TEACHER'S SELF-TALK:
AN EXAMINATION OF TEACHER'S USE OF SELF-TALK AND ITS IMPACT ON
ANXIETY AND JOB SATISFACTION

by

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Abstract

A cognitive-behavioral intervention, specifically focusing on self-talk, was designed to help teachers cope with anxiety. This study examined the nature of teacher self-talk and the efficacy of an intervention program, based on stress inoculation training, in the treatment of teacher stress and job satisfaction. The participants (17 females and 2 males) were full-time elementary and junior high classroom teachers assigned to a treatment group or a waitlist control group. The intervention program consisted of six 90-minute sessions conducted over six weeks. The State-Trait Anxiety Inventory (Spielberger, Gorsuch, Lushene, Bagg, & Jacobs, 1983), the Automatic Thoughts Questionnaire - Revised (Kendall, Howard, & Hays, 1989), and the Job Satisfaction sub-scale of the Teacher Stress Inventory-Revised (Schutz & Long, 1988) were administered at pre, post, and one month follow-up. It was predicted that from pre to post participants in the treatment group would show greater change in the measures than the participants in the waitlist control group. Using the States of Mind (SOM) model (Schwartz & Garamoni, 1986) it was further predicted that all participants would report a greater frequency of negative self-talk than positive self-talk at pretest. The results indicated that participants used more positive self-talk than negative self-talk at pretest, and that participants reported self-talk in the SOM range of positive monologue. Although dependent variables changed in the expected directions, repeated measures analysis of variance did not reveal significant interactions for the dependent variables. However, significant time effects emerged for positive and negative self-talk, for anxiety, but not for job satisfaction. Clinically significant change in anxiety was reported for 13 of 17 participants. Anxiety was significantly correlated with
positive and negative self-talk; whereas, job satisfaction significantly correlated with negative self-talk. Although the increase in the ratio of positive self-talk and the reduction in anxiety may be due to treatment effects, the results failed to reach significance. Implications for theory and practice are discussed.
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Dedication

To my parents, Bill and Mary, the roots of my love of learning, concern for others, and dreaming dreams. To Regan, Stephanie, and Danielle whose unconditional love and enthusiasm for life bring me great joy, and the reminder that dreams are possible. To Doreen, whose love, support, and sacrifices have enabled me to pursue my dreams.
Chapter One

Introduction

Cognitive psychology has claimed for the last 20 years that how people think influences their feelings and their behavior. It is believed that the overt and covert messages people give themselves influence their feelings, emotions, and behavior (Beck, 1976; Ellis & Harper, 1975; Meichenbaum, 1977). Popular self-help literature, with its proliferation of “positive thinking” programs, adheres to such beliefs. Parenting programs encourage parents to recognize the good behaviors of their children. Teacher education programs emphasize the importance of being positive with students and suggest that teachers’ thoughts affect their feelings and behaviors (Forman, 1982; Manning & Payne, 1992; Payne & Manning, 1990; Sharp & Forman, 1985).

A countless barrage of interpersonal interactions, tasks, and decisions impact teachers in a normal day: lesson planning, correcting student work, report card interviews, ongoing decisions while engaged in instruction, curricular choices, interpersonal situations, discipline, extra-curricular activities, and so on. Teachers have been encouraged to be positive; undergraduate courses extol the merits of positive reinforcement. However, little is known about the nature of teachers’ thoughts and the impact they have on teacher outcomes. One study reported that when preservice teachers were trained to monitor their own thinking processes, their performance in classroom problem solving and lesson planning improved (Neely, 1986). It would be beneficial to explore the nature of teacher self-directed thought (self-talk) in response to day-to-day work demands, and to determine how self-talk affects outcomes such as stress and job satisfaction.
As an administrator and as a teacher several observations led me to believe that there is a connection between how teachers talk to themselves (self-talk), and the levels of stress and job satisfaction that they experience. Excellent, dedicated teachers were overly self-critical of their performance. They often verbalized to themselves or to other teachers that they could have done something better or should have handled a situation differently. Seldom did I hear positive verbalizations. Many of these same teachers became very fatigued and emotionally drained by the last 2 months of the school year. Experiences such as these are the catalysts of this study.

Purpose of the Study

The purpose of the study is to investigate the nature of teacher self-talk and to determine whether an intervention program to improve the ratio of positive self-talk to negative self-talk result in an improvement in teacher stress or job satisfaction.

Background to the Study

As people experience reality they try to understand it or to interpret it in some way, and give it meaning. People do this through personal constructs, which Kelly (as cited in Hergenhahn, 1990) explained as a system of ideas and values that a person uses to interpret personal experiences. A construct is like a scaffolding or framework that an individual uses to provide structure to experiences and to make sense of them. Some people may construe their experiences favorably whereas others may construe the same experiences unfavorably (i.e., the glass can be half full or half empty).

Teachers face an enormous number of demands in a day that have an impact on them. Teachers may have to engage in 1,000 face to face interactions in a day and may make decisions approximately every 2 minutes (Manning & Payne, 1993). As these situations occur they try to make sense of them according to their personal
constructs. For example, teachers interpret many situations: evaluating the way they taught a concept, whether or not to contact a parent, how to explain something differently to a particular student, what consequence to administer for student misbehavior, and so on. As Kelly suggests, many of these experiences can be interpreted differently -- as positive or negative, as important or not important.

Teachers need to be aware of their personal constructs in order to understand how and why they interpret experiences the way they do. For example, one teacher may have a classroom that is full of student interaction and activity about a story just read, while another teacher may see that same classroom atmosphere as undisciplined and less productive than a quiet, more structured setting. Teachers use their thought processes to make these kinds of judgments and interpretations.

It is generally accepted that some thinking, if not all thinking, is done in words and images (Manning & Payne, 1993). People internalize what they learn and process it in terms of their already established construct system. People process their experiences using words or language, and engage in an inner dialogue (i.e., they talk to themselves) referred to as self-talk.

When the concepts of personal constructs and self-talk are applied to teachers, it suggests that teachers think and process their experiences with words and images (i.e., they have an internal conversation or dialogue with themselves as a natural part of their thinking process). While analyzing, predicting, interpreting, deciding, and evaluating, teachers speak to themselves. Individuals may be oblivious of this inner dialogue; thus, one of the goals of a cognitive approach is to help them develop an awareness of their own inner speech.
Different terms have been used to refer to this thinking process: inner dialogue, inner speech, self-verbalization, self-statements, and self-talk. Self-talk can be defined as "language spoken as a communication to self, with no intention to communicate with someone else or with something else" (Manning & Payne, 1992, p. 90).

If how people think affects how they feel and act and if thinking involves an inner conversation with themselves, then what teachers say to themselves can affect how they feel and how they behave (Manning & Payne, 1993). Thoughts such as "the students are really excited about this," or "John just doesn't care what I say," or "they hate art" can influence a teacher's thinking, expectations, and behavior.

A considerable body of knowledge concerning teacher outcomes, such as stress, and teaching skills, such as direct instruction and cooperative learning, have grown in the last several decades. The literature is clear that teachers experience considerable stress (Kyriacou, 1987; Kyriacou & Sutcliffe, 1978; Litt & Turk, 1985). It is commonly accepted that factors such as lack of time, lack of resources, large class size, discipline problems, and inadequate administrative support have been identified as sources of teacher stress (Galloway, Panckhurst, Boswell, Boswell, & Green, 1984).

Research has viewed stress from two different perspectives. It is conceptualized either as a condition of the environment (i.e., placing external pressure on the individual), or as an internal response of the individual to a threat (Kyriacou & Sutcliffe, 1978; Lazarus, 1966). Stress is viewed as a process or transaction (Meichenbaum, 1985) that involves a stimulus, intervening variables, and a response by the individual.

Lazarus (1966, 1991) reports that an individual's appraisal of the stressful situation (i.e., the glass is half full or half empty) plays a fundamental role in the
dynamic between the individual and the environment. Moreover, coping involves the thinking and behavioral efforts an individual employs to deal with the stressful event.

Kyriacou and Sutcliffe (1978), who have done considerable research with teacher stress, have proposed a model for teacher stress. They identify three key components to the teacher stress process: appraisal, individual characteristics, and coping mechanisms. The model illustrates the interaction of the different components as part of the stress process.

Meichenbaum (1977, 1985) has done extensive research in stress and coping. His Stress Inoculation Training (SIT) has been reported to be effective in helping teachers cope with stress (Forman, 1981, 1982). Rational Emotive Therapy (RET) has also been reported to be effective in reducing teacher anxiety (Forman, 1990).

Research indicates that not only do teachers experience stress but that many teachers are not satisfied with their jobs. In one study over 25% of teachers were less than satisfied with their jobs, and over 20% of teachers reported that they found their job very stressful (Kyriacou & Sutcliffe, 1978). Furthermore, there is a negative correlation between stress and job satisfaction (Galloway et al., 1984; Kyriacou & Sutcliffe, 1978).

Research has indicated factors such as salary, opportunities for promotion, and role expectations as sources of teacher dissatisfaction (Kyriacou & Sutcliffe, 1979; Litt & Turk, 1985). Whereas, other studies have reported relationships with students, and student behavior as sources of teacher satisfaction (Galloway et al., 1984). Teaching itself does not appear to be a source of dissatisfaction.

Whether teachers appraise events as stressful or not, and whether or not those events contribute to their satisfaction or dissatisfaction with their careers exemplifies the
role that self-talk plays in the appraisal process. Cognitive psychology suggests that by changing the cognitive messages teachers give themselves about stress events, teachers can change how they appraise and cope with stress and how they feel about teaching.

In summary, as people reflect on their experiences and ascribe meaning to them they engage in a mental dialogue or self-talk. Cognitive psychology has shown that people's thoughts influence their feelings and behavior. High frequencies of negative self-talk have been reported in socially anxious adults (Cacioppo, Glass, & Merluzzi, 1979; Glass & Furlong, 1990; Heimberg, Bruch, Hope, & Dombeck, 1990) and depressed patients (Kendall, Howard, & Hays, 1989). It was further reported that changing negative self-talk has positive results with agoraphobics (Schwartz & Michelson, 1987).

Many studies have examined the effects of teacher outcomes such as stress; however, little is known about the self-talk of teachers. Even less is known about the effectiveness of teacher self-talk interventions on stress and job satisfaction. Teachers, by the very nature of their profession, are bombarded with interpersonal interactions, educational decisions, and expectations that they interpret and give meaning to using an inner dialogue. Cognitive psychology suggests that teacher self-talk will affect how a teacher feels and behaves. The implications are substantial for both teachers and for students. Teachers must have an awareness of themselves and how their inner speech affects their work and their students.
Chapter Two

Literature Review

The study examines the nature of teacher self-talk and the impact it has on two teacher outcomes, stress and job satisfaction. A review of the literature provides a conceptual framework for the study by addressing the major components of this problem and their relationships, and reveals potential areas for research. The review examines self-talk theory and research: the nature of self-talk, self-talk classifications, altering self-talk, including relevant research of preservice teachers, inservice teachers, and counsellors. This is followed by an examination of teacher stress, job satisfaction, purpose of the study, and hypotheses.

Nature of Self-talk

Cognitive psychology has reported a strong connection between what people say to themselves (self-talk), and their behavior and feelings (Beck, 1976; Ellis & Grieger, 1977; Meichenbaum, 1977; Payne & Manning, 1990, 1991). Cognitive psychologists observed that people change behavior not so much from external factors as from internal ones - their internal thinking or self-talk. Ellis and Harper (1975) proposed that people should scrutinize their thinking to discover feelings and behaviors based on faulty beliefs and to replace them with accurate beliefs. Rational Emotive Therapy or RET (Ellis & Harper, 1975) is based on attacking irrational thinking and replacing it with rational thinking. Beck (1976), who has worked extensively with depressed patients, determined that many of them had self-defeating thoughts and attitudes. He found it effective to have patients replace their dysfunctional attitudes with functional ones through careful self-regulation and self-instruction. Meichenbaum
(1977, 1985) reported that cognitive-behavior modification methods such as stress inoculation training and cognitive restructuring have proven effective with test anxiety, speech anxiety, and phobias. He posits that clients need to examine their internal dialogue and their coping strategies in order to replace negative self-statements with positive ones along with more appropriate coping skills.

Research suggests that the relationship between negative and positive self-talk can be asymmetrical (Ingram & Wisnicki, 1988; Schwartz, 1986). First, negative thoughts can have a greater influence than positive ones. This suggests that an individual may impart greater importance to negative thoughts than to positive thoughts (Kendall & Hollon, 1981). Second, a decrease in negative self-talk does not correlate to an increase in positive self-talk (Schwartz, 1986). There is not a direct relationship between the two. Third, Schwartz noted that the frequencies of positive and negative self-talk can be different, and a positive to negative self-talk ratio can be imbalanced. For example, one group could have a 1 to 1 ratio of positive to negative self-talk and another group could have 1.7 to 1 ratio. The implications of these findings are substantial considering the numerous occasions teachers face to engage in positive or negative self-talk.

Cacioppo et al. (1979) found that the more negative the thoughts male subjects had in anticipation of meeting an unfamiliar woman the lower their self-evaluation became; however, positive and neutral thoughts were unrelated to self-evaluation. The role of negative thoughts was highlighted by Kendall and Hollon (1981). In their research it was reported that negative thoughts were more strongly connected to psychopathology than positive ones. The presence of positive thoughts did not help individuals cope with serious medical procedures such as cardiac catheterization;
however, the absence of negative cognitions correlated to positive adjustment. Kendall and Hollon attributed these results to the “power of non-negative thinking” i.e., the absence of negative thoughts has a greater impact on outcomes than the presence of positive thoughts.

Manning and Payne (1988) found that preservice teachers generated more negative self-talk (51%) than positive (29%) or neutral (20%). The purpose of the study was to describe the internal self-talk of preservice teachers in order to better understand how they problem solve and reflect. The study consisted of 64 white, female student teachers all of whom made up the entire class in an early childhood education quarter semester at a university in southeastern U.S. Participants were instructed to keep self-talk logs for two 24-hour periods in any of four consecutive days. They were asked to record situations and what they said to themselves either silently or aloud.

The self-talk was coded into three categories each having several subcategories. The first classification for the self-talk was positive, negative, or neutral. Self-talk that conveyed optimism, self-confidence, or pleasure was considered positive self-talk. Examples of positive self-talk are: "I'm going to do well on this"; "Don't worry, everything will be all right." If the self-talk conveyed the opposite, i.e., pessimism, lack of self-confidence, or displeasure it was coded as negative. “Nothing ever works right for me - nothing!,” “What a hassle; I hate this!” are examples of negative self-talk. Neutral self-talk consisted of those utterances that were neither positive or negative, for example, “I should eat lunch before I correct those papers.” The second classification determined if the self-talk was in the adult, parent, or child state. A third classification differentiated the self-talk according to whether it demonstrated internal or external
locus of control. In the present study, the first category of self-talk; namely positive, negative, or neutral is examined.

A graduate student, trained by the authors to rate the self-talk logs, achieved interrater reliabilities between .92 and .96. T-tests were used to compare the means for each variable. Percentages were calculated by dividing a variable mean by the total self-talk (e.g., the negative self-talk mean was 51% of the total self-talk). Results reported that the participants used more negative self-talk than positive. The self-talk means were the following: positive $M = 29\%$, neutral $M = 20\%$, and negative $M = 51\%$. All $t$-test scores of pairwise comparisons were significant.

There were several problems with the study. First, the meaning of self-talk was not explained to the participants and they were not given any practice with the concept to be sure that they understood it correctly before attempting to record it. The fact that all the participants were white females in early childhood education makes the findings difficult to generalize. Furthermore, because the study used student teachers as subjects, it is uncertain whether the same results would be achieved with accredited teachers. The design does not indicate whether the participants' self-talk changed or what impact their self-talk had on teacher outcomes. Further study is required to determine the answers to these questions.

The impact of negative self-talk raises serious concerns for counselling approaches that attempt to develop only positive thinking with clients. The addition of positive self-talk does not necessarily result in the reduction of negative self-talk (Schwartz, 1986). Studies with preservice teachers (Manning & Payne, 1988; Payne & Manning, 1991) report a high rate of negative self-talk. This accentuates the
importance of teachers reducing their negative self-talk as well as increasing their positive self-talk.

In the last decade the focus on the impact of negative cognitions has shifted. Ingram and Wisnicki (1988) reported that positive thoughts make an important contribution to coping with anxiety. They suggest that the role of positive and negative thoughts may be quite different in various stressful situations. A different model, based on the importance of both negative and positive thoughts, has been proposed by Schwartz and Garamoni (1989). They suggest that the balance of negative and positive cognitions is indicative of psychological health. A discussion of the ratio of cognitions is discussed later in this chapter.

Classifications of Self-talk

The ways in which different studies identify types of self-talk is of importance. The most common classification identifies self-talk as positive, negative, or neutral (Cacioppo et al., 1979; Kendall & Hollon, 1981; Manning & Payne, 1988) and simply tallies the frequency of each type. Cacioppo et al. (1979) had participants rate their self-talk as positive if it was favorable toward themselves, negative if it was unfavorable toward themselves, and neutral if it was neither favorable nor unfavorable. Payne and Manning (1991) explained self-talk similarly, for example positive self-talk expressed self-confidence, optimism, and pleasure.

The classification of thoughts in such a manner suggests that self-talk can be examined in two ways: from a functional perspective or from an affective perspective (Schwartz, 1986). The functional classification is goal oriented, i.e., it identifies self-talk as achieving or not achieving some goal or desired outcome. For example, "I'm glad I made it to class in time" would be a positive thought based on functionality. The
affective classification identifies self-talk related to valence (e.g., good/bad, pleasant/unpleasant). "That lesson was great" would be an example of a positive thought based on affect.

Another classification of self-talk, the States of Mind Model, has been proposed by Schwartz and Garamoni (1986). They suggest that what is essential to understanding the role of self-talk is neither the frequency of positive or negative self-talk nor the elimination of negative self-talk, but the proportion of positive self-statements compared to the total of positive and negative. Unlike the previous classification, Schwartz and Garamoni do not use neutral self-talk in their model. Neutral self-talk is not considered a significant factor in the self-monitoring process (Schwartz & Michelson, 1987) so it is not added to the self-talk total. This does not mean that neutral self-talk is insignificant, but in terms of the balancing process it is not a factor. It is as if neutral self-talk is cognitive chatter that individuals ignore in the process of balancing the positive and negative. The authors list five categories of self-talk each based on a set point ratio of positive cognitions to total cognitions: positive monologue, negative monologue, positive dialogue, negative dialogue, and internal dialogue of conflict.

Two of the classifications are termed monologue because the ratio of either positive or negative to the total is so imbalanced in one direction that the possibility of an internal dialectic is relatively non-existent. Positive monologue is a high ratio of positive thoughts to the total thoughts resulting in a complete lack of discernment between positive and negative experiences. The opposite classification, negative monologue, has a high ratio of negative self-statements to the total thoughts. This person can exhibit a serious psychopathology such as severe depression.
The remaining three classifications are labeled as dialogic. Schwartz and Garamoni (1986) used the term dialogue because the frequency of positive and negative thoughts is close enough to suggest that they are mentally argued and counter-argued back and forth as a dialectic (e.g., “If I go talk to him he will see that I can stand up for myself; however, he may think I’m a whiner.”).

The third classification of self-talk, positive dialogue, is characterized by a higher ratio of positive self-statements to negative (approximately 1.7 to 1). A person in this range is reported to be in good mental health displaying enough positive thoughts to be assertive and yet enough negative thoughts to be realistic and sensitive to others. Negative dialogue, the fourth classification, has more negative self-statements than positive (below a 1 to 1 ratio). People in this range are described as moderately depressed or anxious. Schwartz and Garamoni suggest that individuals in this classification of SOM may benefit from the low positive self-talk in that negative events are not such a shock; thus, it may help them to cope. The last classification, internal dialogue of conflict, has an equal ratio of positive thoughts to the total number of thoughts. This state can be helpful during times of conflict resolution but, if perpetuated, it can become harmful.

Each SOM classification is defined by a set point ratio and a subsequent range of ratios around each set point. Table 1 lists the set points and ranges of the different SOM classifications.
Table 1

Set Points and Range of Ratios for States of Mind Classifications

<table>
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<tr>
<th>States of mind</th>
<th>Set point ratio</th>
<th>Range of ratios</th>
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<tr>
<td>Negative monologue</td>
<td></td>
<td>.00-.31</td>
</tr>
<tr>
<td>Negative dialogue</td>
<td>.38</td>
<td>.32-.44</td>
</tr>
<tr>
<td>Internal dialogue of conflict</td>
<td>.50</td>
<td>.45-.55</td>
</tr>
<tr>
<td>Positive dialogue</td>
<td>.62</td>
<td>.56-.68</td>
</tr>
<tr>
<td>Positive monologue</td>
<td></td>
<td>.69-1.0</td>
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Note. Ratios are based on the frequency of positive self-talk to the total of positive and negative self-talk.
Schwartz and Garamoni (1989) analyzed 27 studies that were conducted from 1973 to 1984 and yielded 63 suitable cases. Of these 27 studies, 22 were group contrast studies that compared the results of positive and negative cognitions of a functional group to a dysfunctional group. The results of this meta-analysis supported the SOM model. The data reported for each sample were calculated to SOM ratios using mean positive and mean negative cognitions. Each sample was assigned to the appropriate SOM classification, i.e., mildly dysfunctional, moderately dysfunctional etc. Confidence intervals of the mean SOM ratios were set at 95%. The majority of cases were anxiety related disorders (e.g., nonassertiveness, social anxiety, test anxiety, and agoraphobia), some cases were depression disorders (e.g., mildly depressed college students and moderately depressed patients), and some miscellaneous cases such as self-esteem disorders.

Results supported the set points for the functional, mildly dysfunctional, and moderately dysfunctional groups. Functional groups reported positive dialogue proportions close to the set point of .618 or a ratio of positive to negative self-talk of 1.7 to 1. Those mildly anxious and depressed individuals reported a SOM proportion close to the hypothesized set point of .500 or a ratio of 1 to 1. Moderately dysfunctional subjects were characterized by a negative dialogue close to a set point of .382. Results did support the dialogic categories of the model. Because there were only six monologic cases (five positive and one negative) neither the positive monologue nor the negative monologue states could be validated.

Other studies have supported many of the findings of the SOM model (Bruch, Hamer, & Kaflowitz-Linder, 1992; Glass & Furlong, 1990; Heimberg et al., 1990; Kendall et al., 1989). Kendall et al. (1989) conducted a study with 53 undergraduate
volunteer university students to assess the balance of positive and negative self-talk. Participants were divided into three psychometrically defined groups. They completed a modified Automatic Thoughts Questionnaire (Hollon & Kendall, 1980) and rated both the frequency of particular cognitions and the personal valence of each positive and negative self-statement. Results supported the SOM proposal that a psychologically healthy self-talk ratio is 1.6 to 1. It was also reported that the valence of self-statements failed to add significantly to the variance derived from frequency ratings alone.

Bruch et al. (1992) supported the construct validity of the SOM model. The purpose of their study was to evaluate the construct validity of the five SOM classifications in relation to predicting the quality of the participants' assertive responses. Five different videotape situations were presented to 96 female undergraduates ranging from 18 to 23 years of age to assess their degree of assertiveness in refusing an unreasonable request. Each request was followed by three subsequent requests. Verbal responses of the participants were recorded on audiotapes and rated according to the strength of refusal (e.g., “I can't right now, but I'll help tomorrow” is qualified refusal). Participants were asked to list the thoughts they experienced. Trained raters independently coded the thoughts as positive, negative, or neutral, and SOM ratios were calculated using Amsel and Fichten's (1990) adjustment. Their study supported the claim by Schwartz and Garamoni that SOM ratios are sensitive to different situational factors. The correlation between the SOM ratio and the mean behavioral effectiveness rating in the same situation was significant (p < .05) for all five situations (.51, .67, .69, .47, .65). In each of the five situations the SOM ratio for
each situation was situation specific and did not correlate to how they responded in other situations.

Bruch et al. (1992) reported that in four out of five assertive situations participants who scored in the positive monologue range used a greater number of refusal responses and less compliance responses than those in a positive dialogue range. Refusal responses of positive monologue compared to positive dialogue in the five situations are as follows: 64 to 28, 90 to 82, 68 to 50, 70 to 75, and 70 to 56. This finding contradicts Schwartz and Garamoni’s hypothesis that too much focus on positive thoughts will reduce an individual's ability to be in touch with negative events or the consequences of one's behavior. Bruch et al. suggest that an over-emphasis on positive self-talk is essential to effective assertive behavior and that it does not minimize an individual's ability to be aware of consequences but, in fact, it enhances an individual's ability to remain assertive and avoid compliance. The conflicting results suggest that the best SOM for assertive behavior is still in need of further study. A study of 31 agoraphobics with panic attacks was proposed to examine the changes in cognitive balance (Schwartz & Michelson, 1987). The mean age of the participants, 27 females and four males, was 40 years old, and the mean duration of illness was 12 years. They attended 12 weekly 2 hour sessions receiving one of four treatment methods representing different treatment dimensions: paradoxical intention (cognitive), relaxation training (physiological), graduated exposure (behavioral), and combined treatment. As predicted, all agoraphobics recorded a negative dialogue (.437) at pretreatment, and a positive dialogue at midtreatment (.661) and posttreatment (.649). All treatment groups showed an improvement in self-talk and at the 3-month follow-up
all verged on relatively the same SOM (.702) that bordered between positive monologue and positive dialogue.

**Relevant Research: Self-talk**

There is very little research done on the self-talk of teachers, and even less on the impact of teacher self-talk on outcomes such as stress and job satisfaction. Some studies have examined the self-talk of preservice teachers (Manning & Payne, 1988), of counsellor trainees (Parisienne & Long, 1994), and of counsellors (Kurpius & Moran, 1987). Although these populations are not practicing teachers, their tasks are similar to teachers they involve individual and in group teaching, ongoing client evaluation, self-evaluation, program evaluation, planning, and interpersonal relationships with clients and peers. Thus, I believe that self-talk research and stress research from these populations is transferable and an examination of related research will be helpful.

The literature reports that self-talk impacts on outcomes such as stress and performance. Kurpius and Moran (1987) reported that counsellor trainees' low negative self-talk postvideo scores correlated with low anxiety postvideo scores. Stress inoculation training, which has a self-talk component, has been effective in reducing anxiety in teachers (Forman 1982), in district psychologists (Forman, 1981), and in preservice teachers (Payne & Manning, 1990).

As a contrast, in a study of 62 females from volunteer community organizations, Uhlemann and Plater (1990) reported that there was no real significance between their self-talk and their ability to effectively handle or not handle stress as measured by the Life Experiences Survey (Sarason, Johnson, & Siegel, 1978), and the Hassles Scale (Kanner, Coyne, Schaefer, & Lazarus, 1981). However, because all the subjects were from volunteer community organizations they may represent a pre-disposition to stress.
Furthermore, the questionnaire required the participants to respond based on only two stressful events and there was no indication that they were given any instruction about self-talk and how to record their self-talk. This study found no significant correlation between self-talk and coping strategy or the effectiveness of outcomes.

These apparent contradictions warrant further study. An examination of the self-talk of preservice teachers, counsellors, and teachers themselves may provide some clarification.

Preservice teachers. Several studies have examined the self-talk of preservice teachers. One study intended to investigate the actual self-talk of the student teachers and to ascertain whether self-talk is related to locus of control and self-esteem (Payne & Manning, 1991). This study appears almost identical to their study (Manning & Payne, 1988) mentioned earlier with very similar results. In addition, the preservice teacher data from Manning and Payne (1989) appear to be the same data reported in Payne and Manning (1991). The sample in the 1991 study consisted of 69 white female student teachers majoring in early childhood education. Subjects were administered the 20-item Locus of Control scale for Teachers (Sadowski et al., 1982), which measures to what extent teachers believe that their behavior influences student performance and what happens in the classroom. Coopersmith (1967) Self-Esteem Inventory, a 25-item inventory, was used to measure self-esteem. Self-talk was assessed according to an instrument developed by the authors (Manning & Payne, 1989) with three classifications: (a) adult, parent and child transactional states; (b) internal and external locus of control; (c) positive, negative and neutral directional states. For the purposes of this study only the self-talk data concerning directional states will be presented. Negative self-talk was defined as self-talk that “expressed a
lack of self-confidence, pessimism, or displeasure"; whereas, "self-talk that expressed self-confidence, optimism, or pleasure" (p. 49) defined positive self-talk. Neutral was defined as self-talk that was neither positive nor negative.

Subjects recorded their self-talk in logs for any two 24-hour periods out of four consecutive days. Participants had been previously trained in what self-talk is and how to record it. Self-talk data were rated by two independent judges who scored interrater reliability of 92%. Percentages of self-talk were calculated by dividing the total for each sub-category (e.g., positive) by the total for that category (e.g., positive + negative + neutral). The means and standard deviations reported for each directional state are as follows: positive (M = 33, SD = 14), negative (M = 50, SD = 23), neutral (M = 17, SD = 24). Results, like that of Manning and Payne's (1988) study, indicate that the majority of self-talk preservice teachers utilize is negative and that two-thirds of their self-talk is negative or neutral.

Cacioppo et al. (1979) and Kendall and Hollon (1981) reported that negative self-talk was related to lower self-evaluation and psychopathology. An examination of Payne and Manning's (1991) correlations between self-talk and self-esteem is relevant to the same line of research. The authors calculated Zero-order Pearson product-moment correlation coefficients to examine the relationship between positive, negative, neutral self-talk scores and Coopersmith self-esteem scores. Correlation significance was set at p < .05. The correlations were the following: r = .04 for positive, r = .28 for neutral, and r = -.32 for negative self-talk. Both the neutral and negative correlations were statistically significant. Positive self-talk was not positively related to high self-esteem; whereas, neutral self-talk and low negative self-talk were positively related to high self-esteem. This lends further support to Kendall's power of non-negative
thinking, i.e., the elimination of negative self-talk is important to psychological well-being.

This study was helpful in identifying type and frequency of self-talk of student teachers, and in highlighting the inverse relationship between negative self-talk and high self-esteem. A weakness of the study is that all of the participants were white, female, early childhood students. Because the study did not involve classroom teachers, whether the results are generalizable to teachers is not known and in need of further research. The self-talk logs did not reflect everything the participants said to themselves in the two 24-hour periods but they reflected what they said to themselves on typical, randomly chosen situations. This method of gathering self-talk data can be very biased, i.e., it may not accurately reflect the nature of the participants' self-talk but rather the situations the participants chose to recall. Furthermore, by not utilizing any pre or post measurements, the study can not report whether the self-talk of the preservice teachers changed over time. Finally, the study gives no indication of whether the participants can be taught to change their self-talk.

Two studies examined the role of self-talk with preservice teachers in terms of specific outcomes. Neely (1986) found that if student teachers were trained in cognitive awareness, they improved in their ability to problem solve and to write and implement lesson plans. Another study found that changing preservice teacher's self-talk could affect their anxiety and locus of control (Payne & Manning, 1990). The results are discussed in the section dealing with stress.

Counsellors. Several studies have investigated the role of self-talk with counsellors and counsellor trainees. One study compared the self-reported self-talk to counsellor performance as rated by independent evaluators. Kurpius and Morran
(1987) conducted a study with 40 counsellors of different experience and educational levels. They reported that those counsellors who were highly rated for counselling effectiveness by trained evaluators engaged in more self-instruction and less negative self-talk than counsellors with low performance ratings.

A second study examined the correlation of self-talk of counsellor trainees' anxiety before their first counselling session with their counselling performance (Uhlemann, Lee, & Hiebert, 1988). The authors, unlike Kurpius and Moran, found that neither the frequency of positive or negative self-talk, nor the ratio of positive to negative self-talk had a significant impact on counselling performance as judged by supervisors or external judges. Some research contradicts this finding and suggests that the frequency of self-talk alone cannot adequately measure the impact of self-talk because individuals assign greater importance (valence) to negative self-talk than to positive self-talk (Kendall & Hollon, 1981; Schwartz, 1986).

There are some problems with this study. Uhlemann et al. assumed that more anxious trainees would have more negative self-talk, and yet, they did not measure trainee anxiety. It is difficult, therefore, to ascertain the degree of anxiety of the counsellor trainees. If the trainees' anxiety was already low then one would expect correspondingly low negative self-statements as was reported by Parisienne and Long (1994). Another problem is that no assessment of how the trainees perceived their own competence was done. There was nothing in the design to correlate strong feelings of competence to low negative self-talk.

Although not measuring performance, another study investigated the self-talk of 63 female counsellor trainees in response to three different client issues: sexual abuse, physical abuse, and role-conflict (Parisienne & Long, 1994). Contrary to expectations,
trainees who viewed a client reporting sexual abuse did not have more negative self-statements than the other two groups. After the three groups had met and reacted to the clients, the sexual abuse group experienced greater change in positive self-talk than the other two groups. The postvideo ratios, using the SOM model, increased for all three groups to the range of positive monologue. This study also calculated positive ratios (i.e., positive self-talk divided by the sum of positive + negative + neutral self-talk), and negative ratios (i.e., total negative self-talk divided by total self-talk as in positive ratio). Interestingly, the negative ratios decreased considerably from pre to postvideo for all three groups. The positive ratios increased slightly for the role conflict and physical abuse groups, and significantly for the sexual abuse group. This profile supports Kendall's concept of the power of non-negative thinking.

Teachers. The literature on the self-talk of teachers is very sparse (Manning & Payne, 1989). Teachers spend much of their time in isolation (Lortie, 1975) characterized by infrequent interaction with peers concerning their own behaviors and thinking. No studies examine exclusively the self-talk of teachers in order to understand the nature of teachers' inner dialogue. A number of studies reported that after implementing cognitive-behavioral intervention program that incorporates a self-talk component, there was a considerable reduction in stress for elementary and secondary teachers (Forman, 1981, 1982; Payne & Manning, 1990).

In order to examine the difference between student teachers' self-talk and teachers' self-talk, Manning and Payne (1989) conducted a study with 69 college undergraduates and 32 classroom teachers. The undergraduates were in their senior year of an early childhood (K - 4) program and they had no previous teaching experience. The teachers had a minimum of 5 years teaching experience. All 101
participants were female and all lived in the same university town in southeastern U.S. Whether the teachers were in the same school district or same school was not reported. The majority of participants were white, and of middle to upper-middle socio-economic standing.

The teachers kept self-talk logs for two 24-hour periods out of 4 consecutive days. Participants were asked to choose and describe random situations and to record what they said to themselves about those situations. A lecture of at least one hour was given to the participants about self-talk. Each self-talk utterance was coded three times according to three categories containing several sub-categories: (a) positive, negative, or neutral; (b) parent, child, or adult; (c) internal or external locus of control. The same definitions of positive, negative, and neutral were used as in the Manning and Payne's 1988 study.

The percentages of self-talk reported were calculated by dividing the self-talk utterances for each variable (e.g., positive) by the total number of utterances (i.e., positive + negative + neutral). Three analyses of variance were calculated between the percentages of the preservice and inservice groups, and with repeated measures on the sub-categories of self-talk within each category. The significance level was set at .01.

They reported that the self-talk of the two groups was significantly different. Preservice teachers used self-talk of extremes: very positive (M = 33%, SD = 14) or very negative (M = 50%, SD = 17) with little neutral (M = 17%, SD = 12). The authors predicted that the self-talk of inservice teachers would be quite different from preservice teachers due to their teaching experience. Findings indicated that the inservice teachers used little positive self-talk (M = 15%, SD = 14), but more neutral (M = 44%,
SD = 26) and negative (M = 41%, SD = 23) self-talk. Results indicate that as teachers gain in experience they become less positive. When the authors interviewed inservice teachers about these findings, they suggested factors such as stress, more controlling and less creative behavior, and burnout as possible explanations. Furthermore, the preservice group had no previous teaching experience, which may account for unreasonably high expectations and the self-talk of extremes.

A strength of Manning and Payne's study was that it provided data about the self-talk of experienced teachers and not just student teachers. Unlike their 1988 study they also provided some education and training to the participants concerning self-talk and cognitive monitoring which ensured that the data gathered were more reliable. In addition, the study did gather actual self-talk data by using logs. The implications of these findings were surprising. First, it was surprising that inservice teachers used less positive self-talk than preservice teachers. Second, it is alarming that this study reported the majority of inservice teacher self-talk as neutral and negative (85%). This is not the profile of a teacher that is best for students.

Weaknesses of the study concern validity issues such as the selection of subjects. There is no mention of how either group was chosen, nor did the authors report if the teachers were from the same district or the same school which raises the validity issue of history. If the teachers were from the same district and especially if they were from the same school, it could have a considerable impact on the variables. Because all the participants were female and from elementary education the results are limited in their generalizability.
Stress

Stress is a process that involves an interaction or transaction between an individual and the environment. The process is made up of a stressor (stimulus), intervening variables, and a response (Cecil & Forman, 1990; Lazarus, 1966, 1991). Kyriacou and Sutcliffe (1978), who have worked extensively with stress in teachers, report that the literature alludes to stress in two ways: as an external pressure (i.e., how the environment places pressure on the individual), or as an internal response (i.e., how the individual responds to the stressor). The latter is more characteristic of a physiological model of stress.

Stress involves an appraisal by the individual to determine whether the stress is a threat or not. The threat can be a physical threat from the environment (e.g., fatigue), a psychological threat to the individual's self-esteem or well-being (e.g., feeling like a failure), or the perception that there is an imbalance between the demands of the environment and the individual's ability to handle those demands (Kyriacou & Sutcliffe, 1978; Lazarus, 1966). How the individual perceives or makes sense of the stressor is fundamental to understanding stress, and explains why the same stressor can generate such a different response from person to person (Ellis & Harper, 1975; Lazarus, 1966). Lazarus suggests that there are two dimensions in the appraisal process. Primary appraisal is how an individual perceives the stressful situation. Secondary appraisal involves the individual assessing his/her coping resources to deal with the stressful situation.

Coping is defined as the behavioral and cognitive efforts an individual teacher undertakes to manage the demands that strain or exceed his/her personal resources. Two types of coping have been offered by Lazarus (1966): problem-focused coping and
emotion-focused coping. Problem-focused coping (e.g., seeking more information) includes efforts that attempt to change the person-environment relationship. Emotion-focused coping is efforts to control the emotional distress caused by the stressful situation. Keeping busy to avoid thinking about the situation, or denying that the situation is happening (changing the meaning of the situation) are examples of emotion-focused coping.

One model of teacher stress (see Figure 1) focuses on this appraisal mechanism (Kyriacou & Sutcliffe, 1978). The model presented is based on Kyriacou and Sutcliffe's model; however, I have adapted it to illustrate the interaction of the components of the model differently, and to illustrate that all components are part of the teacher stress process. The "Characteristics of the Individual Teacher" component overlaps several other components to visually illustrate that the process is a dynamic interaction of the components. Furthermore, the "Teacher Outcomes of Stress" component has been renamed from the term "teacher stress" to clarify possible misunderstanding that teacher stress occurs only at that point in the model. The "Teacher Outcomes of Stress" component represents the ways teacher stress is manifest. Finally, the original term "potential stressors" has been renamed "Activating Event" to indicate that it begins the appraisal process.
Figure 1. A model of the teacher stress process.
(Adapted from Kyriacou and Sutcliffe, 1978)
Once a potential stressor is perceived as a threat it becomes an actual stressor, and a system of previously learned coping mechanisms are employed to relieve the stress. The coping skills used to deal with the stressors can affect the individual's perception of potential stressors. For example, if an individual uses information-gathering as a coping skill, it may temporarily reduce the degree of stress by putting the situation "on hold" while information is collected. Denial can have a similar effect. Part of Kyriacou and Sutcliffe's model takes into account the individual characteristics of the person. Historical factors (e.g., sex, age, family), personality traits (e.g., controlling), higher level needs (e.g., self-actualization), and belief systems (e.g., respect) also influence the appraisal process.

Stress is measured primarily in three ways: self-report instruments, physiological measurement, and behavioral measurement. Self-report is the most subjective of the three and involves the participant evaluating his/her degree of stress through survey questions. Physiological measurement includes factors such as heart rate, blood analysis, and urine analysis. Behavioral measurements involve measures such as absenteeism, utterances, stuttering, and so on to assess the degree of stress (Kyriacou, 1987).

Although stress may lead to burnout, they are not the same thing, even though the literature often equates the two. Farber (1984) defines burnout as the result of stress that is overpowering (i.e., the individual feels powerless and has no way out of the stressful situation). Another definition suggests that teacher burnout is the result of prolonged teacher stress, that is generally manifested by physical, emotional, and attitudinal exhaustion (Kyriacou, 1987). For the purposes of this study, the intent is not to investigate self-talk in the context of burnout, but in the context of stress. Stress,
then, is defined as a process involving the individual response of teachers to demands which they perceive to threaten the individual's well-being, and that strain or exceed the individual's abilities and resources to meet the demands. Stress is manifest in a variety of outcomes: physical indicators such as high blood pressure, behavioral indicators such as quickness to anger, and psychological indicators such as anxiety or job satisfaction.

Problems which may contribute to teacher stress can include student behavior, poor work conditions, interpersonal relationships with parents, time management, and poor school environment. School environment can involve job security, lack of parent support, student enthusiasm, quality of administration, administrative relationships with staff, relationships with colleagues, and so on. Contrary to popular belief, student misbehavior is not ranked as the greatest source of teacher stress; heavy workload and poor student attitudes are rated higher (Kyriacou, 1987). In another study, administrative meetings and lack of advancement (Farber, 1984) are rated higher than student misbehavior as sources of teacher stress.

Kyriacou and Sutcliffe (1978) defined teacher stress as a negative affect response (e.g., a sense of failure), mediated by the perception that job demands are a threat and by coping mechanisms used to reduce that threat. The negative affect response is usually accompanied by potentially harmful physiological changes (e.g., insomnia) that result from different aspects of a teacher's job. The concept of negative affect is consistent with Lazarus' (1991) understanding of stress that suggests psychological stress only occurs when an individual has appraised a situation as exacting or exceeding his or her resources. For example, a student does not have his homework done again and is very disrespectful. The teacher feels extremely frustrated
(negative affect) and can feel his/her heart start to pound and his/her breathing becomes short (physiological changes). Part of the frustration is having to deal with a hostile parent attitude and poor support from administration (perceived threat to his/her well-being). He/she feels overwhelmed by the expectation that he/she is supposed to teach this student who is resisting. The teacher's response is to avoid calling the student's parents and to ignore the incomplete homework (coping mechanism). Thus, a key component of teacher stress lies in how the teacher perceives the situation.

Cognitive psychology suggests that people have certain beliefs about a situation as they experience it (Beck, 1976; Ellis, 1984; Ellis & Harper, 1975, 1984; Meichenbaum, 1977). For example, some teachers may believe that all students should be respectful or that all parents should support the teacher. If how an individual makes sense of a stressful situation is important, it follows that an individual's self-talk can contribute positively or negatively to appraising and coping with the stressor. For example, "I'll never understand statistics" can affect how a student appraises and prepares for a statistics test. Different cognitive-behavioral interventions have proven to be effective in training individuals to modify their self-talk.

Few studies have focused on both teacher self-talk and its impact on stress. Research is not in total agreement about the influences of self-talk on stress. For example, one study suggested that there is little detrimental effect of negative self-talk on stress (Uhlemann & Plater, 1990), whereas other studies reported that a cognitive-behavioral intervention was significant in reducing self-reported stress and anxiety (Forman, 1982; Payne & Manning, 1990).

Cognitive therapy has reported good results in helping individuals cope with stress. One study reported that the types of negative self-talk that teachers engage in
often used words such as “should” “must” “never” “always” (Manning & Payne, 1992). Ellis and Harper (1975) characterized such words as “musterbation”. Stress management programs using RET or rational emotive therapy (Ellis, 1975, 1977) have proven effective with teachers (Forman, 1990). Forman applied the principles of RET as an approach to help teachers eliminate irrational thoughts and beliefs and replace them with rational ones.

Meichenbaum’s (1977) stress inoculation training (SIT) has been very successful with teachers (Forman, 1981, 1982; Sharp & Forman, 1985) and with community residents (Long, 1984). In a study with 48 females and 25 males from the community who volunteered for help in coping with stress, Long reported that SIT and aerobic conditioning were effective in stress reduction, and that both treatment groups reported considerably less self-reported stress than the waitlist control group.

Forman (1982) evaluated the effectiveness of a cognitive-behavioral intervention program based on Meichenbaum’s (1977) stress inoculation training. Twelve secondary school teachers showed a significant decrease in self-reported measures of stress and anxiety using a cognitive-behavioral intervention program. The participants, who volunteered to be part of a workshop designed to help teachers deal with stress, represented a wide range of teacher backgrounds. The experimental group consisted of 10 females and 2 males of which 8 were black and 4 were white. The control group was a waitlist of 12 teachers (9 females and 3 males) of which 9 were black and 3 were white. Ages varied from 27 to 55 years and experience varied from 5 to 29 years. Six control group teachers (5 females and 1 male; 4 blacks and 2 whites) were randomly chosen to be observed in the classroom while all treatment group teachers were observed.
Treatment participants completed the State Trait Anxiety Inventory (STAI) (Spielberger, Gorsuch, & Lushene, 1970) one week before treatment, during the last week of treatment and 6 weeks after the treatment was completed. The STAI is a 40-item test used to assess both state anxiety (at the moment) and trait anxiety (a general feeling over time). The control group also completed the STAI at the same pre and post assessment periods as the experimental group, but it was not administered at follow-up. The second variable consisted of recording self-reported stress levels. Participants were to identify a particular time in the school day during which they experienced the greatest amount of stress. Each day during the week before treatment and the last week of treatment the teachers rated their stress on a scale of 1 to 10 (i.e., 1 being the least stress and 10 being the most stress they have felt). In addition the experimental group rated their stress levels each day during the week of follow-up testing.

The third variable was the classroom observation of teachers' behaviors. Ratings of teacher behavior in the classroom was conducted by four graduate student observers. Observations conducted for three 30-minute intervals during the week prior to treatment and during the last week of treatment focused on teacher verbalizations, frequency of speech disfluencies, and body touches. Observer reliability was assessed and interobserver agreement ranged from 80% to 86%.

The 18-hour treatment program consisted of meeting for 3 hours once a week for 6 weeks. The program included four segments: theory, relaxation training, cognitive restructuring training, rehearsal, and application. The theory phase of the program introduced the participants to the concepts of stress and situations of teacher stress. The second phase taught the subjects various relaxation techniques. The third phase
included instruction in the role of self-talk in behavior and emotions, and in the significance of irrational beliefs using Ellis' model (1975). The fourth phase concentrated on the participants working with their own stressful situations by developing alternative responses and rehearsing them.

Means and standard deviations of the dependent measures were reported. The mean trait anxiety scores of the experimental group decreased from pretest to posttest (43.58 to 41.00) with further decreases at follow-up (32.17). Mean trait anxiety control group scores, however, increased (33.50 to 34.25) with no follow-up test. Self-reported mean stress level ratings for the experimental group again decreased from pretest to posttest (6.50 to 3.78) with a further reduction at follow-up (2.63). In contrast the control group mean stress level ratings increased (5.33 to 5.55) with no follow-up.

In addition a multivariate analysis of variance was performed on STAI-State scores, STAI-Trait scores and the average weekly stress level ratings. Three one-way analyses of variance were performed on the posttreatment data and follow-up data from the experimental group. A multivariate analysis of variance was also calculated on the observation categories to examine changes in teacher classroom behaviors.

Results indicated that the experimental group reported a significant decrease in anxiety while the control group did not. The MANOVA of self-report measures yielded a significant main effect for group, $F(3, 20) = 8.82, p < .001$, a significant main effect for phase, $F(3, 20) = 11.34, p < .001$, and a significant group x phase interaction, $F(3, 20) = 12.63, p < .001$. Analyses of variance on posttreatment and follow-up data yielded significant differences for State anxiety, $F(1, 11) = 22.75, p < .001$, and stress level, $F(1, 11) = 14.14, p < .003$. Findings indicate that additional decreases in anxiety were reported 6 weeks after the completion of the intervention. Analysis of the classroom
observations showed that the treatment had no effect on the types of teacher verbalizations but a significant interaction was found for body touches, \( F(1, 16) = 15.84, \ p < .001 \), and an interaction which approached significance for speech disfluencies, \( F(1, 16) = 3.67, \ p < .07 \). The reported reduction in observer-reported teacher motoric manifestations as indicators of anxiety supports the self-reported reductions in anxiety levels.

Forman's (1982) study supports the use of a cognitive-behavioral intervention in the reduction of teacher stress. The sample represented a good cross-section of secondary teachers, and participants were provided with ample time to learn and practice the concepts and coping skills used in the intervention. The State-Trait Anxiety Inventory is a well established instrument to assess anxiety. Results showed a considerable reduction in self-reported stress of the experimental group and an even further reduction 6 weeks later.

Some aspects of the study, however, must be considered. Although self-talk is a part of the intervention program it was not examined specifically enough to clearly understand its impact on teacher anxiety, nor was it measured in any way through instruments such as logs and questionnaires. The use of the A-State scale is questionable because it is such a transitory measure of anxiety. Most teachers experience stress at different times of the year; it's part of the job. To establish that an intervention caused a reduction in state anxiety would be difficult to validate. A third concern is the fact that a follow-up was not done with the control group, nor were any data provided whether the control group received the intervention in the next semester. This made it difficult to ascertain if the anxiety of the control group would have also dropped at follow-up, and if the intervention had similar effects when given to the
waitlist control group. Permitting subjects to choose which group they belonged to by letting them choose to receive the treatment immediately or in the next semester could affect the validity of the results. This may account for the control group reporting lower pretest anxiety levels than the experimental group. A random allocation of participants to groups would have ensured greater validity. Finally, the author suggests that this intervention may be valuable only to those who are experiencing stress and the results may not be generalizable to the teaching population. However, the purpose of this intervention is to help teachers who are experiencing stress; it is not intended for all teachers.

Payne and Manning (1990) reported that after a stress management program 67, white female student teachers, who were enrolled in a large southeastern elementary education program, reduced their levels of anxiety. They were administered the Survey of Feelings About Teaching (Payne & Manning, 1989) as a pretest to assess their levels of anxiety the week before treatment started. Six weeks later, or the week after the completion of the 3-week field experience, the same instrument was administered as a post-test. The instrument was a 14-item survey developed by the authors based on the format and construct of a validated instrument to assess test anxiety. It was constructed in such a way that higher scores reflect greater anxiety. Internal consistency measured by Cronbach’s alpha was reported at .79.

Subjects received a 6-hour intervention based on Meichenbaum’s stress inoculation training. The treatment consisted of three stages: first, a review of the concept of self-talk and its impact on behavior and feelings; second, training in developing an awareness of an individual’s self-talk and in modifying self-statements;
finally, the rehearsal and application of the skills using imagery, cognitive rehearsal, and role-play.

Subjects were randomly assigned to one of three groups after the pretest: experimental (N = 20), attention control (N = 26), and assessment control (N = 21). The attention control group met with the same frequency as the experimental group and received the same material as the experimental group, i.e., theory of self-talk, except it did not create positive self-statements or practice using the self-statements. The assessment control group received the same student teaching classes, materials, and activities as the other two groups; however, it did not receive any of the theory, practice, or cognitive self-talk strategies that the other two groups received.

The mean pretest anxiety scores of all three groups was very high (M = 9.49 or 68% of the maximum score) showing that all three groups began the field experience with a high degree of anxiety. A one-way analysis of covariance was used to determine the relative efficacy of the treatment program to modify anxiety toward teaching with the Survey of Feelings About Teaching pretest as the covariate. Results indicate that the experimental group had a significantly lower adjusted mean anxiety score (M = 10.05 to M = 6.73) than the attention group (M = 8.73 to M = 9.30) or the assessment group (M = 9.90 to M = 9.03). Furthermore, there was no significant difference reported between the attention control and assessment control groups after pair-wise comparisons.

This study demonstrated that a training program such as stress inoculation training is effective in reducing self-reported stress. It also showed that the theory alone (attention control group) is not effective as a stress reduction technique. The use of the pretest and posttest format was helpful in measuring the degree of change in the group’s anxiety scores.
This study had several weaknesses. The Survey of Feelings About Teaching is an instrument designed by the authors; however, there is no real mention of its validity and reliability other than the Cronbach's alpha of internal consistency score. Also no measure of the self-talk of the participants was taken. Previous Payne and Manning studies used self-talk logs, but this one did not use any means of recording the self-talk. The authors assumed that if the participants show a reduction in anxiety after completing an intervention aimed at altering self-talk, the change was due to an improvement in self-talk. A measure of either the valence of self-talk or the ratio of self-talk in the pre and post assessments would have provided a much clearer picture if the self-talk changed lending greater support to their conclusion. In addition, the subjects were all white female preservice teachers in elementary education which limits its generalizability to the general teacher population. Finally, the study does not mention how the subjects were selected which creates some concerns about subject validity.

Cecil and Forman (1990) conducted a study to examine the effectiveness of coworker support groups compared to stress inoculation training as a stress management program. The participants, 54 regular classroom teachers from nine elementary and middle schools in a suburban area, volunteered to be a part of a study to evaluate two treatment programs designed to help teachers learn new ways to cope with job stress. All but two of the participants were female and all but two were white. Twice as many teachers had an M.A. as those with a B.A. and the mean years of teaching experience was 10.4. Elementary school participants were randomly assigned to one of three treatment groups: stress inoculation (SIT), coworker support (CS), and no-treatment control (C). Middle-school participants were also randomly assigned to one of three middle-school treatment groups. The SIT program was delivered to two
groups, 10 elementary teachers and 7 middle school teachers, with a mean of 8.6 years of experience. Those assigned to the no-treatment control group were informed that they would have the opportunity to participate in a workshop on stress after the completion of the study.

Several dependent measures were used. Data were collected during the week before treatment, the week following the completion of treatment, and 4 weeks after treatment. Four of six sub-scales of the Teacher Stress Inventory (TSI) (Fimian, 1984) were used to assess self-reported stress: Personal/Professional Stressors, Professional Distress, Discipline and Motivation, Emotional Manifestations. Alpha reliabilities for the sub-scales ranged from .74 to .86. Content validity was acceptable with 75% of expert raters strongly agreeing with the relevancy of any individual item. Because the authors believed the TSI emphasizes the personal causes and effects of teacher stress, they also used 5 sub-scales of the Job Stress in the School Setting (JSSS) (Pettegrew & Wolf, 1982) to provide a broader measure of organizationally-based stress variables. The broader measure of stress was measured using 5 of 13 sub-scales of the JSSS: School Stress, Task-Based Stress, Role Overload, Peer Support, and Job Satisfaction. Alpha reliabilities ranged from .76 to .89.

Coping skills were assessed by the written responses of the participants to two questions: (a) What strategies or techniques do you use to cope with stress on the job? (b) If I started feeling upset on the job today, I would ... Two independent raters were trained to evaluate the responses and interrater reliability of .90 was achieved. An overall coping skills score for each participant was determined by averaging the ratings for each response.
The Teacher Anxiety Observation Schedule (Coates & Anton, 1975) was used to determine how often teachers used motoric manifestations of stress and anxiety in the classroom. Teachers were observed for three 30-minute intervals in the pretest, in the posttest, and in the follow-up. Interobserver reliabilities of .89 at pretest, .93 at posttest, and .89 at follow-up were reported.

The treatment consisted of two programs: a stress inoculation group, and a coworker support group. The SIT was based on Forman's (1982) modification of the stress inoculation training model (Meichenbaum, 1977). The intervention consisted of the three SIT phases: educational, rehearsal, and practice. The coworker support group was designed to facilitate teachers to help each other in small problem-solving groups. Each treatment group met for 90 minutes once a week for 6 weeks.

Scheffé paired comparisons were calculated to examine the nature of group changes over time. Results showed that significant reductions in stress were made by the stress inoculation group from pretest to posttest, and from pretest to follow-up. No significant changes were reported for the coworker support group or for the no-treatment group from any of the testing periods (pretest to posttest, pretest to follow-up, posttest to follow-up). Means and standard deviations of teacher self-report data for coping skills indicates that the SIT group made significant improvement from pretest to posttest (\( M = 2.88, SD = .56 \) to \( M = 2.00, SD = .91 \)) compared to the control group (\( M = 2.54, SD = .50 \) to \( M = 2.46, SD = .58 \)). This effect was not maintained at follow-up for the SIT group (\( M = 2.23, SD = .76 \)) or the control group (\( M = 2.79, SD = .64 \)).

This study was helpful in that it provided further support to SIT as an effective stress management intervention and it did not support the effectiveness of coworker support groups as an organizational stress management intervention. It also enabled a
closer examination of particular sub-scales of teacher stress. Validity issues were met by having the participants, although volunteers, randomly assigned to different groups, and by an adequate sample size.

No investigation of specific dimensions of SIT (e.g., self-talk, relaxation) was attempted. This makes it difficult to ascertain if one particular aspect of the intervention was effective in reducing stress or if it was the program in its entirety. Payne and Manning (1990) reported that simple awareness or theory alone is not sufficient to reduce preservice teacher anxiety. The impact of self-talk on reducing anxiety has yet to be determined.

Although a significant reduction in the self-reported anxiety of the participants was found, changes in the observed classroom anxiety behaviors of the participants were not as pronounced as those in Forman's 1982 study. The authors hypothesized that since the participants received only 9 hours of intervention compared to 18 hours in the Forman (1982) study, perhaps the number of hours of the intervention program was a factor in the overall success of the approach.

These findings indicated that SIT has proven effective in reducing teacher stress; however, the importance that teacher self-talk plays in SIT is unclear and in need of further study.

Job Satisfaction

Three studies illustrate that the issue of teacher job satisfaction is an important one. A study of 291 public high school teachers (Litt & Turk, 1985) from Connecticut was conducted to examine sources of stress and dissatisfaction with teaching. The teachers ranged in experience from 5 to 15 years. It was reported that teachers' intention to leave the profession significantly correlated ($r = -.39, p < .001$) with job
satisfaction. It is often assumed that high stress will automatically correlate with low job satisfaction. In a study of teacher self-reported job satisfaction, Kyriacou and Sutcliffe (1979) reported that 72.5% of teachers were very satisfied or fairly satisfied with teaching. They also reported that 23.4% of participants described their job as very stressful or extremely stressful. This suggests that almost 25% of the participants are less than satisfied with teaching, experiencing undue stress; furthermore, many will leave teaching (Kyriacou & Sutcliffe, 1979).

Previous research has tended to view career satisfaction in one of two ways: (a) as a goodness of fit between an individual's abilities and accomplishments, and an individual's job requirements; (b) as a match between what an individual values in work and what values are achievable in an individual's job. Both views posit a type of matching between what is and what ought to be. Career job satisfaction is defined as an individual's affective reaction to his/her job based on the perception of the job fulfilling his/her job values.

Chapman and Lowther (1982) examined the relationship between the participants' self-report of career satisfaction, and a self-assessment of their abilities, values, and accomplishments in their profession. After extensive screening, 542 University of Michigan teacher graduates volunteered to participate in a study to examine teacher job satisfaction. All participants were in full-time employment, and had taught continuously since graduation. The authors operationally defined career satisfaction as the mean response on a satisfaction scale made up of two questions: (a) How satisfied are you with your present employment? (b) Overall, how satisfied are you with the progress you have made in your professional career?
An interesting paradox emerged in the study. The authors noted that teachers negatively rated a particular value as an indicator of success; however, they rated the same value positively if they accomplished it. For example, the importance of "leadership activities" as a measure of success were negatively correlated to job satisfaction; however, if leadership activities were actually accomplished they were assigned a strong positive correlation. In a second case the importance given to "learning new things" as a measure of success was negatively correlated to job satisfaction; however, if it was actually achieved, it was given a positive correlation. Recognition from administrators had a strong positive relationship to career satisfaction which has considerable implications for the influence of administrators on teachers' evaluations of their careers. Finally, results indicated that women have greater satisfaction with their careers than men. A similar result was reported by Long, Schutz, Kendall, and Hunt (1986).

A variety of correlations between teacher stress and job satisfaction have been reported. For example, a study of 296 primary teachers in New Zealand examined the relationship between self-reported stress, health, absences from work, and job satisfaction (Galloway, Pankhurst, Boswell, Boswell, & Green, 1984). Participants were full-time teachers in urban and rural schools. An overall stress score and an overall job satisfaction score were obtained by participants responding to two questions asking them to rate separately, on a 5-point scale, their overall stress and overall job satisfaction. The two overall scores showed a significant negative correlation ($r = -.44$; $p < .001$). In the same study the correlation between the Stress Inventory mean rating and the Satisfaction with Teaching Questionnaire mean score was smaller and nonsignificant ($r = -.28$; $p < .001$). In another study, 218 full-time teachers from 16
randomly selected schools in England (Kyriacou & Sutcliffe, 1979) also reported a significant negative correlation between self-reported teacher stress and job satisfaction ($r = -0.27; p < .01$).

Long et al. (1986) conducted a needs assessment study of teaching and non-teaching staff for an Employee Health Service in a large metropolitan school district in western Canada. Stress was divided into 10 stress sub-domains including job satisfaction. Participants responded to questions on each sub-domain on a 1 to 5 scale from “not at all” to “completely.” Role overload, role ambiguity, supervisory support, and task stress are additional sub-domains of stress also identified by teachers in the literature as sources of dissatisfaction. Results report that task stress was of greatest concern to elementary and secondary teachers ($M = 3.0$), followed by role overload ($M = 2.5$). These results support similar findings by Litt and Turk (1985) and Kyriacou et al. (1979). Also reported was that men ($M = 2.5$) experience more role conflict (two or more work demands that are incompatible) than women ($M = 2.2$).

Galloway et al. (1984) reported sources of teacher satisfaction: relationships with students, relationships with peers, and a sense of autonomy. Interestingly, they noted that important sources of teacher stress, such as student behavior and student progress, are also important sources of teacher satisfaction. One problem with this study is that mean scores were used for correlations. The mean rating was calculated based on the sum of 37 items using a 5-point scale in which a high score indicates high satisfaction. A problem with mean scores is that the effect of the extreme scores is lost. For example teachers may be very satisfied with their relationships with most of their students but feel extremely stressed about their relationships with a few individual
students. The mean score for those teachers would not adequately convey the true picture of their relationships with students.

Chapman et al. (1982) reported that recognition from administration is another source of satisfaction. Personal characteristics (e.g., age and sex), skills and abilities (e.g., speaking effectively), values placed on indicators of success (e.g., leadership activities in the field), and teaching accomplishments in areas of those same indicators of success were also reported as having significant positive relationships to job satisfaction for teachers.

Previously mentioned studies investigated sources of teacher job satisfaction (Galloway et al., 1984; Kyriacou & Sutcliffe, 1979), but others investigated sources of teacher job dissatisfaction (Litt & Turk, 1985). Role expectations, relationships with supervisors, and lack of feedback concerning performance were reported as important sources of teacher dissatisfaction (Litt & Turk, 1985). The same study reported that the reasons teachers gave for leaving teaching were as follows: salary (76%), poor advancement opportunities (45%), and role overload (34%). Kyriacou et al. (1979) reported similar results: among 14 sources of stress, those most strongly related to job satisfaction were poor career structure (\( r = -.28; p < .01 \)), salary (\( r = -.18; p < .01 \)) and the misbehavior of individual students (\( r = -.18; p < .01 \)). Poor career structure includes factors such as opportunity for advancement. Reasons for leaving teaching and sources of stress in teaching are remarkably alike. Many teachers claim that discipline is a major source of dissatisfaction, and yet when ranked with other problems it is not highly rated (Litt et al., 1985). Note that many of the issues of dissatisfaction revolve around conditions of work, and not teaching itself.
Job satisfaction is often assumed to have a strong negative correlation to stress (i.e., the greater the stress with the job, the less the satisfaction). This hypothesis is only partially correct; some studies report only a moderate, negative correlation (Galloway et al., 1984; Kyriacou, 1987). In other words, teachers who report high stress do not necessarily report low job satisfaction.

It was reported earlier that self-talk has an impact on teacher stress. After a SIT program anxiety scores decreased, whereas job satisfaction sub-scale scores increased for teachers (Cecil & Forman, 1990), and for district psychologists (Forman, 1981). No studies were found examining the relationship of self-talk and teacher job satisfaction. As teachers interpret their experiences, which impact on their satisfaction or dissatisfaction with their careers, they use self-talk. Thus, training teachers to be aware of their self-talk and how to alter their self-talk may influence their job satisfaction.

The literature has established that there is a correlation between stress and job satisfaction. Findings are not clear as to the strength or the exact nature of the correlation. Studies also report that approximately 20% - 30% of teachers are experiencing stress and are generally dissatisfied with teaching. Thus, research indicates that job satisfaction is a serious issue for the teaching profession and it warrants careful consideration.

Summary

A review of the literature in relation to self-talk, teacher stress, and teacher job satisfaction has identified variables that are related to teacher self-talk and its impact on teacher stress and teacher job satisfaction. However, the review has revealed several areas in need of further research and raised questions about the relationships between
variables. In particular further research is needed to study the relationship between teacher self-talk, teacher stress, and job satisfaction.

Although researchers have agreed that self-talk is asymmetrical and that it impacts on behavior and feelings, understanding how it impacts and the relationship of the types of self-talk is not in agreement. Research has reported the need to help individuals to be aware of their negative self-talk. Also, it has shown that positive self-talk will not automatically replace the negative; therefore, individuals must be taught how to change their self-talk. The importance of positive, negative and neutral self-talk, and the ratio of self-talk is still in need of further study.

Some research has been conducted on the self-talk of preservice teachers, counsellor trainees, and counsellors. There is a paucity of research on teacher self-talk and the impact it has on teacher behavior and feelings. In contrast, considerable research on teacher stress and job satisfaction is available. However, little is known about the relationship of teacher self-talk to teacher stress and job satisfaction.

A review of the literature has shown cognitive interventions, particularly stress inoculation training, has proven effective with stress reduction with teacher populations. Although self-talk is an integral part of the stress inoculation training program, it is not the only component. Results, therefore, cannot be attributable to self-talk alone. Further research on the importance of teacher self-talk in the reduction of teacher stress is needed.

**Purpose of the Study**

The major purpose of the study was to investigate the nature of teacher self-talk and to determine if an intervention program to improve the ratio of positive to negative self-talk would result in an improvement in teacher stress or job satisfaction.
Hypotheses

Question One. Very little is known about the nature of teacher self-talk. In a study of preservice teachers and inservice teachers, Payne and Manning (1989) reported that inservice teachers' self-talk was made up of 41% negative, 15% positive, and the remaining 44% was neutral. Question one asks what is the frequency of positive and negative teacher self-talk.

Hypothesis One. It was predicted that for both the treatment and waitlist control groups the frequency of positive teacher self-talk before treatment would be lower than the frequency of negative self-talk.

Question Two. Some intervention programs utilized with teachers have not focused exclusively on self-talk; whereas, those studies that have focused on self-talk have not had teachers as participants. Hence, there is a paucity of knowledge about the effect of a self-talk intervention on teachers. Question two asks in what way teacher self-talk would change after an intervention program designed to alter self-talk.

Hypothesis Two. It was predicted that from pre to posttreatment the participants in the treatment group would report a decrease in negative self-talk and an increase in positive self-talk compared to the waitlist control group.

Hypothesis Three. It was predicted that from pre to posttreatment the participants in the treatment group and the waitlist treatment group would report a decrease in negative self-talk and an increase in positive self-talk. The changes in positive and negative self-talk were predicted to be maintained at follow-up.

Question Three. Schwartz and Garamoni (1986) have reported that the ratio of positive self-talk to negative plus positive self-talk in psychologically healthy participants approximates a set-point of .62 with a range of .56 to .68. This classification of self-talk is
termed positive dialogue. Question three asks whether the ratio of teacher self-talk at posttest and at follow-up would approximate the SOM set-point ratio of .62.

Hypothesis Four. Using the SOM model, both treatment groups were predicted to report self-talk after the intervention program in the range of positive dialogue.

Hypothesis Five. It was further predicted that the ratio of positive dialogue would be maintained at follow-up.

Question Four. The teachers received an intervention program designed to reduce teacher anxiety and increase teacher job satisfaction. In order to validate the effectiveness of this treatment approach, the fourth question asks whether anxiety would be reduced and job satisfaction increased following participation in a treatment program.

Hypothesis Six. It was predicted that from pre to posttreatment, participants in the treatment group would report a reduction in anxiety scores and an increase in job satisfaction scores compared with participants in the waitlist control group.

Hypothesis Seven. It was predicted that a reduction in anxiety scores and an increase in job satisfaction scores would be reported from pre to posttest for both treatment groups. The changes in anxiety scores and job satisfaction scores were predicted to be maintained at follow-up.
Design

A controlled cross-over repeated measures experimental design was utilized. This is a 2 (treatment and control) x 3 (pretest, posttest, and follow-up) design with random assignment to groups. In phase 1 of the study the waitlist group was a control group; whereas in phase 2 the waitlist group became a second treatment group (cross-over) called the waitlist treatment group. Repeated measures assessments of both treatment groups took place at three periods: pretreatment, posttreatment, and follow-up (see Figure 2). The waitlist control group was assessed at pretest and at posttest. The posttest data for the waitlist control group was used as the pretest data for their treatment program as the waitlist treatment group. The data from the waitlist treatment group was collapsed into the data of the first treatment group for some of the analyses.
### Figure 2. Design of the study examining the effects of a 6 week intervention program (I) on the treatment group (T) and the waitlist treatment group (WLT) compared to the waitlist control group (WC). * The posttest for the WC group also served as the pretest for the waitlist treatment group.

#### Participants

Nineteen full-time teachers from one of three urban school districts in Western Canada (the Edmonton Catholic School District, the Edmonton Public School District, and the Greater St. Albert Catholic Regional Division No. 29), volunteered to be part of this study. Two teachers volunteered as a result of hearing about the program from a friend, one responded to an advertisement placed in the teacher association newspaper, and 16 responded to a letter of invitation. The teachers met the criteria of the study. They were certificated, full-time classroom teachers, department heads, or resource teachers. A resource teacher was defined as a full-time teacher who works
with special needs students to provide remediation or enrichment. The participants were elementary or junior high school teachers. Elementary schools are those schools offering kindergarten to grade 6; junior high schools are those schools offering grades 7 to 9; any combination of elementary or junior high grades was acceptable.

Administrators, counselors, and high school teachers were not invited to participate. A third criterion was that all participants reported experiencing some mild to severe stress when interviewed to determine the appropriateness of the program to meet their needs. All participants indicated their willingness to participate in the study by signing a consent form. Finally, they were willing to attend a 6-week intervention program and a follow-up session 4 weeks later.

Seventeen of the participants were female and two were male. The mean age of the participants was 41.10 ($SD = 8.15$), ranging from 27 to 51, and they had a mean of 14.32 ($SD = 8.58$) years of teaching experience. Five of the participants taught at the junior high level, and 14 taught at the elementary level. One member of the waitlist control group withdrew after the pretest due to a time conflict, and two other members of the same group had to leave after the second treatment of the waitlist treatment group due to difficulties with illness and time. Four additional teachers volunteered for the second treatment program although they were not in the waitlist control group. One of them withdrew from the study after the second treatment session due to difficulties with transportation; none of her data were used in this study.

**Procedure**

Permission to approach teachers to conduct the study was obtained from (a). The District Monitoring Measurement Specialist, Edmonton Catholic School District; (b) the Deputy Superintendent, Greater St. Albert Catholic Regional School District.
The teachers of all elementary, junior high, or elementary-junior high schools (N = 1,715) were invited by letter to participate in the study. A cover letter along with the teacher letters was sent to the principal (Appendix A) of each school asking the principal to distribute the letters to all full-time teachers (Appendix B) on staff except for administrators and counselors. The study was described as a program to help teachers learn new ways to cope with stress. The teacher letter asked for volunteers who were experiencing some degree of stress. Interested teachers submitted a registration form.

Because the study was designed to assist teachers who were experiencing stress, volunteers were screened by the information on the registration form and through a subsequent interview. The registration form asked them to rate the level of stress they were experiencing using a 5-point rating scale ranging from 0 (experiencing no stress at this time) to 4 (experiencing extreme stress). A brief description of possible behaviors (e.g., very irritable) and symptoms (e.g., can't sleep) for each level on the scale was provided in order to standardize the interpretations of each level.

Twenty-two teachers were interviewed prior to the start of the study in order to determine the appropriateness of the intervention to meet their needs, to make some type of clinical assessment of their degree of stress, and to explain the study in detail, including assuring them that strict anonymity and confidentiality of responses would be followed and that they could withdraw from the study at any time. None of the volunteers were rejected from the study; some chose not to participate.

Stratified random sampling was used to assign participants to one of two groups (treatment and waitlist) to ensure that each group had an equal number of males and females. Because only two males volunteered for the study one male was placed in each group by draw. The remaining females were assigned by draw with the exception
of two women who asked to be together in the later treatment program due to transportation and time concerns.

Previous research (Cecil & Forman, 1990; Forman, 1981, 1982; Long, 1985; Sharp & Forman, 1985) with SIT programs utilized 6 to 10 sessions ranging from 1 1/2 hours to 3 hours in length. Cecil and Forman’s (1990) study suggested that six 1 1/2 hour sessions may not have been enough time for the participants to completely learn the skills and maintain the progress at follow-up. For pragmatic reasons, this study consisted of six 1 1/2 hour sessions that included the administering of the evaluation measures in first and last sessions.

Because of the cross-over design, the procedures to be outlined are presented in chronological order rather than by group so that the sequence of events is understandable. Participants were notified before the pretest which group they had been assigned to. All participants in both groups asked to complete demographic information, expectancy questionnaires, and consent forms followed by the three pretest measures. The same instruments, instructions, and the order of instruments was followed in all testing periods. Upon completion of the testing (approximately 45 minutes) the waitlist control participants left and the first treatment session began. The sessions were conducted according to the treatment manual outline (Appendix C). I was the leader of the treatment group and Dr. Michael Rousell, a registered psychologist in Alberta and junior high school counsellor, led the second waitlist treatment group.

On the sixth session the treatment program was concluded and the treatment group completed the three posttest measures. The waitlist treatment group began the second treatment program on the same day as the first treatment group concluded.
The waitlist treatment group consisted of eight waitlist control group participants who completed a second expectancy questionnaire, and four new participants who completed demographic information, expectancy questionnaires, and consent forms. All members of the waitlist treatment group completed the three pretest measures and began the first session with a different group leader (see Group Leaders). The pretest measures for the participants who were in the waitlist control group were also used as the posttest measures for the waitlist control group.

Four weeks after the last session the treatment group returned to complete the three follow-up measures and a program evaluation. They were thanked for their participation and informed that they would be notified of meeting to discuss the results.

On the sixth session for the waitlist treatment group the same procedures were followed as for the treatment group. Four weeks after the last session the waitlist treatment group returned for the same follow-up procedures and information that the treatment group received.

**Data Analysis**

Preliminary analysis of the dependent variables provided descriptive data, such as means, standard deviations, Pearson product-moment correlation coefficients, and frequency distributions for each group at the three assessment periods. Because of the design of the study some analyses required that the Treatment group be compared with the Waitlist Control group, and other analyses compared the Treatment group with the Waitlist Treatment group.

In Hypothesis one it was predicted that at pretest the participants would have higher frequency of negative self-talk than positive self-talk. A t-test comparing the positive self-talk and negative self-talk of the Treatment and the Waitlist Control groups
and a second t-test comparing the Treatment and Waitlist Treatment groups were conducted to test the prediction.

The hypotheses in question two predicted that there would be changes in self-talk over time within groups and between groups. In order to determine the effects of the treatment program, 2 two-way (group x time), repeated measures, analyses of variance (ANOVA) were performed on each dependent self-talk variable to examine group by time interactions. One ANOVA was conducted on the treatment and waitlist control group. A group x time interaction effect would indicate differential changes on the dependent variables between the groups and was of particular interest to this study. Because this analysis had only two time periods (pretest and posttest) further exploration of a time effect was unnecessary. A second ANOVA was conducted on the two treatment groups and a group by time interaction effect was of particular interest. However, any reported change may have occurred over three time intervals; thus, three separate t-tests were performed on the variables that emerged as significant to test for a significant time effect. Effect sizes and power analyses were calculated for each variable to assess the significance of the results.

In calculating the SOM ratio, a constant of 1.0 was added to a positive or negative (but not both) self-talk frequency score of 0 to correct for a distortion of individual ratios (Amsel & Fichten, 1990). Zero frequencies of positive self-talk result in a SOM ratio of 0; whereas, zero frequencies of negative self-talk result in a SOM ratio of 1. This creates a problem when comparing the frequency of self-talk ratios. For example, if two individuals had no positive self-talk but one had 10 negative self-talk utterances and another individual had 1 negative utterance, both ratios would be 0. The two ratios would not accurately reflect the nature of their self-talk.
In Hypothesis four, I predicted that the SOM self-talk ratio of the treatment groups would emerge at the level of positive dialogue after treatment and that it would be maintained at follow-up (Hypothesis five). These predictions were tested by using a t-test of mean scores for the Treatment and Waitlist Treatment groups against the expected score of .62 at posttest and at follow-up.

Hypotheses six and seven predicted that there would be a decrease in anxiety and an increase in job satisfaction scores over time within groups and between groups that would be maintained at follow-up. Similar to the data analysis for hypothesis two and three, two-way (group x time), repeated measures, analyses of variance (ANOVA) were performed on the anxiety and job satisfaction dependent variables to examine the group by time interaction. The ANOVA for Hypothesis six was conducted on the treatment and waitlist control groups, and a second ANOVA for Hypothesis seven was conducted on the treatment and waitlist treatment groups. The group x time interaction effect with the treatment and waitlist control groups was of particular interest to show differential changes on the dependent variables between groups. In the treatment and waitlist treatment ANOVAs three separate t-tests were conducted to further examine for a significant time effect. Power analyses and effect sizes were also calculated to assess the significance of the results.

As previously mentioned in the design of the study, this study was also exploratory in nature. Pearson product-moment correlations were used to explore the relationships between negative self-talk and stress, and between the SOM ratio and stress. In addition, the relationship between teacher stress and job satisfaction was of particular interest.
One test return for the STAI had an incomplete item and another test return for the TSI-R job satisfaction sub-scale had an incomplete item. The TSI-R did not outline a particular correction method but the STAI Test Manual (Spielberger et al., 1983) did outline a procedure to correct for one or two missing items. The manual recommended calculating the mean weighted score for the scale items to which the participant responded, multiplying that value by 20 (the number of questions in the scale), and rounding to the next higher whole number. For example, if a participant’s mean scale score for 19 of the 20 questions was 3.2, then 3.2 x 20 = 64 would be the pro-rated scale score. The same procedure was used to correct for both tests that had a missing item.

**Clinical Significance**

It has been contended that statistically significant results do not necessarily indicate clinically meaningful results. Jacobson and Truax (1991) suggested a procedure to calculate reliable change, the Reliable Change Index (RC), which accounts for the reliability of the instrument. The RC takes into account a pretreatment assessment and the amount of change from one assessment time to another (e.g., pre to post) for each individual. This procedure is an attempt to standardize the assessment of clinical significance. Speer (1992) criticized this RC index arguing that it does not take into account regression to the mean, so he used another formula. Speer’s formula is more conservative with respect to estimating improvement rates and runs the risk of Type II errors, i.e., an effective treatment may be overlooked. In this study the Reliable Change Index was calculated using the Jacobson and Truax method involving the difference of the pretest-posttest scores of an individual client divided by
the standard error of the differences between the two test scores,

\[ RC = \frac{X_2 - X_1}{2(SE)^{1/2}}. \]

**Measures**

Three inventories, the Trait Scale of the State-Trait Anxiety Inventory Form Y (Spielberger, Gorsuch, Lushene, Vagg, & Jacobs, 1983), the Automatic Thoughts Questionnaire Revised (Kendall et al., 1989), and the job satisfaction sub-scale of the Teacher Stress Inventory (Schutz & Long, 1988) were the dependent variables. Demographic information regarding gender, age, number of years teaching, and grade level taught was collected. Additional data regarding the participants' expectations for treatment efficacy and program evaluations were gathered.

**State-Trait Anxiety Inventory**

In order to assess the anxiety of the participants, the State-Trait Anxiety Inventory (STAI) was used. It is one of the most widely used instruments to assess anxiety. The STAI is available in Form X (1970) and Form Y (1983). Form Y was developed in response to some concerns that Form X did not sufficiently differentiate between depression and anxiety. Correlations between Form X and Form Y are over .95 for males and females. The 40-item test is divided into two 20-item parts, each measuring the level of an individual's state anxiety and trait anxiety. The state anxiety scale is designed to measure transitory anxiety or anxiety that an individual is experiencing at that particular point in time (e.g., just before a job interview). The trait anxiety scale is designed to assess a more general orientation or disposition of an individual's personality to anxiety (e.g., anxiety proneness). Because this study was investigating the more stable orientation or tendency of teachers to anxiety rather than their transitory anxiety only the A-Trait test was used. Form Y was used for this study.
to provide a more accurate assessment of the anxiety levels of teachers rather than depression.

The STAI was designed for high school and college students and for adults. For the trait-anxiety scale the subject is asked to rate each item on a 4-point frequency scale classified as "(1) Almost Never," "(2) Sometimes," "(3) Often," and "(4) Almost Always." The instructions asked participants to rate how they feel "in general" to each item and it assured them that there is no "right" answer. Scores can range from 20 to 80 with the higher scores indicating greater levels of anxiety.

Form Y trait scale test-retest reliabilities on two groups of high school students after 30 days and 60 days ranged from .65 to .75 with a median correlation of .70. Form X test-retest reliability for the trait scale on male and female college students ranged from .73 to .86, with a median of .77. Findings indicate that the trait anxiety scale is quite stable. Internal consistency, as measured by Cronbach's alpha, was calculated on normative samples. The normative samples consisted of 1,838 working adults (ages 19-69), 424 high school students, 855 college students, and 1,964 military recruits. Internal consistency of the trait-anxiety scale showed that all but one group (male military) had coefficient alphas over .90, furthermore three age ranges of male and female adults also reported high alpha coefficients for all ranges (.89 to .96) demonstrating high internal consistency. All item total correlations were above .30.

Several aspects of the validity of STAI Form Y are reported. Construct validity correlations between state and trait anxiety scales reported for males and females in all four normative samples except female military ranged from .59 to .75 with r = .65 the median correlation. This indicates that the state and trait measures do not measure the same construct, and yet, there is a moderate correlation. Correlations between the
Form X Trait anxiety scale and other measures such as Taylor Manifest Anxiety and the IPAT Anxiety Scale were reported (e.g., .73 to .85. It has been reported that the A-Trait scale scores of teachers who received a SIT intervention were reduced at posttest and further reduced at follow-up (Cecil & Forman, 1990; Forman, 1982).

Teacher Stress Inventory - Revised

The TSI-R (1988) is a revision of the Teacher Stress Inventory (TSI) developed by Pettegrew and Wolf (1982). Schutz and Long (1988) tested the factorial validity of the TSI using confirmatory factorial analysis, revised it, and retested it in a study with 879 elementary and 607 secondary teachers in an urban school district in western Canada. The revised form of the TSI is a 7-factor, 36-item inventory. The seven factors are the following: Role Ambiguity, Role Stress, Organizational Management, Job Satisfaction, Life Satisfaction, Task Stress, and Supervisory Support. Participants are asked to respond on a 5-point Likert-type scale ranging from “strongly disagree” to “strongly agree”. Items that were worded positively (e.g., I currently find my life very rewarding”) are reverse scored so that a high score indicates a high degree of stress.

The revised format was compared to the original TSI using confirmatory factor analysis (CFA) and it indicated a significant improvement in fit over the original form. Factor intercorrelations for the revised structure were validated on a withheld group (Sample B) and the CFA results were very similar to those of the test sample. Internal consistency was measured using Cronbach’s alpha. Findings showed that all seven factors had high internal consistency (alpha’s ranging from .74 to .87) and that item-total correlations for all but three of the 36 items were above .50. Reliability results indicated that the revised 7-factor, 36-item inventory is as reliable as the original TSI and provides a simpler factor structure.
Validity of the revised format was assessed by conducting three MANOVAs to determine if the factors could discriminate groups known to be different on stress related characteristics. An analysis of the means of the factors indicated that the most powerful discriminators were Role Stress and Task Stress. All seven factors discriminated among the different levels of the independent variable (p < .001). The multivariate Fs were significant (p < .001) for the independent variables Perceived Stress and Health Concerns. In summary, the TSI-R is a suitable instrument to measure teacher stress and has stronger psychometric properties than the TSI with the added advantage of being shorter.

The Job Satisfaction sub-scale was of particular interest in this study and was used as a measure of teacher job satisfaction. It consisted of four items such as “All in all, I would say that I am extremely satisfied with my job” or “My job is extremely important in comparison to other interests in my life” that were worded both positively and negatively. The sub-scale showed moderate correlations to the other factors in the TSI-R ranging from .41 to .56. Furthermore, when subjected to an item analysis, the internal consistency of the revised test sub-scale, as measured by Cronbach’s alpha, was .82. Total scores for the four items can range from 4 to 20 with a low score indicating high satisfaction. Thus, an increase in job satisfaction would result in a decrease in the sub-scale score, i.e., it would move in a negative direction.

**Automatic Thoughts Questionnaire -Revised**

The Automatic Thoughts Questionnaire-Revised (Kendall et al., 1989) is designed to measure the frequency of an individual’s self-talk. The ATQ-R was chosen as a measure for this study because it incorporates both negative and positive self-talk
items. This allows for the opportunity to examine the balance of cognitions as suggested by Kendall and Hollon (1981) and Schwartz and Garamoni (1986).

The development and evaluation of the ATQ-R (Kendall et al., 1989) was based on two studies with different samples. Study 1 used 177 undergraduate university volunteers; Study 2 used a sample of 34 psychiatric inpatients in Philadelphia. Both studies supported the SOM model's claim that psychologically healthy individuals display self-talk ratios (positive to negative) of 1.6 to 1.0 (or .62 to .38). SOM ratios calculated in Study 1 for dysphoric groups were .42 and .45, whereas normals were .63 and .64. Study 2 reported depressed patients at .34 and other patients at .53.

There are different methods of gathering self-talk data. The one used in this study is referred to as an endorsement method or inventory. One strength of the endorsement method (e.g., the ATQ-R) is that subsequent coding of the self-talk is not required; whereas, the other methods of gathering self-talk data do require coding (Kendall & Hollon, 1981). Coding of the data can affect the reliability of the measure. However, a weakness with an inventory approach such as ATQ-R is that it asks participants to assess their self-talk retrospectively, which also can affect reliability. Another weakness is that the self-talk statements are limited to those listed in the instrument. In this study, the ATQ-R was chosen for several reasons: it has positive and negative self-talk statements, it has specific self-talk statements that may be useful for those not familiar with the concept (i.e., for the waitlist control group at all test periods, and at pretest for the treatment group), and coding will not be a concern.

The ATQ-R is a 40-item inventory of self-statements. Participants are asked to rate the frequency of each thought (item) during the preceding week using a 5-point Likert scale ranging from 0 = "not at all" to 4 = "all the time." Scores for the 30 negative
items are added for a total negative score that can range from 0 to 120, and scores for the 10 positive items are added to generate a positive score ranging from 0 to 40. A simple mathematical calculation (i.e., multiply the positive score by 3) is made to adjust for the fewer number of positive items, so adjusted positive scores can range from 0 to 120.

The revised ATQ consisted of the addition of a total of 10 positive self-talk items to the original ATQ. The authors reported that regression analysis showed that the addition of the 10 nonnegative items accounted for significantly more variance in the distribution of Dysphoric and Normal participants than for the original ATQ (ATQ, adjusted $R^2 = .43$; nonnegative items, adjusted $R^2 = .57$, $F(1,26) = 10.0$, $p < .01$). In Study 2 they also reported that the total score of the 10 nonnegative items successfully discriminated clinically depressed patients from other psychiatric patients ($t(32) = -2.77$, $p < .05$). An analysis of the contribution of the frequency ratings of the nonnegative items to the inventory using hierarchical multiple regression showed that the nonnegative items accounted for a significant increase in the variance when using diagnostic group as a dependent variable (adjusted $R^2 = .21$ to adjusted $R^2 = .26$, $F(1,31) = 7.29$, $p < .05$).

Because the negative items in the ATQ-R did not change from the ATQ, which was well established as having good internal consistency, internal consistency was examined for the 10 nonnegative items. Correlation coefficients, calculated between each of the 10 items and the total nonnegative score (from 10 to 50 points) for each participant, varied from .54 to .75. Furthermore, the coefficient alpha was reported to be .90. Results of the ATQ-R indicate that it is a suitable instrument to measure negative and positive self-talk. The addition of the positive items improves the variance
of the revised version compared to the original measure, and permits an analysis of the ratio of positive and negative self-talk.

**Expectations of Treatment Efficacy**

A treatment efficacy survey was administered to all participants to ensure that the expectations of the participants in the treatment group, the waitlist control group, and the waitlist treatment group were similar. Participants in the all groups were asked to indicate their expectations of treatment following the pretest. The treatment efficacy questionnaire consisted of three questions and it asked participants, using a 5-point scale, to rate how effective they believed the sessions would be in helping them to cope with (a) anxiety, (b) job satisfaction, (c) how likely they would be to recommend the program to a friend (see Appendix D). The scale ranged from 1 being “very ineffective” to 5 being “very effective”.

**Group Leaders**

In order to enhance internal validity, this study had different leaders for both treatment groups. Although it may be argued that leader effects can affect the validity of the results, I decided that the validity issues would be best met by using different leaders. Both leaders were males who had graduate training in counselling interventions. I led the first treatment group and I am a teacher/administrator who has considerable experience working with teachers and in presenting workshops. The waitlist treatment group received the intervention from a registered psychologist. He is a teacher who also has experience working with teachers and in presenting workshops. Training sessions in the treatment program consisted of reading and discussing the treatment manual and specific lesson plans to ensure familiarity with the concepts, the
rationale, and the design of the program. The two leaders discussed particular aspects of the program such as content or activities as the need arose.

**Treatment Fidelity**

The treatment manual enabled the leaders to ensure the treatment fidelity for the two groups. Both leaders carefully followed the treatment manual (see Appendix B) to ensure content validity (i.e., that the content presented to the two groups is the same). Each session consisted of specific lesson plans including content, materials, and time allotments. Program evaluation forms (see Appendix E) were administered at the follow-up session to assess the participants' experiences of the intervention.

**Treatment Program**

The teachers participating in the treatment met once a week for 90 minutes over 6 consecutive weeks. The program was based on Meichenbaum's (1977, 1985) stress inoculation training; however, it has been modified to more closely examine the impact of teacher self-talk. Stress inoculation training is a cognitive-behavioral intervention designed to help individual's better cope with stress. The same basic SIT format was used consisting of three phases: the educational phase, the rehearsal phase, and the application phase.

A brief overview of the treatment program is presented; however, a more detailed description of each session is provided in Appendix B. Session 1 included the administering of the pretest instruments to provide a preliminary examination of teacher self-talk, stress and job satisfaction. Once the pretests were administered the treatment program began. Preliminary activities of rapport building, establishing groups norms, and discussing confidentiality took place. A definition of stress and the dynamics of the Lazarus (1966) model of the stress process was presented highlighting the appraisal
process. The participants were asked to identify possible causes and effects of school stress. Each session involved specific homework assignments and the importance of completing the assignments was mentioned.

The second session presented a version of Kyriacou and Sutcliffe's (1978) model of teacher stress and teachers examined their own stress situations. A brief relaxation exercise was introduced to help the teachers prepare for activities in later sessions. Self-talk and the role of cognitions on behavior and feelings was introduced. Participants were asked to keep self-talk logs for use in the remaining sessions.

The third session further examined more closely cognitive restructuring and Ellis' (1977) ABCDE model. The stages of a stress event were presented and participants worked with self-talk statements and examined several of their own stressful situations. The participants began to use relaxation and imagery for personal stressful situations.

In the fourth session teachers continued to work with their self-talk patterns and cognitions. The self-talk cycle was introduced. Participants were asked to rank the severity of their stressful situations and they developed stress scripts with those situations and practiced using imagery and role-play.

Session 5 had the participants developing stress scripts with more stressful situations. Participants practiced coping with anticipated stress events (e.g., report card time) and using role reversal and role play.

Session 6 had participants practice with one last role-play to reinforce the skills learned and introduced relapse prevention with guided imagery. The program was briefly reviewed and concluded. The posttests were administered to the participants. Following the posttests, they were thanked for their participation and they were reminded that they were to return in 4 weeks for a follow-up assessment.
The follow-up session administered the three instruments to the participants and had them complete an evaluation of the program. They were informed that they would be notified of an information meeting at some future date to present the findings of the study.
Chapter Four

Results

Sample Characteristics

Data from the three waitlist control group participants who withdrew were used in the analysis of the waitlist control group (n = 8), but not in the analysis of the waitlist treatment group (n = 9). None of the data of the participant who was only in the waitlist treatment group were used in this study. Final n for the waitlist treatment group was 9. One expectancy questionnaire in the waitlist treatment group was not completed.

Group Comparability

Characteristics of the participants in each group are presented in Table 2. In order to assess group comparability, two demographic variables were examined (age, years of teaching). Because members of the waitlist control group were also in the waitlist treatment group, two separate analyses were conducted for each variable: treatment compared to waitlist control and treatment compared to waitlist treatment. Means and standard deviations of the three groups are presented in Table 2. A t-test on the treatment and the waitlist control groups did not reveal a significant difference in age, t (14) = -1.12, p = .28. A similar result was revealed for the two treatment groups, t (15) = .35, p = .73. No significant differences in years of teaching experience emerged from t-tests conducted on either the treatment and control group, t (14) = .08, p = .94, or on the two treatment groups, t (15) = -.58, p = .57. Additional demographic information regarding the grade level taught and the type of students teachers were working with is
available in Appendix F. In sum there appear to be no pre-treatment differences in sample characteristics between the groups.

Table 2

Participant characteristics by group.

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Treatment</th>
<th>Waitlist Control</th>
<th>Waitlist Treatment</th>
</tr>
</thead>
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<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Age</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>M</td>
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<tr>
<td>SD</td>
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</tr>
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<td>Years of teaching</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>M</td>
<td>15.25</td>
<td>14.88</td>
<td>12.67</td>
</tr>
<tr>
<td>SD</td>
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<td>8.56</td>
</tr>
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<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Jr. High</td>
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<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>
Correlation Matrix

The correlation matrix for the dependent variables and age and years of experience demographic variables of the treatment group and the waitlist control group at pretest is presented in Table 3. Correlations were all in the expected direction. For example, it was expected that positive self-talk would be negatively correlated to negative self-talk. A positive correlation was expected between stress and job satisfaction. This is because a higher STAI score meant higher stress; whereas, a higher job satisfaction reverses their score. Thus, a high stress score is expected to correlate with a high job satisfaction score. Such a positive correlation did, in fact, occur between these two variables. It is important to note that the ratio score is derived from both the positive and negative self-talk scores, thus a significant correlation of ratio to both the positive and negative scores was expected. Nevertheless, the ratio scores were included to help understand the relationship of positive and negative self-talk and the ratio of the two. It was also expected that a significant correlation of age and years of teaching would emerge. From these findings it can be seen that job satisfaction is significantly positively correlated with negative self-talk (r = .59, p = .016) and significantly negatively correlated with ratio of self-talk (r = -.59, p = .016), but not significantly correlated with positive self-talk. Stress was significantly related to negative self-talk (r = .64, p = .008) with high stress being associated with greater negative self-talk.
Table 3

Correlation Matrix of dependent variables and demographic variables for the treatment
group and the waitlist control group at pretest

<table>
<thead>
<tr>
<th></th>
<th>negative</th>
<th>positive</th>
<th>ratio</th>
<th>satisfaction</th>
<th>STAI</th>
<th>age</th>
<th>experience</th>
</tr>
</thead>
<tbody>
<tr>
<td>negative\textsuperscript{a}</td>
<td>--</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>positive\textsuperscript{b}</td>
<td>-.39</td>
<td>--</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ratio\textsuperscript{c}</td>
<td>-.88\textsuperscript{**}</td>
<td>.72\textsuperscript{**}</td>
<td>--</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>satisfaction\textsuperscript{d}</td>
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<td>-.32</td>
<td>-.59\textsuperscript{*}</td>
<td>--</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>STAI\textsuperscript{e}</td>
<td>.64\textsuperscript{**}</td>
<td>-.58\textsuperscript{*}</td>
<td>-.68\textsuperscript{**}</td>
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<td>--</td>
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</tr>
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<td>-.06</td>
<td>.17</td>
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<td></td>
<td></td>
</tr>
<tr>
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<td>-.12</td>
<td>-.08</td>
<td>.32</td>
<td>.03</td>
<td>.79\textsuperscript{**}</td>
<td>--</td>
</tr>
</tbody>
</table>

\textit{Note.} \textit{n} = 16

\textsuperscript{a} negative self-talk
\textsuperscript{b} positive self-talk
\textsuperscript{c} ratio of positive/ positive + negative self-talk
\textsuperscript{d} Teacher Stress Inventory - job satisfaction sub-scale
\textsuperscript{e} State-trait Anxiety Inventory
\textsuperscript{f} years of teaching experience

\textsuperscript{*} \textit{p} < .05.  \textsuperscript{**} \textit{p} < .01
Stress was significantly negatively correlated to ratio of self-talk ($r = -.68$, $p = .004$) and positive self-talk ($r = -.58$, $p = .018$) with high stress being negatively correlated to positive self-talk and to ratio of self-talk. No other correlations were significant.

The correlation matrix for the dependent variables and the demographic variables, age and years of experience, for the treatment group and the waitlist treatment group at pretest is presented in Table 4. Correlations were in the expected direction for the same reasons as the correlations in Table 3 since the measures were the same. All three correlations of stress to the self-talk variables are significant. Stress is positively correlated to negative self-talk ($r = .72$, $p = .001$) with high stress being associated with greater negative self-talk. Stress was negatively correlated to both positive self-talk ($r = -.72$, $p = .001$) and ratio of self-talk ($r = -.82$, $p = .001$) indicating that high stress is associated with lower positive self-talk and a lower ratio of self-talk. Job satisfaction has a significant correlation to negative self-talk ($r = .58$, $p = .014$) with high negative self-talk being associated with low job satisfaction (i.e., job satisfaction reverses the score). Negative self-talk has a significant negative correlation to positive self-talk ($r = -.48$, $p = .05$) and to ratio of self-talk ($r = -.89$, $p = .001$). Positive self-talk has a significant positive correlation to ratio ($r = .74$, $p = .001$). All other correlations were non significant.
Table 4

Correlation matrix of dependent variables and demographic variables for the treatment group and the waitlist treatment group at pretest.

<table>
<thead>
<tr>
<th></th>
<th>negative</th>
<th>positive</th>
<th>ratio</th>
<th>satisfaction</th>
<th>STAI</th>
<th>age</th>
<th>experience</th>
</tr>
</thead>
<tbody>
<tr>
<td>negative(^a)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>positive(^b)</td>
<td>-.49**</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>ratio(^c)</td>
<td>-.89**</td>
<td>.74**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>satisfaction(^d)</td>
<td>.58*</td>
<td>-.13</td>
<td>-.45*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>STAI(^e)</td>
<td>.72**</td>
<td>-.72**</td>
<td>-.82**</td>
<td>.22</td>
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<td>.01</td>
<td>.17</td>
<td>.09</td>
<td></td>
<td></td>
</tr>
<tr>
<td>experience(^f)</td>
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<td>-.11</td>
<td>.03</td>
<td>-.07</td>
<td>.01</td>
<td>.82*</td>
<td></td>
</tr>
</tbody>
</table>

Note. \(n=17\).

\(^a\) negative self-talk

\(^b\) positive self-talk

\(^c\) ratio of positive/ positive + negative self-talk

\(^d\) Teacher Stress Inventory - job satisfaction sub-scale

\(^e\) State-trait Anxiety Inventory

\(^f\) years of teaching experience

* \(p < .05\).  ** \(p < .01\)
Preliminary Analysis

In order to evaluate the effect of the treatment across the groups, participants' expectations of the treatment program were assessed in the first session. Participants were asked to indicate on 5-point scales how effective they thought the sessions would be in helping them to cope with stress (1 = "very ineffective" to 5 = "very effective") in question one and with job satisfaction in question two. In addition, question three asked participants to rate how likely they would be to recommend the treatment program to a friend (1 = "very unlikely" to 5 = "very likely"). Participants in the waitlist control group were assessed twice, i.e., in session one as waitlist control and in session one as waitlist treatment. Means and standard deviations are presented in Table 5.

In examining the differences between the treatment group and the waitlist control group, t-tests were performed for each question and results were non significant. Similarly, the results of t-tests performed on the two treatment groups were also non significant for questions one and two. However, the results for question three were significant, $t(14) = -2.41$, $p = .03$. Thus, it appears that there are no differences among groups regarding the expectations of the program to help participants cope with anxiety and job satisfaction. However, for the expectation of recommending the program to a friend, significant differences emerged between the treatment group and the waitlist treatment group, but not between the treatment group and the waitlist control group. Of note is the fact that for 6 of the 9 participants this was the second time they completed the expectancy questionnaire. It is difficult to see how this could have any effect on the results.
Table 5

Means and standard deviations for participants' expectations regarding the effectiveness of the program for coping with anxiety, job satisfaction, and for recommending the program to a friend by group.

<table>
<thead>
<tr>
<th>Group</th>
<th>Treatment</th>
<th>Waitlist Control</th>
<th>Waitlist Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anxiety</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M</td>
<td>3.75</td>
<td>3.75</td>
<td>3.38</td>
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<tr>
<td>SD</td>
<td>.89</td>
<td>1.04</td>
<td>1.19</td>
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<tr>
<td>Job Satisfaction</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>M</td>
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<td>3.75</td>
<td>3.75</td>
</tr>
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<td>SD</td>
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<tr>
<td>Recommend</td>
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</tr>
<tr>
<td>M</td>
<td>4.25</td>
<td>3.63</td>
<td>3.38</td>
</tr>
<tr>
<td>SD</td>
<td>.87</td>
<td>.92</td>
<td>.52</td>
</tr>
<tr>
<td>n</td>
<td>8</td>
<td>8</td>
<td>8*</td>
</tr>
</tbody>
</table>

* Results from one participant in the Waitlist Treatment group was missing
An examination of the distribution of the variables at the three assessment periods showed all variables had marginal skewness except for negative self-talk of the treatment group at posttest (+2.26). According to Tabachnick and Fidell (1989) skewness of this magnitude is not a concern, especially considering the small sample size. They suggest that the skewness value be divided by the standard error of skewness to create a z-score which is compared with 0 using the z distribution (p. 73). They recommend that conventional but conservative (.01 or .001) alpha levels should be used to evaluate the skewness of small to moderate samples. The critical z value at alpha .01 = 2.58 and at alpha .001 = 3.30. In this study the skewness value (2.26) divided by the standard error of skewness (.75) yields a z-score of 3.01 that approaches a conservative significance level of .001. There was not strong evidence of skewness; thus no adjustment was necessary, and the assumptions of normality appear to be within acceptable limits.

Main Analyses

Hypothesis Tests

As mentioned in the hypotheses section of chapter two, due to the cross-over design the three groups can not be analyzed at the same time. Some data analyses require that the treatment and waitlist control groups be compared involving pre and posttest; whereas, other analyses require treatment and waitlist treatment groups be compared involving pre, post and follow-up tests. Results will be presented for each combination of groups.

Treatment and waitlist control group analysis from pre to posttest. Hypothesis one predicted that before treatment the frequency of positive teacher self-talk would be
lower than the frequency of negative self-talk for the treatment and the waitlist treatment groups. A $t$-test comparing negative self-talk to positive self-talk of the participants from both groups was performed. The hypothesis was not supported, $t(15) = -2.08$, $p = .055$.

Hypothesis two predicted that from pretest to posttest the participants in the treatment group would report a decrease in negative self-talk and an increase in positive self-talk compared to the waitlist control group. A 2 (time) by 2 (group) repeated measures analysis of variance was performed for each self-talk variable to test the hypothesis. Because of the small sample size, effect size (eta squared) and power were calculated to provide further understanding of the results. Effect size is a measure of the magnitude of the effect that is not sensitive to sample size; thus, giving some indication of the meaningfulness of the effect even though it may not be significant. Eta squared, often referred to as “shrunken $R^2$” (Keppel, 1992), is only one method of calculating effect size. Using eta squared, a small effect size would be .01, moderate effect size would be approximately .09, and large effect size would be approximately .25. This study will report meaningful effect sizes and power.

In order to determine whether the assumptions of ANOVA were met a Cochran's C and Bartlett Box-F were performed for the dependent variables. The data appeared to meet the assumptions.

Means and standard deviations for the Automatic Thoughts Questionnaire-Revised (ATQ-R) are reported in Table 6. For ATQ-R negative self-talk, results were nonsignificant (see Table 7) for the group effect and the group by time interaction, $F < 1$. The time effect was also nonsignificant, $F(1,14) = 2.70$, $p = .12$. Effect size and
power for the interaction effect were small, while medium effect size (.16) and low power (.34) emerged for the time effect.

Results of the ATQ-R positive self-talk indicates nonsignificant effects for group, $F < 1$, and for interaction, $F < 1$. The main effect for time, however, was significant, $F (1, 14) = 5.15, p = .04$ (see Table 7). A small effect size and power emerged for the interaction effect (.03 and .11 respectively) and a large effect size and low power was reported for the time effect (.27 and .56 respectively). The combination of large effect size with low power indicates that the positive self-talk of the participants meaningfully changed over time and further supports the significant time effect.

Analysis of variance of ATQ-R ratio indicates nonsignificance for the group effect and the interaction effect $F < 1$; however, a borderline significant time effect did emerge, $F (1, 14) = 4.39, p = .055$ (see Table 7). Effect size for the interaction was small (.02) and power was low (.07); whereas, the time effect showed a large effect size (.24) but low power (.50). The large time effect means that participants' ratio of self-talk changed over time, and the nonsignificant interaction was due to low power. The results are ambiguous. In summary, results of the three ANOVAs did not support hypothesis two.
Table 6

Means and standard deviations for Automatic Thoughts Questionnaire-Revised self-report variables for treatment, waitlist control, and waitlist treatment groups pre, post, follow-up tests.

<table>
<thead>
<tr>
<th>Group</th>
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<th>Waitlist Treatment</th>
</tr>
</thead>
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</tr>
<tr>
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<tr>
<td>Positive</td>
<td>49.50</td>
<td>17.86</td>
<td>54.38</td>
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<tr>
<td>Negative</td>
<td>34.00</td>
<td>30.73</td>
<td>28.75</td>
</tr>
<tr>
<td>SOM</td>
<td>.64</td>
<td>.23</td>
<td>.63</td>
</tr>
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<td>Positive</td>
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<td>63.00</td>
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<tr>
<td>Negative</td>
<td>25.25</td>
<td>28.99</td>
<td>24.13</td>
</tr>
<tr>
<td>SOM</td>
<td>.74</td>
<td>.22</td>
<td>.69</td>
</tr>
<tr>
<td>Follow-up</td>
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<tr>
<td>Positive</td>
<td>73.89</td>
<td>25.40</td>
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<tr>
<td>Negative</td>
<td>22.13</td>
<td>17.92</td>
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</tr>
<tr>
<td>SOM</td>
<td>.78</td>
<td>.17</td>
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</tbody>
</table>
Table 7

Analysis of variance, effect size, and power analysis for Automatic Thoughts Questionnaire-Revised positive self-talk, negative self-talk, and ratio of self-talk for treatment and waitlist control groups.

<table>
<thead>
<tr>
<th>Source</th>
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<th>F</th>
<th>Sig of F</th>
<th>ES*</th>
<th>Power</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ATQ - negative</strong></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Group (G)</td>
<td>1</td>
<td>.08</td>
<td>.79</td>
<td>.005</td>
<td>.05</td>
</tr>
<tr>
<td>between error</td>
<td>14</td>
<td>(1062.44)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time (T)</td>
<td>1</td>
<td>2.70</td>
<td>.12</td>
<td>.16</td>
<td>.34</td>
</tr>
<tr>
<td>G x T</td>
<td>1</td>
<td>.26</td>
<td>.62</td>
<td>.02</td>
<td>.07</td>
</tr>
<tr>
<td>within error</td>
<td>14</td>
<td>(132.55)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>ATQ - positive</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group (G)</td>
<td>1</td>
<td>.01</td>
<td>.93</td>
<td>.001</td>
<td>.05</td>
</tr>
<tr>
<td>between error</td>
<td>14</td>
<td>(1273.74)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time (T)</td>
<td>1</td>
<td>5.15</td>
<td>.04</td>
<td>.27</td>
<td>.56</td>
</tr>
<tr>
<td>G x T</td>
<td>1</td>
<td>.47</td>
<td>.50</td>
<td>.03</td>
<td>.11</td>
</tr>
<tr>
<td>within error</td>
<td>14</td>
<td>(238.10)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>source</td>
<td>df</td>
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<td>sig of F</td>
<td>ES(^a)</td>
<td>Power</td>
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<td>----</td>
<td>-----</td>
<td>----------</td>
<td>----------</td>
<td>-------</td>
</tr>
<tr>
<td>ATQ - ratio</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group (G)</td>
<td>1</td>
<td>.07</td>
<td>.79</td>
<td>.005</td>
<td>.05</td>
</tr>
<tr>
<td>between error</td>
<td>14</td>
<td>(.10)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time (T)</td>
<td>1</td>
<td>4.39</td>
<td>.055</td>
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<td>.50</td>
</tr>
<tr>
<td>G x T</td>
<td>1</td>
<td>.27</td>
<td>.61</td>
<td>.02</td>
<td>.07</td>
</tr>
<tr>
<td>within error</td>
<td>14</td>
<td>(.01)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Note.** Values enclosed in parentheses represent mean square errors.

\(^a\) ETA squared
Hypothesis six predicted that from pretest to posttest the treatment group would report a significant reduction in anxiety (STAI) scores and an increase in job satisfaction (TSI-JS) scores compared to the waitlist control group. To test this hypothesis a 2 (time) by 2 (group) repeated measures analysis of variance was performed for each dependent variable. Means and standard deviations are presented in Table 8. For STAI the results showed no significant interaction, $F(1,14) = 2.86, p = .11$, with a moderate effect size (.17) and low power (.35). Because there was a meaningful (i.e., moderate to large) effect size and low power, this implies that the likelihood of the differences in anxiety between groups may be due to treatment effects. A nonsignificant group effect, $F < 1$, emerged with a small effect size (.01) and low power (.06). Borderline significance, $F(1,14) = 3.72, p = .07$, emerged for the time effect but a medium to large effect size (.21) and low power (.44) was reported (see Table 9). Once again, the large effect size and low power suggests that the anxiety of the participants differed over time but the low power reduced the ability to detect it.

For job satisfaction there were no differences, $F < 1$, for group effect and interaction (effect size = .06 and .04 respectively). The time effect was non significant, $F(1,14) = 1.91, p = .19$, (effect size = .12). Table 9 presents the results in detail. The STAI and job satisfaction results did not support the hypothesis.
Table 8

Means and standard deviations for State-trait Anxiety Inventory and Teacher Stress Inventory job satisfaction sub-scale self-report variables for treatment, waitlist control, and waitlist treatment groups at pre, post, and follow-up.

<table>
<thead>
<tr>
<th>Group</th>
<th>Treatment</th>
<th>Waitlist Control</th>
<th>Waitlist Treatment</th>
</tr>
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<tr>
<td></td>
<td>n = 8</td>
<td>n = 8</td>
<td>n = 9</td>
</tr>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
</tr>
<tr>
<td>Pretest</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>STAI</td>
<td>46.50</td>
<td>12.59</td>
<td>40.38</td>
</tr>
<tr>
<td>TSI - JS</td>
<td>10.38</td>
<td>3.25</td>
<td>11.25</td>
</tr>
<tr>
<td>Posttest</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>STAI</td>
<td>37.00</td>
<td>7.62</td>
<td>39.75</td>
</tr>
<tr>
<td>TSI - JS</td>
<td>9.00</td>
<td>4.00</td>
<td>10.88</td>
</tr>
<tr>
<td>Follow-up</td>
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</tr>
<tr>
<td>STAI</td>
<td>37.00</td>
<td>6.55</td>
<td>--</td>
</tr>
<tr>
<td>TSI - JS</td>
<td>9.13</td>
<td>3.76</td>
<td>--</td>
</tr>
</tbody>
</table>
Table 9

Analysis of variance, effect size, and power analysis for State-trait Anxiety Inventory (STAI) and Teacher Stress Inventory: job satisfaction sub-scale (TSI-JS) for treatment and waitlist control groups.

<table>
<thead>
<tr>
<th>source</th>
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<th>F</th>
<th>sig of F</th>
<th>ES*</th>
<th>Power</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>STAI</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group (G)</td>
<td>1</td>
<td>.14</td>
<td>.71</td>
<td>.01</td>
<td>.06</td>
</tr>
<tr>
<td>between error</td>
<td>14</td>
<td>(169.96)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time (T)</td>
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<td>3.72</td>
<td>.07</td>
<td>.21</td>
<td>.44</td>
</tr>
<tr>
<td>G x T</td>
<td>1</td>
<td>2.86</td>
<td>.11</td>
<td>.17</td>
<td>.35</td>
</tr>
<tr>
<td>within error</td>
<td>14</td>
<td>(55.14)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>TSI-JS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group (G)</td>
<td>1</td>
<td>.89</td>
<td>.36</td>
<td>.06</td>
<td>.15</td>
</tr>
<tr>
<td>between error</td>
<td>14</td>
<td>(16.96)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time (T)</td>
<td>1</td>
<td>1.91</td>
<td>.19</td>
<td>.12</td>
<td>.25</td>
</tr>
<tr>
<td>G x T</td>
<td>1</td>
<td>.62</td>
<td>.44</td>
<td>.04</td>
<td>.14</td>
</tr>
<tr>
<td>within error</td>
<td>14</td>
<td>(3.21)</td>
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</tbody>
</table>

*Note.* Values enclosed in parentheses represent mean square errors.

* ETA squared
Treatment and waitlist treatment group analysis from pretest, posttest, and follow-up. In question one, a t-test was not performed on the two treatment groups because the waitlist treatment group was primarily the same participants as the waitlist control group.

Hypothesis three predicted that participants in both groups would report a decrease in negative self-talk and an increase in positive self-talk from pretest to posttest that would be maintained at follow-up. A 3 (time) by 2 (group) repeated measures analysis of variance was performed for each self-talk variable. Effect size and power analysis were also performed to provide further understanding of the results; however, only meaningful effect sizes and power are reported.

A Cochran's C and Bartlett Box-F were performed to determine whether the assumptions of ANOVA were met. Homogeneity of variance was violated with the ATQ ratio and the ATQ negative variables; however, because the interaction effects were non significant an adjustment was not necessary. Two time effects, ATQ ratio and STAI, violated the sphericity assumption. A Geisser-Greenhouse correction was applied in both cases as recommended by Keppel, 1992 (p. 378).

Means and standard deviations are presented in Table 6. The time effect was significant for all three ATQ self-talk variables: F (2,30) = 5.52, p = .009, effect size = .27 for ratio of self-talk; F (2,30) = 3.99, p = .03, effect size = .21 for positive self-talk; F (2,30) = 4.06, p = .03, effect size = .21 for negative self-talk. As mentioned previously, the time effect for the ATQ ratio violated the sphericity assumption; thus a Geisser-Greenhouse correction was performed. Using a critical value of F (1, 14) = 4.60 at alpha .05 the time effect is significant. Other results were non significant and are reported in Table 10. The results did not support the hypothesis.
Table 10

Analysis of variance, effect size, and power analysis for Automatic Thoughts Questionnaire-Revised positive self-talk, negative self-talk and ratio of self-talk for treatment and waitlist treatment groups.

<table>
<thead>
<tr>
<th>source</th>
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<th>ES*</th>
<th>Power</th>
</tr>
</thead>
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<td>ATQ - negative</td>
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<td></td>
<td></td>
<td></td>
</tr>
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<td>.23</td>
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<td>between error</td>
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<td>(862.21)</td>
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<td></td>
</tr>
<tr>
<td>Time (T)</td>
<td>2</td>
<td>4.06</td>
<td>.03</td>
<td>.21</td>
<td>.68</td>
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<tr>
<td>G x T</td>
<td>2</td>
<td>.02</td>
<td>.98</td>
<td>.001</td>
<td>.05</td>
</tr>
<tr>
<td>within error</td>
<td>30</td>
<td>(141.13)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ATQ - positive</td>
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<td></td>
</tr>
<tr>
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<td>.29</td>
<td>.07</td>
<td>.18</td>
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<tr>
<td>between error</td>
<td>15</td>
<td>(1128.80)</td>
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<td></td>
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<tr>
<td>Time (T)</td>
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<td>3.99</td>
<td>.03</td>
<td>.21</td>
<td>.67</td>
</tr>
<tr>
<td>G x T</td>
<td>2</td>
<td>.78</td>
<td>.47</td>
<td>.05</td>
<td>.17</td>
</tr>
<tr>
<td>within error</td>
<td>30</td>
<td>(326.83)</td>
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(table continues)
### ATQ - ratio

<table>
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<td>.25</td>
<td>.09</td>
<td>.20</td>
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<tr>
<td>between error</td>
<td>15</td>
<td>(.06)</td>
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<td></td>
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<tr>
<td>Time (T)</td>
<td>2</td>
<td>5.52</td>
<td>.009</td>
<td>.27</td>
<td>.81</td>
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<tr>
<td>G x T</td>
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<td>.001</td>
<td>.98</td>
<td>.001</td>
<td>.05</td>
</tr>
<tr>
<td>within error</td>
<td>30</td>
<td>(.02)</td>
<td></td>
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</tbody>
</table>

**Note.** Values enclosed in parentheses represent mean square errors.

<sup>a</sup> ETA squared
In question three it was predicted that both treatment groups would report the ratio of self-talk at posttest and at follow-up in the range of positive dialogue. A \( t \)-test comparing the ATQ posttest ratio \( (M = .79, SD = .17) \) against \( .62 \) was performed to test hypothesis four and the result was significant, \( t(16) = 4.10, p = .001 \). A second \( t \)-test was performed comparing the ATQ follow-up ratio \( (M = .82, SD = .13) \) against \( .62 \) to test hypothesis five and the result was also significant, \( t(16) = 6.30, p = .0001 \). However, the hypotheses predicted that there would be no significant differences; thus, the hypotheses were not supported.

In question four it was predicted that both treatment groups would report a reduction in anxiety scores and an increase in job satisfaction scores from pretest to posttest and that the differences would be maintained at follow-up. A 3 (time) by 2 (group) repeated measures analysis of variance was performed to each variable to test the hypotheses. Calculations of effect size and power were performed due to the small sample size. Means and standard deviations for anxiety (STAI) and job satisfaction (TSI-JS) are reported in Table 8.

To test whether the assumptions of ANOVA were met a Cochran’s C and Bartlett Box-F were performed for the dependent variables. The data appeared to meet the assumptions.

Only the time effect for STAI emerged as significant, \( F(2,30) = 9.71, p = .001 \) with a large effect size (.39) and high power (.97). The sphericity assumption for STAI was violated so a Geisser-Greenhouse correction was performed. The critical value was adjusted to \( F(1,14) = 4.60 \) and the result remained significant. The other results were non significant and are presented in Table 11.
Table 11

Analysis of variance, effect size and power analysis for State-trait Anxiety Inventory (STAI) and Teacher Stress Inventory: job satisfaction sub-scale (TSI-JS) for treatment and waitlist treatment groups.

<table>
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<tr>
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<th>sig of F</th>
<th>ES&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Power</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>STAI</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group (G)</td>
<td>1</td>
<td>1.38</td>
<td>.26</td>
<td>.08</td>
<td>.20</td>
</tr>
<tr>
<td>between error</td>
<td>15</td>
<td>(154.12)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time (T)</td>
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<td>9.71</td>
<td>.001</td>
<td>.39</td>
<td>.97</td>
</tr>
<tr>
<td>G x T</td>
<td>2</td>
<td>.07</td>
<td>.93</td>
<td>.005</td>
<td>.06</td>
</tr>
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<td>within error</td>
<td>30</td>
<td>(46.70)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>TSI-JS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group (G)</td>
<td>1</td>
<td>.76</td>
<td>.40</td>
<td>.05</td>
<td>.15</td>
</tr>
<tr>
<td>between error</td>
<td>15</td>
<td>(22.67)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time (T)</td>
<td>2</td>
<td>1.17</td>
<td>.32</td>
<td>.07</td>
<td>.24</td>
</tr>
<tr>
<td>G x T</td>
<td>2</td>
<td>1.23</td>
<td>.31</td>
<td>.08</td>
<td>.25</td>
</tr>
<tr>
<td>within error</td>
<td>30</td>
<td>(2.08)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. Values enclosed in parentheses represent mean square errors.

<sup>a</sup> ETA squared
There were no significant effects for job satisfaction. Results, including effect size and power analysis are reported in Table 11. The results for the STAI and job satisfaction variables did not support hypothesis seven or hypothesis eight.

As with the treatment and control group analysis, the relationship between the change in stress and the change in job satisfaction for the two treatment groups from pretest to posttest, posttest to follow-up and pretest to follow-up assessed using a Pearson product-moment correlation. The result was $r = .31, p = .22$ from pre to post, $r = .37, p = .15$ from post to follow-up, and $r = .40, p = .12$ from pre to follow-up.

**Post-hoc Analyses**

Several post-hoc analyses were required to further examine the significant time effects from the ANOVAs conducted in the main analyses for the treatment and waitlist treatment groups. By performing post-hoc tests on only significant effects it acts as a form of control for family wise Type I error (Keppel, 1992, p. 247). Keppel adds that when the main effects are significant, current practice in psychological research is to conduct the analysis without correction for family wise error. Although this runs the risk of greater Type I error, the inverse possibility of Type II error and low power is also of concern, especially with small sample size. Because it is considered acceptable practice to not adjust for Type I error, no adjustment will be made in order to increase the power of the results.

Mean comparisons are the type of post-hoc tests recommended to analyze significant main effects. Specifically, the ATQ ratio, ATQ positive, ATQ negative, and STAI variables were examined to determine which time intervals contributed to the significant main effect using $t$-tests. Table 12 presents the results of the four $t$-tests.
performed. For ATQ ratio, the ratio of positive self-talk to total self-talk from pretest to posttest significantly increased, \( t(16) = 2.26, p = .04 \), as did pretest to follow-up, \( t(16) = 2.70, p = .02 \). The ATQ positive showed a significant increase in positive self-talk from pretest to follow-up, \( t(16) = 2.27, p = .04 \). A significant decrease in negative self-talk emerged for the ATQ negative from pretest to follow-up \( t(16) = -2.39, p = .03 \). Finally, the STAI showed significant decreases in anxiety from pretest to posttest, \( t(16) = -3.45, p = .003 \), and from pretest to follow-up, \( t(16) = -3.25, p = .005 \). In summary, when the significant main effects were followed-up all of the pretest to follow-up times were significant in the expected directions, and pretest to posttest was significant for ATQ ratio and for STAI in the expected directions. There was a borderline significant increase for the ATQ positive from pretest to posttest as well as a borderline significant decrease for the ATQ negative in the same time period.
Table 12

Post-hoc analysis t-tests for significant time effects for treatment and waitlist treatment groups.

<table>
<thead>
<tr>
<th></th>
<th>pre to post</th>
<th></th>
<th>post to follow-up</th>
<th></th>
<th>pre to follow-up</th>
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<tbody>
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<td></td>
<td>df</td>
<td>$t$</td>
<td>$p$</td>
<td>$t$</td>
<td>$p$</td>
<td>$t$</td>
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<td>.04</td>
<td>1.53</td>
<td>.15</td>
<td>2.70</td>
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<td>.06</td>
<td>.69</td>
<td>.50</td>
<td>2.27</td>
</tr>
<tr>
<td>ATQ negative</td>
<td>16</td>
<td>-2.06</td>
<td>.06</td>
<td>-1.09</td>
<td>.29</td>
<td>-2.39</td>
</tr>
<tr>
<td>STAI</td>
<td>16</td>
<td>-3.45</td>
<td>.003</td>
<td>-.58</td>
<td>.57</td>
<td>-3.25</td>
</tr>
</tbody>
</table>
Clinical Significance

Using the formula mentioned previously, the Reliable Change index (RC) for clinical significance was calculated for each participant's STAI scores for each appropriate time interval. The State-Trait Anxiety Inventory was used because it has well established test-retest reliability coefficients that are needed for calculating the index. The STAI-Trait test-retest reliability coefficient for college students varied from .73 to .86 so the median of $r = .77$ was used. The calculation involves finding the difference from a participant's two STAI tests (e.g., posttest to pretest) and applying the formula listed in chapter three. Any change greater than +/- 1.96 is considered to be significant. The expected change was to be in a negative direction since it was anticipated that the stress levels of the participants would decrease.

Results were calculated for three time intervals: pre to post, post to follow-up, pre to follow-up. Means and standard deviations are found in Table 13. From pretest to posttest the RC index for all treatment group participants was negative (-57.35 to -1.47) and significant in the expected negative direction for 7 out of 8 participants. Four of 8 participants in the waitlist control group had significant reduction in stress levels ranging from -19.12 to -2.94, two with no change, one with a significant increase (23.53) in stress and one with a nonsignificant increase. The waitlist treatment group reported a significant decrease in 6 out of 9 participants ranging from -33.82 to -4.41, one negative nonsignificant change, one no change and one nonsignificant increase in stress (1.47). Table 14 presents a summary of the frequencies of the reliable change index by direction of change.
<table>
<thead>
<tr>
<th>Table 13</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Means and standard deviations for the Reliable Change Index of the treatment, waitlist control and waitlist treatment groups for three time intervals.</strong></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>--------------</td>
</tr>
<tr>
<td>Reliable Change 1&lt;sup&gt;a&lt;/sup&gt;</td>
</tr>
<tr>
<td>M</td>
</tr>
<tr>
<td>SD</td>
</tr>
<tr>
<td>Reliable Change 2&lt;sup&gt;b&lt;/sup&gt;</td>
</tr>
<tr>
<td>M</td>
</tr>
<tr>
<td>SD</td>
</tr>
<tr>
<td>Reliable Change 3&lt;sup&gt;c&lt;/sup&gt;</td>
</tr>
<tr>
<td>M</td>
</tr>
<tr>
<td>SD</td>
</tr>
<tr>
<td>n</td>
</tr>
</tbody>
</table>

**Note.**

<sup>a</sup> reliable change index from pretest to posttest.  
<sup>b</sup> reliable change index from posttest to follow-up.  
<sup>c</sup> reliable change index from pretest to follow-up.
The reliable change index from posttest to follow-up showed 3 of 8 participants in the treatment group had significant reductions in stress ranging from -14.71 to -2.94, one negative nonsignificant reduction, and four significant increases in stress (ranging from 4.41 to 10.29). The waitlist treatment group showed significant decreases in 4 out of 9 participants ranging from -10.29 to -2.94, one nonsignificant decrease, one with no change, and three significant increases (4.41).

Reliable change was calculated from pretest to follow-up as well. The treatment group showed clinically significant reductions in stress for 6 out of 8 participants ranging from (-23.53 to -4.41), one nonsignificant reduction and one significant increase (8.82). The waitlist treatment group showed significant reductions with 7 out of 9 participants ranging from -44.12 to -5.88, one nonsignificant reduction, one with no change and one significant increase (5.88).

Closer examination of participants who did not reduce their anxiety, revealed no clear relationships or patterns with demographic characteristics. One participant in the treatment group whose anxiety did not change from pretest to posttest was the second oldest member, and yet, the participant who changed the most was the oldest member of the group, so age does not appear to be a factor. Another participant in the treatment group, who showed the greatest reduction in anxiety only to increase it again by follow-up, was the youngest in the group and had only one year of teaching experience. In the waitlist treatment group, 3 of 4 participants who showed increased anxiety from posttest to follow-up had the fewest years teaching experience in the group. This implies that teaching experience may be helpful or beneficial in maintaining and increasing gains made in reducing stress during the treatment program. Two of the
17 treatment participants had an overall increased RC index for anxiety (i.e., follow-up minus pretest) but there were no similarities between the two.
Table 14

Frequencies for the Reliable Change Index for the State-trait Anxiety Inventory for the treatment, waitlist control and waitlist treatment groups for three time intervals.

<table>
<thead>
<tr>
<th></th>
<th>Treatment</th>
<th>Waitlist Control</th>
<th>Waitlist Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>sig $^d$</td>
<td>nonsig $^a$</td>
<td>sig</td>
</tr>
<tr>
<td>Reliable Change 1$^a$</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>negative</td>
<td>7</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>positive</td>
<td></td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>no change</td>
<td></td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Reliable Change 2$^b$</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>negative</td>
<td>3</td>
<td>1</td>
<td>--</td>
</tr>
<tr>
<td>positive</td>
<td>4</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>no change</td>
<td></td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Reliable Change 3$^c$</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>negative</td>
<td>6</td>
<td>1</td>
<td>--</td>
</tr>
<tr>
<td>positive</td>
<td>1</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>no change</td>
<td></td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>n</td>
<td>8</td>
<td>8</td>
<td></td>
</tr>
</tbody>
</table>

Note.

$^a$ reliable change index from pretest to posttest. $^b$ reliable change index from posttest to follow-up. $^c$ reliable change index from pretest to follow-up. $^d$ clinically significant. $^e$ clinically nonsignificant.
Chapter Five

Discussion

This study examined the nature of teacher self-talk and whether a cognitive intervention program would be effective in reducing anxiety and in increasing job satisfaction. The hypothesis that predicted a greater frequency of negative teacher self-talk at the beginning of treatment, and the hypotheses that predicted an SOM ratio of positive dialogue at the conclusion of treatment were not supported. The remaining hypotheses regarding the treatment effects on positive self-talk, negative self-talk, stress, and job satisfaction were partially supported.

The significance of the results was evaluated in three ways: statistical significance, effect size and power, and clinical significance. Statistical significance, effect size, and power are discussed in terms of each variable followed by a discussion of clinical significance. Finally, a discussion of treatment evaluations, implications, limitations, and future research are presented.

Self-talk

In hypothesis one it was predicted that the frequency of positive self-talk would be lower at pretest than negative self-talk. Results showed that the frequency of positive teacher self-talk was greater than negative self-talk. Based on the literature and on personal experience it was not expected that teachers experiencing stress would report higher frequencies of positive self-talk before the treatment program. These results did not support the findings for inservice teachers (Manning & Payne, 1989) or for preservice teachers (Manning & Payne, 1988; Payne & Manning, 1991). Nor did they support the findings of Schwartz and Garamoni (1986, 1989) that individuals experiencing mild or
moderate dysfunction, such as anxiety, would have higher levels of negative self-talk. Using the participants' self-report and the pre-screening interview, the participants were experiencing stress, and yet, the frequencies of the types of self-talk did not support the SOM model. At pretest, the self-talk of both treatment and waitlist control groups was in the range of positive dialogue which is uncharacteristic of individual's experiencing stress. According to Schwartz and Garamoni (1989), the participants should have produced ratios in the range of mild dysfunction (.45 - .55). The same research, using self-statement inventory studies, reported that mildly dysfunctional participants showed self-talk ratios approximating the internal dialogue of conflict (.50). Self-talk ratios at pretest for the treatment group (.64) and for the waitlist treatment group (.72) did not support their findings.

There are several possible explanations for the difference. One reason may be that many participants were unfamiliar with the concept of self-talk, however, the same possibility would have been true for Schwartz and Garamoni's study. Manning and Payne's (1989) study had a preliminary one-hour session to explain the concept of self-talk. A second explanation may be that the ATQ-R items were too general and needed to include more teacher-specific self-talk items (e.g., "Why does the copier always break down just when I need to run off a test?"). Payne and Manning did not use the ATQ-R, but used self-talk logs that were subsequently coded. A third possibility is that the SOM categories are not valid for teachers experiencing stress. Bruch et al. (1992) reported that for situations requiring people to show assertive behavior perhaps positive monologue may be the most adaptive response. As a means of coping with stress, perhaps teachers respond with self-talk in the range of positive monologue. The most likely explanation, based on my teaching experience and on working with the treatment
group, is that teachers do not want to admit to having negative self-talk. Teachers, extensively trained to be positive with students, parents, and staff, have countless occasions to practice and rehearse these skills in their daily interactions with students. As a result, there may be a type of “culture” or group norm regarding being positive that makes it difficult to admit to negative thinking.

Hypothesis two predicted that there would be a significant decrease in negative self-talk and an increase in positive self-talk for the treatment group from pretest to posttest compared to the waitlist control group. The means and standard deviations for the self-talk variables for the treatment group and the waitlist control group showed a change in the expected directions. Negative self-talk decreased, and both positive self-talk and ratio of self-talk (the ratio of positive to negative plus positive) increased. The waitlist control group, however, also changed in the same direction as the treatment group, although not as significantly. This partially explains why there was no significant interaction effects for any of the self-talk variables, and it suggests that the change in self-talk can not be attributed to the treatment program alone. The different frequencies of positive and negative self-talk supported the theory of the asymmetrical nature of self-talk (Schwartz, 1986). The differential changes in the type of self-talk from one test period to the next also supports the theory that self-talk is asymmetrical (Schwartz, 1986). For example, the reduction in negative self-talk from pretest to posttest did not result in a similar increase in positive self-talk.

The ATQ positive variable showed a significant time effect. This means that there was a significant increase in positive self-talk for everyone in both groups from pretest to posttest. Although the ATQ ratio of self-talk variable only approached significance for the time effect, it may have been due to the small sample size. Even though only one time
effect reached significance, the effect size of negative, positive, and ratio of self-talk variables was moderate to large (.16, .27, .24, respectively) with low power (.34, .56, .50, respectively). The moderate to large effect size and low power is a recurring trend in the results indicating that some meaningful effects may have reached significance had the sample size been larger, or random error reduced.

An explanation for the waitlist control group changes in self-talk being similar in direction, but not in magnitude, to the treatment group is that after the third treatment the participants in both groups had spring vacation for 10 days. However, because the differences between the two groups are not uniform, it can be suggested that some of the change is due to treatment effect. This is further supported by the treatment group continuing to change its self-talk results in the expected direction from posttest to follow-up. Again, there is a concern that the ATQ-R may not accurately measure self-talk with a teacher population.

Hypothesis three, involving the two treatment groups, predicted the same changes in self-talk as hypothesis two, except it also predicted that the changes would be maintained at follow-up. Changes emerged in the expected directions. Because both groups received the treatment program, a group effect and interaction effect were not expected, but a time effect was. There were no group effects but there were significant time effects for all three variables. Participants in both groups showed significant changes over time in positive and negative self-talk and in the ratio of self-talk. In addition, the effect size for all three variables was strong (.21 - .27) with moderate power (.68 - .81) suggesting that replication would produce similar results.

Post-hoc analysis showed that pretest to follow-up and pretest to posttest emerged as significant. It was predicted that the change from posttest to follow-up would
be maintained; thus, a significant change for that time was not expected. Considering the participants in this research received only nine hours of instruction, compared to 12 to 18 hours of instruction in other studies (Forman, 1981, 1982; Payne & Manning, 1990; Sharp & Forman, 1985), it would have been unlikely to expect participants to continue to improve their levels of self-talk. This is supported by Payne and Manning (1990) who reported that theory alone was not enough to reduce stress. Practice is needed for participants to acquire skills. The treatment program was effective in changing the self-talk of the participants and after one month the change in self-talk was maintained. Finally, both groups received treatment at different times (six weeks apart) and from different group leaders controlling for threats to internal validity, namely history, selection, and experimenter effects. This strengthens the claim that the treatment program was effective in reducing negative self-talk and in increasing both positive self-talk and the ratio of self-talk.

Hypothesis four predicted that using the SOM findings reported by Schwartz and Garamoni (1986) the two treatment groups would report self-talk ratios in the range of positive dialogue (.56 - .68). After the posttest both treatment groups reported ratios of self-talk in the range of positive monologue (> .71). Because the participants were considered to be mildly anxious based on Schwartz and Garamoni’s (1989) classification, it was expected that their ratio of self-talk scores at pretest would be in the range of internal dialogue of conflict. Results showed that participants began in the range of positive dialogue and positive monologue. Kendall et al. (1989) reported that participants classified as normal scored in the range of positive dialogue (.62 in study 1 and .64 in study 1 cross-validation).
Several explanations for the different results are possible. One difficulty was that the ATQ-R may not be effective in measuring the self-talk of teachers. Many participants later expressed that they were unaware that they engaged in self-talk which could significantly influence the pretest results. They expressed difficulty in identifying themselves as using the type of statements listed in the ATQ-R. This suggests the need to develop a more appropriate self-talk questionnaire specific to teachers. A second explanation is that teachers cope with stress by using self-talk in the range of positive monologue. If this were true, as the teachers lowered their stress, self-talk ratios should also have lowered within the range of positive dialogue (.62). Results showed that the participants’ stress was reduced but the self-talk ratios increased at posttest and further increased at follow-up. Bruch et al. (1992) also reported the self-talk of assertives to be in the range of positive monologue. These results conflict with the findings of the SOM model (Schwartz & Garamoni, 1986), suggesting that the model may not be valid for teachers experiencing stress, or that the ranges of the SOM model may be specific to the type of dysfunction (e.g., depression compared to anxiety). Further research is needed to clarify this question. A third explanation is the possibility of an occupational bias by teachers against reporting negative self-talk or perhaps of even being aware of it. For example, one participant reported zero incidents of negative self-talk at posttest and at follow-up and the Amsel and Fichten (1990) correction had to be used.

Hypothesis five predicted that the SOM positive dialogue range of self-talk would be maintained at follow-up. Results showed that the ratio was maintained, in fact it continued to increase. Because the ratio was maintained, although not at the ratio predicted, the hypothesis was supported. This suggests that the program was not only
effective in helping change the participants’ self-talk to a more positive ratio, but also in helping the participants to maintain it.

Teacher Stress

The second part of this study was to understand the effect that the treatment program had on teacher stress and job satisfaction. Hypothesis six predicted that participants in the treatment group would report a reduction in anxiety and an increase in job satisfaction compared to the waitlist control group. Results for the treatment group moved in the expected direction, i.e., less stress and more job satisfaction. The mean stress level for the treatment group at pretest (46.50) was considerably higher than the norms for the STAI (35.55 for males and 36.15 for females); the waitlist control group was also higher 40.38 than the norms. The STAI scores for teachers in this study were similar to those in Forman (1982) who reported experimental group means of 43.58 (SD = 4.69) at pretest, 41.00 (SD = 4.80) at posttest, 32.17 (SD = 8.01) at follow-up. Control group means were reported as 33.50 (SD = 6.10) at pretest and 34.25 (SD = 6.33) at posttest. There was no follow-up for the control group.

At posttest the treatment group reported lower stress levels that were closer to the norms; whereas, the waitlist control group stress level remained almost the same. Although there were no significant effects and the treatment group anxiety level did not differ significantly from the waitlist control group, the differences did approach significance for a time effect and a group by time interaction effect. The interaction showed moderate to large effect size (.21) with low power (.44) which suggests that the results may have reached significance if the sample size had been larger. Likewise, the time effect emerged with moderate effect size (.11) and low power (.35). The waitlist control group also showed almost the same anxiety level at posttest. Results indicate
that the treatment program may have been effective in reducing the anxiety of the participants and that further studies with a larger sample may produce significant results.

Hypothesis seven predicted that the two treatment groups would also show similar results from pretest to posttest and that those changes would be maintained at follow-up. Results for both groups generally changed in the expected directions. The waitlist treatment group reported STAI scores above the norms, but at posttest the scores were below the norms. This indicates that the waitlist treatment group, like the treatment group, experienced a considerable reduction in anxiety from pretest to posttest, and it continued to reduce even further at follow-up. The treatment group maintained its reduction in anxiety at follow-up. Analysis of variance on the STAI variable revealed nonsignificant group and interaction effects. As with the ANOVAs for the self-talk variables, a significant group and interaction effect was not expected because both groups received the same treatment program. A significant time effect emerged indicating that both groups significantly changed over time. Post-hoc analysis showed that both the pretest to posttest interval and the pretest to follow-up interval were significant. This suggests that the treatment program was effective in helping the participants to reduce anxiety.

Part of hypothesis seven was the prediction that the changes from pretest to posttest would be maintained at follow-up. A significant time effect was not expected because the results were not expected to change, thus, this part of the hypothesis was supported. Cecil and Forman (1990) reported that the treatment group did not maintain the effects at follow-up. Unlike Cecil and Forman, the STAI scores for the treatment group remained the same and the waitlist treatment group reduced its anxiety even
further. Results indicate that the treatment program was effective in helping participants to maintain the reduction in stress.

Teacher Job Satisfaction

Hypothesis six also predicted an increase in job satisfaction for the treatment group when compared to the waitlist control group. Although a slight increase in job satisfaction emerged for both groups, the group x time interaction and the time effect for the job satisfaction sub-scale were nonsignificant indicating that the treatment group did not increase job satisfaction.

Similar results were expected for job satisfaction between the two treatment groups, i.e., an increase in job satisfaction after treatment. The interaction and the main effects emerged as nonsignificant, and the effect sizes were small to moderate. Results indicate that the treatment program did not have a significant effect on the job satisfaction of the participants, but further study with a larger sample size is needed to verify the results.

A prediction that the change in job satisfaction would be maintained at follow-up was also made in hypothesis seven. There was no significant increase from pre to post, and there continued to be no significant increase in job satisfaction at follow-up.

Clinical Significance

Clinical significance is a calculation to try to determine results that may be significant in practice although not statistically significant. Clinical significance was determined for individual participants and it was calculated only for STAI. The results showed that both treatment groups made large clinically significant reductions in anxiety from pretest to posttest, and from pretest to follow-up. The waitlist treatment group continued to make reductions in anxiety from posttest to follow-up bordering on clinical
significance. The total number of treatment participants making clinically significant improvement from pretest to posttest was 13 out of 17, and the same number improved from pretest to follow-up. As mentioned in chapter 4, there were no identifiable characteristics common to the four participants who did not change; however three of the four had the fewest years of teaching experience. Future research needs to investigate the relationship of experience in teaching and reduction of anxiety.

Considering the results of clinical significance, effect size, and some time effects, I am confident in concluding that the treatment program was effective in helping participants to reduce anxiety and to increase the positive ratio of self-talk. This study supports the research that cognitive therapy is effective in helping individuals (Beck, 1976; Meichenbaum, 1977) and teachers in particular (Cecil & Forman, 1990; Manning & Payne, 1992) cope with stress.

**Stress and Job Satisfaction**

Part of this study was exploratory in nature and the relationship of stress and job satisfaction was of interest. The correlation of stress and job satisfaction variables were calculated at each interval; the pretest correlations are reported in Table 3 and Table 4. The correlation of the two variables at pretest was nonsignificant for both the treatment and waitlist control group, and for the treatment and waitlist treatment groups. Each of the other intervals also reported nonsignificant results.

The change in stress scores and job satisfaction scores calculated for each interval were presented in chapter 4. The stress difference was correlated with the job satisfaction difference at each interval for the treatment and waitlist control groups, and for the treatment and waitlist treatment groups. None of the correlations were significant. This does not support the finding Kyriacou and Sutcliffe (1979) or Galloway et al. (1984)
who reported a significant negative correlation of stress and job satisfaction. This study found no correlation between stress and job satisfaction which implies that there is no relationship between teacher stress and job satisfaction.

**Self-talk and Job Satisfaction**

Correlations were calculated for each interval for the treatment group and the waitlist control group, and for the two treatment groups. The pretest results for the treatment and waitlist control groups showed a moderate correlation between job satisfaction and negative self-talk ($r = .59, p = .02$). For the two treatment groups, negative self-talk significantly correlated with job satisfaction ($r = .58, p = .01$). Note that job satisfaction is reverse scored so that the higher the score the lower the satisfaction. In contrast positive self-talk did not significantly correlate with job satisfaction. The results that low job satisfaction correlated with negative self-talk but positive self-talk did not correlate with high job satisfaction supports the theory of the power of non-negative thinking (Kendall & Hollon, 1981). The theory suggests that individuals place greater importance on negative self-talk than positive self-talk; thus, Kendall and Hollon suggest that it is important to reduce negative self-talk first rather than trying to increase positive self-talk. Results of this study suggest that focusing on negative self-talk may be important in dealing with job satisfaction. Another question is whether increased job satisfaction would result in increased positive self-talk. Kurpius and Moran (1987) reported that high performing counsellors had low negative self-talk which appears to support the power of non-negative thinking. They did not report a relationship between high performing counsellors and positive self-talk. If high performing counsellors had high job satisfaction, the implication would be that there is no correlation between high
job satisfaction and positive self-talk. Further research is needed to clarify the relationship of positive and negative teacher self-talk and job satisfaction.

**Self-talk and Teacher Stress**

The correlations of stress and the self-talk variables at pretest for the treatment and waitlist control groups were significant for all three self-talk variables. Stress correlated significantly with negative self-talk ($r = .64, p = .01$), with positive self-talk ($r = -.58, p = .02$), and with ratio of self-talk ($r = .68, p = .004$). For the two treatment groups similar results emerged with ($r = .72, p = .001$) for negative self-talk, ($r = -.72, p = .001$) for positive self-talk, and ($r = -.82, p = .001$) for ratio of self-talk. The findings support the suggestion of Meichenbaum (1977) that negative self-talk needs to be replaced with positive self-talk and coping skills. The correlation of positive self-talk with stress also supports the report that positive self-talk has an impact on coping with anxiety (Ingram & Wisnicki, 1988). Results indicate a strong correlation between the types of self-talk and stress. It is puzzling to know why the self-talk variables correlate significantly with stress and yet only negative self-talk consistently correlates with job satisfaction. Future research could explore these relationships.

**Program Evaluations**

The real test of an intervention program lies in the actual results experienced by the participants. The participants in this research were asked to evaluate the effectiveness of the program (see Appendix D) and 16 out of 17 were submitted. None of the participants had received any therapy from a professional since their last session so the evaluations were based on the effect of the treatment program. Three items in particular were more frequently identified as situations that the program helped them to deal with: student discipline, learning how to deal with their own stress, and dealing with
parents and staff. One comment expressed that the program was "...helpful in realizing I have choices and that my actions and decisions can add to or alleviate stress." Some participants found the intervention helpful in dealing with their own personal situations as well. The inability of the program to help the participant to deal with "sudden situations in class" was mentioned on three evaluations. This suggests that more time was needed to help teachers to develop and to practice the skills to enable more automatic responses. One teacher commented "my self-talk isn't quite there yet, so that I can prevent exploding in a situation...." All of the participants thought the program met their expectations. Weekly logs were identified as helpful but that they had insufficient time to complete them. Many components of the program were identified as helpful, but the three most frequently listed items were self-talk, relaxation, and discussions. Comments such as "to meet the stress focus on where it starts", "it helped me focus on situations and how I feel about them", "learning that I self-talk and how to change self-talk to make positive change..." indicate the effectiveness of the program. Very few parts of the program were identified as not helpful and none of them were mentioned more than once. Only one participant was undecided whether to recommend the program to a friend, and 13 evaluations felt it would be useful as a staff development activity provided it was voluntary or it was a decision of the staff. From the evaluations one can conclude the participants felt that the program was successful in helping them deal with their stress.

Implications

Theoretical implications. The results of this research supports Lazarus' (1966) model that stress is a transaction between the individual appraisal of an event and the environment. The reduction of stress by the participants after the treatment program supports his model. Further evidence is provided by the feedback of the participants
concerning developing an awareness of how they contribute to their stress. Results also support the findings of cognitive therapy (Beck, 1976; Ellis & Harper, 1975; Meichenbaum, 1977) that what individuals say to themselves influences their behavior and feelings. The findings did not show a negative correlation between stress and job satisfaction. This research partially supports some studies (Galloway et al., 1984; Kyriacou, 1987) that report only a moderate correlation between stress and job satisfaction.

Results do not support the SOM set-point classifications. It would appear that teachers who experience stress report self-talk ratios in the range of positive dialogue. Further study of teacher self-talk using a variety of measures and data gathering methods such as thought-listing is needed.

This research does support the theory of the asymmetrical nature of self-talk. At both an individual level and at a group level, as one type of self-talk (e.g., negative) increased or decreased the other type (e.g., positive) did not change accordingly.

Research implications. This study has questions concerning the suitability of the Automatic Thoughts Questionnaire - Revised for measuring the self-talk of teachers. Participants found the items not situation-specific enough to their teaching experience which may account for some of the discrepancy with the results. They also expressed some uncertainty as to how to answer particular items.

The timing of this research with teachers is very important and conflicts with school events is almost unavoidable. For this study it would have been best to conduct the research in the fall or in the winter; a minimum of conflicts with exams, report cards and holidays could have been avoided. Furthermore, more than nine hours of intervention is needed for participants to fully understand the concepts and to integrate the necessary
skills into their personal repertoire. This recommendation supports a similar claim in a study by Cecil and Forman (1990).

**Implications for practice.** Results indicate that much more needs to be learned about teacher self-talk. The findings show that teacher self-talk is excessively weighted toward the positive, even for teachers experiencing stress; moreover, teacher evaluations and comments indicated that many of them had no awareness that they used self-talk. Results did not support Payne and Manning (1990) who reported inservice teachers as having much lower positive self-talk than preservice teachers. Payne and Manning also used neutral self-talk which this study did not; how similar the results would have been is uncertain.

Schwartz (1986) reported that self-talk is asymmetrical which means individuals assign a greater valence to negative thoughts than positive ones, and the reduction of one type of thought does not necessarily mean an increase in the other. Kendall and Hollon (1981) report that the reduction of negative self-talk carries greater impact on outcomes than the addition of positive self-talk alone. Both of these findings have implications for counselling. First, interventions should focus on helping individuals to be aware of their negative, self-defeating thoughts rather than focusing exclusively on positive, coping thoughts. Second, individuals need to be taught how to develop positive self-talk and to encourage themselves (Manning & Payne, 1993). It is not a natural result of reducing negative self-talk.

I believe that the heavy emphasis on teachers to be positive creates a type of "culture" for teachers that predisposes them from admitting to negative self-talk, and over time they may become unaware of it. One participant referred to a "denial" process in the evaluation. Safety and trust are crucial issues. This is especially true if the participants
feel unsafe and uncertain about judgment and what will be done with the results of the study. In future studies, effort has to be made to reassure teachers that they are safe and that it is “normal” to have some negative self-talk.

Contributions

This study has contributed to a greater understanding of teacher self-talk. Although the results were not as expected, it demonstrated that a cognitive intervention program can alter teacher self-talk in the expected direction. Unlike previous studies (Cecil & Forman, 1990; Payne & Manning, 1992) that failed to specifically examine teacher self-talk in terms of anxiety, this study has established that stress was reduced and the ratio of positive self-talk increased. Considering the small sample size, I believe that the results present enough evidence to justify the claim that by helping the participants to develop a better ratio of self-talk their stress was reduced.

In working with the participants in role-play situations it became apparent that some of them were out of touch with their own negative feelings in the particular situation being rehearsed. As they were trying to change the situation, they were unaware of what negative self-talk they were using and needed to change; they only knew that the situation was causing them stress. They found it very difficult to claim negative feelings and the self-talk that accompanied them, especially when it involved students. I believe that teachers have worked so hard to keep their negative feelings and negative self-talk under control in the classroom that over time they have lost touch with those feelings and yet the feelings are still impacting them. A type of denial seemed to take place. Payne and Manning (1989), who reported that the self-talk of inservice teachers was mostly negative and neutral, asked the teachers to offer possible explanations. The teachers
suggested that perhaps they had learned to develop more controlling, rational, and less
creative behavior. This may be similar to the type of denial I was noticing.

I am not advocating that teachers suddenly voice all their feelings, but they do
need to admit to having them and then choose to cope with them in an appropriate
manner. Some teachers found it so freeing in their role-plays to admit to themselves
through their self-talk that they were hurt or frightened. It was easier for teachers to
admit to feeling angry, but the deeper emotions beneath the anger were more difficult. I
believe that working with teachers to help them cope with stress involves becoming
aware of their self-talk, getting in touch with their feelings and beliefs around stressful
situations and the accompanying self-talk, changing the negative self-talk to positive, and
choosing how to respond to the stressor.

Finally, a common complaint with the participants, especially regarding doing their
log books, was the lack of time. As a teacher/administrator this was not surprising,
especially for teachers under stress. Teachers need to take time to be reflective and to
process their own inner world, and not just meet their pedagogical needs. It would seem
that an integral part of teacher training and student teaching practicums would involve
helping teachers to develop an awareness of and a hunger for understanding their own
constructs, beliefs, and self-talk. Hopefully, too, this process would be encouraged and
maintained in schools and school districts everywhere, so that teachers, students, and
parents would benefit.

Limitations

Certain restrictions apply to this study that limit its generalizability. First, the
participants were volunteers and predominantly women teaching in school districts in a
large urban city. As a result, the findings may not generalize to other teachers and
school districts. Second, the dependent variables were self-reported. Third, because all
the participants were volunteers, it limits the findings. This issue is difficult to control
because the nature of the research requires that individuals are experiencing stress
and that they want to participate in the program. Fourth, the study is limited because
there may have been a subject-treatment interaction. Some participants were from the
same school or were friends; thus, they may have met and discussed common
concerns that may have led to a group dynamic not generalizable to other teachers'
situations. A fifth limitation is that a pretest-posttest sensitization may have been
present because the same instruments were administered at each testing period.
Sixth, several analyses were conducted with no adjustment for Type I error. Replication
of the study with a larger sample size is important to improve power and reduce the
possibility of Type II error. Seventh, the study was limited by the fact that spring
vacation occurred in the middle of the treatment group and waitlist control group period.
Whether the vacation affected the results is difficult to determine.

Future Research

This study has identified the need for further research in several areas. More
research is needed on the self-talk of inservice teachers, not preservice teachers,
including those experiencing stress. Replication is needed to determine whether the
SOM model applies to the teacher population. It would be particularly important to
explore the range of self-talk under stress to clarify whether it is in the range of internal
dialogue of conflict as Schwartz and Garamoni (1986) suggest or in the range of
positive monologue as Bruch et al. (1992) suggest. The development of a self-talk
instrument specific to teachers is another area for further research. Future research is
needed with larger sample sizes to control for the possibility of Type I error, and also
with several similar measures (assuming convergent validity) at different testing periods
to control for test sensitization. Finally, further research is needed to explore the
relationships of teacher stress, job satisfaction, and self-talk.
References


Dear Principal,

My name is David Ross and I have been a teacher with the Edmonton Catholic School District for twenty-five years. I am an M.A. student in the Department of Counseling Psychology at U.B.C. under the supervision of Dr. Bonita Long (Faculty of Education, phone 604-822-5259). The Edmonton Catholic School District and the Greater St. Albert Catholic Regional District have given me approval to seek teacher support for my research project examining Teacher Stress and Job Satisfaction.

The purpose of the study is to explore the effectiveness of an approach that teachers can employ to proactively reduce stress and enhance job satisfaction. The information gathered will be used to help teachers to learn effective skills for coping with stress. The teachers do not have to be experiencing severe stress in order to participate, although some degree of stress is necessary.

The participants of this study must be full-time teachers of elementary or junior high students. For the purposes of this study administrators, high school teachers, part-time teachers and counselors are not the focus of this research.

I have enclosed enough letters for the teachers on your staff, based on the numbers given to me by district office. Would you please give one invitation (a colleague letter and an acceptance form) to each teacher who meets the above qualifications (i.e., full-time, elementary or junior high teacher) as soon as possible. Please do not give one to any high school teachers, administrators, part-time teachers or counselors on your staff.

The study will run with a first group before Easter and a second group in May - June; a short follow-up session will take place about three weeks after the last session. I would also appreciate it if you could briefly remind staff of the study and of the deadline, February 21, at your staff meeting. I have requested the replies be faxed (456-5231) to speed up the delivery.

Thank you for your support of this very important issue to improve the quality of life for teachers. If you have any questions, I can be reached at 456-5222 (work) or 459-8228 (home).

Sincerely,

David Ross
M.A. Student
Dept. of Counseling Psychology
University of British Columbia
Appendix B  Letter to Teachers

THE UNIVERSITY OF BRITISH COLUMBIA

February 12, 1996

Dear Colleague,

My name is David Ross and I have been a teacher with the Edmonton Catholic School District for twenty-five years. I am an M.A. student in the Department of Counselling Psychology at U.B.C. under the supervision of Dr. Bonita Long (Faculty of Education, phone 604-822-5259). The Greater St. Albert Catholic Regional School District gave me approval to seek your support for my research project examining Teacher Stress and Job Satisfaction.

The purpose of the study is to explore the effectiveness of an approach that teachers can employ to proactively reduce stress and enhance job satisfaction. The information gathered will be used to help teachers to learn effective skills for coping with stress. You do not have to be experiencing severe stress in order to participate, although some degree of stress is necessary.

The participants of this study must be full-time teachers of elementary or junior high students. Although I appreciate your support, for the purposes of this study administrators, high school teachers, part-time teachers, and counsellors are not the focus of this research.

Participation in this study will involve six sessions approximately ninety minutes in length and a short follow-up session will take place about three weeks later. During the first and last sessions you will also be required to complete several questionnaires which will take approximately 45 minutes. The size of the group is essential to maximize the effectiveness of the program; therefore, it will be necessary to place some people on a waiting list. They will receive the same program as the first group once the initial group is finished. Volunteers will be allocated to a group by random selection.

The data will be anonymous and confidential. This will be ensured by using a code of your own choice. The anonymous raw data will be available only to myself and my thesis committee, and it will be shredded within five years. Due to research constraints, I will not be leading all of the sessions. Dr. Michael Rousel, a registered psychologist and counsellor with Edmonton Catholic Schools, will lead some of the sessions. A final report of the results will be available to the participants.

The study will start February 26, 1996. If you would like to participate, please complete the information on page two and fax it to me at St. Charles School 456-5231. To ensure confidentiality of information I will call you to answer a few questions about your stress level using the scale on the following page. It may be helpful to keep the scale handy for my phone call.

Thank you for your consideration of this very important issue which impacts the quality of teachers' lives. If you have any questions, I can be reached at 456-5222 (work) or 459-8228 (home).

Sincerely,

David Ross
M.A. Student
Dept. of Counselling Psychology
University of British Columbia
Stress is not necessarily a bad thing but excessive or prolonged stress can have devastating effects. This study will use the term "stress" to refer to bad stress. There are times when we are aware of stress in our lives and yet, there are other times when we are unaware of our stress and the way it manifests itself. Some common symptoms of teacher stress are listed:

<table>
<thead>
<tr>
<th>physical</th>
<th>behavioral</th>
<th>emotional</th>
</tr>
</thead>
<tbody>
<tr>
<td>headaches</td>
<td>irritable with colleagues/students</td>
<td>mood swings/outbursts</td>
</tr>
<tr>
<td>irritability</td>
<td>difficulty making decisions</td>
<td>pessimism</td>
</tr>
<tr>
<td>fatigue</td>
<td>poor concentration</td>
<td>depressed</td>
</tr>
<tr>
<td>change in sleep pattern</td>
<td>excessive criticism</td>
<td>emptiness</td>
</tr>
<tr>
<td>change in appetite</td>
<td>feeling trapped or victimized</td>
<td>unreasonable self-blame</td>
</tr>
<tr>
<td>pains in back or chest</td>
<td>late to work</td>
<td>disinterest in things I used to enjoy</td>
</tr>
</tbody>
</table>

In determining the degree of stress an individual is experiencing three components may be considered: frequency (i.e., the number of symptoms experienced), intensity, and duration (i.e., how long you have experienced the symptoms). The scale of teacher stress presented below is only intended to be a guide to standardize the responses.

<table>
<thead>
<tr>
<th>scale</th>
<th>description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>no stress</td>
</tr>
<tr>
<td>1</td>
<td>occasional stress (e.g., don't sleep well the odd night, odd headaches, slight irritability, feel pressure but coping, enthusiastic but tired at times)</td>
</tr>
<tr>
<td>2</td>
<td>frequent stress (e.g., more/longer body aches, frequent irritability and intolerance, harder to make decisions, occasional use of drugs to reduce stress, more critical and pessimistic, less energy, noticeable appetite change, some &quot;blue&quot; feelings, poor concentration).</td>
</tr>
<tr>
<td>3</td>
<td>significant impact on my life (e.g., usually sleep poorly, frequent body aches, little appetite/considerable over-eating, using drugs of some type regularly, very irritable, no tolerance for mistakes, generally fatigued, few highs with longer lows, strong feelings of emptiness, no enthusiasm)</td>
</tr>
<tr>
<td>4</td>
<td>severely affecting many parts of my life for some time (e.g., no appetite at all, can't sleep, severe mood swings or depression, frequent probems with peers and students, extremely difficult to be motivated, severe body aches)</td>
</tr>
</tbody>
</table>

If you are interested in participating in the sessions in this study, please complete the following section and fax it to David Ross at St. Charles School 456-5231 by February 21, 1996.

Name: 
School: 
Grade teaching: 
Full-time teacher? Yes/No 
School phone: 
Home phone: 

What stress level have you experienced in the last two weeks? (to be answered at phone call) Experiencing every symptom is not required to place you in that level; they are only examples.

(no stress) 0 1 2 3 4 (severe stress)

**Please keep this page for when I call to ask you a few questions about your stress level.**
Appendix C  Treatment Manual for the Self-Talk Intervention

Treatment Manual for the Self-Talk Intervention

Session 1
- administer pretests to participants
- introductions and getting to know each other activity
- review group norms and confidentiality

STRESS
- definition of stress
- explain stress as a process (Lazarus): environment and person transaction
  - internal
  - external
- elicit from teachers causes of teacher stress (add research results) and effects of school stress as they experience it.

HOMEWORK
- emphasize its importance
- observe personal stress response at school and what situations trigger stress response
- write maximum of 10 stress situations and how you respond

Session 2
- review previous session and discuss group reaction or questions
-explain Kyriacou and Sutcliffe’s (1979) model of teacher stress and various components
-emphasize the appraisal process and its importance to this study
-have participants examine their own appraisals of situations and discuss
-individuals generate a list of their own stress situations; have teachers note the following in their situation:
  -environmental factors
  -mediating variables
  -stress response
-define and explain coping process
-two types of coping
  problem-focused
  emotion-focused
-progressive-muscle relaxation exercise: used to help participants with later activities using imagination to apply self-talk.

SELF-TALK
(to develop an awareness of self-talk)

-role of cognitions on behavior and feelings
-types of cognitions:
  cognitive events
  cognitive processes
  cognitive structures

-define self-talk and explain
-characteristics of self-talk: content specific, can interpret events, predictions re situations

- self-attributional (e.g., “I’m so stupid”)

- devalue task (e.g., “What a lousy job I did”)

- valence of self-talk (positive, negative, neutral)

- have teachers list some self-talk statements they made about school and label the valence; discuss

**HOMEWORK**

- introduce self-talk logs - list the self-talk used during the next week

- come to class with 10 to 15 positive and negative self-talk items

**Session 3**

- review and discuss previous session

- individual’s need to be aware of his/her own self-talk at different stages of a stress event:

  - preparing for a stress event (call a parent)
  - dealing with a stress event
  - feeling overwhelmed
  - during coping efforts

- power of non-negative thinking

- asymmetry of self-talk - implications for people under stress; therefore, the need to teach individuals to learn how to give positive self-talk to themselves
COGNITIVE RESTRUCTURING

- Ellis' ABC and explain how it connects to self-talk
  automatic thoughts
  need to challenge irrational/dysfunctional beliefs

- list 16 teacher irrational beliefs (Forman, 1990),

- have teachers assess their own cognitions: examine their own negative self-talk list
  and change it to a positive self-talk statement

- do a muscle relaxation exercise

- teachers imagine a stress situation they have experienced and examine it for:
  what is their self-talk during the different stages of stress event
  what are underlying beliefs that may lead to self-talk
  change any negative self-talk into positive
  write down positive self-talk that is important, or insightful in log

- debrief as a group and clarify

- repeat for another situation as time permits

- review list of important positive self-talk that teachers wrote in their logs

HOMEWORK:

- repeat positive self-talk list each day (e.g., "I can't control how you react", "If I don't
  finish the lesson I can readjust my planning")

- continue to write in self-talk log

- note the reactions of others or yourself to changes

- bring 5 stress situations that you have experienced to next class
Session 4

- review and debrief the previous week
- go over logs and review for valence of self-talk; note if stuck changing a negative to positive
- list and discuss Ellis' (1975) common irrational beliefs
- list and review Ellis' "musterbation" words
- examine the stress cycle
- review the self-talk cycle
  - draw parallel to stress cycle (i.e. a change in self-talk can create reactions in others and in oneself which can influence self-talk etc.)
- introduce stress scripts (teachers anticipate a stressful situation); rank the 5 stress situations for homework according to intensity of the stress
- relaxation exercise
- teachers choose one of their less intense situations and imagine themselves to be in it, experience the stressful feelings and reactions, note their self-talk, imagine coping with the situation effectively through new self-talk and new feelings
- debrief in small groups (see stress as a problem to be solved and not as a personal threat)
- use role-play in small groups of one situation and act out verbalizing self-talk for other members of the group to hear. Repeat with the other four stress situation(s) as time permits.

HOMEWORK

- continue with self-talk logs (noting the reaction of others and self to behavior changes and any tendency to regress to old self-talk patterns)
-continue repeating important positive self-talk statements each day
-bring several stressful situations recently experienced
-bring several more stressful situations that you anticipate experiencing

Session 5
-review the previous work and logs; continue to develop positive self-talk list and repeat each day
-preparing for stress
   use acronym for preparing for stressful situations
   -note that a change in self-talk has a direct affect on 4 things:
       what the individual attends to in the environment
       how a situation is appraised
       to what an individual attributes his/her behavior
       expectations of an individual's own ability to handle stress events
-relaxation exercise and imagine one of the more stressful situation recently experienced
-role-play the situations with pauses to work on generating appropriate self-talk
-stress scripts with expected or anticipated stress; use stress scripts and role reversal to practice and verbalize self-talk to others

HOMEWORK
-continue with self-talk log noting personal responses to stress situations, changes in self-talk, areas of failure or more practice
-imagine self in stressful situations coping effectively using positive self-talk
-come to the next class with one very stressful situation not used yet
Session 6

- review and debrief logs and situations of the past week
- role play very stressful situation and debrief in small groups
- explain relapse prevention; have participants relax and imagine using positive self-talk after a failure of some type
- review key concepts of the six sessions
- concluding comments and thank teachers for their participation
- administer posttest instruments giving the same test instructions as the pretest
- remind teachers of the follow-up test date

Follow-up Session

- administer follow-up tests with same instructions as previous test periods
- handout program evaluation form to complete and hand-in
- concluding remarks and thank teachers for their participation; let them know that they will be contacted concerning the results of the study
Appendix D  Expectancy Questionnaire

How effective do you believe these sessions will be for helping you to cope with anxiety? (Please circle one item).

1. Very ineffective
2. Somewhat ineffective
3. Uncertain
4. Somewhat effective
5. Very effective

How effective do you believe these sessions will be for helping you to cope with job satisfaction?

1. Very ineffective
2. Somewhat ineffective
3. Uncertain
4. Somewhat effective
5. Very effective

How likely are you to recommend this approach to a friend?

1. Very unlikely to recommend it
2. Somewhat unlikely to recommend it
3. Uncertain
4. Somewhat likely to recommend it
5. Very likely to recommend
Appendix E  Program Evaluation

1. Rate the stress level that you have experienced in the last **couple of days** (circle the appropriate number).
   (no stress) 0 1 2 3 4 5 (severe stress)

2. Since the last session have you received any therapy from a professional (e.g., therapist)?

3. a. What types of situations have you found this intervention particularly helpful in dealing with? Explain.

   b. What situations has this intervention not been helpful with? Explain.

4. Did the program meet your expectations? Explain.

5. In terms of learning, practicing, and integrating the skills, how effective was:
   a. the length of the sessions
   b. the number of sessions
   c. the log book and weekly assignments

6. a. Explain the parts of the program that you found helpful.

   b. not helpful. What would you recommend?

7. Would you recommend this program to a friend?

8. Would you find this program helpful as a staff development activity? Explain why or why not.
Appendix F

Frequencies for the grade level and type of student taught.

<table>
<thead>
<tr>
<th></th>
<th>Treatment</th>
<th>Waitlist Control</th>
<th>Waitlist Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grade level</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>elementary</td>
<td>6</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>junior high</td>
<td>2</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Type of student</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>regular</td>
<td>4</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>integrated special needs*</td>
<td>4</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>special needs</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

* Note: a regular classroom with less than one quarter of the students integrated is to be considered special needs