teaching, no family, no possessions.
12. must be methodical.
13. must be told occasionally that my work is appreciated and on track.
14. must be able to teach the material in an exciting manner.
15. need a high tolerance for problems caused by disruptive students.
16. need to have teaching experience.
17. should meet the emotional needs of my students.
18. must constantly keep abreast of new developments in education.
19. must share a common philosophy with that of the school and its administrators.
20. must work to my fullest potential.
21. need greater support from government officials and the media.
22. need to focus on each student individually in order to best meet his/her needs.
23. must be conforming.
24. must be able to justify every activity and assignment as worthwhile, with definite objectives.
25. need plenty of prep time.
26. must upgrade my education constantly.
27. must be a master at the subject being taught.
28. must view teaching as a mission or a calling.
29. have to have the support of the parents.
30. must be willing to sacrifice personal time.
31. must keep up to date with technology.
32. must always be a willing listener to any and all students.
33. must enjoy the administration that I work with.
34. should act as a loving parent.
35. must be able to work cooperatively with all people.
36. must be younger than I am.
37. must keep in constant touch with parents.
38. must be teaching in my field of expertise.
39. must be my students' greatest cheering section.
40. must be born again by God's grace.
41. need to give extra of my energy.
42. am always available to help students in or out of class.
43. need to be a superb communicator.
44. must know I have the backing of central office.
45. must be willing to give of my best efforts in all areas.

Kunkel (1993) indicate that a stress value of .27 is "reasonably stable," and Trochim, Cook, and Setze (1994) found a stress value of .31 to be acceptable.

The Concept System subsequently generates specified cluster solutions which it superimposes on the multidimensional scaling map. In this study, although several cluster solutions were selected for analysis, the 6 cluster solution was chosen as being the most conceptually clear. Solutions with clusters fewer than 6 were found to be unsatisfactory as the diversity within the clusters was too large. Solutions with greater numbers of clusters than 6 were found to be too narrow.

The concept map of the 6 cluster solution is contained in Figure 4-1. This map displays the original 45 points enclosed by the boundaries for the 6 clusters. The boundaries "represent items that were frequently sorted together in the same pile and less often sorted with items in other piles" (Daughtry & Kunkel, 1993, p. 320). Names were assigned to each of the 6 clusters (themes): Upgrading/Curriculum Issues, Work Requirements, Support, Working With Students, Time/Energy Commitment, and Miscellaneous. These names were selected to reflect the nature of the items composing each grouping. In the selection of names, particular attention was paid to those belief statements within each group with a low bridging index. The bridging index (a number between 0 and 1) is a statistical measure of a statement's relationship to other statements in the group. A low value indicates a greater likelihood that the statement was sorted primarily with the statements that are close to it on the map. The 45 self-defeating belief statements grouped in the 6 cluster solution are listed in Table 4-2, and the 6 cluster solution with accompanying bridging values is contained in Appendix P.

Figure 4-1

6 Concept Map of Teachers' Self-Defeating Beliefs

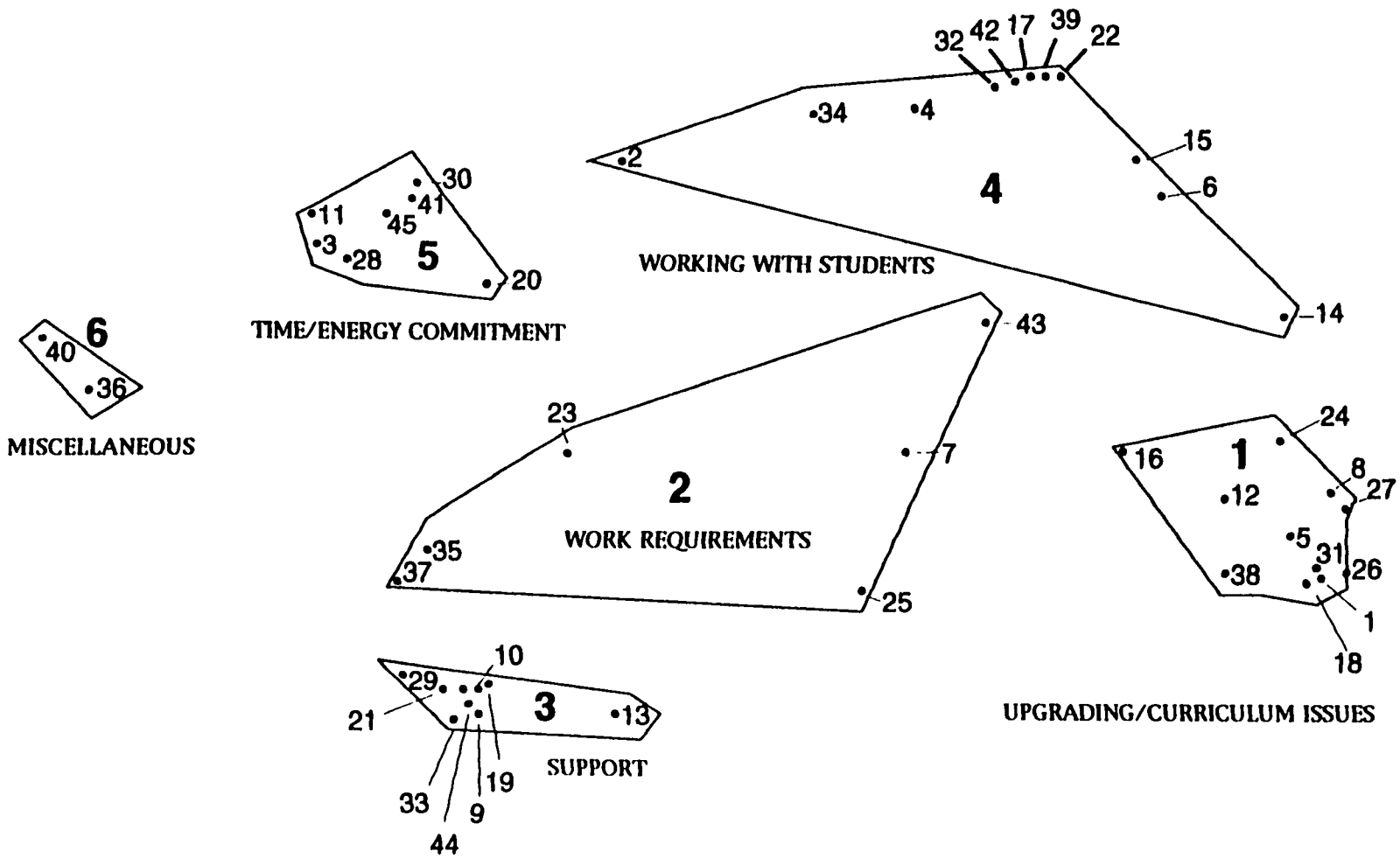

Table 4-2

6 Cluster Grouping of Teacher Self-Defeating Beliefs With Means, Standard Deviations, and Frequency Distributions (in Percentages)

BELIEF STATEMENTS - NUMBERS AND NAMES	Mean	S.D.	FREQUENCY DISTRIBUTION (%)* 1	2	3	4	5	6	7	n
In order to be a good teacher, I believe that I.....										
Cluster 1 (Upgrading/Curriculum Issues)										
1. must continually change and evolve as a teacher	6.51	.72	1	0	0	1	8	31	61	295
8. must constantly re-work and revise unit and year plans so as never to get in a rut	5.98	1.12	0	1	3	5	14	38	38	297
5. must constantly reflect on the success of my teaching	5.97	1.16	1	1	3	7	16	32	41	296
18. must constantly keep abreast of new developments in education	5.78	.96	1	0	2	5	28	42	23	297
31. must keep up to date with technology	5.71	1.05	1	1	4	5	27	41	23	296
16. need to have teaching experience	5.20	1.51	3	4	7	12	26	28	20	296
26. must upgrade my education constantly	5.03	1.39	1	6	7	12	33	28	12	296
38. must be teaching in my field of expertise	5.02	1.59	3	6	10	13	23	27	18	297
27. must be a master at the subject being taught	4.75	1.70	4	9	13	11	23	26	14	296
24. must be able to justify every activity and assignment as worthwhile, with definite objectives	4.60	1.75	7	7	16	8	25	25	12	297
12. must be methodical	4.23	1.54	6	10	11	27	25	15	5	294
Cluster Mean and S. D.	5.34	.71								
Cluster 2 (Work Requirements)										
7. must be professional in all that I do and say	6.27	1.03	1	1	2	2	9	33	52	296
43. need to be a superb communicator	5.81	1.11	1	1	3	4	23	40	28	296
25. need plenty of prep time	5.76	1.26	1	2	3	8	24	26	36	297
35. must be able to work cooperatively with all people	5.43	1.34	1	3	8	8	25	33	23	297
37. must keep in constant touch with parents	4.79	1.53	2	7	14	12	29	24	12	296
23. must be conforming	3.26	1.54	17	16	24	21	16	6	2	293
Cluster Mean and S. D.	5.23	.72								

Table 4-1 (continued)

			FREQUENCY DISTRIBUTION (%)*							
	Mean	S.D.	1	2	3	4	5	6	7	n
Cluster 3 (Support)										
10. need good, strong, effective leadership	6.32	.97	1	1	1	2	11	31	55	297
21. need greater support from government officials and the media	6.07	1.26	1	1	2	8	15	20	53	296
13. must be told occasionally that my work is appreciated and on track	5.97	1.03	0	1	2	5	20	37	36	297
44. must know I have the backing of central office	5.81	1.30	1	2	2	7	22	29	37	295
9. need a dedicated and experienced staff to draw from	5.77	1.16	1	1	2	7	23	37	29	296
29. have to have the support of the parents	5.73	1.26	1	2	4	4	27	29	33	297
19. must share a common philosophy with that of the school and its administrators	5.32	1.30	1	2	9	8	26	39	15	295
33. must enjoy the administration that I work with	5.27	1.43	2	3	9	10	24	33	20	297
Cluster Mean and S. D.	**5.78**	**.76**								
Cluster 4 (Working With Students)										
6. must be able to motivate students to learn enthusiastically	6.27	.88	0	0	1	3	15	31	50	296
32. must always be a willing listener to any and all students	5.99	1.15	1	2	2	4	16	37	39	296
22. need to focus on each student individually in order to best meet his/her needs	5.72	1.17	1	2	3	5	21	42	25	296
14. must be able to teach the material in an exciting manner	5.69	1.01	0	1	4	6	27	43	20	296
42. am always available to help students in or out of class	5.19	1.53	3	3	10	7	26	32	19	296
39. must be my students' greatest cheering section	5.15	1.52	5	3	4	13	32	24	20	297
4. must know students' family backgrounds	5.12	1.31	2	3	5	12	35	31	11	297
17. should meet the emotional needs of my students	5.11	1.25	1	4	5	11	41	27	11	295
15. need a high tolerance for problems caused by disruptive students	5.03	1.77	4	9	11	4	22	28	22	295
2. should be involved in extra-curricular activities	5.02	1.52	4	5	5	17	27	28	15	297
34. should act as a loving parent	4.78	1.64	4	6	12	18	22	22	16	296
Cluster Mean and S. D.	**5.37**	**.77**								

Table 4-1 (continued)

				FREQUENCY DISTRIBUTION (%)*							
	Mean	S.D.	1	2	3	4	5	6	7	n
Cluster 5 (Time/Energy Commitment)										
20. must work to my fullest potential	6.14	.96	1	1	2	2	11	44	39	297
3. have to love my job	6.11	1.07	0	1	3	4	15	33	45	297
45. must be willing to give of my best efforts in all areas	6.04	1.11	1	1	2	3	18	36	41	296
30. must be willing to sacrifice personal time	5.33	1.37	3	3	5	5	33	34	17	297
41. need to give extra of my energy	5.08	1.45	3	3	7	13	29	30	14	293
28. must view teaching as a mission or a calling	4.27	1.84	11	10	13	19	18	18	12	295
11. must devote my whole life to teaching, no family, no possessions	1.44	1.07	79	10	4	2	2	2	0	297
Cluster Mean and S. D.	4.91	.74								
Cluster 6 (Miscellaneous)										
40. must be born again by God's grace	2.45	1.79	53	7	2	28	4	2	4	283
36. must be younger than I am	2.44	1.92	54	9	8	13	6	4	6	293
Cluster Mean and S. D.	2.44	1.45								
Grand Mean and S. D.	5.22	.60								

* Figures rounded to nearest whole percent.

Incidence Rate of Self-Defeating Beliefs

The 45 self-defeating beliefs (Table 4-1) were used to construct a beliefs questionnaire (Appendix N). Participants were asked to rate each of the beliefs on a seven point scale (1 = strongly disagree, 2 = moderately disagree, 3 = slightly disagree, 4 = neutral, 5 = slightly agree, 6 = moderately agree, 7 = strongly agree). The ratings provided by 297 teachers are summarized in Table 4-2 with the presentation of means, standard deviations and accompanying frequency distributions in percentages (rounded to the nearest percent). The belief statements are rank-ordered from highest to lowest mean within each theme.

Overall, the means of the belief statements ranged from 6.51 ("must continually evolve and change as a teacher") to 1.44 ("must devote my whole life to teaching, no family, no possessions"), with a grand mean of 5.22. The 10 beliefs with the highest mean were:

	Mean	S. D.
must continually change and evolve as a teacher.	6.51	.72
need good, strong, effective leadership.	6.32	.97
must be professional in all that I do and say.	6.27	1.03
must be able to motivate students to learn enthusiastically.	6.27	.88
must work to my fullest potential.	6.14	.96
have to love my job.	6.11	1.07
need greater support from government officials and the media.	6.07	1.26
must be willing to give of my best efforts in all areas.	6.04	1.11
must always be a willing listener to any and all students.	5.99	1.15
must constantly re-work and revise unit and year plans so as never to get in a rut.	5.98	1.12

Three of these belief statements were from the Time/Energy Commitment theme, and 1 was from the Work Requirement theme. The remaining 6 belief statements were equally distributed among the following themes: Upgrading/Curriculum Issues, Support, Working With Students.

In examining theme means, it was found that 4 of the 6 themes had a mean greater than 5 (Support = 5.78; Working With Students = 5.37; Upgrading/Curriculum Issues = 5.34; Work Requirements = 5.23). The mean rating for the Time/Energy Commitment theme was 4.91 while the mean rating for Miscellaneous was 2.44. The latter theme consists of the items "must be born again by God's grace" and "must be younger than I am."

Incidence Rate By Whole Group

In examining the self-defeating beliefs data, it was found that 39 of the 45 beliefs on the questionnaire were endorsed slightly, moderately, or strongly by a majority of the sample population. The only beliefs not endorsed by the majority were "must view teaching as a mission or a calling" (48% agreeing slightly, moderately, or strongly), "must be methodical" (45%), "must be conforming" (24%), "must be younger than I am" (16%), "must be born again by God's grace" (10%), and "must devote my whole life to teaching, no family, no possessions" (4%). All belief statements in the themes Support and Working With Students were endorsed slightly, moderately or strongly by a majority of the sample population. Two of the above beliefs (those not endorsed by a majority of the sample population) compose the Miscellaneous theme, while the others are from the themes Upgrading/Curriculum Issues, Work Requirements, and Time/Energy Commitment. The Miscellaneous theme is the only theme that does not contain any belief statements endorsed by a majority of the sample population.

In analyzing the data by moderate or strong agreement, it was found that 50% or more of the population gave a rating of moderately or strongly agree to a majority of the beliefs on the questionnaire (27 of the 45). The 45 beliefs are listed in Table 4-3, rank ordered as to the percentage of the

Table 4-3

Percentage of Sample Population Moderately or Strongly Agreeing With Belief Statements (n = 297)

In order to be a good teacher, I believe that I . . . . . .

must continually change and evolve as a teacher.	92%
need good, strong, effective leadership.	86%
must be professional in all that I do and say.	85%
must work to my fullest potential.	83%
must be able to motivate students to learn enthusiastically.	81%
have to love my job.	78%
must be willing to give of my best efforts in all areas.	77%
must always be a willing listener to any and all students.	76%
must constantly re-work and revise unit and year plans so as never to get in a rut.	76%
must constantly reflect on the success of my teaching.	73%
need greater support from government officials and the media.	73%
must be told occasionally that my work is appreciated and on track.	73%
need to be a superb communicator.	68%
need to focus on each student individually in order to best meet his/her needs.	67%
must know I have the backing of central office.	66%
need a dedicated and experienced staff to draw from.	66%
must constantly keep abreast of new developments in education.	65%
must keep up to date with technology.	64%
must be able to teach the material in an exciting manner.	63%
have to have the support of the parents.	62%
need plenty of prep time.	62%
must be able to work cooperatively with all people.	56%
must share a common philosophy with that of the school and its administrators.	54%
must enjoy the administration that I work with.	53%
am always available to help students in or out of class.	51%
must be willing to sacrifice personal time.	51%
need a high tolerance for problems caused by disruptive students.	50%
need to have teaching experience.	48%
must be teaching in my field of expertise.	45%
must be my students' greatest cheering section.	44%
need to give extra of my energy.	44%
should be involved in extra-curricular activities.	43%
must know students' family backgrounds.	42%
must be a master at the subject being taught.	40%
must upgrade my education constantly.	40%
should meet the emotional needs of my students.	38%
should act as a loving parent.	38%
must be able to justify every activity and assignment as worthwhile, with definite objectives.	37%
must keep in constant touch with parents.	36%
must view teaching as a mission or a calling.	30%
must be methodical.	20%
must be younger than I am.	10%
must be conforming.	8%
must be born again by God's grace.	6%
must devote my whole life to teaching, no family, no possessions.	2%

sample population agreeing moderately or strongly. With the exception of the Miscellaneous theme, each of the themes contain several beliefs that were moderately or strongly endorsed by a majority of the sample population. All of the belief statements comprising the Support theme were moderately or strongly agreed to by over 50% of the population. This theme consists of the belief statements "need good, strong, effective leadership," "need greater support from government officials and the media," "must be told occasionally that my work is appreciated and on track," "must know I have the backing of central office," "need a dedicated and experienced staff to draw from," "have to have the support of the parents," "must share a common philosophy with that of the school and its administrators," and "must enjoy the administration that I work with."

In analyzing the data by strong agreement, it was found that 50% or more of the sample population gave a rating of strongly agree to the following 5 beliefs: "must continually change and evolve as a teacher" (61% agreeing strongly), "need good, strong, effective leadership" (55%), "need greater support from government officials and the media" (53%), "must be professional in all that I do and say" (52%), and "must be able to motivate students to learn enthusiastically" (50%). These 5 beliefs are contained in the themes Upgrading/Curriculum Issues, Work Requirements, Support, and Working With Students. Two of the belief statements are from the Support theme.

Incidence Rate by Responses Per Individual

The beliefs data was further examined by number of beliefs endorsed by individuals. The minimum number of beliefs endorsed slightly, moderately, or strongly by any one individual was 12. The maximum number of beliefs endorsed slightly, moderately or strongly by any one

individual was 45. The mean number of belief statements endorsed slightly, moderately, or strongly was 34 (S. D. = 6), and the median was 35. In doing a similar analysis of the data by moderate or strong agreement, the minimum number of beliefs endorsed by any one individual was 1 while the maximum number of beliefs endorsed by any one individual was 41. The mean was 24 (S. D. = 8) and the median was 25. In analyzing the data by strong agreement, the minimum number of beliefs endorsed strongly by any one individual was 0 and the maximum was 34. The mean was 11 (S. D. = 7) and the median was 10.

Comparisons of Incidence Rates by Demographic Variables

Comparisons of the beliefs data at both the theme (cluster) level and individual level were made by sex, grade level taught, years of teaching experience, age, percentage of workload assigned to teaching, class size, and locale (urban/rural). T tests were conducted to make the comparisons. (T-test results for separate variance are reported due to differences in variance between some of the groups compared.) As it was necessary to execute multiple calculations in examining the items making up each of the respective themes, the alpha level to achieve significance was adjusted using the Bonferroni correction (Morin, Stone, Trinkle, Mercer & Remsberg, 1993; Rosenthal & Rubin, 1984). Additional analyses of the individual beliefs were conducted using Scheffe's test, a particularly sensitive "guard against false alarms or type 1 errors" (Witte, 1993, p. 355). Similar results were obtained to those reported for the t-test analyses. Analysis of the theme data was also conducted using MANOVA. The results obtained were consistent with the findings of the t-test analyses. An alpha level of .05 was used for all statistical tests.

In analysis by sex (Appendix Q), some significant differences were found in responses between males and females. While a majority of both males and females endorsed the individual belief statements noted below, female teachers reported stronger agreement. For the belief "must know I have the backing of central office," $t(189.30) = -3.31$, 72% of females indicated moderate or strong agreement compared with 56% of males. Females also gave significantly stronger endorsements to the beliefs "must continually change and evolve as a teacher," $t(182.60) = -3.69$, "must constantly re-work and revise unit and year plans so as never to get in a rut," $t(235.72) = -4.25$, and "must know students' family backgrounds," $t(195.89) = -5.19$. In analysis conducted at the theme level, females were found to give significantly stronger endorsements to the beliefs contained in the Support theme, $t(211.39) = -3.66$.

In analysis by grade level taught, no significant differences were found in mean responses between junior and senior high teachers at either the theme or individual belief level. In a comparison of the responses of elementary and junior high teachers, no between-groups differences were found by theme. Junior high teachers were found to be stronger in their endorsement of the belief "should be involved in extra-curricular activities," $t(134.06) = -3.72$; 60% of junior high teachers moderately or strongly agreed compared to 35% of elementary teachers.

In a comparison of the responses of elementary and senior high teachers (Appendix R), elementary teachers were found to give significantly higher endorsements to 4 belief statements from the Working With Students theme: "must know students' family backgrounds," $t(209.74) = 5.78$; 59% of elementary teachers moderately or strongly agreed compared with 26% of senior high teachers, "should meet the emotional needs of my

students," t(210.93) = 4.74; 54% of elementary teachers agreed moderately or strongly compared with 25% of senior high teachers, "need to focus on each student individually in order to best meet his/her needs," t(210.51) = 3.77, and "must be able to motivate students to learn enthusiastically," t(210.92) = 4.17. In analysis by theme, elementary teachers were found to be significantly higher in their ratings for Working With Students, t(210.14)=4.54.

Elementary teachers were also found to be significantly higher than senior high teachers in their ratings on the Work Requirements theme, t(202.11) = 3.77. They gave significantly higher endorsements to the belief statement from this theme "must keep in constant touch with parents," t(209.75) = 5.45; 52% of elementary teachers moderately or strongly agreed compared with 23% of senior high teachers. Elementary teachers also gave significantly higher endorsements to the belief "must constantly reflect on the success of my teaching," t (203.65) = 3.91; 84% of elementary teachers moderately or strongly agreed compared with 68% of senior high teachers.

In a comparison of groups by years of teaching experience, no significant differences were found by theme. Teachers with 0-4 years of teaching experience did endorse the belief statement "need a dedicated and experienced staff to draw from" more strongly than did teachers with greater than 20 years of teaching experience, t(94.46) = 3.37; 81% of teachers with 0-4 years of teaching experience moderately or strongly agreed compared with 61% of teachers with greater than 20 years of experience. No significant differences were found in comparisons of groups by age, class size, workload assigned to teaching, or school locale (urban/rural).

Relationship Between Self-Defeating Beliefs and Stress

The self-defeating beliefs generated by teachers in part one of this study were used to design a beliefs questionnaire (Appendix N). Two hundred ninety-seven north-central Alberta K-12 teachers completed the beliefs questionnaire, rating each of the beliefs on a seven point scale (1 = strongly disagree, 2 = moderately disagree, 3 = slightly disagree, 4 = neutral, 5 = slightly agree, 6 = moderately agree, 7 = strongly agree). Participants also completed the Teacher Stress Inventory (Fimian, 1988). This measure (Appendix N) consists of 49 items that are rated on a five point scale ranging from 1 (no strength, not noticeable) to 5 (major strength, extremely noticeable). An overall score (Total Stress) and 10 factor scores can be arrived at. Five of the factors provide measures of sources of stress and the other five provide measures of stress manifestations.

Comparison of Low Beliefs/High Beliefs Groups

Overall scores on the beliefs measure were used to separate the sample population into two groups - one with a relatively low endorsement rate of self-defeating beliefs (n = 29) and one with a high endorsement rate of self-defeating beliefs (n = 32). The scores obtained by the bottom and top 10% of the sample population on the beliefs measure (n = 297) constituted these two groups.

Scores obtained by the low and high beliefs group on the Teacher Stress Inventory (TSI) (Fimian, 1988) were compared to the norms provided for regular classroom teachers (Appendix S). Fimian's norms are presented in decile ranges. In his classification system, scores in the 90-100 decile range are referred to as high stress values and scores in the 0-9 decile range are referred to as low stress values. In this study, the high beliefs

group obtained higher stress scores than the low beliefs group on 8 of the 10 stress factors as well as on Total Stress, although all scores were in a range that Fimian would characterize as "moderate." The largest differences in mean stress scores between the high and low beliefs groups were obtained on the factors Time Management and Emotional Manifestations. In t-test analyses of this data (Appendix S), the high beliefs group gave significantly higher ratings to the items on the TSI Time Management factor than did the low beliefs group, $t(57.31) = -3.16$. This factor contains items such as "easily over commit myself," "do more than one thing at a time," "have little time to relax," "feel uncomfortable about wasting time".

In comparing the low beliefs/high beliefs groups by demographic variables, no significant differences were found in t-test analyses by age, percentage of workload assigned to teaching, school size, class size, or in chi-square analysis by sex or school location. The high beliefs group appeared to consist of a greater proportion of elementary teachers and teachers with more than 20 years of teaching experience (see Appendix T).

Comparison of Low Stress/High Stress Groups

Scores obtained on the Teacher Stress Inventory (TSI) (Fimian, 1988) were used to form a low stress group (n = 33) and a high stress group (n = 34). The overall TSI scores obtained by the bottom and top 11% of the sample population (n = 297) constituted the two groups.

Generally, belief statements were given the strongest endorsements by the high stress group (means were found to be highest for this group on 34 of the 45 belief statements) (Appendix U). In comparisons by theme, the lowest means were obtained by the low stress group and the highest means were obtained by the high stress group.

T-test comparisons of the beliefs data were made by low and high stress groups (Appendix U) at both the theme (cluster) level and individual level. As it was necessary to execute multiple calculations in examining the items making up each of the respective themes, the alpha level to achieve significance was adjusted using the Bonferroni correction (Morin, Stone, Trinkle, Mercer & Remsberg, 1993; Rosenthal & Rubin, 1984). High stress teachers were found to give stronger endorsements to the beliefs "must know I have the backing of central office," $t(63.64) = -3.33$; 56% of the high stress group indicated strong agreement compared with 18% of the low stress group, "need greater support from government officials and the media," $t(50.39) = -4.48$; 77% of the high stress group indicated strong agreement compared with 24% of the low stress group, "must be told occasionally that my work is appreciated and on track," $t(53.78) = -3.44$; 50% of the high stress group indicated strong agreement compared with 21% of the low stress group. In analyses by theme, the high stress group was found to have given significantly higher endorsements to items from the Support theme, $t(59.79) = -4.69$. As significant differences were found by sex in previous analyses of the Support theme data, further analysis using MANOVA was conducted. No significant differences were found in endorsement rates of the belief statements in this theme by sex in the high and low stress groups.

Further between-groups differences in the low and high stress groups were not found by theme. (Analysis by theme utilizing MANOVA produced identical results to those results reported for t-test analyses.) An additional significant difference was found between the high and low stress group on the individual belief "need plenty of prep time," $t(62.75) = -3.54$. Fifty-three

percent of the high stress group indicated they agreed strongly with this belief statement compared with 15% of the low stress group.

A result that did not reach statistical significance but which is worthy of note is the finding of a reverse endorsement pattern on some of the belief statements. On 6 of the 45 belief statements, the highest means were found for the low stress group while the lowest means were found for the high stress group. The differences were substantial on 2 of these statements: "should be involved in extra-curricular activities" (low stress group mean = 5.64, high stress group mean = 4.85); "have to love my job" (low stress group mean = 6.42, high stress group mean = 5.88) (Appendix U).

In comparing the low and high stress groups by demographic variables, no significant differences were found in t-test or chi-square analyses. There was a wide difference in stress levels between the two groups (see Appendix V).

Correlational Analyses of Beliefs-Stress Data

In a further examination of the relationship between the beliefs and stress data, Pearson product-moment correlations were computed (Table 4-4). (Unless otherwise noted, all correlations are significant at the .01 level.) The strongest and most numerous of the significant correlations were found between the beliefs theme Support and the following TSI stress factors: Emotional Manifestations (r = .25), Time Management (r = .23), Work-Related Stressors (r = .21). The correlation between the theme Support and Total Stress was r = .21. These findings are consistent with the results of t-test analyses reported earlier of significant differences between low and high stress groups on several belief statements from the Support theme.

Table 4-4

Pearson Product-Moment Correlation Coefficients
For Self-Defeating Belief Themes and Teacher Stress

	THEME 1 (Upgrading/) (Curriculum Issues)	THEME 2 (Work) (Requirements)	THEME 3 (Support)	THEME 4 (Working) (With Students)	THEME 5 (Time/Energy) (Commitment)	THEME 6 (Miscellaneous)	TOTAL BELIEFS
TEACHER STRESS INVENTORY FACTORS							
SOURCES OF STRESS							
Time Management	.15*	.10	.23**	.13*	.23**	.16**	.21**
Work-Related Stressors	.07	.11	.21**	.03	.21**	.15**	.14*
Professional Distress	.13*	.13*	.13*	-.01	.07	.07	.11
Discipline and Motivation	.04	.01	.14*	-.02	.13*	.18**	.08
Professional Investment	.07	.06	.11	-.00	.10	.08	.09
MANIFESTATIONS OF STRESS							
Emotional Manifestations	.10	.13*	.25**	.03	.11	.11	.15**
Fatigue Manifestations	.10	.10	.19**	.10	.19**	.12*	.16**
Cardiovascular Manifestations	.05	.00	.11	.01	.07	.15**	.06
Gastronomic Manifestations	.05	.06	.03	.07	-.01	-.01	.05
Behavioral Manifestations	.07	.02	-.02	.07	-.06	-.03	.03
TOTAL STRESS	.10	.09	.21**	.02	.19**	.17**	.15*

* $p < .05$

** $p < .01$

A moderate correlation was also found between Total Beliefs and the stress factor Time Management (r = .21). Weak correlations were found between Total Beliefs and the stress factors Work-Related Stressors (r = .14, p < .05), Emotional Manifestations (r = .15), Fatigue Manifestations (r = .16), as well as between Total Beliefs and Total Stress (r = .15). These findings are consistent with the results of t-test analyses reported earlier. Moderate correlations were also found between scores on the theme Time/Energy Commitment and the stress factors Time Management (r = .23) and Work-Related Stressors (r = .21).

The alpha reliabilities obtained for the belief clusters (themes) were: Upgrading/Curriculum Issues (.73), Work Requirements (.53), Support (.77), Working With Students (.79), Time/Energy Commitment (.64), Miscellaneous (.33), and Total Beliefs (.90). The alpha reliabilities as reported for the Teacher Stress Inventory (TSI) factors (Fimian, 1988) are: Time Management (.87), Work-Related Stressors (.74), Professional Distress (.75), Discipline and Motivation (.82), Professional Investment (.70), Emotional Manifestations (.84), Fatigue Manifestations (.70), Cardiovascular Manifestations (.77), Gastronomic Manifestations (.76), Behavioral Manifestations (.83), and Total Stress (.92).

In additional analyses to examine the relationship between beliefs and stress, the 45 belief statements from the beliefs questionnaire were subjected to principal components analysis. Thirteen components with eigenvalues greater than 1 accounted for 63% of the variance in the data set. The scree test indicated that 5 factors should be retained. These 5 factors were subjected to varimax rotation, and accounted for 41% of the variance.

When correlations were calculated between the belief factors arrived at and the Teacher Stress Inventory factors, several positive significant correlations were obtained for one belief factor. This factor consisted of 6 belief statements: "need greater support from government officials and the media," "must know I have the backing of central office," "need good, strong, effective leadership," "must enjoy the administration that I work with," "must be told occasionally that my work is appreciated and on track," and "need plenty of prep time." The correlations obtained (all significant at the .01 level) are as follows: Total Stress (r = .33), Emotional Manifestations (r = .34), Work-Related Stress (r = .33), Fatigue Manifestations (r = .28), Time Management (r = .23), Professional Distress (r = .22), Discipline and Motivation (r = .22), Professional Investment (r =.18), and Cardiovascular Manifestations (r = .18). Interestingly, 4 of the 6 beliefs in this belief factor were identified in earlier t-test analysis as beliefs that low and high stress groups differ significantly on. These findings therefore support the results of the previous t-test analyses.

Additional Analyses

Data collected on the sample population of teachers (n = 297) was examined further to investigate the relationship between teacher stress and the numerous demographic variables that have been implicated in the teacher occupational stress literature. Little difference was found in the comparisons made of these variables (see Appendix W).

Chapter 5

DISCUSSION AND CONCLUSIONS

This chapter begins with a summary of the research. A discussion and the conclusions that stem from the results follow. The chapter ends with a discussion of the limitations of the study, practical implications of the findings, and recommendations for future research.

Summary

The purpose of this study was to examine the relationship between teacher stress and self-defeating beliefs (i.e., beliefs that teachers have about being a good teacher that are unfounded by logical or empirical evidence, and have a strong likelihood of causing unrealistic expectations in the workplace).

The findings in the stress literature point to a consistent and significant relationship between beliefs and stress (e.g., Morin, Stone, Trinkle, Mercer, & Remsberg, 1993; Turner, Hittner, Cardozo, & Paras, 1991; Woods, 1987). However, research that investigates this relationship in teachers is very limited. Further, while a relationship between expectations and teacher stress has been reported (e.g., Byrne, 1991; King & Peart, 1992), the expectations teachers have for themselves in their work role have not been documented. The specific goals of this research were therefore to determine (a) the self-defeating beliefs of teachers (b) the themes of the self-defeating beliefs (c) the incidence rate of self-defeating beliefs in the sample population (d) the relationship between self-defeating beliefs and teacher stress in the sample population.

Teachers were asked to respond to the sentence stem "In order to be a good teacher, I believe that I . . . . . ." Forty-one teachers generated 365 belief statements. These statements were edited to a list of

169 distinct beliefs. Ratings of the 169 belief statements by 3 independent judges were used to arrive at a list of 45 self-defeating beliefs. In the belief statements generated, a preponderance of absolute terms were in evidence (e.g., must, should).

Concept mapping as outlined by Trochim (1989b) was used to organize the 45 self-defeating beliefs into themes. The 45 belief statements were sorted by independent sorters into groups that had common themes. Multidimensional scaling and cluster analysis were performed on the sort data using the computer program The Concept System (Trochim, 1993a). The 6 concept solution was chosen as being the most conceptually clear. The names assigned to each of the 6 clusters (themes) were: Upgrading/Curriculum Issues (e.g., must continually change and evolve as a teacher), Work Requirements (e.g., need to be a superb communicator), Support (e.g., need good, strong, effective leadership), Working With Students (e.g., must be able to motivate students to learn enthusiastically), Time/Energy Commitment (e.g., must be willing to sacrifice personal time), and Miscellaneous (e.g., must be younger than I am).

The 45 self-defeating belief statements were used to create a beliefs questionnaire. Incidence data was compiled based on the responses of the 297 teachers who completed the questionnaire. The participants also completed the Teacher Stress Inventory (Fimian, 1988).

Endorsement of the belief statements was found to be wide-spread. A majority of the sample population moderately or strongly endorsed 27 of the 45 belief statements. The mean number of beliefs endorsed moderately or strongly by individuals was 24 (S. D. = 8).

Some significant differences in strength of endorsement were found for the belief statements in comparisons by sex and grade level. Female

teachers gave stronger endorsements to beliefs from the Support theme. Elementary teachers endorsed beliefs from the themes Working With Students and Work Requirements more strongly than did senior high teachers.

The relationship between self-defeating beliefs and teacher stress was examined by making comparisons between groups based on (a) overall scores on the stress measure (b) overall scores on the beliefs measure. The high stress teachers rated beliefs from the Support theme with significantly greater strength of agreement than did low stress teachers. Teachers with high beliefs scores reported significantly more time management stress. High endorsement of the belief statements was found to be associated with high stress levels. Moderate significant Pearson product-moment correlations were obtained for the self-defeating beliefs and stress scores (e.g., $\underline{r} = .34, \underline{r} = .33, \underline{r} = .25$). The results are consistent with findings reported in the literature: (e.g., $\underline{r} = .38$ [Gillis, 1992], $\underline{r} = .34$ [Malouff, Schutte, & McClelland, 1992], $\underline{r} = .23$ [Anderson & Arnoult, 1989]).

Discussion

Beliefs have been implicated in the stress equation for some time (e.g., Beck, 1976; Ellis, 1977; Lazarus, 1966). Participants in beliefs-stress research are rarely asked to supply comprehensive information regarding their beliefs, however. In the teacher stress literature, while researchers report a relationship between expectations and teacher stress (Byrne, 1991; Flett, Hewitt, & Hallett, 1995; King & Peart, 1992), the expectations teachers have for themselves in their work role have not been documented.

Upon being provided with the opportunity to report on their job-related beliefs in this study, 41 teachers generated a total of 365 belief statements (169 of which were distinct) to describe what they believe it

takes for them to be a good teacher. An interesting finding of the research was the language used by teachers in describing their job-related beliefs. The vast majority of the beliefs were stated in absolute terms - 336 of the original 365 belief statements included the words "must," "should," "have to," "need/need to," as did 165 of the 169 distinct beliefs. The sheer number and the absoluteness of the generated statements suggest that teachers have high self-expectations in their work role. Further, the selection of absolute terms in describing job-related beliefs suggests the potential for rigid functioning. If performance in the workplace is under the rule of beliefs that are absolute in nature, one is less able to adapt to changing circumstances as need be, and distress will likely result. As an example, if a teacher has a class size of 45, it will prove to be difficult to "always be a willing listener to any and all students." Such circumstances realistically dictate more of a "crowd control" approach in order to maintain some semblance of order.

Large numbers of the sample population (n = 297) endorsed the beliefs that were deemed to have a strong likelihood of causing unrealistic expectations in the workplace (i.e., self-defeating). Twenty-seven of the 45 self-defeating belief statements received a moderate or strong agreement rating from 50% or more of the sample population, and individual teachers moderately or strongly endorsed a large number of such beliefs (mean = 24, S. D. = 8). Given that endorsement of these beliefs was found to be wide-spread, a question to consider is whether these results reflect "normal perfectionism" in which individuals "strive to excel" (Blatt, 1995, p. 1006), or, alternatively, reflect unrealistically high standards that are held on to despite changing circumstances (Hewitt, 1997). The finding of a positive relationship between beliefs and stress in this study suggests that in some

instances, beliefs about being a good teacher are being acted upon in an inflexible manner. That is, beliefs are being adhered to in circumstances that would reasonably call for an adjustment to be made. Close to 30 years ago, Greenberg (1969) noted that when beliefs are held as over idealized goals, "a barrage of shoulds and should-nots . . . add immeasurably to the burden of teaching" (p. 25). The results of this study provide some empirical evidence for Greenberg's position.

There is also some suggestion, based on the findings of the study, that, for at least a portion of the sample population, beliefs about being a good teacher are held as ideals to strive for. The strength of endorsement for a few of the beliefs actually decreased as stress levels increased (e.g., "should be involved in extra-curricular activities," "have to love my job"). In addition, while some groups (e.g., elementary teachers) appeared to be overly represented in the high beliefs group, they were not overly represented in the high stress group. These results seem to point to what Blatt (1995) and Hamachek (1978) refer to as normal perfectionism. According to this conceptualization, while there is a striving for excellence, individuals "feel free to be less precise as the situation permits" (Hamachek, 1978, p. 27). This view is consistent with the position of Ellis (1987). According to Ellis, beliefs are not problematic, even though they may be phrased as "shoulds" and "musts," unless they are absolutistic or dogmatic.

As noted above, differences were found in belief endorsement rates when the data was analyzed by demographic variables. Female teachers gave significantly stronger endorsements to the beliefs contained in the Support theme, many of which focus on relationships with administrators. It may be that gender differences related to "relational identity" (Crozier,

1994) are reflected in this finding. Female teachers gave significantly stronger endorsement to the individual belief statement "must know I have the backing of central office." Given that central office staff are predominately male, this finding could point to gender differences in the importance placed upon support by males and females (once again relating back to "relational identity"). This finding could also point to gender differences regarding the types of actions that produce feelings of support in males and females.

Female teachers also gave significantly stronger endorsements to the beliefs "must constantly change and evolve as a teacher" and "must constantly re-work and revise unit and year plans so as never to get into a rut." These results are consistent with the findings of Burke and Greenglass (1988) who report that more women than men value challenge and mastery of new skills in their role as teacher.

Group differences were found in comparisons of the data by grade level taught. In analysis by theme, elementary teachers endorsed belief statements from the themes Working With Students and Work Requirements with significantly more strength than did senior high teachers (e.g., "should act as a loving parent"). These differences in responses likely reflect developmental differences in the students that the teachers in these two groups have contact with. Interestingly, no differences were found between junior high and senior teachers, and little difference was found between elementary and junior high teachers, adding some support to the above hypothesis.

Stronger endorsements of self-defeating beliefs were found to be associated with increased stress levels, consistent with the findings of previous beliefs-stress investigations (Gillis, 1992; Harran & Ziegler, 1991;

Hart, Turner, Hittner, Cardozo, & Paras, 1991; Kassinove, 1986; Morin, Stone, Trinkle, Mercer, & Remsberg, 1993; Woods, 1987; Zuroff, Igreja, & Mongrain, 1990). Teachers with high beliefs scores reported significantly more time management stress. In analyzing the data by stress scores, teachers with high stress scores were found to endorse beliefs from the Support theme with significantly greater strength than the low stress group. The high stress group gave significantly stronger endorsements to the beliefs listed below. Three are from the Support theme: "must know I have the backing of central office," "need greater support from government officials and the media," "must be told occasionally that my work is appreciated and on track," "need plenty of prep time." Social support as a moderating variable in stress has been the focus of much investigative attention (Holt, 1993). It could be that participants in the high stress group were experiencing unsupportive environments and reported higher stress levels as a result. An alternative explanation could be that an overall belief in the need for the intervention of an outside agency in order to be "a good teacher" results in increased stress levels. (Many of the self-defeating beliefs for which no significant differences were found reflect activities within an individual's control.) Whether or not the between-groups differences are related to constructs such as self-efficacy (Bandura, 1984) and/or locus of control (Rotter, 1966) is indeterminable based on the data collected in this study. Overall, the findings are consistent with Beck's (1976) construct of depression. In his conceptualization, distress and feelings of helplessness are associated.

Finally, in this investigation of the beliefs-stress equation, moderate significant Pearson product-moment correlations were obtained for the self-defeating beliefs and stress scores (e.g., $\underline{r} = .34, \underline{r} = .33, \underline{r} = .25$). The

strength of these correlations are noteworthy given that wide-spread endorsement of the belief statements led to limited variability in the beliefs scores. The reduced variability limited the size of the correlations that could be obtained.

Conclusions

In part, the results of this research serve to articulate the beliefs teachers have about being a good teacher. Given the number of belief statements generated and the nature of the words composing the belief statements (i.e., must, should, have to, need to), it would appear that among members of the teaching population, there are high self-expectations.

Endorsements of the beliefs deemed to have a high potential to cause unrealistic expectations in the workplace (i.e., self-defeating) were found to be wide-spread. To what extent this finding represents what Blatt (1995) and Hamachek (1978) refer to as "normal perfectionism" is difficult to determine based on the data collected. Given that a general, positive relationship was found between endorsement of self-defeating beliefs and teacher stress, it is likely that some belief endorsements reflect what Horney (1950) characterizes as the "tyranny of the shoulds." Beliefs of this nature can be expected to cause difficulty for individuals in circumstances where reason would otherwise dictate that an adjustment be made.

Overall, the findings of this research suggest that there are large numbers of teachers at risk for having unrealistic self-expectations in the workplace. The findings point to a need for teachers to become more aware of the beliefs they hold that guide their daily lives in the classroom. What they believe may well be contributing to the stress levels they ultimately experience.

Finally, the findings of the research support the need for more population-derived beliefs in beliefs research. The wealth of work-related belief statements generated in this study by teachers would not have surfaced had the beliefs instrument used in this investigation been based on a hypothesized construct (e.g., Ellis [1962]) or a review of the literature.

Limitations of the Study

An important limitation of this study stems from the fact that participants were volunteers. It is likely that in the schools in which the questionnaires were distributed, the most stressed teachers chose not to participate. Time and energy were required to complete the questionnaire, two commodities typically in short supply for teachers. For highly stressed teachers, this would be even more of an issue. The data in this study provides some support for the limitation elaborated upon above. The high stress group (although significantly higher in stress scores than the low stress group) were not 1 standard deviation above the norm (90-100 decile range according to the norms provided by Fimian [1988]). The mean scores for the high stress group in this study fell in the 80-89 decile range, slightly below what Fimian classifies as a high stress value.

A second limitation of the study lies in the fact that the findings are based on self-report data. For this reason, the data may or may not accurately reflect the experiences of the participants (e.g., be reflective of the behaviors they engage in).

A limitation of the results presented in this study concerns the generalizability of the incidence findings. While the demographic characteristics of the teachers completing the beliefs questionnaire were fairly consistent with those of Alberta teachers as a whole, the sample population was relatively small (n = 297) and consisted of teachers from

north-central Alberta. In order to expand the generalizability of the results, it would be desirable to replicate the study with a larger sample size drawn from a broad geographical base.

A further limitation of this study results from the exploratory nature of the research itself. As the area of teacher self-defeating beliefs is one in which no previous research has been conducted, norms/previous findings were unavailable for comparison purposes. Differences that have been reported in this study as significant (e.g., sex differences on the beliefs theme Support) may or may not represent findings of actual significance. In addition, the participants in this study were asked to list/rate belief statements. Findings may have been more definitive had participants been asked to elaborate upon the effects (if any) of holding such beliefs.

Another limitation of this study is that the results obtained cannot be said to represent all self-defeating beliefs that teachers hold. The belief statements generated were in response to a specific sentence stem. A broader prompt may have elicited other belief statements (e.g., "If my students don't do well on provincial exams, I will lose my job"). In addition, different inclusion criteria and/or the use of a different set of judges may have resulted in a slightly different set of self-defeating belief statements being selected.

Finally, the results of this study suggest that self-defeating beliefs and teacher stress are related. Although the findings serve to shed some light on the role that personal variables play in the stress equation, causality cannot be attributed.

Practical Implications

The findings from this study suggest that large numbers of teachers are at risk for having unrealistic expectations for themselves in the

workplace. The results also point to a link between unrealistic expectations (i.e., self-defeating beliefs) and increased stress levels. While most people would agree that it is advantageous for teachers to set high standards for themselves in their daily work with students, few would endorse adhering to rigidly-held high standards if they provide a likely recipe for burn-out. The self-defeating belief statements generated in this study provide a valuable starting point for discussions in teacher stress workshops. The statements provide a means of enabling teachers to become aware of their own beliefs about being a good teacher, a necessary step when learning to state beliefs in preferential rather than absolute terms. In developing an awareness of the need for balance between striving for excellence and unrealistic expectations, teachers would be provided with valuable coping strategies that they could use in their increasingly challenging work environments. The generated belief statements could be used in a similar manner by individuals counselling teachers on long-term stress leave.

The findings of this study also have implications for teacher educators. The generated belief statements provide a concrete way for such educators to assess their own beliefs about what makes a good teacher. What these educators believe is of importance, as their beliefs will shape both the implicit and explicit learnings they provide to teachers-in-training.

Further Research

In the present study, endorsements of the belief statements were wide-spread. A logical extension of this study would be to utilize the beliefs questionnaire with teachers-in-training. Results obtained from such a population prior to extensive exposure to a teacher training program and

upon completion of it could provide valuable information as to the origins of the beliefs that teachers have about being a good teacher.

In this study, participants were asked to indicate the strength of their agreement/disagreement with belief statements. No attempt was made to determine whether or not their present ratings of these beliefs had changed over time. Future research is needed to investigate the coping/adaptation mechanisms used in belief-impinging circumstances. Further research is also needed to help distinguish between those beliefs that represent ideals, and those that are truly self-defeating.

Finally, an additional project worthy of pursuit would be to develop the beliefs questionnaire used in this study into a psychometrically sound instrument. A self-defeating beliefs questionnaire with adequate reliability and validity could be a valuable resource for teachers. The use of such an instrument would provide educators with a tool for becoming aware of their implicit "shoulds." This awareness could lead to greater choice with regard to self-expectations in the workplace.

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Appendix A

Cover Letter to School Principals - Part One of Study

Dear School Principal:

A study is being carried out that will look at the beliefs teachers have about being a good teacher. Your school is one that has been selected for this study, and it would be greatly appreciated if these questionnaires could be distributed to your teaching staff. The information gathered in this study will be used to create a questionnaire to be used in a follow-up study investigating the relationship between beliefs and stress.

Participation in this study is voluntary, and individuals are not asked to identify themselves by name. Additional copies of the questionnaire may be made and distributed as required. A stamped, self-addressed envelope is enclosed for completed questionnaires. Please make this available in a central location so that staff may return their completed questionnaires to it. It would be greatly appreciated if all completed questionnaires could be returned within two weeks of receipt of this material.

Thank-you for your time and cooperation.

Ms. Linda Chorney, Ph.D. Candidate
Department of Educational Psychology
University of Alberta

Dr. Peter Calder, Professor
Department of Educational Psychology
University of Alberta

Appendix B

Cover Letter to Teachers - Part One of Study

Dear Teaching Staff Member:

A study is being carried out that will attempt to develop a better understanding of the beliefs teachers have concerning being a good teacher. The information collected in this study will be used to design a questionnaire to be used in a follow-up study investigating the relationship between beliefs and stress.

A number of schools in the province of Alberta have been selected to receive this initial questionnaire. The information provided by the staffs of these schools will be used to design the questionnaire for the follow-up study. Other schools in the province will be asked to be involved in the follow-up study.

* * *

Your thoughts are important to us. It would be appreciated if you would take a few minutes to answer the following questions. Your participation is strictly voluntary and there is no need for you to identify yourself. Your answers will be completely confidential and only the group results will be used.

If you choose to complete this double-sided questionnaire, it will require about 5-10 minutes of your time. After removing this cover letter, return your completed questionnaire to the envelope in your school that has been provided for this purpose. If you prefer to return your questionnaire on an individual basis, our address is Department of Educational Psychology, 6-102 Education North, University of Alberta, Edmonton, Alberta, T6G 2G5, Attention: Linda Chorney. Please complete and return all questionnaires within two weeks time.

This research project is due to be completed by the Fall of 1996. Upon request, participants will receive a summary of the results. If you would like a copy of the results, forward your request to the above address in an envelope separate from any completed questionnaires.

Thank-you for your time and effort.

Ms. Linda Chorney, Ph.D. Candidate
Department of Educational Psychology
University of Alberta

Dr. Peter Calder, Professor
Department of Educational Psychology
University of Alberta

Appendix C

Questionnaire - Part One of Study

1. As a teacher, at what level do you primarily work?
   Elementary _____ Junior High _____
   High School _____

2. What percentage of your workload is assigned to teaching? _____

3. Where is your school located?
   Urban area _____ Rural area _____

4. Number of students in your school _____

5. Your average class size _____

6. How many years have you been employed as a teacher? _____

7. Age _____

8. Gender _____

9. Describe your highest level teacher training.
   four years university _____
   completed one year graduate studies _____
   completed a Master's degree _____
   other (please describe) _____

10. Please respond to the following sentence stem. Give as many responses as you can think of.

Once again, thank-you for your time and effort.

1. In order to be a good teacher, I believe that I _____

   _____

2. In order to be a good teacher, I believe that I _____

   _____

3. In order to be a good teacher, I believe that I _____

   _____

4. In order to be a good teacher, I believe that I _____

   _____

5. In order to be a good teacher, I believe that I _____

_____

6. In order to be a good teacher, I believe that I _____

_____

7. In order to be a good teacher, I believe that I _____

_____

8. In order to be a good teacher, I believe that I _____

_____

9. In order to be a good teacher, I believe that I _____

_____

Etc. Please use additional pages if required.

Appendix D

Characteristics of Teachers Generating Belief Statements

Demographic Variable	Mean	S. D.	Categories	n	%*
Sex	NA	NA	Male	16	39
			Female	25	61
Age	41.49	7.11	20-29 yrs.	3	7
			30-39 yrs.	13	32
			40-49 yrs.	19	46
			50 yrs. and over	6	15
Grade Level Taught	NA	NA	Elementary	15	37
			Junior High	9	22
			Senior High	5	12
			Elementary-Junior High	4	10
			Junior High - Senior High	5	12
			Elementary - Senior High	3	7
Years of Teaching Experience	15.44	7.72	0-4 yrs.	4	10
			5-10 yrs.	8	20
			11-15 yrs.	7	17
			16-20 yrs.	12	29
			over 20 yrs.	10	24
Workload Assigned to Teaching (%)	86.21	20.20	100%	16	42
			85-99%	13	34
			70-84%	3	8
			50-69%	2	5
			less than 50%	4	11
Highest Teacher Training Level	NA	NA	4 years university	29	71
			completed 1 yr. graduate training	1	2
			Master's degree	6	15
			other	5	12
School Location	NA	NA	Urban	17	41
			Rural	24	59
Average Class Size	22.45	5.67	less than 15 students	2	5
			15-20 students	10	25
			21-24 students	11	28
			25-30 students	16	40
			31-35 students	1	3
School Size	436.72	272.22	less than 100 students	2	5
			100-299 students	14	36
			300-499 students	10	26
			500-699 students	11	28
			700-999 students	0	0
			1000 and over	2	5

* Figures rounded to nearest whole percent.

Appendix E

Characteristics of Teachers Completing Beliefs/Stress Questionnaire

Demographic Variable	Mean	S. D.	Categories	n	%*
Sex	NA	NA	Male	119	42
			Female	167	58
Age	40.62	8.96	20-29 yrs.	42	15
			30-39 yrs.	82	29
			40-49 yrs.	105	37
			50 yrs. and over	54	19
Grade Level Taught	NA	NA	Elementary	100	35
			Junior High	59	21
			Senior High	113	40
			Elementary-Junior High	11	4
			Junior High - Senior High	3	1
Years of Teaching Experience	14.61	8.75	0-4 yrs.	40	14
			5-10 yrs.	64	23
			11-15 yrs.	49	17
			16-20 yrs.	53	19
			over 20 yrs.	78	27
School Employment Status	NA	NA	full time equivalent (1.0)	242	85
			.81 to .99	18	6
			.51 to .80	13	5
			half-time (.5)	7	2
			less than .5	6	2
Workload Assigned to Teaching (%)	84.49	26.77	100%	144	53
			85-99%	65	24
			70-84%	17	6
			50-69%	14	5
			less than 50%	30	11
Highest Teacher Training Level	NA	NA	4 years university	168	59
			completed 1 yr. graduate training	36	13
			Master's degree	44	16
			other	36	13
School Location	NA	NA	Urban	181	64
			Rural	102	36
Average Class Size	25.02	4.56	less than 15 students	7	2
			15-20 students	45	16
			21-24 students	35	12
			25-30 students	181	64
			31-35 students	13	5
School Size	631.34	419.31	less than 100 students	4	1
			100-299 students	58	21
			300-499 students	80	30
			500-699 students	31	11
			700-999 students	40	15
			1000 and over	58	21

* Figures rounded to nearest whole percent.

Appendix F

Belief Statements Recorded from Returned Questionnaires

* indicates new information in response

In order to be a good teacher, I believe that I . . . . . .

Participant #1

1.* must devote my whole life to teaching, no family, no possessions.
2.* must be a master at the subject being taught.
3.* need plenty of prep time.
4.* must love kids.
5.* must be willing to spend major hours after school.
6.* must update my education constantly.
7.* must be fair but strict.
8.* must be constant.

Participant #2

9.* must realize that all children are different.
10.* must try to accommodate the different needs of different students.
11.* must respect the parents' wishes and beliefs.
12.* must do more than just teach.
13.* should be involved in extra-curricular activities.
14.* should be involved in the total school community.
15.* must keep abreast of current developments in education.
16.* must delicately balance the demands of work and family life.
17.* should be involved in activities out of school in order to keep fresh and try to avoid burnout.
18.* must not put pressure on myself and expect a 100% success rate with all the students.
19.* should not let a bad day get me down.
20.* should be proud of my effort and not listen to the negativity of the public.

Participant #3

21.* must genuinely be sincere in helping others (service oriented).
22.* must bring the outside world into the classroom - this shows relevance and can be done in all subjects.

Participant #4

23.* must be interested in a child's learning.
24.* must be organized and efficient at work.
25.* should be prepared and flexible in planning and organization.
26. must be constantly keeping abreast of new developments in curricula.
27. must be professional and upgrade.
28.* must listen to students.
29.* should have time for my own pursuits, hobbies on a continual basis, not just in July, August.
30.* should be able to work with my colleagues and be professional.

Participant #5

31. must be competent in my area of teaching.
32.* must be dedicated and hard working.
33.* must be confident, happy, well rested and enjoy my work in order to do my best.
34.* must enjoy the school, staff and administration which I work with.
35.* must feel better about my profession (public negativity).
36. must know the curriculum and its expectations.
37.* need a clear understanding of the expectations administration has of me.
38.* must be told occasionally that my work is appreciated and on track.
39.* need to spend more time teaching rather than being involved in so many committees.
40.* need a dedicated and experienced staff to draw from.
41.* need good, strong, effective leadership.
42.* must know I am backed by my administration.
43.* need time for planning and professional development.
44.* need to know what the long range plan is for teaching during the coming year.
45.* must continually learn and change and evolve as a teacher.
46.* must be willing and committed to stand for my beliefs and what I feel is right (whether it be in discipline, in teaching styles, responding to the latest fad, etc.) - trust my instincts and experience.

Participant #6

47. must like young people.
48.* must respect my students.
49.* must have the respect of my students.
50. need to cooperate with my colleagues.
51. need the support of administration.
52.* must support colleagues and administration in return.
53. must be given some inservice from time to time.
54. need to give extra of my time and energy.
55.* must be able to laugh at myself and my mistakes.
56.* must look after myself.
57. must take time out for activities other than school.
58. must keep in touch with the outside world.
59.* have to think that I am an O.K. person.

Participant #7

60.* should meet the emotional needs of my students.
61.* provide a safe environment for the students.
62. must strive to reach and teach all learning abilities and levels of my students.
63. must keep abreast of professional development and information.
64. must always make my students comfortable enough to explore/venture answers.
65.* must communicate effectively with parents.
66.* must be in good mental health.

Participant #8

67. must be committed to helping people.
68. must be willing to sacrifice personal time.

69. must keep up with changes and new innovations.
70.* must carefully weigh the pros and cons of new ideas for their benefit to the student.
71. must understand the situation of each individual student.
72. must be willing to listen to others.
73. must know the subject material.
74. must maintain a good learning environment in the classroom.
75.* must have a desire to succeed and to see others succeed as well.

Participant #9

76. should meet the students' needs.
77.* should be kind and compassionate.
78.* become involved in community events.
79.* must keep in constant touch with parents.
80. must be involved in extra-curricular activities.
81.* must be patient.
82. must be cooperative with all those involved in the school.
83. must know my limitations (homework and family life).
84. must learn to change and keep up with the changes.
85.* must be understanding and forgiving.
86.* must know students' family backgrounds.
87.* must know how to relax.
88.* must have a positive outlook towards life in itself.

Participant #10

89.* must have good communication skills.
90.* must understand a student's way of thinking.
91. must be able to reach different levels, deal with emotions of children, adapt to changes especially technology.
92. should be well prepared for class.
93. have to be fair.
94. should be a good listener.
95.* should be creative in presenting concepts to my class.
96.* should use various approaches to get to the student.
97.* should teach according to how a student learns best, therefore I have to be accommodating.
98.* must have control of the class.
99. must love children.
100.* must be firm, yet flexible.
101.* should be patient, act as a loving parent, and be an example/role model that the student can be proud of and want to emulate.

Participant #11

102.* must be insightful.
103. must be a compassionate human being.
104.* must be accepting of students as they are.
105.* must be accepting of parents.
106.* must be accepting of my colleagues.
107.* must promote the emotional and social development of students (in addition to the academic).
108. need to have a sense of humor.
109. need to be firm and set limits.
110. need to be a superb communicator.

111. need to have a positive outlook.
112.* need to be consistent and reliable.
113.* need to be able to recognize general group moods and feelings from time to time, day to day and month to month, etc.

Participant #12
114.* must be a "kid" watcher - observant.
115. must be flexible.
116. must be able to work cooperatively with all people.
117. must be cognizant of curriculum.
118. must meet children's needs as best as humanly possible. No easy task.
119. need to be organized and efficient to even attempt to survive.
120.* must want to work with children.
121. must be open to change, but not readily jumping on all bandwagon ideas.
122. need to have a balance in life. Too much school can be destructive.
123. must be constantly learning.
124.* must make goals, reflect, adapt and change if necessary.

Participant #13
125.* must put the needs of my students first.
126. need to remember that students are adults in small bodies.
127. need adequate time away from the classroom.

Participant #14
128. work far too hard and too long.
129. must be very patient with students.
130.* need greater support (instead of criticism) from the community at large (e.g.) Ralph Klein, Halvar Johnson, Ted Byfield, etc.
131.* must be younger than I am - it gets tougher every year.

Participant #15
132.* encourage the student to believe in himself and that he can do anything he/she sets their minds to.
133.* must make learning interesting, fun and applicable to the world.
134.* must have a positive self-esteem and be positive towards the students.
135. must love the company of children.

Participant #16
136.* must relate to my students.
137. must know the curriculum to be taught.
138.* must be punctual and conforming.
139. must enjoy the work I'm doing.

Participant #17
140. have to love my job.
141.* have to believe that I can make a difference.
142. have to love kids at the age level I'm teaching.
143. have to be prepared.
144.* have to have the support of the parents.
145. have to be respected by the students.

146. have to respect the students.
147. have to spend many extra hours preparing, evaluating and organizing.

Participant #18

148. listen to the needs of my students.
149.* believe in the capability of the students.
150. adapt my lesson plans to the different classes I have.
151.* am always looking for new ways of teaching (changing strategies).
152. am always available to help students in or out of class.
153. give the opportunity to every student of learning in a positive environment.
154. establish a good rapport with the students (not only in the classroom).
155. am willing to improve by taking different workshops and staying informed about what is coming out.

Participant #19

156. must be empathetic to the needs of my students.
157.* exude a warm and caring attitude toward all students.
158. must be knowledgeable in the subjects I teach.
159. must be respected by and respect students.
160. must stay abreast of advancements in the educational field.
161.* must be able to motivate students to learn enthusiastically.
162. must maintain classroom control.
163.* must generate and encourage humor in the classroom.

Participant #20

164.* must be excited about learning.
165.* must be physically healthy and emotionally stable.
166. must be educated.
167. need to love children.
168.* need to understand how children learn.
169. need to be aware of how to motivate and excite my students to learn.
170. must be organized in order to be prepared and to plan for the individual needs of my students.
171.* need to work as a partner with parents to educate their children.

Participant #21

172. should build trust by treating students equally, fairly, and with respect.
173. should provide a safe learning environment in which all students are given the opportunity to succeed.
174. should recognize the uniqueness of every student in terms of personality, academic strengths and weaknesses, and out of school interests.
175. should vary instructional techniques as much as possible to meet the needs of students with a wide range of learning styles.
176.* should have high expectations for students, emphasizing that it is very important to do their best work everyday.
177. should challenge students with exceptional academic skills while not overwhelming their peers.

178. should provide students with structure upon which to "hang" newly acquired knowledge. Frequent use of models is essential here.
179. should work in partnership with parents, stressing that we have a vital common goal: helping children to realize their maximum potential.
180. should be open to, and keep current with, new teaching theories and practices.
181. should be a positive role model by "practicing what I preach."
182. should be aware of recent trends and fads of students, better enabling me to relate to them on their own level.
183. should not stagnate, but continue to learn and grow as a person.
184. should resign if I lose my sense of humor, or no longer feel fulfilled.

Participant #22

185. need always to be watchful (students, parents, administration, board, Alberta Education) - the times are complex and fluid.
186. need courage - a school is a very human place.
187. need patience and empathy (knowledge is acquired best in an atmosphere of trust).
188. need knowledge of the subject area.
189.* need experience - experience is the best teacher.
190. need time to consider, to think (spares are not a luxury).
191.* need support (from parents, board, administration) - there is a lot of stress in our profession.
192.* need discipline (for myself and my students).
193. need good communication (there is so much potential for misunderstanding otherwise).
194. need opportunities for professional development (a university alone is not going to produce good teachers past an appropriate knowledge base - much is character and energy expended in pursuit of being that "good teacher."

Participant #23

195. need to be organized and prepared.
196. need to enjoy spending my time with children.
197. need to keep current as well as up-dating my skills.
198. need to focus on each student individually in order to best meet his/her needs.
199. need to have both long term and short term goals for teaching.
200. need to draw on the skills and expertise of my peers.
201. need to balance my professional life with my personal life.
202. need to travel, read, meet people and experience life to the fullest.

Participant #24

203. must be an expert at every subject.
204. must be able to understand the background students bring to learning.
205.* must be ready to train not only for content but skills development.
206. must be familiar with the resources available.
207. must have a sense of direction in my teaching.
208.* must view teaching as a mission or a calling.
209. must like both learning and teaching.
210. must like kids.

Participant #25

211. need to have a love for my students.
212. need to do professional readings.
213. benefit from collegial exchanges of ideas and skills.
214. will never be complete but always acquiring and seeking to acquire more skills.
215.* need to evaluate my lessons and programs.
216. need support from administration.
217. need to work in an atmosphere of respect and support and the expectation that I am doing my best.
218. need to be a learner and supported as such.
219. will succeed and fail and both are vital to my teaching.

Participant #26

220. need to be prepared for every subject I teach.
221. must treat each child with dignity and respect.
222.* must be able to justify every activity and assignment as worthwhile and with definite objectives.
223.* must mark and grade assignments as promptly as possible, giving meaningful feedback to the student.
224. need to keep order, control and discipline in my classroom.
225. should communicate with parents re: progress, problems and successes as often as is feasible in the time frame.
226. must keep informed re: the curriculum, subjects, emphasis and implement ideas and changes as necessary.
227.* should be open to constructive evaluation, criticism, and suggestions of my colleagues and principal, et. al. I should also take parent's input under consideration.
228. must attempt to address the academic needs of every student assigned to me, not neglecting or ignoring those with learning difficulties.
229.* must do everything possible to address needs of students with special problems, not to enable them to be dependent upon me, but to become healthy independent learners.
230.* must not simply inform, but I must tease and fan children's curiosity and discovery of patterns, sequences, consequences, etc.
231.* must actively teach children to be responsible, contributing citizens by planned, deliberate activities and example.

Participant #27

232.* must work to my fullest potential.
233. must be organized.
234. must be well planned.
235.* must be creative.
236.* must be understanding to the needs of the students.
237. must work well with others.
238. should have yearly inservicing in better becoming a teacher.
239.* must be able to teach the material in an exciting manner.

Participant #28

240. have to enjoy children.
241. need to put time into planning and evaluating.
242. need to stay current.

243.* need to change assignments periodically.

Participant #29
244. must like children.
245. must be prepared.
246. must keep up to date with technology.
247. must have a sense of humor.
248. must be able to get along with parents.
249. must know how to get ideas across to students.
250.* must enable children to do their best work.
251. must teach each child from their starting point of ability.

Participant #30
252. must make my students feel safe, cared for and confident.
253. must do my best to see my students grow academically.
254.* must accept that students rate of growth will vary and that all strides forward are important.
255. must be prepared for each day but must let flexibility be part of those plans.

Participant #31
256. need to be aware of the problems of students.
257. need to be fair and equal to all students.
258. should be up to date with new information.
259.* need a high tolerance towards problems caused by the disruptive students.
260. need to be compassionate towards the students.
261. should be able to relate to the students.
262. should have the support of the administration.
263. should have the support of the parents.

Participant #32
264. must actively involve the students.
265. must be student focused.
266. must make instructional decisions based on knowledge of individual achievement, aptitude, learning style and interest.
267. must plan for success (instructional materials/resources must be in place).
268.* must utilize school time productively.
269.* must utilize flexible grouping to allow children to participate in a variety of group structures.
270. must engage students in purposeful learning most of the time.
271. must frequently monitor student progress.
272. must give prompt feedback to students.
273.* must model the goals of the school.
274. must have clear instructional goals.
275. will help learners to learn/provide assistance.
276. must have high expectations.
277. must be fair and caring.
278. must follow the curriculum.
279. must have effective classroom management skills
280. must know I have the backing of administrators, central office and parents.

Participant #33

281. must try to meet the needs of as many of my students as possible.
282.* must realize that there are limitations to what I can do in a given time period and not let it frustrate me.
283. must be knowledgeable in the area I am teaching.

Participant #34

284. must enjoy my work.
285. must genuinely like my students.
286.* must be teaching in my field of expertise.
287. must have the confidence of my principal and vice-principal.
288. must keep abreast of new materials, resources available to me.
289. must always be a willing listener to any and all students.
290. must be sincere in my dealings with the students.
291.* must be professional in all that I do and say.
292. must have support of my superiors in all disciplinary measures.
293.* must have a clear understanding of the school's goals and objectives.
294.* must share a common philosophy with that of the school and its administrators.
295. must constantly re-work and revise unit and year plans so as never to get in a rut, the theory being that if it is new and exciting to me, it will also be for the students.

Participant #35

296. must enjoy children.
297. must get adequate rest.
298. must be open minded.
299.* must be methodical.
300. must be flexible in my teaching style.
301.* must do adequate administrative duties (i.e. paperwork on kids and courses).
302. must continually improve myself (i.e. professional development).
303. must be a people person (i.e. relate well to people).

Participant #36

304. must constantly seek new and more engaging ways to teach.
305. must constantly reflect on the success of my teaching.
306. must engage students actively in learning.
307. must be well organized.
308. must clearly transmit my (high) expectations to students.
309. must be involved in more aspects of the school than just teaching.
310. must be sensitive to student needs and moods.
311. must not let teaching become "just a job."
312. always place what's best for the students at the foremost.
313. must encourage an environment of mutual respect/trust.
314. endeavor to involve parents in the education of their children.
315. try to set a strong positive example.
316. keep rules simple.
317. enforce rules fairly.
318. prepare thoroughly.
319. return assignments promptly and review them.

Participant #37

320. need to be very efficient with time.
321. need to be knowledgeable in the subject area.
322. need to be well prepared for classes.
323. must be able to relate with students.
324. need to have control in the classroom.
325. must be caring to the needs of all in the classroom.
326. must have a good working relationship with others in the school (i.e. resource people, administration, etc.).

Participant #38

327. must be involved with my student's learning.
328. should keep my knowledge base current.
329. should care about my students' progress.
330.* should give students some choices about their learning.
331. should work in extra-curricular activities.
332. should show concern when students are having problems.
333. should be available as a person students can talk to, like a friend, but limited.
334. should set a good example for students.

Participant #39

335. must have a genuine desire to work with students with patience and understanding.
336. must be a professional in my attitude and conduct.
337. must be a life-long learner.
338. must be willing to give of my best efforts in all areas; provide the best quality education possible.
339. must be balanced and well in my life.
340. must be willing to support my colleagues, to be a team player.
341. must have a strong level of competency in my area, strong communication skills.
342.* must be a concerned world citizen.
343. must be a strong role model.
344. must be creative and positively respond to change.
345. must treat each student as a unique individual.

Participant #40

346. must love people (adults and children).
347. must love educating students.
348. must lead students in their educational process.
349. must be a model learner.
350. must be a model teacher as an administrative leader.
351. must encourage participation in the teaching-learning process.
352. must be a motivator and my students' greatest cheering section.
353.* must be born again by God's grace through faith in the Lord Jesus Christ of the Bible, gifted and talented in teaching.
354.* intellectually honest.
355.* of good reputation.
356.* love truth.
357. seek to do the right thing for each educational participant.

Participant #41

358.* need a good education, not only of curriculum material but child development.
359. need support and cooperation of parents of my students.
360. need support and cooperation of administration and colleagues.
361. require a sense of humor.
362. must be in good physical, emotional, and mental health.
363. must be prepared for teaching classes on a day-to-day and yearly basis.
364.* must believe in the purpose of what I am teaching.
365. need to have enough time to plan for classes and evaluate students.

Appendix G

Initial Editing of Belief Statements

In order to be a good teacher, I believe that I . . . . . .

Group One

1. should be able to work with my colleagues.
2. need to cooperate with my colleagues.
3. must be cooperative with all those involved in the school.
4. must be able to work cooperatively with all people.
5. must have a good working relationship with others in the school (i.e. resource people, administration, etc.).
6. must work well with others.
7. must support my colleagues.
8. must be willing to support my colleagues.
9. must be willing to be a team player.
10. must be accepting of my colleagues.
11. must enjoy the staff that I work with.
12. need a dedicated and experienced staff to draw from.
13. need to draw on the skills and expertise of my peers.
14. need support of colleagues.
15. need cooperation of colleagues.
16. benefit from collegial exchanges of ideas and skills.
17. must enjoy the administration that I work with.
18. need a clear understanding of the administration's expectations of me.
19. need good, strong, effective leadership.
20. must know I am backed by my administration.
21. must know I have the backing of administrators.
22. need cooperation of administration.
23. need the support of administration.
24. need support of administration.
25. need support from the administration.
26. should have the support of the administration.
27. need support from administration.
28. must have support of my superiors in all disciplinary measures.
29. must have the confidence of my principal and vice-principal.
30. must support my administration.
31. need to work in an atmosphere of respect and support and the expectation that I am doing my best.

Group Two

32. must love kids.
33. must love children.
34. need to love children.
35. must love people (adults and children).
36. need to have a love for my students.
37. must genuinely like my students.
38. must like kids.
39. must like children.
40. must like young people.
41. must love the company of children.

42. have to enjoy children.
43. must enjoy children.
44. need to enjoy spending my time with children.
45. have to love kids at the age level I'm teaching.
46. must want to work with children.
47. must have a genuine desire to work with students with patience and understanding.
48. must realize that all children are different.
49. must be accepting of students as they are.
50. should recognize the uniqueness of every student in terms of personality, academic strengths and weaknesses, and out of school interests.
51. must treat each student as a unique individual.
52. must know students' family backgrounds.
53. must be able to understand the background students bring to learning.
54. must understand a student's way of thinking.
55. adapt my lesson plans to the different classes I have.
56. must try to accommodate the different needs of different students.
57. must teach each child from their starting point of ability.
58. must make instructional decisions based on knowledge of individual achievement, aptitude, learning style and interest.
59. need to focus on each student individually in order to best meet his/her needs.
60. must be student focused.
61. must be involved with my student's learning.
62. must attempt to address the academic needs of every student assigned to me, not neglecting or ignoring those with learning difficulties.
63. must do everything possible to address needs of students with special problems in order to help them become independent learners.
64. must strive to reach and teach all learning abilities and levels of my students.
65. should vary instructional techniques as much as possible to meet the needs of students with a wide range of learning styles.
66. should meet the students' needs.
67. must meet children's needs as best as humanly possible.
68. must try to meet the needs of as many of my students as possible.
69. must be understanding to the needs of the students.
70. must be sensitive to student needs.
71. should show concern when students are having problems.
72. must be caring to the needs of all in the classroom.
73. should challenge students with exceptional academic skills while not overwhelming their peers.
74. must put the needs of my students first.
75. always place what's best for the students at the foremost.
76. am always available to help students in or out of class.
77. must be empathetic to the needs of my students.
78. need empathy.
79. must not expect a 100% success rate with all the students.
80. must accept that student's rate of growth will vary and that all strides forward are important.
81. must be interested in a child's learning.
82. believe in the capability of the students.
83. establish a good rapport with the students.
84. must relate to my students.
85. must be able to relate with students.

86. should be able to relate to the students.
87. should be aware of recent trends and fads of students, better enabling me to relate to them on their own level.
88. must listen to students.
89. should be a good listener.
90. must be willing to listen to others.
91. listen to the needs of my students.
92. must always be a willing listener to any and all students.
93. should be available as a person students can talk to.
94. must respect my students.
95. have to respect the students.
96. must respect students.
97. must treat each child with dignity and respect.
98. must encourage an environment of mutual respect/trust.
99. must be respected by students.
100. must have the respect of my students.
101. have to be respected by the students.
102. should build trust by treating students equally, fairly, and with respect.
103. must be sincere in my dealings with the students.
104. must be positive towards the students.
105. should meet the emotional needs of my students.
106. must be able to deal with emotions of children.
107. need to be aware of the problems of students.
108. exude a warm and caring attitude toward all students.
109. must promote the emotional and social development of students (in addition to the academic).
110. must be ready to train not only for content but skills development.
111. provide a safe environment for the students.
112. must make my students feel cared for.
113. must maintain a good learning environment in the classroom.
114. will help learners to learn by providing assistance.
115. give the opportunity to every student of learning in a positive environment.
116. should provide a safe learning environment in which all students are given the opportunity to succeed.
117. must always make my students comfortable enough to explore/venture answers.
118. must make my students feel safe.
119. must make my students feel confident.
120. should act as a loving parent.
121. should be an example/role model that the student can be proud of and want to emulate.
122. must be a strong role model.
123. try to set a strong positive example.
124. should set a good example for students.
125. should be a positive role model by "practicing what I preach."
126. encourage students to believe that they can do anything they set their minds to.
127. must be my students' greatest cheering section.
128. should care about my students' progress.
129. must enable children to do their best work.
130. should have high expectations for students, emphasizing that it is very important to do their best work everyday.
131. must have high expectations.

132. must clearly transmit my (high) expectations to students.
133. must actively teach children to be responsible, contributing citizens by planned, deliberate activities and example.

Group Three

134. must be a master at the subject being taught.
135. must be an expert at every subject.
136. must be competent in my area of teaching.
137. must have a strong level of competency in my area.
138. must know the curriculum and its expectations.
139. need a good education with regard to curriculum material.
140. need to be knowledgeable in the subject area.
141. must be cognizant of curriculum.
142. must know the subject material.
143. must be familiar with the resources available.
144. need knowledge of the subject area.
145. must be knowledgeable in the subjects I teach.
146. must be knowledgeable in the area I am teaching.
147. must know the curriculum to be taught.
148. must follow the curriculum.

Group Four

149. must update my education constantly.
150. must upgrade.
151. need to keep up-dating my skills.
152. must continually improve myself (i.e. professional development).
153. must keep abreast of current developments in education.
154. must constantly keep abreast of new developments in curricula.
155. must keep abreast of professional development and information.
156. must stay abreast of advancements in the educational field.
157. must keep abreast of new materials, resources available to me.
158. must keep up with changes and new innovations.
159. should be up to date with new information.
160. should keep current with new teaching theories and practices.
161. should be open to new teaching theories and practices.
162. need to do professional readings.
163. must keep informed re: the curriculum.
164. need to keep current.
165. need to stay current.
166. should keep my knowledge base current.
167. must keep up to date with technology.
168. must keep up with the changes.
169. must implement ideas and changes with regard to the curriculum as necessary.
170. am willing to improve by taking different workshops and staying informed about what is coming out.
171. need time for professional development.
172. need opportunities for professional development.
173. should have yearly inservicing.
174. must be given some inservice from time to time.

Group Five

175. must respect the parents' wishes and beliefs.

176. must communicate effectively with parents.
177. must keep in constant touch with parents.
178. should communicate with parents.
179. must be accepting of parents.
180. have to have the support of the parents.
181. need support from parents.
182. should have the support of the parents.
183. need support of parents of my students.
184. must know I have the backing of parents.
185. need cooperation of parents of my students.
186. need to work as a partner with parents to educate their children.
187. should work in partnership with parents.
188. endeavor to involve parents in the education of their children.
189. must be able to get along with parents.
190. should take parent's input under consideration.
191. should be involved in extra-curricular activities.
192. should be involved in the total school community.
193. become involved in community events.
194. should work in extra-curricular activities.
195. must be involved in extra-curricular activities.
196. must be involved in more aspects of the school than just teaching.
197. need greater support from government officials and the media.
198. need support from the school board.
199. must know I have the backing of central office.

Group Six
200. need plenty of prep time.
201. need time for planning.
202. need to have enough time to plan for classes.
203. need to have enough time to evaluate students.
204. need time to consider, to think.
205. need to spend less time on committees.

Group Seven
206. must delicately balance the demands of work and family life.
207. need to have a balance in life.
208. need to balance my professional life with my personal life.
209. must know my limitations with regard to homework and family life.
210. should be involved in activities out of school in order to avoid burnout.
211. must take time out for activities other than school.
212. need adequate time away from the classroom.
213. need to travel, read, meet people and experience life to the fullest.
214. should have time for my own pursuits, hobbies on a continual basis, not just in July, August.

Group Eight
215. must devote my whole life to teaching, no family, no possessions.
216. must be willing to spend major hours after school.
217. need to give extra of my energy.
218. need to give extra of my time.
219. must be willing to sacrifice personal time.
220. have to spend many extra hours preparing, evaluating and organizing.

Group Nine

221. must be fair but strict.
222. have to be fair.
223. must be fair.
224. need to be fair and equal to all students.
225. enforce rules fairly.
226. must have control of the class.
227. need to have control in the classroom.
228. must maintain classroom control.
229. need to keep order, control and discipline in my classroom.
230. must have effective classroom management skills.
231. need to be firm and set limits.
232. must be firm, yet flexible.
233. must be organized at work.
234. need to be organized.
235. must be organized.
236. need to be organized.
237. must be organized.
238. must be well organized.
239. must be efficient at work.
240. need to be efficient.
241. need to be very efficient with time.
242. must be well planned.
243. should be prepared in planning.
244. prepare thoroughly.
245. must plan for success (instructional materials/resources must be in place).
246. need to be well prepared for classes.
247. must be prepared.
248. need to put time into planning and evaluating.
249. need to be prepared for every subject I teach.
250. should be well prepared for class.
251. have to be prepared.
252. need to be prepared.
253. must be prepared for teaching classes on a day-to-day basis.
254. must be prepared for each day but must let flexibility be part of those plans.
255. must have clear instructional goals.
256. need to have short term goals for teaching.
257. must have a sense of direction in my teaching.
258. must be able to justify every activity and assignment as worthwhile with definite objectives.
259. must engage students in purposeful learning most of the time.
260. must utilize school time productively.
261. need to have long term goals for teaching.
262. must be prepared for teaching classes on a yearly basis.
263. need to know what the long range plan for teaching is.
264. must constantly re-work and revise unit and year plans so as never to get in a rut.
265. must constantly seek new and more engaging ways to teach.
266. must make goals.
267. need to evaluate my lessons and programs.
268. must constantly reflect on the success of my teaching.

269. must reflect.
270. should be flexible in planning.
271. must be flexible.
272. must be flexible in my teaching style.
273. should be flexible in organization.
274. must have good communication skills.
275. must have strong communication skills.
276. need to be a superb communicator.
277. must bring the outside world into the classroom.
278. should be creative in presenting concepts to my class.
279. need to understand how children learn.
280. must know how to get ideas across to students.
281. should provide students with structure upon which to "hang" newly acquired knowledge.
282. must do my best to see my students grow academically.
283. must be able to teach the material in an exciting manner.
284. must make learning interesting.
285. must make learning fun.
286. must make learning applicable to the world.
287. should use various approaches to get to the student.
288. am always looking for new ways of teaching.
289. should teach according to how a student learns best, therefore I have to be accommodating.
290. need to be able to recognize general group moods and feelings from time to time, day to day and month to month, etc.
291. must be sensitive to student moods.
292. must be able to motivate students to learn enthusiastically.
293. must be a motivator.
294. need to be aware of how to motivate and excite my students to learn.
295. must not simply inform, but must encourage children's curiosity and discovery in learning
296. must actively involve the students.
297. must encourage participation in the teaching-learning process.
298. must engage students actively in learning.
299. must utilize flexible grouping to allow children to participate in a variety of group structures.
300. must generate and encourage humor in the classroom.
301. must mark and grade assignments as promptly as possible.
302. return assignments promptly and review them.
303. must give prompt feedback to students.
304. must frequently monitor student progress.
305. must give meaningful feedback to the student.
306. need to change assignments periodically.
307. should give students some choices about their learning.
308. must provide the best quality education possible.

Group Ten

309. must genuinely be sincere in helping others.
310. must be committed to helping people.
311. must be a people person (i.e., relate well to people).
312. should be kind and compassionate.
313. must be caring.
314. must be a compassionate human being.

315. need to be compassionate towards the students.
316. must be patient.
317. should be patient.
318. need patience.
319. must be very patient with students.
320. must be understanding.
321. must be forgiving.
322. must be dedicated.
323. must hard working.
324. must work to my fullest potential.
325. must be willing to give of my best efforts in all areas.
326. need self-discipline.
327. need to be consistent
328. must be methodical.
329. need to be reliable.
330. must be punctual.
331. must be conforming.
332. must be observant.
333. must be insightful.
334. must be creative.
335. must be creative.
336. must continually learn as a teacher.
337. must be a life-long learner.
338. must be constantly learning.
339. must be excited about learning.
340. must like learning.
341. must continually change and evolve as a teacher.
342. should not stagnate, but continue to learn and grow as a person.
343. need to be a learner and supported as such.
344. must be a model learner.
345. must learn to change.
346. must be able to adapt to changes, especially technology.
347. must adapt and change if necessary.
348. must positively respond to change.
349. must be open minded.
350. must be committed to stand for my beliefs when making educational decisions (trust my instincts and experience in this regard).
351. must carefully weigh the pros and cons of new ideas for their benefit to the student.
352. must be open to change, but not readily jumping on all bandwagon ideas.
353. must be confident.
354. must be happy.
355. have to think that I am an O.K. person.
356. must have a positive self-esteem.
357. must be in good mental health.
358. must be in good mental health.
359. must be emotionally stable.
360. must be in good emotional health.
361. must be balanced and well in my life.
362. must be physically healthy.
363. must be in good physical health.
364. must have a desire to succeed.
365. must have a desire to see others succeed.

366. should be open to constructive evaluation.

Group Eleven

367. should not let a bad day get me down.
368. should be proud of my effort despite public negativity.
369. must be well rested.
370. must get adequate rest.
371. must look after myself.
372. must know how to relax.
373. must be able to laugh at myself and my mistakes.
374. need to have a sense of humor.
375. require a sense of humor.
376. must have a sense of humor.
377. must have a positive outlook towards life.
378. need to have a positive outlook.
379. must realize that there are limitations to what I can do in a given time period.

Group Twelve

380. must enjoy my work.
381. must enjoy my work.
382. must enjoy the work I'm doing.
383. must like teaching.
384. must love educating students.
385. have to love my job.
386. must enjoy the school in which I work
387. must feel better about my profession.
388. must be told occasionally that my work is appreciated and on track.
389. need a good education with regard to child development.
390. must be younger than I am.
391. have to believe that I can make a difference.
392. need to have teaching experience.
393. must believe in the purpose of what I am teaching.
394. must view teaching as a mission or a calling.
395. need a high tolerance for problems caused by disruptive students.
396. must model the goals of the school.
397. must be teaching in my field of expertise.
398. must be professional in all that I do and say.
399. must be a professional in my attitude and conduct.
400. must have a clear understanding of the school's goals and objectives.
401. must share a common philosophy with that of the school and its administrators.
402. must do adequate administrative duties (i.e. paperwork on kids and courses).
403. must be a concerned world citizen.
404. must be born again by God's grace.

Appendix H

Final Editing of Belief Statements

169 Distinct Beliefs

In order to be a good teacher, I believe that I . . . . . .

1. must be able to work cooperatively with all people.
2. must support my colleagues.
3. must be accepting of my colleagues.
4. must enjoy the staff that I work with.
5. must be willing to be a team player.
6. need a dedicated and experienced staff to draw from.
7. must enjoy the administration that I work with.
8. need a clear understanding of the administration's expectations of me.
9. need good, strong, effective leadership.
10. must know I am backed by my administration.
11. must support my administration.
12. must love children.
13. must love the company of children.
14. must genuinely like my students.
15. must want to work with children.
16. must be accepting of students as they are.
17. should recognize the uniqueness of every student in terms of personality, academic strengths and weaknesses, and out of school interests.
18. must know students' family backgrounds.
19. must understand a student's way of thinking.
20. must make instructional decisions based on knowledge of individual achievement, aptitude, learning style and interest.
21. need to focus on each student individually in order to best meet his/her needs.
22. should show concern when students are having problems.
23. must put the needs of my students first.
24. am always available to help students in or out of class.
25. must not expect a 100% success rate with all the students.
26. must accept that student's rate of growth will vary and that all strides forward are important.
27. must be interested in a child's learning.
28. believe in the capability of the students.
29. must be able to relate with students.
30. must always be a willing listener to any and all students.
31. must respect my students.
32. must have the respect of my students.
33. must be sincere in my dealings with the students.
34. must be positive towards the students.
35. should meet the emotional needs of my students.
36. need to be aware of the problems of students.
37. exude a warm and caring attitude toward all students.
38. must be able to deal with emotions of children.

39. must promote the emotional and social development of students (in addition to the academic).
40. must make my students feel cared for.
41. should provide a safe learning environment in which all students are given the opportunity to succeed.
42. must always make my students comfortable enough to explore/venture answers.
43. must make my students feel confident.
44. should act as a loving parent.
45. should be an example/role model that the student can be proud of and want to emulate.
46. encourage students to believe that they can do anything they set their minds to.
47. must be my students' greatest cheering section.
48. must clearly transmit my (high) expectations to students.
49. must actively teach children to be responsible, contributing citizens by planned, deliberate activities and example.
50. must be a master at the subject being taught.
51. must know the curriculum and its expectations.
52. must be competent in my area of teaching.
53. must update my education constantly.
54. must keep up to date with technology.
55. must constantly keep abreast of new developments in education.
56. need time for professional development.
57. must respect the parents' wishes and beliefs.
58. must communicate effectively with parents.
59. must keep in constant touch with parents.
60. must be accepting of parents.
61. have to have the support of the parents.
62. need to work as a partner with parents to educate their children.
63. must be able to get along with parents.
64. should take parent's input under consideration.
65. should be involved in extra-curricular activities.
66. need greater support from government officials and the media.
67. must know I have the backing of central office.
68. need plenty of prep time.
69. need to spend less time on committees.
70. must delicately balance the demands of work and family life.
71. must take time out for activities other than school.
72. should have time for my own pursuits, hobbies on a continual basis, not just in July, August.
73. must devote my whole life to teaching, no family, no possessions.
74. need to give extra of my energy.
75. must be willing to sacrifice personal time.
76. must be fair but strict.
77. must have control of the class.
78. must be organized.
79. need to be efficient.
80. need to be well prepared for classes.
81. must have clear instructional goals.
82. must be able to justify every activity and assignment as worthwhile, with definite objectives.
83. must utilize school time productively.
84. need to know what the long range plan for teaching is.

85. must constantly re-work and revise unit and year plans so as never to get in a rut.
86. must constantly reflect on the success of my teaching.
87. must be flexible.
88. must have good communication skills.
89. need to be a superb communicator.
90. must bring the outside world into the classroom.
91. should be creative in presenting concepts to my class.
92. need to understand how children learn.
93. must be able to teach the material in an exciting manner.
94. must make learning interesting.
95. must make learning fun.
96. must make learning applicable to the world.
97. should use various approaches to get to the student.
98. should teach according to how a student learns best, therefore I have to be accommodating.
99. need to be able to recognize general group moods and feelings from time to time, day to day and month to month, etc.
100. must be able to motivate students to learn enthusiastically.
101. must not simply inform, but must encourage children's curiosity and discovery in learning.
102. must engage students actively in learning.
103. must utilize flexible grouping to allow children to participate in a variety of group structures.
104. must generate and encourage humor in the classroom.
105. must give prompt and meaningful feedback to students.
106. need to change assignments periodically.
107. should give students some choices about their learning.
108. must genuinely be sincere in helping others.
109. must be committed to helping people.
110. must love people (adults and children).
111. must be kind and compassionate.
112. must be patient.
113. must be caring.
114. must be understanding.
115. must be forgiving.
116. must be dedicated.
117. must work to my fullest potential.
118. must be willing to give of my best efforts in all areas.
119. need self-discipline.
120. need to be consistent.
121. must be methodical.
122. need to be reliable.
123. must be punctual.
124. must be conforming.
125. must be observant.
126. must be insightful.
127. must be creative.
128. must be excited about learning.
129. must continually change and evolve as a teacher.
130. must be committed to stand for my beliefs when making educational decisions (trust my instincts and experience in this regard).
131. must carefully weigh the pros and cons of new ideas for their benefit to the student.

132. must be open to change, but not readily jumping on all bandwagon ideas.
133. must positively respond to change.
134. must be confident.
135. must be happy.
136. must have a positive self-esteem.
137. must be in good mental health.
138. must be emotionally stable.
139. must be physically healthy.
140. must have a desire to succeed.
141. must have a desire to see others succeed.
142. should be open to constructive evaluation.
143. should not let a bad day get me down.
144. should be proud of my effort despite public negativity.
145. must be well rested.
146. must know how to relax.
147. must have a sense of humor.
148. need to have a positive outlook.
149. must realize that there are limitations to what I can do in a given time period.
150. must like teaching.
151. have to love my job.
152. must feel better about my profession.
153. must be told occasionally that my work is appreciated and on track.
154. must enjoy the school in which I work.
155. must believe in the purpose of what I am teaching.
156. must be younger than I am.
157. have to believe that I can make a difference.
158. need to have teaching experience.
159. need a good education with regard to child development.
160. must view teaching as a mission or a calling.
161. need a high tolerance for problems caused by disruptive students.
162. must model the goals of the school.
163. must be teaching in my field of expertise.
164. must be a professional in my attitude and conduct.
165. must be professional in all that I do and say.
166. must have a clear understanding of the school's goals and objectives.
167. must share a common philosophy with that of the school and its administrators.
168. must be a concerned world citizen.
169. must be born again by God's grace.

Appendix I

Rating Form For Judges

Dear Rater:

The following are statements that Alberta teachers have given in response to the sentence stem "In order to be a good teacher, I believe that I . . . . . ." There are 169 belief statements in all.

I would like you to rate each belief as to the following:

> Overall, in your judgment, what is the likelihood that holding this belief would be problematic for a teacher in that it would cause a teacher to have unrealistic expectations for their performance in the work environment.

L	M	H
Low likelihood of causing problems	Medium likelihood of causing problems	High likelihood of causing problems

*Please note that each statement is preceded by the phrase "In order to be a good teacher, I believe that I . . . . . .

Thank you for your effort and time. If you have further questions, please feel free to contact me at 433-0709.

Linda Chorney

1. Years of teaching experience at the following levels:
   elementary _____ junior high _____ senior high _____

2. Currently employed as a teacher _____ yes _____ no
   If no, number of years since being employed as a teacher _____

3. Describe your highest educational level/training _____

Note: On this sheet (or on the belief statements sheets), please include any comments you might want to make about any of the items, or about the process of rating the items.

* * * * *

*Note: Appendix F was replicated for each judge. Due to space considerations, only a sample of this portion of the judge's rating form is provided below.

In order to be a good teacher, I believe that I . . . . . .

L M H 1. must be able to work cooperatively with all people.
L M H 2. must support my colleagues.
L M H 3. must be accepting of my colleagues.
L M H 4. must enjoy the staff that I work with.
Etc.

Appendix J

Summary of Judges' Ratings

In order to be a good teacher, I believe that I . . . . . .

3 High Ratings

1. must always be a willing listener to any and all students.
2. should meet the emotional needs of my students.
3. should act as a loving parent.
4. need plenty of prep time.
5. must devote my whole life to teaching, no family, no possessions.
6. must be born again by God's grace.

2 High Ratings, 1 Medium Rating

1. am always available to help students in or out of class.
2. must keep in constant touch with parents.
3. need greater support from government officials and the media.
4. need to give extra of my energy.
5. must be conforming.
6. must view teaching as a mission or a calling.

2 High Ratings, 1 Low Rating

1. must be a master at the subject being taught.
2. need to be a superb communicator.
3. have to love my job.
4. must be told occasionally that my work is appreciated and on track.
5. must be younger than I am.
6. must share a common philosophy with that of the school and its administrators.
7. must be willing to give of my best efforts in all areas.

1 High Rating, 2 Medium Ratings

1. need a dedicated and experienced staff to draw from.
2. must constantly keep abreast of new developments in education.
3. must be willing to sacrifice personal time.
4. must constantly re-work and revise unit and year plans so as never to get in a rut.

1 High Rating, 1 Medium Rating, 1 Low Rating

1. must be able to work cooperatively with all people.
2. must enjoy the administration that I work with.
3. need good, strong, effective leadership.
4. must know students' family backgrounds.
5. need to focus on each student individually in order to best meet his/her needs.
6. must update my education constantly.

7. must keep up to date with technology.
8. have to have the support of the parents.
9. should be involved in extra-curricular activities.
10. must know I have the backing of central office.
11. must be able to justify every activity and assignment as worthwhile, with definite objectives.
12. must constantly reflect on the success of my teaching.
13. must be able to teach the material in an exciting manner.
14. must be able to motivate students to learn enthusiastically.
15. must work to my fullest potential.
16. must be methodical.
17. must continually change and evolve as a teacher.
18. need to have teaching experience.
19. need a high tolerance for problems caused by disruptive students.
20. must be teaching in my field of expertise.
21. must be professional in all that I do and say.
22. must be my students' greatest cheering section.

1 High Rating, 2 Low Ratings

1. must know I am backed by my administration.
2. must utilize flexible grouping to allow children to participate in a variety of group structures.
3. must be happy.
4. must feel better about my profession.
5. must be a concerned world citizen.
6. need a good education with regard to child development.

3 Medium Ratings

1. need to spend less time on committees.

2 Medium Ratings, 1 Low Rating

1. must be accepting of my colleagues.
2. must enjoy the staff that I work with.
3. must love children.
4. must love the company of children.
5. must genuinely like my students.
6. must make instructional decisions based on knowledge of individual. achievement, aptitude, learning style and interest.
7. must put the needs of my students first.
8. exude a warm and caring attitude toward all students.
9. must clearly transmit my (high) expectations to students.
10. need time for professional development.
11. must respect the parents' wishes and beliefs.
12. must be accepting of parents.
13. need to work as a partner with parents to educate their children.
14. should teach according to how a student learns best, therefore I have to be accommodating.
15. must genuinely be sincere in helping others.
16. must be creative.
17. must be committed to stand for my beliefs when making educational

decisions (trust my instincts and experience in this regard).
18. must carefully weigh the pros and cons of new ideas for their benefit to the student.
19. must model the goals of the school.
20. must be willing to be a team player.
21. must positively respond to change.
22. must love people (adults and children).

1 Medium Rating, 2 Low Ratings
1. must support my colleagues.
2. need a clear understanding of the administration's expectations of me.
3. must support my administration.
4. should recognize the uniqueness of every student in terms of personality, academic strengths and weaknesses, and out of school interests.
5. must understand a student's way of thinking.
6. should show concern when students are having problems.
7. need to be aware of the problems of students.
8. must be able to deal with emotions of children.
9. must promote the emotional and social development of students (in addition to the academic).
10. must make my students feel cared for.
11. must make my students feel confident.
12. encourage students to believe that they can do anything they set their minds to.
13. must know the curriculum and its expectations.
14. must be able to get along with parents.
15. must delicately balance the demands of work and family life.
16. need to be efficient.
17. must utilize school time productively.
18. need to know what the long range plan for teaching is.
19. must bring the outside world into the classroom.
20. should be creative in presenting concepts to my class.
21. need to understand how children learn.
22. must make learning interesting.
23. must make learning fun.
24. must make learning applicable to the world.
25. need to be able to recognize general group moods and feelings from time to time, day to day and month to month, etc.
26. must not simply inform, but must encourage children's curiosity and discovery in learning.
27. must engage students actively in learning.
28. must give prompt and meaningful feedback to students.
29. must be kind and compassionate.
30. must be patient.
31. must be understanding.
32. must be forgiving.
33. must be dedicated.
34. need self-discipline.
35. need to be consistent.
36. must be observant.
37. must be excited about learning.
38. should be open to constructive evaluation.

39. must be well rested.
40. must enjoy the school in which I work.
41. must have a clear understanding of the school's goals and objectives.
42. must believe in the purpose of what I'm teaching.

3 Low Ratings

1. must want to work with children.
2. must be accepting of students as they are.
3. must not expect a 100% success rate with all the students.
4. must accept that student's rate of growth will vary and that all strides forward are important.
5. must be interested in a child's learning.
6. believe in the capability of the students.
7. must be able to relate with students.
8. must respect my students.
9. must have the respect of my students.
10. must be sincere in my dealings with the students.
11. must be positive towards the students.
12. should provide a safe learning environment in which all students are given the opportunity to succeed.
13. must always make my students comfortable enough to explore/venture answers.
14. should be an example/role model that the student can be proud of and want to emulate.
15. must actively teach children to be responsible, contributing citizens, by planned, deliberate activities and example.
16. must be competent in my area of teaching.
17. must communicate effectively with parents.
18. should take parent's input under consideration.
19. must take time out for activities other than school.
20. should have time for my own pursuits, hobbies on a continual basis, not just in July, August.
21. must be fair but strict.
22. must have control of the class.
23. must be organized.
24. need to be well prepared for classes.
25. must have clear instructional goals.
26. must be flexible.
27. must have good communication skills.
28. should use various approaches to get to the student.
29. must generate and encourage humor in the classroom.
30. need to change assignments periodically.
31. should give students some choices about their learning.
32. must be committed to helping people.
33. must be caring.
34. need to be reliable.
35. must be punctual.
36. must be insightful.
37. must be open to change, but not readily jumping on all bandwagon ideas.
38. must be confident.
39. must have a positive self-esteem.

40. must be in good mental health.
41. must be emotionally stable.
42. must be physically healthy.
43. must have a desire to succeed.
44. must have a desire to see others succeed.
45. should not let a bad day get me down.
46. should be proud of my effort despite public negativity.
47. must know how to relax.
48. must have a sense of humor.
49. need to have a positive outlook.
50. must realize that there are limitations to what I can do in a given time period.
51. must like teaching.
52. have to believe that I can make a difference.
53. must be professional in my attitude and conduct.

Appendix K

Self-Defeating Beliefs

In order to be a good teacher, I believe that I . . . . . .

1. must continually change and evolve as a teacher.
2. should be involved in extra-curricular activities.
3. have to love my job.
4. must know students' family backgrounds.
5. must constantly reflect on the success of my teaching.
6. must be able to motivate students to learn enthusiastically.
7. must be professional in all that I do and say.
8. must constantly re-work and revise unit and year plans so as never to get in a rut.
9. need a dedicated and experienced staff to draw from.
10. need good, strong, effective leadership.
11. must devote my whole life to teaching, no family, no possessions.
12. must be methodical.
13. must be told occasionally that my work is appreciated and on track.
14. must be able to teach the material in an exciting manner.
15. need a high tolerance for problems caused by disruptive students.
16. need to have teaching experience.
17. should meet the emotional needs of my students.
18. must constantly keep abreast of new developments in education.
19. must share a common philosophy with that of the school and its administrators.
20. must work to my fullest potential.
21. need greater support from government officials and the media.
22. need to focus on each student individually in order to best meet his/her needs.
23. must be conforming.
24. must be able to justify every activity and assignment as worthwhile, with definite objectives.
25. need plenty of prep time.
26. must upgrade my education constantly.
27. must be a master at the subject being taught.
28. must view teaching as a mission or a calling.
29. have to have the support of the parents.
30. must be willing to sacrifice personal time.
31. must keep up to date with technology.
32. must always be a willing listener to any and all students.
33. must enjoy the administration that I work with.
34. should act as a loving parent.
35. must be able to work cooperatively with all people.
36. must be younger than I am.
37. must keep in constant touch with parents.
38. must be teaching in my field of expertise.
39. must be my students' greatest cheering section.
40. must be born again by God's grace.
41. need to give extra of my energy.
42. am always available to help students in or out of class.
43. need to be a superb communicator.
44. must know I have the backing of central office.
45. must be willing to give of my best efforts in all areas.

Appendix L

Cover Letter to School Principals - Part Two of Study

Dear School Principal:

A study is being carried out that will look at the relationship between beliefs teachers have about being a good teacher and teacher occupational stress. A member of your staff is currently enrolled in the Master's program in School Counselling at the University of Alberta. Members of this class are participating in the distribution of materials for the study.

Recently, a survey of Alberta teachers was carried out in which participants were asked to list their beliefs about being a good teacher. Those responses were used to create the beliefs portion of the enclosed questionnaires. It would be greatly appreciated if the staff of your school could be involved in this follow-up study.

Participation is voluntary, and individuals are not asked to identify themselves by name or school. Additional copies of the questionnaire may be made and distributed as required. A summary of the results will be provided to each participating school upon completion of the data analysis.

Thank-you for your time and cooperation.

Ms. Linda Chorney, Ph.D. Candidate
Department of Educational Psychology
University of Alberta

Dr. Peter Calder, Professor
Department of Educational Psychology
University of Alberta

Appendix M

Cover Letter to Teachers - Part Two of Study

Dear Teaching Staff Member:

A study is being carried out that will attempt to develop a better understanding of the relationship between the beliefs teachers have about being a good teacher and stress. A member of your staff is currently enrolled in the Master's program in School Counselling at the University of Alberta. Members of this class are participating in the distribution of materials for the study.

Recently, a survey of Alberta teachers was carried out in which participants were asked to list their beliefs about being a good teacher. Those responses were used to create the beliefs portion of the attached questionnaire. Your involvement in this follow-up study would be greatly appreciated.

Participation in this project is strictly voluntary. You are not asked to identify yourself and your answers will be completely confidential. Only the group results derived from numerous schools will be used. The time required to complete the questionnaire is about 20 minutes. A summary of the results will be provided to each participating school once the data has been fully analyzed.

Upon completion of the questionnaire, seal it in the envelope provided and place it in the mailbox of the individual from your school who is in the School Counselling program. If you prefer to return your questionnaire on an individual basis, our address is Department of Educational Psychology, 6-102 Education North, University of Alberta, Edmonton, Alberta, T6G 2G5, Attention: Linda Chorney. Please complete and return all questionnaires within two weeks time. Should you choose not to participate in this study, please return the uncompleted questionnaire to the mailbox described above.

Thank-you for your time and effort.

Ms. Linda Chorney, Ph.D. Candidate
Department of Educational Psychology
University of Alberta

Dr. Peter Calder, Professor
Department of Educational Psychology
University of Alberta

Appendix N

Questionnaire - Part Two of Study

1. As a teacher, at what level do you primarily work?
   Elementary _____ Junior High _____
   High School _____

2. Which best describes you as a school employee at the present time?

   _____ full time equivalent (1.0) _____ .81 to .99

   _____ .51 to .80 _____ half-time (.5)

   _____ less than .5

3. What percentage of your workload is assigned to teaching?_____

4. Where is your school located?
   Urban area _____ Rural area _____

5. Number of students in your school _____

6. Your average class size _____

7. How many years have you been employed as a teacher? _____

8. Age _____

9. Gender _____

10. Describe your highest level teacher training.

    four years university _____
    completed one year graduate studies _____
    completed a Master's degree _____
    other (please describe) _____

Thank-you for your willingness to be involved in this study. Your time and effort is very much appreciated.

Beliefs

The following are beliefs about being a good teacher that were recently submitted by Alberta teachers. You are asked to give each statement a rating that indicates the strength of your agreement or disagreement with it. Circle the number (1-7) that most closely matches how you would describe each statement as it applies to you. Please note that each statement is preceded by the phrase "In order to be a good teacher, I believe that I . . . . . ."

strongly disagree	moderately disagree	slightly disagree	neutral	slightly agree	moderately agree	strongly agree
1	2	3	4	5	6	7

In order to be a good teacher, I believe that I . . . . . .

1. . . . must continually change and evolve as a teacher.	1	2	3	4	5	6	7
2. . . should be involved in extra-curricular activities.	1	2	3	4	5	6	7
3. . . . have to love my job.	1	2	3	4	5	6	7
4. . . . must know students' family backgrounds.	1	2	3	4	5	6	7
5. . . . must constantly reflect on the success of my teaching.	1	2	3	4	5	6	7
6. . . . must be able to motivate students to learn enthusiastically.	1	2	3	4	5	6	7
7. . . . must be professional in all that I do and say.	1	2	3	4	5	6	7
8. . . . must constantly re-work and revise unit and year plans so as never to get in a rut.	1	2	3	4	5	6	7
9. . . . need a dedicated and experienced staff to draw from.	1	2	3	4	5	6	7
10. . . need good, strong, effective leadership.	1	2	3	4	5	6	7
11. . . must devote my whole life to teaching, no family, no possessions.	1	2	3	4	5	6	7
12. . . must be methodical.	1	2	3	4	5	6	7
13. . . must be told occasionally that my work is appreciated and on track.	1	2	3	4	5	6	7
14. . . must be able to teach the material in an exciting manner.	1	2	3	4	5	6	7
15. . . need a high tolerance for problems caused by disruptive students.	1	2	3	4	5	6	7
16. . . need to have teaching experience.	1	2	3	4	5	6	7
17. . . should meet the emotional needs of my students.	1	2	3	4	5	6	7
18. . . must constantly keep abreast of new developments in education.	1	2	3	4	5	6	7
19. . . must share a common philosophy with that of the school and its administrators.	1	2	3	4	5	6	7
20. . . must work to my fullest potential.	1	2	3	4	5	6	7

strongly disagree	moderately disagree	slightly disagree	neutral	slightly agree	moderately agree	strongly agree
1	2	3	4	5	6	7

In order to be a good teacher, I believe that I . . . . . .

21. . . need greater support from government officials and the media.	1	2	3	4	5	6	7
22. . . need to focus on each student individually in order to best meet his/her needs.	1	2	3	4	5	6	7
23. . . must be conforming.	1	2	3	4	5	6	7
24. . . must be able to justify every activity and assignment as worthwhile, with definite objectives.	1	2	3	4	5	6	7
25. . . need plenty of prep time.	1	2	3	4	5	6	7
26. . . must upgrade my education constantly.	1	2	3	4	5	6	7
27. . . must be a master at the subject being taught.	1	2	3	4	5	6	7
28. . . must view teaching as a mission or a calling.	1	2	3	4	5	6	7
29. . . have to have the support of the parents.	1	2	3	4	5	6	7
30. . . must be willing to sacrifice personal time.	1	2	3	4	5	6	7
31. . . must keep up to date with technology.	1	2	3	4	5	6	7
32. . . must always be a willing listener to any and all students.	1	2	3	4	5	6	7
33. . . must enjoy the administration that I work with.	1	2	3	4	5	6	7
34. . . should act as a loving parent.	1	2	3	4	5	6	7
35. . . must be able to work cooperatively with all people.	1	2	3	4	5	6	7
36. . . must be younger than I am.	1	2	3	4	5	6	7
37. . . must keep in constant touch with parents.	1	2	3	4	5	6	7
38. . . must be teaching in my field of expertise.	1	2	3	4	5	6	7
39. . . must be my students' greatest cheering section.	1	2	3	4	5	6	7
40. . . must be born again by God's grace.	1	2	3	4	5	6	7
41. . . need to give extra of my energy.	1	2	3	4	5	6	7
42. . . am always available to help students in or out of class.	1	2	3	4	5	6	7
43. . . need to be a superb communicator.	1	2	3	4	5	6	7
44. . . must know I have the backing of central office.	1	2	3	4	5	6	7
45. . . must be willing to give of my best efforts in all areas.	1	2	3	4	5	6	7

If you have beliefs about being a good teacher that are not mentioned on this questionnaire, please include them.

The Teacher Stress Inventory (Fimian, 1988) is copyrighted, hence it is not reproduced here. The abbreviated stems of the inventory are provided as they appear in Fimian and Fastenau (1990). Complete information regarding this inventory can be obtained from the publisher - Clinical Psychology Publishing Co., Inc., 4 Conant Square, Brandon, Vermont, U.S.A., 05733.

Factor I:
Professional Investment
Personal opinions not sufficiently aired
Lack control over decisions
Not emotionally/intellectually stimulated
Lack opportunities for improvement

Factor II:
Behavioral Manifestations
Using over-the-counter drugs
Using prescription drugs
Using alcohol
Calling in sick

Factor III:
Time Management
Easily over commit myself
Become impatient
Do more than one thing at a time
Have little time to relax
Think about unrelated matters
Feel uncomfortable wasting time
Not enough time to get things done
Rush in my speech

Factor IV:
Discipline and Motivation
Discipline problems in my classroom
Having to monitor pupil behavior
Teaching students who should do better
Teaching students who are poorly motivated
Inadequate or poorly defined discipline policies
Authority rejected by pupils/administrators

Factor V:
Emotional Manifestations
Feeling insecure
Feeling vulnerable
Feeling unable to cope
Feeling depressed
Feeling anxious

Factor VI:
Work Related Stressors
Little time to prepare
Too much work to do
School day pace is too fast
Caseload/class is too big
Personal priorities being shortchanged
Too much administrative paperwork

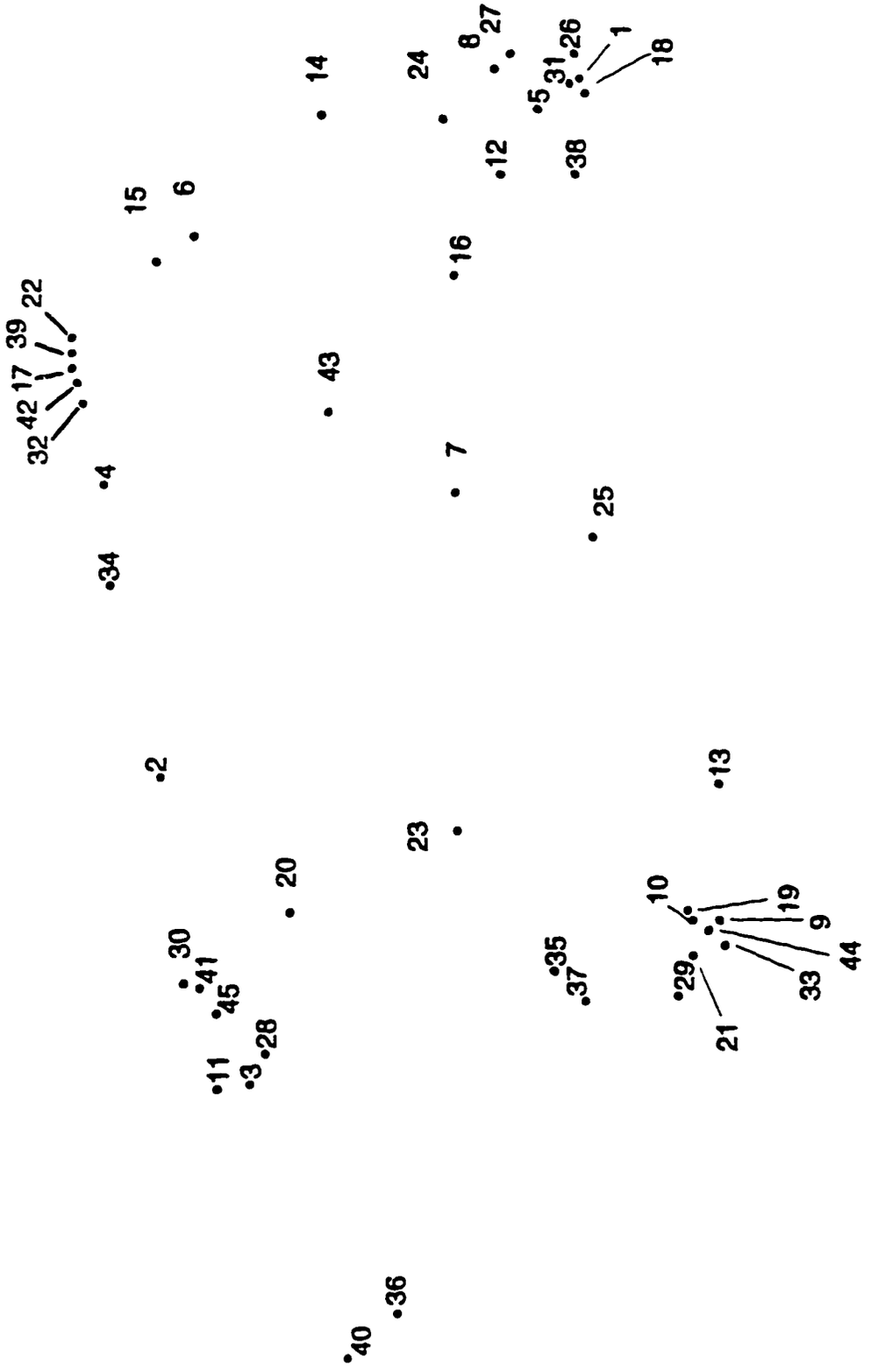
Factor VII:
Gastronomical Manifestations
Stomach cramps
Stomach pains of extended duration
Stomach acid

Factor VIII:
Cardiovascular Manifestations
Feelings of increased blood pressure
Feelings of heart pounding or racing
Rapid/shallow breath

Factor IX:
Fatigue Manifestations
Sleeping more than usual
Procrastinating
Becoming fatigued in short time
Physical exhaustion
Physical weakness

Factor X:
Professional Distress
Lack promotion or advancement opportunities
Not progressing rapidly in job
Need more status and respect
Receive an inadequate salary
Lack recognition

Appendix O
Point Map Derived From Teachers' Self-Defeating Beliefs Sort Data



Appendix P

Cluster Solution For 6 Concept Map

Belief Statement Numbers, Belief Statement Names, and Bridging Values

Cluster 1 (Upgrading/Curriculum Issues)

1. must continually change and evolve as a teacher (0.26)
18. must constantly keep abreast of new developments in education (0.28)
31. must keep up to date with technology (0.25)
26. must upgrade my education constantly (0.23)
38. must be teaching in my field of expertise (0.43)
5. must constantly reflect on the success of my teaching (0.41)
8. must constantly re-work and revise unit and year plans so as never to get in a rut (0.35)
27. must be a master at the subject being taught (0.40)
12. must be methodical (0.43)
24. must be able to justify every activity and assignment as worthwhile, with definite objectives (0.48)
16. need to have teaching experience (0.65)

Cluster Average Bridging Value = 0.38

Cluster 2 (Work Requirements)

7. must be professional in all that I do and say (0.80)
43. need to be a superb communicator (0.78)
25. need plenty of prep time (0.92)
23. must be conforming (0.90)
35. must be able to work cooperatively with all people (0.84)
37. must keep in constant touch with parents (0.85)

Cluster Average Bridging Value = 0.85

Cluster 3 (Support)

9. need a dedicated and experienced staff to draw from (0.04)
10. need good, strong, effective leadership (0.02)
33. must enjoy the administration that I work with (0.00)
19. must share a common philosophy with that of the school and its administrators (0.11)
44. must know I have the backing of central office (0.08)
21. need greater support from government officials and the media (0.17)
29. have to have the support of the parents (0.25)

13. must be told occasionally that my work is appreciated and on track (0.50)

Cluster Average Bridging Value = 0.15

Cluster 4 (Working With Students)

2. should be involved in extra-curricular activities (0.77)
4. must know students' family backgrounds (0.71)
34. should act as a loving parent (0.56)
17. should meet the emotional needs of my students (0.20)
32. must always be a willing listener to any and all students (0.20)
42. am always available to help students in or out of class 0.20)
22. need to focus on each student individually in order to best meet his/her needs (0.17)
39. must be my students' greatest cheering section (0.15)
6. must be able to motivate students to learn enthusiastically (0.59)
15. need a high tolerance for problems caused by disruptive students (0.47)
14. must be able to teach the material in an exciting manner (0.72)

Cluster Average Bridging Value = 0.43

Cluster 5 (Time/Energy Commitment)

3. have to love my job (0.49)
28. must view teaching as a mission or a calling (0.60)
11. must devote my whole life to teaching, no family, no possessions (0.47)
20. must work to my fullest potential (0.72)
30. must be willing to sacrifice personal time (0.45)
41. need to give extra of my energy (0.46)
45. must be willing to give of my best efforts in all areas (0.46)

Cluster Average Bridging Value = 0.53

Cluster 6 (Miscellaneous)

36. must be younger than I am (1.00)
40. must be born again by God's grace (0.64)

Cluster Average Bridging Value = 0.82

Appendix Q
Comparison of Teacher Self-Defeating Beliefs By Sex (In Six Cluster Grouping)

BELIEF STATEMENTS - NUMBERS AND NAMES	MALES (n=119) Mean	S.D.	FEMALES (n=167) Mean	S.D.	t Value	p
In order to be a good teacher, I believe that I						
Cluster 1 (Upgrading/Curriculum Issues)						
1. must continually change and evolve as a teacher	6.30	.89	6.64	.55	-3.69 *	.000
18. must constantly keep abreast of new developments in education	5.61	.94	5.91	.97	-2.60	.010
31. must keep up to date with technology	5.83	1.01	5.67	1.00	1.30	.195
26. must upgrade my education constantly	4.97	1.46	5.11	1.32	-.82	.411
38. must be teaching in my field of expertise	5.08	1.58	4.99	1.60	.47	.637
5. must constantly reflect on the success of my teaching	5.90	1.18	6.05	1.12	-1.12	.264
8. must constantly re-work and revise unit and year plans so as never to get in a rut	5.65	1.15	6.21	1.03	-4.25 *	.000
27. must be a master at the subject being taught	5.06	1.70	4.56	1.66	2.48	.014
12. must be methodical	4.33	1.47	4.15	1.58	.97	.332
24. must be able to justify every activity and assignment as worthwhile, with definite objectives	4.40	1.74	4.75	1.75	-1.69	.092
16. need to have teaching experience	5.24	1.48	5.23	1.53	.04	.972
Analysis by Cluster	5.31	.70	5.39	.72	-.94	.349
Cluster 2 (Work Requirements)						
7. must be professional in all that I do and say	6.18	1.24	6.35	.84	-1.29	.198
43. need to be a superb communicator	5.93	1.01	5.72	1.19	1.59	.113
25. need plenty of prep time	5.56	1.35	5.93	1.16	-2.39	.018
23. must be conforming	3.44	1.45	3.13	1.57	1.67	.096
35. must be able to work cooperatively with all people	5.47	1.32	5.40	1.35	.47	.638
37. must keep in constant touch with parents	4.50	1.50	4.99	1.51	-2.73	.007
Analysis by Cluster	5.19	.73	5.26	.71	-.86	.388

* $p < .05$

		MALES (n=119)		FEMALES (n=167)			
		Mean	S.D.	Mean	S.D.	t Value	p
Cluster 3 (Support)							
9.	need a dedicated and experienced staff to draw from	5.59	1.17	5.92	1.11	-2.38	.018
10.	need good, strong, effective leadership	6.12	1.19	6.48	.76	-2.92	.004
33.	must enjoy the administration that I work with	5.03	1.60	5.46	1.29	-2.38	.018
19.	must share a common philosophy with that of the school and its administrators	5.06	1.36	5.54	1.22	-3.06	.002
44.	must know I have the backing of central office	5.49	1.55	6.02	1.02	-3.31*	.001
21.	need greater support from government officials and the media	5.86	1.47	6.23	1.04	-2.30	.022
29.	have to have the support of the parents	5.77	1.21	5.70	1.29	.43	.667
13.	must be told occasionally that my work is appreciated and on track	5.82	1.04	6.08	1.02	-2.12	.035
	Analysis by Cluster	**5.59**	**.84**	**5.93**	**.65**	**-3.66***	**.000**
Cluster 4 (Working With Students)							
2.	should be involved in extra-curricular activities	5.16	1.61	4.96	1.44	1.09	.277
4.	must know students' family backgrounds	4.65	1.49	5.47	1.03	-5.19*	.000
34.	should act as a loving parent	4.84	1.66	4.72	1.64	.62	.535
17.	should meet the emotional needs of my students	4.93	1.32	5.27	1.15	-2.25	.025
32.	must always be a willing listener to any and all students	5.96	1.16	6.03	1.15	-.52	.603
42.	am always available to help students in or out of class	5.33	1.49	5.10	1.58	1.25	.213
22.	need to focus on each student individually in order to best meet his/her needs	5.50	1.23	5.89	1.11	-2.72	.007
39.	must be my students' greatest cheering section	4.97	1.30	5.29	1.64	-1.80	.073
6.	must be able to motivate students to learn enthusiastically	6.08	.98	6.40	.78	-2.95	.003
15.	need a high tolerance for problems caused by disruptive students	4.75	1.81	5.20	1.72	-2.15	.032
14.	must be able to teach the material in an exciting manner	5.56	.99	5.77	1.03	-1.76	.080
	Analysis by Cluster	**5.25**	**.82**	**5.46**	**.72**	**-2.28**	**.024**

*$p < .05$

		MALES (n=119)		FEMALES (n=167)			
		Mean	S.D.	Mean	S.D.	t Value	p
Cluster 5 (Time/Energy Commitment)							
3.	have to love my job	6.07	1.10	6.15	1.05	-.64	.523
28.	must view teaching as a mission or a calling	4.37	1.81	4.20	1.86	.76	.446
11.	must devote my whole life to teaching, no family, no possessions	1.50	1.12	1.41	1.07	.69	.491
20.	must work to my fullest potential	5.95	.96	6.29	.90	-3.05	.003
30.	must be willing to sacrifice personal time	5.29	1.30	5.37	1.41	-.49	.623
41.	need to give extra of my energy	5.15	1.41	5.02	1.51	.73	.465
45.	must be willing to give of my best efforts in all areas	5.84	1.14	6.19	1.07	-2.65	.009
	Analysis by Cluster	4.88	.77	4.95	.72	-.77	.443
Cluster 6 (Miscellaneous)							
36.	must be younger than I am	2.54	1.89	2.40	1.96	.60	.550
40.	must be born again by God's grace	2.37	1.74	2.51	1.82	-.65	.517
	Analysis by Cluster	2.46	1.37	2.45	1.53	.08	.940

$^{*}p < .05$

* Because many calculations were executed, the alpha level to achieve this level of significance has been adjusted using the Bonferroni correction (i.e., .05/45 = .001 in order to be declared significant at the .05 level for individual beliefs; .05/6 = .008 in order to be declared significant at the .05 level for cluster analysis).

Appendix R
Comparison of Teacher Self-Defeating Beliefs By Grade Level Taught (In Six Cluster Grouping)

		ELEMENTARY (n=100)		SENIOR HIGH (n=113)			
	BELIEF STATEMENTS - NUMBERS AND NAMES	Mean	S.D.	Mean	S.D.	t Value	p
	In order to be a good teacher, I believe that I						
	Cluster 1 (Upgrading/Curriculum Issues)						
1.	must continually change and evolve as a teacher	6.61	.62	6.32	.71	3.10	.002
18.	must constantly keep abreast of new developments in education	5.94	1.08	5.63	.96	2.22	.028
31.	must keep up to date with technology	5.64	.94	5.82	1.04	-1.37	.171
26.	must upgrade my education constantly	5.14	1.41	4.96	1.43	.95	.342
38.	must be teaching in my field of expertise	4.80	1.45	5.40	1.63	-2.83	.005
5.	must constantly reflect on the success of my teaching	6.31	.87	5.75	1.20	3.91 *	.000
8.	must constantly re-work and revise unit and year plans so as never to get in a rut	6.15	.97	5.78	1.15	2.56	.011
27.	must be a master at the subject being taught	4.36	1.62	5.15	1.72	-3.45	.001
12.	must be methodical	4.34	1.53	4.04	1.53	1.41	.159
24.	must be able to justify every activity and assignment as worthwhile, with definite objectives	4.76	1.77	4.35	1.83	1.64	.102
16.	need to have teaching experience	5.32	1.56	5.25	1.33	.36	.719
	Analysis by Cluster	**5.40**	**.74**	**5.31**	**.70**	**.83**	**.405**
	Cluster 2 (Work Requirements)						
7.	must be professional in all that I do and say	6.43	.81	6.19	1.20	1.75	.083
43.	need to be a superb communicator	5.79	1.14	5.75	1.16	.25	.800
25.	need plenty of prep time	5.80	1.30	5.84	1.15	-.24	.811
23.	must be conforming	3.46	1.71	2.96	1.44	2.28	.024
35.	must be able to work cooperatively with all people	5.63	1.21	5.30	1.32	1.90	.059
37.	must keep in constant touch with parents	5.36	1.45	4.25	1.52	5.45 *	.000
	Analysis by Cluster	**5.42**	**.73**	**5.05**	**.67**	**3.77 ***	**.000**

* $p < .05$

		ELEMENTARY (n=100)		SENIOR HIGH (n=113)			
		Mean	S.D.	Mean	S.D.	t Value	p
Cluster 3 (Support)							
9.	need a dedicated and experienced staff to draw from	5.87	1.18	5.65	1.12	1.35	.179
10.	need good, strong, effective leadership	6.41	.84	6.17	1.16	1.76	.080
33.	must enjoy the administration that I work with	5.39	1.21	5.19	1.55	1.03	.305
19.	must share a common philosophy with that of the school and its administrators	5.48	1.22	5.20	1.35	1.59	.113
44.	must know I have the backing of central office	6.05	.98	5.58	1.51	2.76	.006
21.	need greater support from government officials and the media	6.01	1.39	6.19	1.10	-1.06	.290
29.	have to have the support of the parents	5.93	1.15	5.66	1.14	1.70	.091
13.	must be told occasionally that my work is appreciated and on track	6.10	1.05	5.91	1.01	1.33	.183
	Analysis by Cluster	5.91	.71	5.70	.76	2.10	.037
Cluster 4 (Working With Students)							
2.	should be involved in extra-curricular activities	4.69	1.54	5.09	1.56	-1.88	.062
4.	must know students' family backgrounds	5.62	1.13	4.63	1.38	5.78*	.000
34.	should act as a loving parent	5.17	1.61	4.43	1.62	3.32	.001
17.	should meet the emotional needs of my students	5.54	1.12	4.77	1.25	4.74*	.000
32.	must always be a willing listener to any and all students	6.18	1.05	5.81	1.25	2.38	.018
42.	am always available to help students in or out of class	5.21	1.48	5.09	1.72	.56	.574
22.	need to focus on each student individually in order to best meet his/her needs	6.04	1.08	5.46	1.17	3.77*	.000
39.	must be my students' greatest cheering section	5.49	1.44	4.93	1.41	2.86	.005
6.	must be able to motivate students to learn enthusiastically	6.52	.76	6.05	.88	4.17*	.000
15.	need a high tolerance for problems caused by disruptive students	5.36	1.66	4.70	1.72	2.86	.005
14.	must be able to teach the material in an exciting manner	5.78	1.04	5.55	1.00	1.63	.104
	Analysis by Cluster	5.60	.72	5.14	.77	4.54*	.000

*$p < .05$

	ELEMENTARY (n=100)		SENIOR HIGH (n=113)			
	Mean	S.D.	Mean	S.D.	t Value	p
Cluster 5 (Time/Energy Commitment)						
3. have to love my job	6.32	1.00	6.12	1.07	1.44	.150
28. must view teaching as a mission or a calling	4.54	1.88	4.28	1.81	.99	.321
11. must devote my whole life to teaching, no family, no possessions	1.28	.83	1.53	1.16	-1.83	.068
20. must work to my fullest potential	6.27	.80	6.12	.88	1.27	.206
30. must be willing to sacrifice personal time	5.32	1.47	5.37	1.35	-.27	.790
41. need to give extra of my energy	5.20	1.40	5.04	1.55	.79	.433
45. must be willing to give of my best efforts in all areas	6.20	.99	5.87	1.15	2.28	.024
Analysis by Cluster	5.02	.70	4.90	.75	1.12	.263
Cluster 6 (Miscellaneous)						
36. must be younger than I am	2.21	1.86	2.58	1.99	-1.38	.170
40. must be born again by God's grace	2.81	1.88	2.12	1.62	2.77	.006
Analysis by Cluster	2.49	1.46	2.36	1.39	.67	.504

$^{*}p < .05$

* Because many calculations were executed, the alpha level to achieve this level of significance has been adjusted using the Bonferroni correction (i.e., .05/135 = .0003 in order to be declared significant at the .05 level for individual beliefs - 45 beliefs compared at 3 grade levels [45 X 3 = 135]; .05/18 = .0027 in order to be declared significant at the .05 level for cluster analysis - 6 clusters compared at 3 grade levels [6 X 3 = 18]).

Appendix S
Teacher Stress Inventory (TSI) Results For Low and High Beliefs Groups

TEACHER STRESS INVENTORY FACTORS	LOW BELIEFS GROUP (n=29) Mean	S.D.	TSI Decile Range	HIGH BELIEFS GROUP (n=32) Mean	S.D.	TSI Decile Range	t Value	p
SOURCES OF STRESS								
Time Management	3.07	.81	30-39	3.70	.75	60-69	-3.16	.002*
Work-Related Stressors	3.25	1.05	50-59	3.70	.95	70-79	-1.76	.083
Professional Distress	2.63	.96	30-39	2.84	.98	40-49	-.87	.387
Discipline and Motivation	2.89	1.01	40-49	3.09	1.30	50-59	-.69	.493
Professional Investment	2.02	.90	20-29	2.40	.95	30-39	-1.61	.112
MANIFESTATIONS OF STRESS								
Emotional Manifestations	2.31	1.03	40-49	3.02	1.35	70-79	-2.33	.023
Fatigue Manifestations	2.20	.86	40-49	2.81	1.07	60-69	-2.46	.017
Cardiovascular Manifestations	1.81	1.06	50-69	2.19	1.07	60-69	-1.42	.160
Gastronomic Manifestations	1.56	.72	50-59	1.53	.80	50-59	.16	.870
Behavioral Manifestations	1.29	.50	60-69	1.33	.49	60-69	-.27	.784
TOTAL STRESS	2.30	.56	30-39	2.66	.67	50-59	-2.28	.026

*$p < .05$

* Because several calculations were executed, the alpha level to achieve this level of significance has been adjusted using the Bonferroni correction (i.e., .05/11 = .004 in order to be declared significant at the .05 level).

Appendix T

Further Examination of the Low Beliefs/High Beliefs Groups

The researcher was interested in determining if the low beliefs/high beliefs groups differed substantially by demographic variables. No significant differences were found in t-test analyses by age, percentage of workload assigned to teaching, school size, class size, or in chi-square analysis by school location. (See next page for a summary of the demographic variables for the low and high beliefs groups.) The difference between the groups by years of teaching experience was not significant overall (mean for low beliefs group = 13.85 years; mean for high beliefs group = 16.91 years), although a disproportionate number of teachers with more than 20 years of teaching experience appeared to be in the high beliefs group (41% compared to 15% in the low beliefs group). Thirty percent of the low beliefs group were elementary teachers and 44% were senior high teachers, while in the high beliefs group, the percentages were 53% and 22% respectively. Although these percentages appeared to be disproportionate, the differences were not found to be significant in chi-square analysis. The composition of the low beliefs group by sex was 52% males and 48% females. In the high beliefs group, the percentages were 38% and 63% respectively. This difference was not found to be significant in chi-square analysis.

Demographic Information For Low and High Beliefs Groups

	LOW BELIEFS GROUP (n = 29)					HIGH BELIEFS GROUP (n = 32)				
	Mean	S. D.	Categories	n	%*	Mean	S. D.	Categories	n	%*
Sex	NA	NA	Male	14	52	NA	NA	Male	12	38
			Female	13	48			Female	20	63
Age	40.22	7.59	20-29 yrs.	3	11	42.32	10.26	20-29 yrs.	6	19
			30-39 yrs.	9	33			30-39 yrs.	4	13
			40-49 yrs.	12	44			40-49 yrs.	12	39
			50 yrs. and over	3	11			50 yrs. and over	9	29
Grade Level Taught	NA	NA	Elementary	8	30	NA	NA	Elementary	17	53
			Junior High	5	19			Junior High	6	19
			Senior High	12	44			Senior High	7	22
			Elem.-Junior High	1	4			Elem.-Junior High	1	3
			Junior-Senior High	1	4			Junior-Senior High	1	3
Years of Teaching Experience	13.85	7.29	0-4 yrs.	4	15	16.91	9.53	0-4 yrs.	5	16
			5-10 yrs.	5	19			5-10 yrs.	4	12
			11-15 yrs.	4	15			11-15 yrs.	5	16
			16-20 yrs.	9	35			16-20 yrs.	5	16
			over 20 yrs.	4	15			over 20 yrs.	13	41
School Employment Status	NA	NA	full time (1.0)	22	82	NA	NA	full time (1.0)	29	91
			.81 to .99	1	4			.81 to .99	2	6
			.51 to .80	0	0			.51 to .80	0	0
			half-time (.5)	2	7			half-time (.5)	1	3
			< half-time	2	7			< half-time	0	0
Workload Assigned to Teaching (%)	84.57	24.95	100%	12	52	86.17	26.04	100%	16	55
			85-99%	5	22			85-99%	7	24
			70-84%	2	9			70-84%	2	7
			50-69%	2	9			50-69%	1	3
			less than 50%	2	9			less than 50%	3	10
Highest Teacher Training Level	NA	NA	4 years university	18	67	NA	NA	4 years university	17	55
			1 yr. grad. train.	2	7			1 yr. grad. train.	5	16
			Master's degree	4	15			Master's degree	5	16
			other	3	11			other	4	13
School Location	NA	NA	Urban	18	67	NA	NA	Urban	24	75
			Rural	9	33			Rural	8	25
Average Class Size	24.52	4.15	< 15 students	1	4	23.34	5.10	< 15 students	2	6
			15-20 students	5	19			15-20 students	6	19
			21-24 students	4	15			21-24 students	10	31
			25-30 students	17	63			25-30 students	13	41
			31-35 students	0	0			31-35 students	1	3
School Size	653.26	397.32	100-299 students	2	7	564.64	477.21	100-299 students	9	32
			300-499 students	11	41			300-499 students	9	32
			500-699 students	3	11			500-699 students	4	14
			700-999 students	5	19			700-999 students	1	4
			1000 and over	6	22			1000 and over	5	18

* Figures rounded to nearest whole percent.

Appendix U
T-Test Comparisons of Teacher Self-Defeating Beliefs By Low and High Stress Groups

BELIEF STATEMENTS - NUMBERS AND NAMES	LOW STRESS GROUP (n = 33) Mean	S.D.	HIGH STRESS GROUP (N = 34) Mean	S.D.	t Value	p
In order to be a good teacher, I believe that I						
Cluster 1 (Upgrading/Curriculum Issues)						
1. must continually change and evolve as a teacher	6.52	.67	6.50	.75	.09	.931
18. must constantly keep abreast of new developments in education	5.73	.91	5.94	.74	-1.06	.295
31. must keep up to date with technology	5.91	.95	5.68	1.04	.96	.341
26. must upgrade my education constantly	4.78	1.48	5.21	1.20	-1.28	.206
38. must be teaching in my field of expertise	4.70	1.51	5.29	1.31	-1.72	.090
5. must constantly reflect on the success of my teaching	6.00	1.20	5.79	1.27	.68	.498
8. must constantly re-work and revise unit and year plans so as never to get in a rut	5.79	1.24	5.74	1.33	.17	.868
27. must be a master at the subject being taught	4.42	1.58	4.76	1.60	-.85	.398
12. must be methodical	4.13	1.74	4.61	1.56	-1.17	.245
24. must be able to justify every activity and assignment as worthwhile, with definite objectives	4.79	1.52	4.65	1.65	.36	.717
16. need to have teaching experience	5.15	1.58	5.76	1.46	-1.65	.104
Analysis by Cluster	**5.27**	**.73**	**5.45**	**.69**	**-1.06**	**.295**
Cluster 2 (Work Requirements)						
7. must be professional in all that I do and say	6.48	.67	6.12	1.01	1.76	.083
43. need to be a superb communicator	5.85	.97	5.97	.94	-.52	.603
25. need plenty of prep time	5.30	1.16	6.24	.99	-3.54	.001 *
23. must be conforming	3.36	1.41	3.41	1.48	-.14	.892
35. must be able to work cooperatively with all people	5.12	1.49	5.44	1.35	-.92	.362
37. must keep in constant touch with parents	4.85	1.52	4.97	1.36	-.35	.731
Analysis by Cluster	**5.16**	**.64**	**5.36**	**.74**	**-1.15**	**.253**

* $p < .05$

		LOW STRESS GROUP (n = 33)		HIGH STRESS GROUP (N = 34)			
		Mean	S.D.	Mean	S.D.	t Value	p
Cluster 3 (Support)							
9.	need a dedicated and experienced staff to draw from	5.39	1.32	5.82	.97	-1.51	.135
10.	need good, strong, effective leadership	6.06	1.09	6.56	.79	-2.14	.036
33.	must enjoy the administration that I work with	4.82	1.36	5.68	1.17	-2.77	.007
19.	must share a common philosophy with that of the school and its administrators	5.16	1.51	5.52	1.12	-1.09	.281
44.	must know I have the backing of central office	5.21	1.36	6.26	1.21	-3.33	.001 *
21.	need greater support from government officials and the media	5.45	1.30	6.62	.74	-4.48	.000 *
29.	have to have the support of the parents	5.45	1.28	6.12	.95	-2.41	.019
13.	must be told occasionally that my work is appreciated and on track	5.42	1.28	6.32	.81	-3.44	.001 *
	Analysis by Cluster	5.38	.72	6.12	.55	-4.69	.000 *
Cluster 4 (Working With Students)							
2.	should be involved in extra-curricular activities	5.64	.86	4.85	1.52	2.61	.012
4.	must know students' family backgrounds	4.85	1.42	5.41	1.16	-1.78	.080
34.	should act as a loving parent	4.55	1.39	4.71	1.55	-.45	.657
17.	should meet the emotional needs of my students	5.09	1.42	5.12	1.23	-.08	.935
32.	must always be a willing listener to any and all students	5.76	1.03	6.15	.78	-1.74	.088
42.	am always available to help students in or out of class	4.78	1.66	5.15	1.62	-.91	.368
22.	need to focus on each student individually in order to best meet his/her needs	5.70	1.07	5.82	1.17	-.46	.646
39.	must be my students' greatest cheering section	4.88	1.60	5.53	1.05	-1.96	.055
6.	must be able to motivate students to learn enthusiastically	6.24	.94	6.18	.90	.29	.770
15.	need a high tolerance for problems caused by disruptive students	4.91	1.65	5.44	1.56	-1.35	.182
14.	must be able to teach the material in an exciting manner	5.76	.90	5.74	.90	.10	.920
	Analysis by Cluster	5.29	.65	5.46	.70	-1.05	.296

* $p < .05$

		LOW STRESS GROUP (n = 33)		HIGH STRESS GROUP (N = 34)			
		Mean	S.D.	Mean	S.D.	t Value	p
Cluster 5 (Time/Energy Commitment)							
3.	have to love my job	6.42	.66	5.88	1.12	2.42	.019
28.	must view teaching as a mission or a calling	4.30	1.78	4.42	1.48	-.30	.764
11.	must devote my whole life to teaching, no family, no possessions	1.21	.60	1.76	1.62	-1.87	.069
20.	must work to my fullest potential	6.12	.86	6.06	1.10	.26	.796
30.	must be willing to sacrifice personal time	4.79	1.54	5.59	1.08	-2.46	.017
41.	need to give extra of my energy	4.48	1.59	5.32	1.41	-2.55	.028
45.	must be willing to give of my best efforts in all areas	5.76	1.17	6.21	.77	-1.84	.071
	Analysis by Cluster	4.73	.70	5.04	.76	-1.70	.093
Cluster 6 (Miscellaneous)							
36.	must be younger than I am	2.03	1.49	3.09	1.99	-2.47	.016
40.	must be born again by God's grace	2.33	1.96	2.59	1.88	-.55	.587
	Analysis by Cluster	2.18	1.45	2.84	1.46	-1.85	.069

$^{*}p < .05$

* Because many calculations were executed, the alpha level to achieve this level of significance has been adjusted using the Bonferroni correction (i.e., .05/45 = .001 in order to be declared significant at the .05 level for individual beliefs; .05/6 = .008 in order to be declared significant at the .05 level for cluster analysis).

Appendix V

Further Examination of the Low Stress/High Stress Groups

In comparing the low and high stress groups by demographic variables, no significant differences were found in t-test or chi-square analyses. The next page contains a summary of demographic variables for the low and high stress groups.

There was a wide difference in stress levels between the low and high stress groups. In comparing the group scores to the norms provided by Fimian (1988) for regular classroom teachers (page 194), the Total Stress score for the low stress group was categorized as "significantly weak" (in the 0-9th decile range) while the group score for the high stress group was in the 80-89th decile range. In t-test analyses, significant differences were found between high and low stress group scores on all the factors of the Teacher Stress Inventory (TSI) as well as on the overall TSI stress score.

Demographic Information For Low and High Stress Groups

	LOW STRESS GROUP (n = 33)					HIGH STRESS GROUP (n = 34)				
	Mean	S. D.	Categories	n	%*	Mean	S. D.	Categories	n	%*
Sex	NA	NA	Male	13	41	NA	NA	Male	11	34
			Female	19	59			Female	21	66
Age	41.78	7.93	20-29 yrs.	2	6	40.69	8.98	20-29 yrs.	5	16
			30-39 yrs.	11	34			30-39 yrs.	8	25
			40-49 yrs.	13	41			40-49 yrs.	13	41
			50 yrs. and over	6	19			50 yrs. and over	6	19
Grade Level Taught	NA	NA	Elementary	12	38	NA	NA	Elementary	11	34
			Junior High	5	16			Junior High	8	25
			Senior High	15	47			Senior High	12	38
			Elem.-Junior High	0	0			Elem.-Junior High	1	3
Years of Teaching Experience	14.91	8.57	0-4 yrs.	5	16	15.84	8.90	0-4 yrs.	4	13
			5-10 yrs.	5	16			5-10 yrs.	5	16
			11-15 yrs.	6	19			11-15 yrs.	7	22
			16-20 yrs.	8	25			16-20 yrs.	6	19
			over 20 yrs.	8	25			over 20 yrs.	10	31
School Employment Status	NA	NA	full time (1.0)	29	91	NA	NA	full time (1.0)	26	81
			.81 to .99	3	9			.81 to .99	3	9
			.51 to .80	0	0			.51 to .80	2	6
			half-time (.5)	0	0			half-time (.5)	1	3
Workload Assigned to Teaching (%)	81.50	26.18	100%	13	46	89.16	22.78	100%	19	61
			85-99%	5	18			85-99%	8	26
			70-84%	5	18			70-84%	1	3
			50-69%	1	4			50-69%	1	3
			less than 50%	4	14			less than 50%	2	6
Highest Teacher Training Level	NA	NA	4 years university	16	50	NA	NA	4 years university	19	61
			1 yr. grad. train.	6	19			1 yr. grad. train.	6	19
			Master's degree	3	9			Master's degree	2	7
			other	7	22			other	4	13
School Location	NA	NA	Urban	20	65	NA	NA	Urban	25	81
			Rural	11	36			Rural	6	19
Average Class Size	23.06	5.65	< 15 students	3	9	24.13	6.28	< 15 students	2	7
			15-20 students	6	19			15-20 students	4	13
			21-24 students	5	16			21-24 students	2	7
			25-30 students	17	53			25-30 students	19	63
			31-35 students	1	3			31-35 students	3	10
School Size	633.00	378.54	< 100 students	0	0	693.16	517.92	< 100 students	1	3
			100-299 students	7	25			100-299 students	6	19
			300-499 students	7	25			300-499 students	10	32
			500-699 students	2	7			500-699 students	3	10
			700-999 students	6	21			700-999 students	0	0
			1000 and over	6	22			1000 and over	11	35

* Figures rounded to nearest whole percent.

Teacher Stress Inventory (TSI) Results For Low and High Stress Groups

TEACHER STRESS INVENTORY FACTORS	LOW STRESS GROUP (n=33) Mean	S.D.	TSI Decile Range	HIGH STRESS GROUP (n=34) Mean	S.D.	TSI Decile Range	t Value	p
SOURCES OF STRESS								
Time Management	2.27	.62	10-19	4.04	.50	80-89	-12.93	.000 *
Work-Related Stressors	1.90	.68	0-9	4.39	.39	90-100	-18.36	.000 *
Professional Distress	1.52	.55	0-9	3.52	.76	60-69	-12.42	.000 *
Discipline and Motivation	1.81	.60	10-19	3.98	.70	80-89	-13.56	.000 *
Professional Investment	1.22	.40	0-9	3.13	.72	50-59	-13.54	.000 *
MANIFESTATIONS OF STRESS								
Emotional Manifestations	1.40	.41	20-29	4.02	.73	90-100	-18.33	.000 *
Fatigue Manifestations	1.39	.39	10-19	3.71	.68	80-89	-17.31	.000 *
Cardiovascular Manifestations	1.12	.40	0-39	3.18	.92	80-89	-11.94	.000 *
Gastronomic Manifestations	1.07	.18	40-49	2.38	.94	70-79	-7.99	.000 *
Behavioral Manifestations	1.09	.23	50-59	1.96	.85	80-89	-5.75	.000 *
TOTAL STRESS	1.48	.16	0-9	3.43	.19	80-89	-44.75	.000 *

* $p < .05$

* Because several calculations were executed, the alpha level to achieve this level of significance has been adjusted using the Bonferroni correction (i.e., .05/11 = .004 in order to be declared significant at the .05 level).

Appendix W

Further Examination of the Sample Population

Data collected on the sample population of teachers (n=297) was examined further to investigate the relationship between numerous demographic variables and teacher stress. Results reported in the teacher occupational stress literature in this regard have been conflicting. The researcher was interested in examining the demographic variables that have been implicated in teacher stress.

Group results on the Teacher Stress Inventory for the sample population were tabulated and compared to the norms provided by Fimian (1988). Page 198 contains a comparison of the sample population results to the norms provided for regular classroom teachers. Comparisons to Fimian's norms were also made by sex (page 199) and grade level taught (page 200). In the comparisons made, all Total Stress and factor scores for the sample population fell within one standard deviation of the mean for the norm population. Hence, all group scores were in the moderate range and did not fall into either the "significantly strong" or the "significantly weak" category. Scores ranged from the 20-29th decile to the 60-69th decile. Higher intensity ratings were generally given to items on the stress manifestation factors than the stress source factors.

T tests were utilized in further stress comparisons of the sample population by sex, percentage of workload assigned to teaching, class size, age, teaching experience, grade level taught, and locale (urban/rural). As it was necessary to execute multiple calculations in examining the Teacher Stress Inventory factors for each comparison group, the alpha level to achieve significance was adjusted using the Bonferroni correction (Morin,

Stone, Trinkle, Mercer, & Remsberg, 1993; Rosenthal & Rubin, 1984). An alpha level of .05 was used.

In analysis by sex (page 199), no significant differences were found in overall stress levels (Total Stress). Females rated items on two TSI stress manifestation factors with significantly greater intensity than did males: Emotional Manifestations, $t(267.16) = -4.04$, Fatigue Manifestations, $t(269.68) = -2.88$. When the obtained scores for males and females were compared to the norms provided by Fimian (1988), however, they were found to fall within similar decile ranges. These findings serve to illustrate one of the problems inherent in using non-standardized measures of teacher stress. While significant differences between groups may be found, these differences may be negligible when norms for the groups being compared are consulted. Researchers such as Pithers and Fogarty (1995) have drawn attention to the importance of using standardized teacher stress measures in order to facilitate accurate interpretation of findings.

In analysis by percentage of workload assigned to teaching (page 201), no significant differences were found in overall stress levels (Total Stress). Teachers who had 100% of their workload assigned to teaching rated items on two TSI factors with significantly more intensity than did teachers who reported having less than 50% of their workload assigned to teaching: Discipline and Motivation, $t(47.69) = -2.99$, (e.g., "discipline problems in my classroom," "having to monitor pupil behavior," "teaching students who are poorly motivated"), Professional Investment, $t(58.27) = -3.20$, (e.g., "personal opinions not sufficiently aired," "lack control over decisions," "lack opportunities for improvement").

In comparison by class size (page 201), no significant between-groups difference was found on overall stress scores (Total Stress). Teachers with

a class size of greater than 27 students gave significantly higher intensity ratings to the TSI factor Work-Related Stressors than did teachers with less than 21 students, $t(99.59) = -2.97$. Items on this factor include "too much work to do," "little time to prepare," "school day pace is too fast," "caseload/class is too big."

No significant differences were found between groups in t-test analyses by grade level, age, teaching experience, or locale (urban/rural). Comparisons were unable to be made by employment status (full-time versus half-time or less) due to the small number of participants in the latter category ($n = 13$).

In this study, the results of comparisons of overall stress scores by demographic variables are consistent with reports in the literature of little difference in teacher stress levels on such variables as age, sex, and years of teaching experience (Burke & Greenglass, 1989a, 1994; Manthei & Solman, 1988; Morgan & Krehbiel, 1985; Schonfeld, 1990b, Sigler & Wilson, 1988). In contrast, while a finding frequently cited in the literature is that of higher stress in female teachers due to student misbehavior/non-compliance (Borg, Riding, & Falzon, 1991; Dewe, 1986; Laughlin, 1984; O'Connor & Clarke, 1990; Payne & Furnham, 1987; Tuettemann & Punch, 1992b), no elevations in this regard were found using the Teacher Stress Inventory norms, nor were significant differences found in t-test analysis of the intensity ratings given by males and females to the Discipline and Motivation factor of the TSI.

Teacher Stress Inventory (TSI) Results For Population Sample as a Whole (n = 297)

TEACHER STRESS INVENTORY FACTORS	Mean	S.D.	n	TSI Decile Range
SOURCES OF STRESS				
Time Management	3.39	.77	297	50-59
Work-Related Stressors	3.43	.98	297	50-59
Professional Distress	2.67	.97	296	30-39
Discipline and Motivation	2.97	1.01	297	40-49
Professional Investment	2.06	.90	297	20-29
MANIFESTATIONS OF STRESS				
Emotional Manifestations	2.67	1.12	297	60-69
Fatigue Manifestations	2.52	.98	297	50-59
Cardiovascular Manifestations	1.92	1.03	297	50-69
Gastronomic Manifestations	1.61	.88	297	50-59
Behavioral Manifestations	1.34	.54	297	60-69
TOTAL STRESS	2.46	.60	297	40-49

Teacher Stress Inventory (TSI) Results By Sex

TEACHER STRESS INVENTORY FACTORS	MALES (n=119) Mean	S.D.	TSI Decile Range	FEMALES (n=167) Mean	S.D.	TSI Decile Range	t Value	p
SOURCES OF STRESS								
Time Management	3.26	.78	60-69	3.46	.76	50-59	-2.19	.029
Work-Related Stressors	3.41	.97	60-69	3.44	.99	50-59	-.27	.785
Professional Distress	2.79	.94	30-39	2.59	.99	20-29	1.79	.075
Discipline and Motivation	3.02	.96	50-59	2.91	1.04	40-49	.89	.375
Professional Investment	2.16	.92	20-29	2.01	.90	30-39	1.40	.162
MANIFESTATIONS OF STRESS								
Emotional Manifestations	2.36	1.04	40-49	2.88	1.14	50-59	-4.04	.000 *
Fatigue Manifestations	2.33	.90	50-59	2.65	1.00	50-59	-2.88	.004 *
Cardiovascular Manifestations	1.83	1.04	50-69	1.96	1.00	50-59	-1.06	.292
Gastronomic Manifestations	1.70	.96	50-59	1.53	.79	50-59	1.50	.134
Behavioral Manifestations	1.32	.50	50-69	1.35	.55	60-69	-.63	.528
TOTAL STRESS	2.42	.58	40-49	2.48	.61	40-49	-.88	.378

* $p < .05$

* Because several calculations were executed, the alpha level to achieve this level of significance has been adjusted using the Bonferroni correction (i.e., .05/11 = .004 in order to be declared significant at the .05 level).

Teacher Stress Inventory (TSI) Results By Grade Level Taught

TEACHER STRESS INVENTORY FACTORS	ELEMENTARY (n=100) Mean	S.D.	TSI Decile Range	JUNIOR HIGH (n=59) Mean	S.D.	TSI Decile Range	SENIOR HIGH (n=113) Mean	S.D.	TSI Decile Range
SOURCES OF STRESS									
Time Management	3.48	.70	50-59	3.48	.74	40-49	3.22	.84	40-49
Work-Related Stressors	3.48	.98	50-59	3.39	.96	50-59	3.39	1.03	50-59
Professional Distress	2.65	.97	30-39	2.66	1.02	30-39	2.67	.94	30-39
Discipline and Motivation	2.88	1.05	50-59	3.13	1.00	40-49	2.91	.99	50-59
Professional Investment	2.01	.86	30-39	2.16	1.03	30-39	2.05	.89	20-29
MANIFESTATIONS OF STRESS									
Emotional Manifestations	2.78	1.22	50-59	2.84	.98	50-59	2.45	1.10	50-59
Fatigue Manifestations	2.58	1.00	50-59	2.68	.96	50-59	2.39	.97	40-49
Cardiovascular Manifestations	2.03	1.08	60-69	1.89	.97	50-59	1.74	.94	50-59
Gastronomic Manifestations	1.62	.87	50-59	1.62	.90	60-69	1.57	.85	50-59
Behavioral Manifestations	1.29	.47	60-69	1.38	.55	60-69	1.35	.56	50-69
TOTAL STRESS	2.48	.60	40-49	2.52	.60	30-39	2.37	.61	30-39

Teacher Stress Inventory (TSI) Results By Percentage of Workload Assigned to Teaching/Class Size

By Percentage of Workload Assigned to Teaching	< 50% (n=30)		100% (n= 144)			
TEACHER STRESS INVENTORY FACTORS	Mean	S. D.	Mean	S. D.	t Value	p
SOURCES OF STRESS						
Time Management	3.42	.65	3.33	.76	.71	.478
Work-Related Stressors	3.60	.86	3.39	.96	1.21	.232
Professional Distress	2.47	.91	2.74	.98	-1.47	.148
Discipline and Motivation	2.54	.83	3.06	.99	-2.99	.004 *
Professional Investment	1.68	.66	2.15	.96	-3.20	.002 *
MANIFESTATIONS OF STRESS						
Emotional Manifestations	2.36	1.13	2.66	1.13	-1.33	.191
Fatigue Manifestations	2.39	1.02	2.51	1.00	-.63	.534
Cardiovascular Manifestations	1.77	1.08	1.87	.95	-.50	.622
Gastronomic Manifestations	1.71	.80	1.59	.93	.74	.465
Behavioral Manifestations	1.28	.40	1.37	.58	-1.03	.306
TOTAL STRESS	2.32	.52	2.47	.60	-1.35	.184

By Class Size	< 21 STUDENTS (n=52)		> 27 STUDENTS (n= 80)			
TEACHER STRESS INVENTORY FACTORS	Mean	S. D.	Mean	S. D.	t Value	p
SOURCES OF STRESS						
Time Management	3.36	.84	3.31	.75	.38	.707
Work-Related Stressors	3.03	1.03	3.56	.92	-2.97	.004 *
Professional Distress	2.66	1.03	2.63	.99	.17	.869
Discipline and Motivation	2.79	1.05	2.95	1.03	-.87	.386
Professional Investment	2.06	1.00	2.05	.82	.08	.933
MANIFESTATIONS OF STRESS						
Emotional Manifestations	2.79	1.18	2.51	1.02	1.44	.152
Fatigue Manifestations	2.61	.97	2.48	.95	.73	.466
Cardiovascular Manifestations	1.99	1.10	1.74	.98	1.34	.183
Gastronomic Manifestations	1.69	1.00	1.56	.85	.76	.450
Behavioral Manifestations	1.44	.54	1.29	.42	1.75	.084
TOTAL STRESS	2.44	.65	2.41	.56	.33	.745

* $p < .05$

* Because several calculations were executed, the alpha level to achieve this level of significance has been adjusted using the Bonferroni correction (i.e., .05/11 = .004 in order to be declared significant at the .05 level).