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The effects of five structured intervention seminars on anxiety, health, and burnout inventory scores of elementary student teachers during a ten week student teaching practicum

Mannion, Joseph Chapek, Ed.D.

University of Hawaii, 1994

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THE EFFECTS OF FIVE STRUCTURED INTERVENTION SEMINARS ON ANXIETY, HEALTH, AND BURNOUT INVENTORY SCORES OF ELEMENTARY STUDENT TEACHERS DURING A TEN WEEK STUDENT TEACHING PRACTICUM

A DISSERTATION SUBMITTED TO THE GRADUATE DIVISION OF THE UNIVERSITY OF HAWAII IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF

DOCTOR OF EDUCATION

IN

EDUCATIONAL ADMINISTRATION

MAY 1994

By

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Dissertation Committee:

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Frank Brown
John A. Thompson
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DEDICATION

For their genuine idealism, enthusiasm, and commitment demonstrated so often throughout their arduous preparation, and for their decision to devote their lives caring about and encouraging children during the most formative years of their lives, these pages are dedicated to the student teachers of the Pacific Northwest and Hawaiian Islands who, though an ocean apart, discover Ho'okahi no kaunu like ana i Waialoha, a true partnership in preparation for a demanding, often exhausting, but eternally rewarding profession.

E hana mua a pa’a ke kahua
mamua o ke a’o ana aku ia ha’i.

(Build yourself a firm foundation before teaching others.)
ACKNOWLEDGEMENTS

Practice teaching is a demanding activity, and rightfully so. Administrators, veteran teachers, parents and students expect novitiates to prove their mettle. Yet a call to participate in a research study during the most critical element of a student’s preservice preparation - the student teaching experience - serves only to add another item to an already crowded agenda.

Recognizing that truth, these few lines express with heartfelt sincerity an appreciation for the active participation in this research study demonstrated by the 63 men and women who comprised the 1992-1993 Elementary Student Teaching Cohort at Concordia College, Portland, Oregon. Mahalo Nui Loa! Hopefully, your involvement will provide lasting benefits for student teachers yet to come.

A sincere thank you is expressed to all members of my dissertation committee for their willingness to spend the large amounts of time necessary to review this work and provide the guidance and support to see it through to completion despite the limitations inherent with working across 2800 miles of ocean. I thank each of them for their encouragement. I feel fortunate indeed to have also experienced their gifts as classroom instructors.

A special note of gratitude is reserved for Dr. Charles Araki, doctoral committee chair, whose correspondence and phone conversations often served as catalysts sparking rounds of intense writing and revising. I have learned much from this educator during the 17 years I have known him. I will remember him not only as the philosopher-scholar
he is, but as a university instructor who exuded enthusiasm and showed through his actions what good teaching should be.

A thank you also to my unofficial committee - Dr. Johnnie Driessner, Dr. Rich Wismar, and Dr. Carl Christian - who provided two critical ingredients: time and encouragement. Special appreciation must be extended to Johnnie for his patience in introducing this statistical novice to the world of SPSS.

Lynette Neumiller, who worked on revising and rerevising the reference section of this paper, as well as managing its duplication, also deserves a sincere thank you.

Lastly, Aloha Nui Loa to Jessica, Aaron and Ruth for their understanding and willingness to lose Dad on many weekends, afternoons and evenings so he could devote time to a project he believed in.
ABSTRACT

This study sought to determine whether the addition of five structured intervention seminars to a preservice seminar program could affect anxiety, health and burnout scores of elementary student teachers during their practicum. Additionally, the study aimed to discover if relationships existed between nine other variables (i.e., gender, age, marital status, years at Concordia College, hours of field experience, grade level assigned, number of children, hours employed during student teaching, and cumulative gradepoint average) and these same dependent measures. Finally, the study investigated the possibility of predicting preservice anxiety, health, or burnout scores on the basis of one or more of these 10 predictors.

This study utilized the posttest-only control group design. A stratified random assignment separated the purposive sample of 70 student teachers into control and experimental groups. During the ten-week practicum, experimental group members received the treatment: 5 seminars dealing directly with student teacher stressors mentioned most frequently in the literature (e.g., discipline and time management). These sessions were devised to provide students with positive, direct action, stress response skills.

With their practicum concluded, all student teachers completed the Maslach Burnout Inventory, the Teaching Anxiety Scale, and the Student Teacher Health Survey. Both univariate (ANOVA and t-test) and multivariate (multiple correlation and multiple regression) statistical procedures were used to test the 12 hypotheses.
That student teachers receiving the experimental treatment reported lower anxiety, fewer stress-related health dysfunctions, and lower burnout scores than their control group counterparts was significantly exhibited \((P < .05)\) on 6 of the 16 dependent measures gleaned from the three instruments. This difference was most pronounced on the Emotional Exhaustion subscale of the MBI where scores from 58% of the experimental group were classified as low EE as opposed to only 19% from the control group. The variables group (i.e., treatment), gender, grade level assigned, and previous field experience were identified via stepwise multiple regression analysis as significant predictors.

If the effects of these additional seminars and their significant relationships to many of the anxiety, health and burnout measures could be replicated in additional studies, the integration of such a strategy in a teacher education program could be warranted.
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CHAPTER I
STATEMENT OF THE PROBLEM

INTRODUCTION

"If you're not nervous, you don't understand the situation."
Statement made by a departing student teacher to a new one (Fuller and Bown, 1975, p.49).

The phone call came shortly after 8 o’clock on that early September morning. The cooperating teacher’s voice was a curious mixture of surprise, concern, and a not so veiled agitation. It seemed that her freshly placed, very promising student teacher who had done so well in two prior field experiences had decided, after only a week with her high school class, that teaching was not for him and was calling it quits. The cooperating teacher made it abundantly clear that no amount of persuasive counseling by the college supervisor or program director was going to change this student teacher’s mind, either. She was right. Within three days the ex-student teacher processed the necessary paperwork with the registrar, received a diploma without a teaching license, and was gone.

The three student teachers who paraded into the director’s office were physically and emotionally spent from their attempts to juggle demands of full-time student teaching and additional evening course work while trying to maintain the semblance of a family life. None of their professors or campus acquaintances would have believed for a moment these three outstanding students would ever feel anxious or "stressed out" while completing their professional quarter.
Another particular education student, a science major, gave great promise of becoming a master teacher during two very successful quarters of field experience. In fact, his supervisor could not find enough superlatives to adequately describe his teaching prowess. For some unknown reasons, much of that initial success paled and ultimately evaporated sometime during the fifth and sixth week of student teaching. Then the mere act of getting to the school site and teaching became an issue of will power and endurance. As the student teacher himself relayed it, "I had no idea full-time teaching would be so demanding or so all consuming. I am exhausted. All I want to do now is get through it and survive." This student teacher completed the practicum and received a state teaching license. He did not, however, actively pursue a teaching position.

These experiences were encountered by the author during his initial year as an education professor. Hundreds of other college supervisors could no doubt relay similar episodes with their own student teachers. But while sources, coping skills, and results of inservice teacher anxiety, stress, and burnout have been researched, identified, and copiously reported, Gold (1985) demanded researchers turn their attention to student teaching which she believes may be far more stressful a situation than regular inservice instruction. Sinclair and Nicoll (1981) supported Gold by stating

The stresses and strains associated with day to day teaching are widely recognized and in the case of the student teacher tend often to reach traumatic proportions (p.1)
Gold's earlier research (1984a) led her to surmise that younger teachers, such as traditional student teachers, are more inclined to experience higher amounts of emotional exhaustion and depersonalization than are older, more experienced, inservice instructors (p.272). Since the professional student teaching quarter is generally the culmination of a typical teacher education program, success or failure of an education student's four years of preparation is contingent upon its satisfactory completion. With future careers riding on practicum performance, this element of the teacher preparation program often causes an increased amount of anxiety and stress. Sinclair and Nicoll (1981) stated it this way:

For most student teachers, practice teaching is a difficult and anxiety provoking experience. This indeed has been long recognized (cf. Stones & Morris, 1973). Yet it seems, if we can generalize from the group of students studied, little progress has been made in reducing the stresses and strains involved. And at a time when tendency has been to require more and more hours of practice teaching as part of the teacher education program. It is difficult to avoid the conclusion that practice teaching is a sink or swim affair (p.18).

The fact that student teachers experience numerous anxieties, especially in the weeks preceding the professional quarter, has been well documented by Bowers, Eichers and Sachs (1983) and Zerr (1988). Unfortunately, the literature concerning this issue of anxiety, stress, stress-related health dysfunctions and burnout illustrates that the major emphasis on discovering solutions to these concerns has been largely and quite naturally directed towards inservice educators rather than those who are in training for the same educational profession (Mungo, 1981). More precisely, Hourcade, Parette and
McCormack (1988) reported that relatively few investigations to date have examined stress and stress-related variables among individuals participating in their student teaching experience. (p. 347) An August, 1992 ERIC search by this investigator validated this contention.

This search, designed to uncover current journal articles, project descriptions, and conference papers dealing with issues of student teacher anxiety, stress and burnout, managed to discover only 82 such citations for the years 1960-1992. Of this number, 40 citations dealt with student teachers peripherally as adjunct information, asides, or afterthoughts, while only 42 citations actually exhibited an exclusive concern for either identifying or ameliorating sources of student teacher anxiety and burnout. Further proof of this lack of research regarding preservice anxiety, stress-related health disorders and burnout was provided by Morris and Morris' (1980) most recent review of Education Index since 1950 which revealed only an occasional reference to anxiety or stress in student teaching. Hourcade, Parette, and McCormack (1988) commented that

This deficit is somewhat surprising because student teaching is part of almost all teacher education programs in the country as a prerequisite to graduation and teacher certification (Jacques, 1984). Abernathy, Manera and Wright (1985) reported that student teachers experienced stress at levels at least equivalent to those seen in regular teachers, and Bradley (1984) suggests that most student teachers experience excessive stress (p. 347).
STATEMENT OF THE PROBLEM

Morris and Morris (1980) summarized the research problem quite succinctly when they stated:

First, the student teaching experience has the potential to be highly stressful. Second, little is being done to prepare student teachers to cope with stress. Third, the research base is pitifully inadequate. (p. 61)

The problem, then, consists of three distinct elements: (1) an inability to reach agreement on the identification of key stressors that create the potential for increased anxiety, stress-related health disorders and burnout in student teachers during the practice teaching experience; (2) a lack of specific programs designed to either provide constructive coping mechanisms or help student teachers discover their own; and (3) the lack of an adequate research base with which to formulate any changes to current teacher education programs, especially those programs encouraging greater amounts of contact time between student teachers and their practice teaching sites.

In sum, there has clearly been a lack of investigations into the realm of anxiety, stress, and burnout on behalf of student teachers. This has resulted in a miniscule amount of specific, anxiety-relieving programs designed to soften the often unexpected blows of isolation, feelings of self-doubt, and inadequacy that accompany so many preservice educators when they face the "culture shock" of their first classroom encounter (Veenman, 1984). The lack of research initiated to either identify, measure the degree of, or provide successful strategies to alleviate the anxiety, stress, and burnout caused
by the student teaching experience is a problem confronting all institutions interested in the proper preparation of teachers.

Indeed, it is a proven fact that student teachers exhibit extremely high levels of anxiety prior to student teaching, but very little has ever been done to ameliorate this anxiety or to minimize its effect on classroom performance (Bowers, Eicher and Sachs, 1983, p.23).

PURPOSE OF THE STUDY

In view of these deficiencies, the present study has been designed to take a small but significant step in increasing the research base in the area of student teacher anxiety, stress-related health disorders and burnout. Specifically, this study has three major purposes: (1) to determine whether the introduction of five additional sessions (i.e., cohort support sessions) to the existing student teaching seminar program at Concordia College, Portland, can affect student teacher anxiety, stress-related health disorders and burnout caused by the rigors of the practice teaching experience; (2) to identify key stressors for the selected student teacher population; and (3) identify variables that play a major role in increasing or decreasing student anxiety, stress and burnout levels during practice teaching.

The study is designed to provide information that will add to the knowledge base on student teacher anxiety, stress, and burnout as well as provide assistance to other
educators who may someday exhibit an interest in conducting similar research in this area.

Finally, this study has been designed to assist Concordia College, Portland, in the formative evaluation of its current student teaching program by posing and ultimately answering such questions as: How stressed and anxiety-laden are student teachers prior to and upon completion of the student teaching experience? Are all student teachers equally susceptible to the burnout phenomena, or do certain variables make particular student teachers more susceptible than others? What are the key stressors facing Concordia students during their professional quarter? Will revisions in the present student teacher seminar program have any significant impact on reducing the stresses and anxieties of the student teaching experience?

**RATIONALE FOR STUDYING THE PROBLEM**

Why study stress in student teachers? Practical reasons for initiating such a study have been listed in the opening paragraphs above (e.g., lack of research studies, a lack of empirical data concerning student teacher anxiety, stress, or burnout, and a general lack of any immediacy to conduct such research). A more specific rationale for investigating this problem, however, can be cited for each of the following interest groups: teacher trainers, student teachers themselves, educational researchers, Concordia College, Portland, and perhaps other Lutheran Church-Missouri Synod teacher training institutions exhibiting equivalent education programs and student teacher demographics.
Those charged with the awesome responsibility of preparing teachers for our nation's schools cannot deny the fact that the increased psychological, physiological and social demands of student teaching have been, and will remain, major factors ensuring that preservice teachers-to-be experiences considerable amounts of anxiety and stress during the professional quarter. As Jones (1982) states,

Student teachers are exposed to a barrage of influences on their professional growth and development. Each day they encounter new, and sometimes bewildering, situations with pupils, teachers and the interactions within the classroom. Mastering the "routine" of teaching can be a major obstacle which may not be overcome without undergoing different kinds of stress during adaptation to the "real" teaching world (p. 3).

Professional educators responsible for teacher training programs have a choice: leave their teacher education programs as they are, and hope that the weak, stress-defeated will be weeded out while the strong, resilient student teachers remain to take their hard-earned place among the other survivors. Another choice would be a more proactive one where strategies for the alleviation of stress in the teaching profession would be ongoing and preventive in nature. If quality educators are to enter and be retained in the teaching profession, the training and development of a mentally healthy teacher at the preservice level would be the most logical place to start (Braun, 1977, p.10).
It is more reasonable to help teachers cope with stress before it becomes uncontrollable and to take a preventive rather than an emergency type of approach. One of the best ways to deal with the conditions that promote stress in teaching would be to include information about stress and ways of dealing with it in a teacher preparation program (Linville and Belt, 1982, p.3).

From the profession's perspective then, it becomes essential to create programs for preservice teachers that will provide them with the ability to recognize symptoms of anxiety and stress, identify their causes, and take the necessary steps to develop strategies for their proper management (Eskridge and Coker, 1985, p.387).

It thus becomes crucial that professionals involved in teacher preparation programs acknowledge the existence and effects of stress in student teachers (Hourcade et. al., 1988, p.347).

Although only corollary to the present study, another critical element of the teacher trainers' rationale for this study relates to Silvernail and Costello's (1983) issue of "inconsistency of results." These researchers express a concern that present reforms in teacher education programs blindly promote more extensive clinical experience (i.e., more field experiences at school sites and longer periods of student teaching) assuming that more will equal better. Citing preservice education studies from the 1960's and 1970's, Silvernail and Costello found that

While several researchers report positive effects, other studies have found that students, by the end of their student teaching experience, exhibit more negative attitudes toward children and
teaching in general. At the very least, this inconsistency of results suggests student teaching experiences do not have uniformly beneficial effects on students, and consequently, clinical experiences need greater scrutiny and study prior to the institution of massive changes in teacher preparation programs (p. 32).

This quote serves as an important warning to those teacher training institutes that may already be making hurried preparations to mount a major "reform-in-teacher-training" program. For while the scant literature certainly does support the fact that

Student teaching as it is presently implemented is seldom capable of handling stress reduction (Wendt, 1980, p.10).

the present study will hopefully provide some basis in fact, not opinion, for changes colleges in general and Concordia College in specific may make as both seek improvements in student teacher programs.

Considering the student teachers' rationale for a study on anxiety, stress-related health disorders and burnout, it is important to note that they themselves have recognized stress as a major stumbling block to the successful completion of their practicum. Womack (1982) reported in his qualitative study completed at two, large, midwestern universities, that student teachers listed stress as their number two concern, immediately following classroom management (p.2), while Zerr (1988) reported that anxiety appears to occur with considerable frequency and is an important concern among student teachers (P.7).
But while there are specific undergraduate education classes designed to deal with their classroom management concerns, how many teacher training colleges or universities offer courses or seminars specifically aimed at reducing student preservice anxiety and stress during a time when the literature states such difficulties reach their highest ebb? If, as Manera and Wright (1988) so forcefully state, recognizing stressors is a major factor in successfully dealing with job stress, why aren’t more efforts made to help student teachers identify and minimize the effects of their particular stressors? A major rationale for the launching of this study is to test the effectiveness of seminars for preservice teachers that can hopefully fill these gaps.

Wendt (1980) notes that Ryan stated as early as 1974 that beginning teachers exhibit culture shock, insecurity about themselves and teaching, and a feeling of isolation as they enter the field (p.3). Sinclair and Nicoll’s (1980) extensive interviews with Australian student teachers supported this hypothesis and added that

Practice teaching is perceived by them as a personal test - a test of themselves as prospective teachers, even as adequate people (p.18).

Too often, however, student teachers undergoing this final "test" of skill and character have been left to fend for themselves. A candid comment made to this author by a Portland Public School administrator hints that the modus operandi of at least some teacher colleges in this part of the Pacific Northwest can be summarized as, "The student
teacher has been placed in a classroom with a cooperating teacher; our job is done. Now it's up to them."

Obviously, this teacher training philosophy will not have a major impact on reducing the stresses and anxieties that naturally sprout from the practicum. Sinclair advises that

To be a satisfactory experience, the student teacher needs far more support and guidance, and far more help . . . (p.26).

One of the major rationales for this study is to provide that necessary support and guidance.

From a research perspective, there may be an even more imperative and convincing rationale for this study. A number of critical questions dealing with the "anxiety-stress-burnout" facet of student teacher education still have no definite, statistically-substantiated answers. How can such answers be found unless the right questions are asked and the problem investigated?

For example, Feitler and Argyle stated in a position paper at the 1990 meeting of the American Educational Research Association that

Little, however, is known about the level of stress experienced by undergraduates as they proceed through school and prepare to become teachers (p.12).
In the same manuscript, these authors report that there has been a veritable plethora of research studies dealing with the issues of teacher stress, symptoms of teacher stress, various coping strategies, and the topic of educator burnout. They continue by stating, however, that

Less well examined is the level of stress experienced by persons preparing to be teachers, especially stress generated by or at the time of entry to a field experience, often prior to student teaching. (p.3).

Feitler and Argyle suggest additional research in this area of "teacher preparation" since their preliminary data suggests stress may be very high for this group.

In earlier but related works, Freudenberger (1980), Pines (1981) and Farber (1983) all came to the same conclusion: college seniors busily preparing for careers in the human services professions - like teaching - have been overlooked in the study of burnout. Their writing suggests that this particular population may exhibit early warning signs of the burnout phenomenon and thus may offer the earliest opportunity for a timely intervention and prevention of its development (Edwards, 1986, p.3).

The rationale for such a study from the college's perspective hinges on a number of issues critical for the proper preparation of teacher candidates. Not surprisingly, there is no lack of studies indicating that student teaching is indeed the most significant factor in any teacher education program (Zerr, 1984, p.4). With this being the case, it is imperative for any teacher training institute to make certain that the student teaching experience be a successful one.
To be a satisfactory experience, the student teacher needs far more supervision and guidance, and far more help in developing effective classroom techniques for dealing with the particular problems that arise during student teaching (Sinclair and Nicoll, 1981, p.18).

and

The student teacher is handicapped in his introduction to teaching if his anxiety is too great. From this point of view, the reduction of extreme anxiety seems highly desirable in the training of teachers (Travers, Rabinowitz and Nemovicher, 1952, p.369).

Would it be beneficial for teachers in training if they could be made aware of particular areas where anxiety and stress flourish and then, through any number of activities such as role-play or case study discussions, were allowed to initiate explorations into the many possible ways of dealing with these kinds of situations (Linville and Belt, 1982, p.5)?

In short, knowledge of anxieties and stressors faced by student teachers would provide valuable information of immediate use to those directly responsible for the ultimate improvement and redesigning of preservice education programs. It should also be most useful for the teacher education program at Concordia College, Portland, and synodical sister schools with similar programs and student constituencies to (1) categorize sources of student teacher anxiety and stress in order to develop an adequate picture or profile of items that stress students most and then, (2) once armed, work to develop strategies for reducing their negative impact. After all,
The earlier one recognizes the debilitating effects of this disease, the more apt one is to minimize its negative effects (Goodall and Brown, 1988, p.19).

and

The psychological well-being necessary for effective teaching cannot be achieved indirectly but must be developed as part of the teacher preparation experience (Martray, Cangemi and Craig, 1977, p.161).

The rationale for such a study from this college or any teacher training school’s point of view must also consider that symptoms and problems associated with student-teacher anxiety, stress-related health disorders and burnout most commonly strike those preservice candidates who exhibit qualities of idealism, commitment to children, and competence in their discipline. It should come as no surprise that students who are convinced of the true service and value their chosen profession provides and who strive to do their very best, are often the same ones who fall prey to the debilitating effects of anxiety and stress. If a teacher training program seriously desires to aid and support these students so that quality teachers enter our schools, investigations into causes of and solutions to relieve stress are indeed necessary.

Again, considering a rationale for this study from a teacher college’s perspective, no director of a teacher education program welcomes the negative news that accompanies student teaching problems emanating from a candidate who is stressed out and unable to cope with the day-to-day exigencies of managing a typical classroom. Anxiety-laden students place additional burdens on the cooperating teacher as well as the host administration. This state of affairs could ultimately translate into a reluctance, if not an
actual refusal, of a particular school to place other student teachers at that site in the future.

Additionally, and perhaps most importantly, student teachers exhibiting stress-related behaviors can negatively impact the students in their particular classroom. Stevens (1984) states that

There is a mounting body of evidence suggesting that job stresses and staff burnout in human service programs adversely affect the welfare of the clients (p.6).

Stevens' point, then, is that these adverse affects are not limited to the student teacher, but could translate into such negatives as the classroom students failing to receive the proper guidance and instruction their parents and the school administration expect.

For the sake of all concerned - placement directors, cooperating teachers, curriculum vice-principals, student teachers and the classroom students themselves - it would be in any teacher college's interest to explore ways in which the anxieties and stressors of the preservice educator could be alleviated.

Lastly, a number of extrinsic influences provide yet a further rationale for undertaking this study. For instance, consider the following reasons: the current, national emphasis on reform in teacher education; the dramatic increase of students entering the elementary and secondary education programs at Concordia College, Portland, as a result of severe financial retrenchment in state-operated teacher education programs; new mandates placed upon teacher training institutions by the Oregon Teacher
Standards and Practices Commission who recently increased by one-third the time student teachers must spend practice teaching.

Considering these recent events, the usefulness, timeliness and practicality of a research study investigating the effects of an intervention program on decreasing levels of student teacher anxiety, stress-related health disorders and burnout during the professional quarter could provide a valuable service for teacher supervisors, cooperating instructors, Concordia's education program, and, most importantly, the student teachers themselves.

NEED AND SIGNIFICANCE OF THIS STUDY

In his survey of problems experienced by beginning teachers, Veenman (1984) cited Ryan's (1979) earlier study which stated

Teachers have difficulty in their first year because they are essentially undertrained for the demands of their work (p.147).

"Demands" is the key word here. Ryan does not level a scathing criticism at current training techniques that are hallmarks of most teacher education programs. Instead, his concern, like Veenman's, is beginning teachers who are not ready for the quantum leap from preservice education to the "Reality Shock" of teaching and maintaining their own classroom. The insinuation, however, is clearly made that the
profession needs preservice programs that prepare fledgling educators for the collapse
of their missionary idealism formed during teacher training as a result of their exposure
to the harsh and rude reality of everyday classroom life (p.143).

The five additional training seminars proposed by this study are specifically
designed to deal with those rude realities so that student teachers, some assuming their
own classrooms in less than three months after completion of their training programs,
will better meet the reality shock Veenman and Ryan describe.

The need for this study is further buttressed by the pioneering work of Fuller and
Bown (1975) who theorized a process of teacher maturation through three distinct, clearly
delineated developmental phases.

The first phase involves survival concerns. These are concerns about
one’s adequacy and survival as a teacher, class control, being liked by
pupils, and being evaluated (p.31).

Fuller posits that these earlier, very self-oriented, first phase concerns are much
less desirable than the later, more pupil-oriented ones. Fuller hypothesized that the more
appropriate, more altruistic student-centered concerns exemplified by phase three cannot
emerge, however, until these phase one concerns are met. Subsequent research studies
by Adams, Hutchinson and Martray (1980) conducted with student, first, and fifth year
teachers supported Fuller’s projections.

If one ascribes to this theory, there appears to be a pressing need to furnish
student teachers with two sets of tools: the practical, instructional methods and materials
of teaching (hopefully, this is already being accomplished, to varying degrees, at teacher training institutes) which provide the education student with practical strategies and techniques to get the classroom instructional tasks done, and a supply of emotional coping strategies which should serve to help soften the blows accompanying reality shock and thus propel the noveau educator quickly from phase one concerns to Fuller’s higher developmental phases where the welfare of the classroom students, rather than the student teacher's, becomes paramount. A cursory review of the scant research completed on student teacher anxiety, stress-related health disorders and burnout points to a definite need for the latter.

The seminar programs specifically designed for this study answer this expressed need for the development of that crucial facet in a teacher training program, so far excluded, that moves beyond the necessary methods and strategies lectures to include an additional component that may act to reduce student teacher anxieties and stress resulting from these students’ overriding but natural preoccupations with being liked by their students, being evaluated by their supervisor and cooperating teacher, and maintaining classroom control.

In sum, there is a genuine need for programs that can help education students successfully jump over the hurdle of Fuller's hypothesized phase one into the more advanced phases where selfish concern are shed for more altruistic ones. The seminars designed for this study are attempts, in Fuller's words, to conceptualize programs of teacher education.
Fuller's main contribution to teacher education is that she has given us a more adequate conceptualization of the problems experienced by teachers. At the same time, the stages of concern can be viewed as a basis for conceptualizing programs of teacher education (Ryan and Philips, 1982, p.1874).

In his longitudinal study of eleven first-year high school teachers, Gehrke (1976, 1981) discovered there were certain critical needs articulated by these new educators as they made their way from the realm of preservice to inservice teacher: the need for respect, the need for liking, the need for belonging, and the need for a sense of competence.

Gehrke's research underscores an important truth already known by teacher trainers: teacher education programs need to instill a sense of confidence in their students by convincing them they have the tools and talents necessary to be competent professionals.

There occurs a distinct crisis of confidence when student teachers begin their practicum and again when these same men and women make the transition to full time teaching positions. The questions "Am I competent, am I adequate, can I really do this?" are asked on a daily basis. The success or failure of a lesson plan, the hint at the slightest bit of student dissatisfaction, may be all that's needed to begin the process of competence and confidence erosion. Real or imagined, such feelings of incompetence are debilitating and can create increased feelings of anxiety and stress on the part of the inexperienced educator resulting in the possibility for more serious problems.
Aware of this problem, Linville (1982) asked:

What can we do in training programs to help individuals prepare to cope with the conditions that have already resulted in large numbers of unhappy and dissatisfied teachers (p. 6)?

The answer to this query is that it appears as though teacher educators need to instill confidence in student teachers by providing them with training that accentuates their strengths and enhances their competence. This study is thus needed in order to determine whether or not the addition of such training, in the guise of seminars, can actually accomplish this task by reducing anxiety, stress-related health disorders and the incidence of burnout in the student teacher population.

As highlighted in numerous citations above, scant research in the realm of student teacher anxiety, stress-related health disorders and burnout has been undertaken. Research completed has primarily been descriptive and qualitative in nature, relying for the most part on informal interviews, supervisory observations, and brief questionnaires. Although these problems have been studied more comprehensively in other helping professions, (i.e., counseling, special education teachers, nursing) with the pioneering work of Freudenberger (1974) and Maslach (1976), the relationship between anxiety, stress, burnout and student teaching is still an enigma.

This lack of study, resulting in such scant knowledge dealing with preservice anxiety, stress, and burnout, advertises a field ripe for research. The lack of information beckons educators involved in teacher preparation programs to marshall their forces and
devote the necessary time and resources for a more introspective look at the source from where all professional educators come: the teacher training programs. This study recognizes that need and will be executed to help meet it.

The significance of this particular research study, then, is twofold. First, it enters educational waters that are largely uncharted. As cited earlier in this same chapter, few studies have delved into the arena of student teacher anxiety, stress, and burnout. But far more significant, however, as chapter three will illustrate, is the fact that this study will become one of the few to approach the issue of preservice anxiety, stress-related health disorders and burnout with an experimental design, and appears to be the only study up to this point to test the effectiveness of topic-specific seminars on the reduction of student teacher anxiety and stress as measured via use of anxiety, health and burnout instruments.

Thus this study will heed Ursprung's (1986) advice when, after extensively reviewing the literature pertaining to burnout in the human services professions, he concluded that

Research on burnout is still in the exploratory stage. It is clearly time for burnout research to become more experimentally oriented (p.196).

Anxiety and stress should not be regarded as a required rite of passage to the teaching profession, something that every student teacher must experience and either live or die by. Teacher preparation schools should instead work to create effective programs
that can lessen the detrimental effects of these all too prevalent maladies. Indeed, it is in their best interests to do so; for unless they are dealt with properly, stress and anxiety can result in the deterioration of a student teacher’s mental and physical well-being (Goodall and Brown, 1988, p.21) as well as the possible loss of a talented, valuable teacher to the profession.

THEORETICAL MODEL EXAMINED

This study will examine the effects of five, topic-specific seminars (i.e., cohort support sessions) on the reduction of student teacher anxiety, stress-related health disorders and burnout over a 10-week student teacher practicum. The rationale for such an approach was derived from David Friesen’s (1986) model of the transactional stress cycle (see figure 1.1, page 24).

The first elements of this cycle are the stressors themselves. Viewed collectively by Friesen as demands made on an individual, these anxieties or stressors create a disequilibrium which can best be described as a general uneasiness, an uncomfortableness, a situation closely akin to those awkward feelings experienced by student teachers as they begin their practicum. As a result of this somewhat sanitized but nonetheless new incursion into the land of full-time student teaching, demands are suddenly made that exceed the student teachers’ present resources or at least cause them
The Stress Cycle
A Conceptual Model by David Friesen (1986)
Figure 1.1
to believe that they do. This study will test the extent of these anxieties and stressors by administering three instruments at the completion of the practicum.

Perception of resources is the second component of Friesen's theorized model. When resources appear inadequate for individuals to meet a new set of demands presently confronting them, stress sets in.

The discrepancy between perceived demands and perceived resources and the perceived degree of seriousness to live up to the demands will determine the degree of stress experienced by an individual. It should be noted that as was the case for demands, the individual’s perception of available resources and consequences of failure will play a major role in determining the level of stress experienced (p.6).

This study strategically intervenes in phases two and three of Friesen's transactional stress cycle (see letters B and C, figure 1.2, page 26). The five additional seminars (i.e., the Cohort Support Sessions) have been specifically designed to convince student teachers that they already have obtained in prior education classes, or can receive through the support sessions, an adequate supply of instructional resources to effectively meet this new set of demands or stressors originating from the reality shock of classroom immersion.

The raison d'être for the introduction of the Cohort Support Sessions is to create a forum where student teachers will be helped to perceive that they have the necessary resources to effectively cope with these new sets of demands and the stress that results from them. This follows Eskridge and Cokers’s (1985) premise that

Figure 1.2
Stress is unique in that it affects people in a personal manner (Alley, 1980). Therefore, an individual's perceptions and attitudes toward stressors determine the physical and emotional responses his or her body exhibits as a result of the stress (p.387).

After this second phase of the stress cycle, Friesen states that "The autonomic nervous system sets in motion a number of physiological changes" (p.6). For this reason, the present study will develop and utilize a Student Teacher Health Survey to assess student teacher health conditions at the conclusion of the 10-week practicum session. The purpose of this inventory will be to determine if the five additional seminars had any influence on decreasing the occurrence of the more common physiological problems associated with anxiety and stress.

The third phase of the stress cycle deals with the types of response to stress and anxiety an individual chooses to make. Friesen's model hypothesizes that there are three responses to stress. The first is termed an "adaptive response behavior" where some particular type of direct action is undertaken to nullify the negative effects of stress and restore equilibrium.

The stress cycle is thus not necessarily destructive, in fact, it can be quite constructive, leading to greater performance and greater satisfaction. The stress has been transformed into a challenge which rather than being dysfunctional is functional in leading to more effective coping (p.7).
The second response pattern is termed maladaptive where

Stress tends to lead to defense mechanisms generally seen as disruptive or destructive to an individual. Mechanic (1978) lists the nine defense mechanisms people employ when under stress: regression, repression, reaction formation, isolation, undoing, projection, introjection, turning against the self, and reversal. These mechanisms operate at an unconscious level and involve denial, falsification, and distortion of reality (p.7).

The third and last response pattern cited by Friesen is termed palliative which includes activities designed to alter the individual’s appraisal of stress.

Palliative responses are not designed as much to deal with a specific problem than with the symptom. Examples are physical exercise, meditation, encounter groups, biofeedback and behavior modification (p.8).

This study interfaces with Friesen’s model through the addition of structured interventions at Phases II and III (i.e., letters B and C) as seen on figure 1.2 on page 26.

At Phase II, or letter B of the stress cycle, student teachers are sizing up their classroom situations and perceiving their resources by mentally taking stock of their instructional arsenal. Here the Cohort Support Sessions will include specific activities designed to convince student teachers they have been equipped with the necessary skills for meeting the new demands of classroom teacher and are very capable of success in their new and at times uncomfortable position. The sessions are not as interested in the conveyance of additional teaching techniques or methods as they are in changing (or, in
some cases, maintaining) the student teachers' perceptions that they have the resources necessary to deal with their new sets of stressors.

At letter C in figure 1.2, the Cohort Support Sessions will deal with specific student teacher stressors (e.g., discipline, time management, relations with cooperating teacher and supervisor, and other topics reported by the literature as causing student teacher anxiety and stress) to provide concrete suggestions for student teachers experiencing classroom difficulties while furnishing additional reinforcement for those who are not.

In conclusion, it is critical to remember for the purposes of this study that Friesen's theoretical model hinges on the word perceptions. Friesen asserts that new demands or stressors do not in themselves cause stress; it is, rather, how one perceives the imbalance between those new demands and the resources to meet those new demands that causes anxiety and stress. More succinctly, if a student teacher believes (perceives) something will cause him to be anxious and stressed, it will. Thus the student teacher, during the critical student teaching practicum, arrives at two trailheads: one leads to the path of confidence emanating from teaching skills already obtained and those the student teacher knows will still be collected, while the other leads to uncertainty and fear stemming from a lack of confidence.

The five additional seminars designed for this study will take issue with these perceptions in an attempt to convince student teachers that the new demands causing anxiety and stress are "much ado about nothing" since these preservice teachers already have, or will soon receive, the resources necessary for student teaching success.

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RESEARCH QUESTIONS AND HYPOTHESES

While previous studies have dealt with the identification, sources and symptoms of stressors in the helping professions, this investigation will attempt to discover whether the addition of five structured seminars (i.e., Cohort Support Sessions) to the present student teacher seminar program at Concordia College, Portland, can affect the level of student teacher stress through planned interventions at stages two (Perception of Resources) and three (Response to Stress) of Friesen’s transactional stress cycle (refer to figure 1.2, page 26).

The Cohort Support Sessions were designed to convince student teachers that they already have, or can acquire, the necessary teaching resources to effectively meet the new demands resulting from student teaching. They have also been planned to help student teachers alter their perceptions of their stressors and anxiety-causing situations so that they can view them instead as manageable challenges they are well-equipped to handle. Lastly, the sessions were devised to provide student teachers with positive, direct action, adaptive stress response behavior skills.

The research questions investigated by this study are as follows:

1. Can five additional seminars, specifically structured to deal with the key student teacher stressors reported in the literature, affect levels of student teacher anxiety, stress-related health disorders and burnout?
2. What effects do the variables age, sex, marital status, number of dependent children, number of years at Concordia College, cumulative grade-point average, student teaching grade-level assigned for the practicum, number of hours employed per week during the practicum, and total hours of field experience prior to student teaching have on the health, anxiety, and burnout scores of student teachers?

3. What are the interactive effects between the above variables and student teacher health, anxiety and burnout levels?

4. Do key stressors reported by student teachers in this study mirror those reported in the literature?

5. Can the formation of a support group, created by students randomly assigned to the five additional seminars, affect student teacher anxiety, stress-related health disorders and burnout levels?

6. What is the average anxiety, health and burnout level of Concordia student teachers on completion of the 10 week professional practicum?

7. Can additional seminars alter student teacher perceptions of stressors so that these stressors become more manageable and less stressful?
8. Are there changes in general student teacher health from entry until completion of the 10 week professional quarter?

9. Is it possible to predict anxiety, health, or burnout scores of student teachers on the basis of one or more of the 10 predictor variables used in the study? (i.e., the five additional seminars (treatment group), age, number of dependent children, hours of prior field experience, gender, grade level assigned, cumulative gradepoint average, hours employed per week during the practicum, marital status, and number of years at Concordia College, Portland.)

10. Would perceptions of key student teacher stressors mentioned in the literature differ significantly between student teachers receiving the treatment and those who did not?

HYPOTHESES

Although effects of the five additional seminars are expected to reduce student teacher anxiety, stress, stress-related health disorders, and burnout, the following hypotheses are stated in the null form. Each will be tested at the .05 level of significance.
1. There is no significant difference between anxiety, health or burnout scores of the experimental group (i.e., student teachers randomly assigned to receive the five additional seminars) and scores of the control group (i.e., students participating in the three traditional Concordia seminars only).

2. A) There is no significant difference between anxiety, health or burnout scores of student teachers as a result of gender;  B) There is no significant difference between anxiety, health, or burnout scores of student teachers as a result of gender in either the control or experimental group; C) There are no significant, non-chance correlations between student teacher anxiety, health or burnout scores and student teacher gender; and D) There are no significant, non-chance correlations between student teacher anxiety, health or burnout scores and student teacher gender in either the control or experimental group.

3. A) There is no significant difference between anxiety, health or burnout scores of student teachers as a result of different age levels;  B) There is no significant difference between anxiety, health, or burnout scores of student teachers as a result of different age levels in either the control or experimental group; C) There are no significant, non-chance correlations between student teacher anxiety, health or burnout scores and student teacher age level; and D) There are no significant, non-chance correlations between student teacher anxiety, health or
burnout scores and student teacher age level in either the control or experimental group.

4. A) There is no significant difference between anxiety, health or burnout scores of student teachers exhibiting different marital status; B) There is no significant difference between anxiety, health or burnout scores of student teachers exhibiting different marital status in either the control or experimental group; C) There are no significant, non-chance correlations between student teacher anxiety, health or burnout scores and their marital status; and D) There are no significant, non-chance correlations between student teacher anxiety, health or burnout scores and their marital status in either the control or experimental group.

5. A) There is no significant difference between the anxiety, health or burnout scores of student teachers with children and those with no children; B) There is no significant difference between the anxiety, health or burnout scores of student teachers with children and those without children in either the control or experimental group; C) There are no significant, non-chance correlations between the anxiety, health and burnout scores of student teachers and their number of children; and D) There are no significant, non-chance correlations between the anxiety, health and burnout scores of student teachers and their number of children in either the control or experimental group.
6. A) There is no significant difference in anxiety, health or burnout scores between student teachers teaching at different grade levels; B) There is no significant difference in anxiety, health or burnout scores between student teachers teaching at different grade levels in either the control or experimental group; C) There are no significant, non-chance correlations between student teacher grade level assigned and student teacher scores on the anxiety, health and burnout measures; and D) There are no significant, non-chance correlations between student teacher grade level assigned and student teacher scores on the anxiety, health and burnout measures in either the control or experimental group.

7. There is no significant difference in anxiety, health and burnout scores between student teachers employed or unemployed during the practicum; B) There is no significant difference in anxiety, health or burnout scores between student teachers employed or unemployed during the practicum when in either the control or experimental group; C) There are no significant, non-chance correlations between the number of hours student teachers are employed per week and their scores on the anxiety, health or burnout measures; and D) There are no significant, non-chance correlations between the number of hours student teachers are employed per week and their scores on the anxiety, health or burnout measures in either the control or experimental group.
8. A) There is no significant difference between the anxiety, health and burnout scores of student teachers based on their number of years in attendance at Concordia College, Portland; B) There is no significant difference between the anxiety, health and burnout scores of student teachers based on their number of years in attendance at Concordia College, Portland, in either the control or experimental group; C) There are no significant, non-chance correlations between the number of years student teachers attend Concordia College, Portland, and their scores on the anxiety, health and burnout measures; and D) There are no significant, non-chance correlations between the number of years student teachers attend Concordia College, Portland, and their scores on the anxiety, health and burnout measures in either the control or experimental group.

9. A) There is no significant difference between the anxiety, health and burnout scores of student teachers based on their hours of prior field experience; B) There is no significant difference between the anxiety, health and burnout scores of student teachers based on their hours of prior field experience in either the control or experimental group; C) There are no significant, non-chance correlations between hours of prior field experience and student teacher scores on the anxiety, health and burnout measures; and D) There are no significant, non-chance correlations between hours of prior field experience and student teacher scores on the anxiety, health and burnout measures in either the control or experimental group.
10. A) There is no significant difference between the anxiety, health and burnout scores of student teachers as a result of their cumulative grade point averages (GPA’s); B) There is no significant difference between the anxiety, health and burnout scores of student teachers as a result of their cumulative grade point averages when in either the control or experimental group; C) There are no significant, non-chance correlations between student teacher anxiety, health and burnout scores and their cumulative grade point averages; and D) There are no significant, non-chance correlations between student teacher anxiety, health and burnout scores and their cumulative grade point averages in either the control or experimental group.

11. There is no significant difference between the control and experimental group’s rating of key student teacher stressors as reported on the Student Teacher Debrief Questionnaire (STDQ).

12. None of the 10 predictor variables (age, dependent children, hours of prior field experience, gender, grade level assigned, cumulative gradepoint average, group (control or experimental), hours employed per week, marital status, and years at Concordia College) will account for any significant variance among the 17 criterion scores on the health, anxiety and burnout measures.
DEFINITION OF TERMS

Anxiety, stress-related health disorders and burnout are legitimate concepts that have been studied by biologists as well as experimental psychologists (Selye, 1956; Cherniss, 1982). Since the 1970's an increasing amount of research regarding issues of anxiety, stress and burnout in education and other service professions has gradually developed (Freudenberg, 1977; Mattingly, 1977; Pines and Maslach, 1978; Broiles, 1982; Fimian, 1984). As a result of these and other such investigations, the following definitions have been developed and appear most frequently in the literature. As a result of their general acceptance, these definitions will be used throughout this paper.

Anxiety -

An abnormal and overwhelming sense of apprehension and fear often marked by physiological signs (as sweating, tension and increased pulse), by doubt concerning the reality and nature of the threat, and by self-doubt about one's capacity to cope (Webster's New Collegiate Dictionary). The forerunner of stress; occurs when a person's feelings of self-adequacy and security are threatened (Sinclair, Heys and Kemmis, 1974, p.241).
Stress -

The result of anxiety, it is unspent energy from the body’s reaction to fears which often stem from such emotional sources as threats to the ego or fear of being disliked, of being misunderstood, of being inadequate, of disapproval, or fear of the loss of love, power or prestige. It can undermine health and increase the incidence of exhaustion, fatigue, colds, headaches, gastrointestinal disturbances, insomnia, hypertension, heart attacks and other stress-related diseases (Goodall and Brown, 1988, p.18).

Burnout -

Worn out, inoperative, exhausted (Cunningham, 1983, p..37); the ultimate result of stress, burnout consists of three components: emotional exhaustion, depersonalization (a loss of care or concern for one’s students), and reduced feelings of personal accomplishment (Maslach & Jackson, 1986, p.1). It is a condition that manifests itself physically and behaviorally. Physical symptoms include those commonly associated with stress, while behavioral symptoms include quickness to anger, crying, suspiciousness, paranoia, feelings of omnipotence, overconfidence, substance abuse, stubbornness, rigidity, cynicism, spending increasing hours of free time at work, and withdrawal from nonwork social contact (Freudenberger, 1974, p.160). Burnout often develops in the
altruistic individual who strives to achieve unrealistic and idealistic goals in activities of high stress and low satisfaction (Edwards, 1986, p.3).

The relationship existing between these terms is summarized in figure 1.3 on page 41.
Hypothesized Model of the Relationships between Anxiety, Stress and Burnout.

Figure 1.3
ASSUMPTIONS AND LIMITATIONS OF THE STUDY

This study assumes that student teachers everywhere are prone to the same anxieties and stressors experienced by inservice educators.

There are many similarities among the stressful situations encountered by experienced teachers and those encountered by student teachers. For example, both groups report stress in situations involving student discipline, pedagogical functions, successful performance, and organizational matters (Kaunitz et al., 1986, p.169).

This study also presumes that the 10 week student teaching practicum provides enough time for these stressors and anxieties to manifest themselves. It is further assumed that 10 weeks is an adequate time to effect changes in student teacher anxiety and stress levels.

The assumption is also made that the two instruments chosen and the one developed for the study (i.e., the Maslach Burnout Inventory, the Teacher Anxiety Scale, and the Student Teacher Health Survey) can act as quantitative gauges to measure the degree of student teacher anxiety, burnout and resultant stress-related health disorders. It is further assumed that the student teachers will provide candid answers on these instruments so social desirability or the halo effect will not act as a confounding variable.

This study also assumes that the syndrome of burnout does indeed, as Maslach and Jackson state, consist of the three separate variables of emotional exhaustion, depersonalization and lack of personal accomplishment which result from an
overexposure to stressful situations. It is further assumed that student teaching is such a stressful situation and does lead to various degrees of burnout.

Further, since all student teaching sites are located within the Portland Metro and adjacent Vancouver city areas, and since students will be randomly assigned to the control or experimental group, the assumption is made that student teachers will be instructing in classroom situations that are comparable in such variables as class size, socio-economic status and ethnic background of the students.

This investigation limits itself to measuring student teacher anxiety via the Teacher Anxiety Scale (developed at Stanford University and later refined by Parsons in 1973), a measure of student teacher stress by the three subscales of the Maslach Burnout Inventory (emotional exhaustion, depersonalization, lack of personal accomplishment), and a measure of stress-related health disorders by the Student Teacher Health Survey. Data collected on this last survey were limited to those health symptoms that appeared most frequently in the anxiety, stress and burnout literature.

The data collected via the Student Teacher Demographic Data Sheet was limited to variables the author and the Concordia College Education Department were interested in testing (e.g., marital status, number of dependent children, years attending Concordia, etc.) as well as those the literature mentioned deserved further study (grade level assigned during the practicum and number of field experience hours prior to student teaching).
Student teachers participating in the study included all Senior elementary education majors from Concordia College, Portland, who would complete their practicum during the Fall, Winter or Spring Quarters of the 1992-1993 academic year.

Lastly, this study is being undertaken in large part to serve the teacher education programs of the Lutheran Church-Missouri Synod, a church body exemplifying a long and distinguished history of preparing teachers for private, parochial and public education since the mid nineteenth century.

More specifically, it is hoped that research results can be used to either support the status quo or illustrate a need for modifications to Concordia College, Portland’s present student teaching program.

Since data will only be collected at Concordia College, Portland, this study recognizes a limitation on generalizability to other private or public teacher training institutions. However, findings can be generalized to the 140 elementary education student teachers at Concordia, Portland, completing their student teaching between 1993 and 1995.
SUMMARY

Chapter I has provided a descriptive introduction to the problem of student teacher anxiety, stress, stress-related health disorders and burnout. The chapter illustrated that few research studies have dealt with these issues. A rationale for this investigation, including the possible benefits that could accrue to Concordia College, its parent church body, and three other teacher training schools with similar characteristics, was also discussed. The theoretical framework for this work was identified as Friesen's hypothesized phases of the stress cycle. These phases were reviewed, and an explanation of where the intervention seminars would be strategically inserted into this model were discussed. Ten research questions and 12 hypotheses were proposed for investigation by this study. Definitions of key terminology, as well as the assumptions and limitations of this research, were also provided.
CHAPTER II  
REVIEW OF THE LITERATURE

A review of the literature reveals relatively few studies dealing specifically with problems of student teachers (Doebler and Rooberson, 1987, p.234).

To date, relatively few investigations have examined stress and stress-related variables among individuals participating in student teaching experiences (Hourcade et al., 1988, p. 347).

IDENTIFYING THE QUESTIONS

Certainly no one who has ever student taught would deny that student teaching was the single most significant factor in their formal teacher training. While an education professor or perhaps even an occasional cooperating teacher or two might dispute this, studies by such researchers as Davis and Davis (1977), Diamonti (1977), Peck and Tucker (1973), and Zerr (1988) support this widespread belief.

The following scholars mentioned throughout the ensuing literature review have all worked under this assumption. Some of their studies have provided rather small contributions to the topic at hand, while others have managed to make major strides in helping educators better understand the nature of student teacher anxiety, stress and burnout. Whether their contributions were minor or major, these investigations shared the common denominator of providing recommendations on how student teaching, the most critical element of a teacher preparation program, could be improved and student teachers provided with an even more beneficial practicum experience.

This chapter will present a brief summary of over 30 years of research pertaining to student teacher anxiety, stress, stress-related health disorders and burnout found in the
professional literature. The methodology and summary conclusions offered by the researchers reviewed will also be reported.

Interestingly, this review revealed only one research study that dealt exclusively with student teacher burnout (Gold and Michael, 1985), while the relatively small number of other articles remaining clustered themselves into three major categories relating to anxiety and stress. These categories were:

1. Studies that answered the question, "What causes student teacher anxiety?" and documented the incidence and type of key student teacher stressors which promoted anxiety and stress during the practicum. As the graph printed below in figure 2.1 illustrates, studies that identified the sources of student teacher anxiety or stress numbered 19 and were the most numerous.

2. Studies investigating the effects of student teacher anxiety and stress on such variables as pupil control ideology, student teacher health, and attitude towards students (six articles, see figure 2.1 below).

3. Studies that either suggested or experimented with strategies aimed at reducing student teacher anxiety, stress, and burnout.
Figure 2.1
A graph of the numbers of professional articles for the period 1960-1992 relating specifically to the five student teacher research categories listed below.
The three categories listed in figure 2.1 above will be utilized as the organizational framework for the following review. The definitions for the key terminology (i.e., anxiety, stress, and burnout) presented in chapter I apply to any references made to these same terms here.

WHAT CAUSES STUDENT TEACHER ANXIETY?
IDENTIFYING THE KEY STRESSORS

The student-teaching experience is similar in nature to the general type of situation which is known to produce anxiety. It is characterized by vagueness and uncertainty concerning both the situation and the adequacy of responses that may be made to it (Travers et al., 1952, p. 368).

With these words, Travers, Rabinowitz, and Nemovicher (1952) initiated the first study that specifically aimed at identifying sources of student teacher anxiety. Data were obtained through administering a sentence completion test to a group of 120 student teachers at the beginning and end of a semester course in student teaching. Their finding that student teachers were most anxious over the dual problems of discipline and the desire to be liked by their pupils was, at that time, important. However, far more important for future investigators was their conceptualization of anxiety and their rationale for identifying its sources:

First, anxiety is an extremely unpleasant experience characterized by feelings of discomfort and tension. Second, anxiety often has a
paralyzing or disorganizing effect upon the individual which interferes with the development of more adequate responses to the situation. From this point of view, the reduction of extreme anxiety seems highly desirable in the training of teachers. In the case of student teaching, it is necessary to determine those aspects of the situation which arouse anxiety before it is possible to develop preventive measures (p.369).

Anderson (1960) and Thompson (1963) both initiated studies that were also aimed at the identification of anxieties or key stressors experienced by student teachers. Thompson believed

It would be helpful to their instructors to know precisely what is the nature of these anxieties and how frequently they occur (p.435).

Data collected from these initial studies became items on the first "lists" of key student teacher stressors. It is interesting that Anderson (1960) chose to entitle his article "Prospective Teachers Have Fears," thus initiating an association between student teacher fear and anxiety that has remained in the literature up to the present time. Anderson chose to be quite specific in reporting student teacher anxieties or stressors and listed the five most frequently identified by the practicum students in his sample. Fears about their ability to effect learning and maintain appropriate classroom control were the most frequently identified stressors (p.339).

Thompson (1963), while attempting to identify anxieties experienced by student teachers, became more concerned with discovering differences in anxiety levels between
male and female student teachers, and in comparing the number of anxieties experienced prior to and during the student teaching practicum. His finding that far more anxiety occurs prior to student teaching than during the actual experience (p.435) eventually led to other research studies designed to either refute or support this contention. Thompson also observed that female student teachers experience more anxiety than their male counterparts during the practicum. This latter finding, however, has not been challenged to date. As illustrated in hypothesis #2, this present study will investigate this question again.

In 1967, Petrusich conducted a brief review of literature concerning anxiety in student teaching and concluded that student teacher anxiety was due largely to fear: fear of an inability to gain control of classes, and fear of an inability to gain the emotional support from pupils (p.355).

Two very similar studies conducted only a year apart, one by Erickson and Ruud (1967), and the other by Yee (1968), both identified evaluation by the college supervisor as well as the cooperating teacher as major stress factors for student teachers. A few years later, Campbell and Williamson's study (1973), which originally sought to determine major areas of difficulty perceived by student teachers, arrived at this same conclusion. Rather than list anxiety-producing stressors, all five of these researchers were content to state that the most important variable in a successful student teaching experience was the relationship between the student teacher and the cooperating teacher. A positive relationship here would greatly reduce preservice anxieties. Conversely, a negative one would more than likely increase the anxiety levels of the student teacher.
Although she did not conduct a research study aimed specifically at identifying key student teacher stressors per se, Fuller (1969) promoted a conceptualization of teacher concerns that included pre-teaching, or student teaching issues. Based on previous research with inservice teacher dilemmas by Travers (1952), Gabriel (1957), Thompson (1963), Erickson and Ruud (1967), Fuller hypothesized a developmental conceptualization of teacher concerns. Within the context of this conceptualization, Fuller and Bown (1975) proposed that student teachers' chief concerns centered on survival skills. Fuller defined these as

Concerns about one's adequacy and survival as a teacher, about class control, about being liked by pupils, about supervisor's opinions, about being observed, evaluated, praised, and failed. These are concerns about feelings, and seem to be evoked by one's status as a student. Preservice teachers have more concerns of this type than in-service teachers (p.37).

Fuller's conceptualization would serve as the new paradigm around which future research on student teacher anxiety, stress, and burnout would now revolve.

Cohen, Mirels and Schwebel (1972), using data from 139 elementary education student teachers, were members of yet another research team that attempted to identify key areas of student teacher concern. Their approach, however, did not rely on what they termed the usual "intuitive" classification of student teacher concerns; instead, these researchers utilized factor analysis to
Provide a classification system based on the empirically obtained intercorrelations among the various stated concerns of student teachers (p.6).

This employment of a factor analytic procedure resulted in the identification of class control, pupil concerns, need for support, and evaluation by supervisors, as the four factors accounting for the greatest percentage of the total variance (p.6).

Campbell and Williamson’s study (1973), cited earlier in this chapter, made another attempt to analyze what student teachers perceived as areas causing the most anxiety during their student teaching. These investigators found that much of the anxiety experienced by the practice teachers grew from less than positive relationships with their cooperating teacher. These anxieties stemmed from

Problems in human relations precipitated by lack of understanding and flexibility by both parties (p.169).

Campbell and Williamson thus established that poor relations with a cooperating teacher had to be listed as a major contributing factor of increased anxiety and stress during the practice teaching experience.

Because her casual observance of journals written by student teachers yielded a "preponderance of words like tense, nervous, and frustrating," Sullivan (1979, p.3) conducted a descriptive study using three Delphi rounds to determine what factors in the school setting contributed to preservice anxiety. Sullivan felt
That the problem is significant and that descriptive research which can be used for decision making is appropriate as indicated by Fuller and Bown (p.3).

Sullivan found that student teacher anxieties stemmed primarily from concerns that focused on pupil and pupil-teacher interactions (e.g., discipline, motivating slow students, not having enough time to help each child as much as needed). Sullivan concluded that since these sources of anxiety are so embedded within the school system, it would be more beneficial "to provide (student) teachers with ways of coping with their anxiety (p.13)."

Realizing that little study had been made to determine the sources of preservice anxiety, Sinclair and Nicoll (1981) surveyed 84 teacher-education majors during a three week practice teaching period to identify the chief sources of student teacher anxiety. Their findings led them to conclude that most anxiety stems from

Concerns about 1) fulfilling expectations, 2) relating to pupils (which included classroom control problems), 3) relating to cooperating teachers and supervisors, and 4) achieving lesson goals (p.1).

Using the A-State scale as a measure, Sinclair and Nicoll, somewhat paralleling Thompson's earlier findings, determined in their study that anxiety levels are highest just prior to practice teaching and exhibit a gradual decline by the middle and end of the practicum. Nevertheless,
Despite the reductions in anxiety, the stresses and strains of teaching remain a major factor ensuring that considerable anxiety will continue to be experienced (p.17).

Jones (1982) realized student teachers underwent tremendous anxiety and stress as they hurriedly attempted to adapt to and master routines of classroom teaching. Jones hypothesized that this stress resulted from differences between a cooperating teacher’s attitude towards pupil control and that of the student teacher’s.

The student teacher’s attitude towards pupil control may be at odds with those of other educators with whom the student teacher interacts. This discrepancy can be such that the free expression of attitude toward pupil control may not only be difficult, but may also be a source of stress (p.3).

Jones’ research led him to conclude that this difference between the cooperating and student teacher’s pupil control ideology was yet another dilemma that contributed to the anxiety and stress experienced by student teachers.

Womack asked student teachers from the University of Texas (1977) and Oklahoma State (1982) to write suggestions that might be helpful for future student teachers embarking on their practicum. From their comments, Womack was able to identify a list of anxiety producing stressors which included such items as discipline, fatigue, relationships with supervisors, and time management (1982, p.2). Womack concluded by highlighting the need for cooperating teachers and administrators to be
aware of these problem areas to help ease the student teacher’s adjustment from college
campus to practicum site.

Interviewing student teachers and inservice classroom teachers to determine stress-
related factors for university students during student teaching, Abernethy, Manera and
Wright (1985) identified 13 stress producing factors which they felt were appropriate and
valid for both elementary and secondary student teachers.

Placing these in a forced choice Q-Sort design, these investigators administered
their instrument to 175 student teachers from two southwestern universities. Examining
this data, they were able to determine that student teachers ranked classroom discipline,
unmotivated students, and time management as the three most stress-producing factors
during the student teaching experience (p.361). They further reported that factors such
as these caused student teachers to experience stress at levels equivalent to those observed
in regular teachers.

Kaunitz, Spokane, Lissitz and Strein (1986) took issue with previous studies of
teacher and student teacher stress and anxiety which limited themselves to the
employment of self-report measures or questionnaires to collect their data. Using aspects
of the situation-elicitation procedure and the paired-rating method of intact situations in
a multidimensional scaling analysis (MDS) of student teacher stress, the analysis this
band of researchers undertook aimed at

Determining underlying dimensions of situations that student
teachers perceive to be stressful, (b) categorizing these situations
according to these underlying dimensions (p.170).
Thirty-one University of Maryland student-teachers participated in the situation-elicitation procedure generating a total of 95 situations they considered stressful. Using these stress-producing situations, 44 additional student teachers completed the paired-comparisons procedure, the results of which were input for MDS. Although some support for three underlying stress dimensions was revealed (i.e. professional-personal, threat-nonthreat, and professional disaster-personal crisis), these stress categories could not be labelled statistically. Kaunitz et al. attempt to categorize student teacher situations that produced anxiety did not materialize.

In research leading to her development of a new instrument to gauge student teacher anxiety (The Student Teacher Anxiety Scale), Hart (1987) reported from data gleaned in a survey of 42 student teachers that class control and discipline, the supervisor's observations, and evaluation of classroom teaching, were the three most frequently reported anxiety-producing situations (p.16).

Hart was able to support these student contentions through a series of personal classroom observations. Noting pupil disruption levels through a careful coding of observed pupil behaviors in various student teacher classrooms in Liverpool, Hart was able to furnish statistical proof for class control and discipline as key stressors for student teachers when her overall student teacher anxiety scores, taken from her Student Teacher Anxiety Scale, correlated positively with pupil disruption levels. In fact,

Pupil disruption had a significant, positive partial correlation with overall anxiety, evaluation anxiety, and class control anxiety (p.16).
Reviewing *Education Index* since 1950, Morris and Morris (1980) reported that only an occasional reference was made to stress in student teaching (p. 58). In fact, they advised researchers interested in this topic to conduct literature searches under the multiple headings of anxiety, concerns, and problems since all three of these terms have been used synonymously in the research.

Nevertheless, their extensive search enabled them to identify four major areas cited as responsible for causing anxiety and stress in student teaching. These were: student behavior (classroom management, discipline and control of students), relationships with supervisors (cooperating teacher and university supervisor), self-adequacy (Can I really be an effective teacher?), and learner achievement (helping pupils succeed in mastering knowledge).

Herbster, Abel, and Prince (1988) conducted an interesting study that investigated whether a student teacher's learning style, defined as distinctive behaviors which serve as indicators of how a person learns from and adapts to his environment, might act as an anxiety-producing factor during the student teaching experience. Their findings, however, illustrated no positive correlation between the various learning styles exhibited by the 62 student teachers participating in the study and their scores on the Wilson Stress Profile for Teachers (p. 6).

Hourcade, Parette and McCormack (1988) again highlighted the paucity of research directed at identifying and examining stress and stress-related variables among student teachers in their study designed to identify leading stress sources among this preservice group. Specifically, their study
Was designed to investigate several potential sources of stress prior to the student teaching experience and subsequent changes in stress following completion of student teaching (p.348).

Using an adaptation of McLean's (1976) Work Stress Scale, pre and posttest mean scores indicated that overall stress did not appear to be a significant factor for the 53 student teachers involved in this study either before or after the student teaching experience (it should be noted, however, that the instrument used for data collection included subscales only tangentially connected to actual student teaching concerns: e.g., job environment, job pressure and responsibility, and rapport with management). Realizing their study provided findings in direct opposition to those of so many of their predecessors, these investigators concluded their investigation with this caveat:

The failure to identify significant stress in these groups of student teachers cannot be interpreted as an indication that student teaching is not stressful (p.348).

Most recently, Feitler and Argyle (1990) developed a questionnaire to collect data on a number of teacher education variables that included levels and sources of student teacher stress (p.6). This questionnaire was administered to 54 preservice teacher education students prior to their initial placement in a five week teaching experience which preceded their actual student teaching. The fact that this study did not collect data from students involved in a true student teaching situation, nor utilize some standard measure of stress or anxiety level, places such findings as "undergraduate students
indicated remarkably low stress levels" and "grades, coursework, and long hours were marked as the three chief stressors" (p.9), in serious jeopardy.

EFFECTS OF STUDENT TEACHER ANXIETY AND STRESS

Dutton (1962) was the first to search for correlations between anxiety levels and attitudes of student teachers. His purpose was to use this investigation as a first step towards a study of the effects of anxiety on student teacher performance (p.380).

In pretest-posttest fashion, Dutton administered the Minnesota Teacher Attitude Inventory (MTAI) and the Taylor Manifest Anxiety Scale (MAS) to 91 elementary school student teachers and 150 education students who were not involved in any aspect of student teaching. Dutton concluded that

Both highly anxious and non-anxious elementary school student teachers changed their attitudes toward youth in a negative direction. This study raises questions about the nature of student teaching, suggesting that the experiences provided are either very realistic and similar to regular teaching situations or perhaps unduly stressful. Students not in student teaching (the 150 students in the methods courses) maintained their high positive attitudes toward children throughout the semester (p.381).

The Dutton study illustrated that anxieties and stresses of the student teaching experience impact negatively the attitudes student teachers held towards their pupils.

Effects of psychological discomfort (i.e., anxiety) resulting from student teachers who hold beliefs about teaching that are different from their cooperating teachers'
became the center of an investigative study by Sorenson and Halpert (1968). Based on data collected via a questionnaire constructed from interview responses of 36 UCLA teacher candidates concerning their practice teaching experiences, these researchers found that anxieties attributed to student teaching manifested themselves in two independent categories. In the first, student teachers

Experienced symptoms of physical discomfort and irritability - increased fatigue, changes in eating habits, increased nervous manifestations such as smoking or nail biting, loss of sleep, arguments with roommates or family, difficulties with studies, and feelings of being unable to cope (p.30).

The second manifestation of anxieties occurred through feelings of personal inadequacy and uncertainty about the student teacher’s role in the classroom.

The candidate feared he was not capable of becoming a teacher, was not doing a good job at student teaching. He said that he had lost his self-confidence, felt a lack of specific techniques to guide him in the classroom, believed that he could never do as well as his cooperating teacher, saw himself as inadequately prepared to teach the subject he was assigned to teach, and was unclear about what is expected of him in the classroom (p.30).

Sorenson and Halpert were the first to report these symptoms of physical discomfort and irritability, and the first to articulate a student teacher’s fears of inadequacy, as results of increased anxiety during the student teaching experience.
Despite their findings, a ten year time span would occur before other researchers would again explore the issue of changes to general student health in studies targeting student teacher anxiety, stress and burnout.

It was Harlin (1978), Kyriacou and Sutcliffe (1978), and Feitler and Argyle (1990) who much later investigated this issue of health disorders resulting from the anxiety and stress caused by involvement in the student teaching practicum. These researchers reported that student teachers under stress experience any number of health dysfunctions including, but not limited to changes in eating habits, difficulty sleeping, headaches, stomach ulcers, skin rashes, feelings of insecurity, inability to cope, and frequent stomach upset. Other symptoms include depression, tenseness, loss of or uncontrollable voice, perspiration, crying, shaking hands, increased heart rate and blood pressure, and a feeling of exhaustion and fatigue.

Without a doubt, cooperating teachers, college supervisors, and even the student teachers themselves are interested in performance. The practice teaching evaluation must ultimately answer the question, "How well can the student teacher teach?" If a student teacher is anxious and stress ridden, what effect will these problems have on performance?

Kracht and Casey (1968) attempted to answer this question in a study that sought to discover whether any relationships might exist between student teachers' anxieties and their classroom teaching performance. Although results of their study implied that student teachers with high anxiety scores were just as likely to receive high proficiency ratings
from their cooperating teacher as they were to receive low ones, both authors concluded that

It seems possible that a more objective measure of student teaching success might show a significant correlation between anxiety and proficiency in teaching. It seems likely that high or low extremes of anxiety can affect the degree of success in any learning related performance - and especially student teaching (p.216).

Thus, while Kracht and Casey surmised that anxiety might possibly affect student teaching performance, their research did not permit them to provide a definitive answer to their original question. Their query, like so many others dealing with the issue of student teacher anxiety, stress, and burnout, remains unanswered. As Keavney and Sinclair (1978) later reported,

At this stage, much further clarification on both the theoretical and empirical level is required regarding the relationship between student teacher anxiety and teaching effectiveness (p.286).

Pupil Control Ideology (a concept developed by Willower et al., 1967) is a measure that describes a teacher's classroom management orientation along a "humanistic" to "custodial" continuum. Humanistic oriented instructors favor a looser, more student-centered classroom atmosphere where students are trusted and self-discipline is substituted for strict teacher control. Instructors oriented to a more custodial mode view school as a more autocratic organization where authority flows from the top
down and students are viewed as an irresponsible, undisciplined lot demanding control and possible punitive sanctions.

Conducting his own investigation and reviewing previous studies by Hoy (1967), Hoy and Rees (1977), Jones (1982) concluded that the anxieties and stresses so prevalent in the practice teaching experience resulted in a marked change of a student teacher’s Pupil Control Ideology from a more humanistic orientation towards a more custodial one (p.4). Perhaps this significant shift was due in part to the student teacher’s realization that success and survival during the practicum were more important than being liked by the pupils.

Student teachers suffering from the anxiety and resultant stress of the practicum would not be encouraged by the findings of Hart’s (1987) study. Hart discovered that student teachers exhibiting high anxious scores on her newly developed Student Teacher Anxiety Scale were found to have classrooms exhibiting higher pupil disruption levels than those of student teachers with lower anxious scores on the same measure. Hart did not conduct a follow up study to answer the obvious: was it the student teacher anxiety that caused the disruption, or was it the pupil disruption that caused the increased anxiety and stress for the student teacher?

REDUCING STUDENT TEACHER ANXIETY, STRESS, AND BURNOUT

Since the decade of the 1960’s, a number of educators have suggested various techniques for reducing student teacher anxiety, stress, and burnout during the practice
teaching experience. These suggestions, most of which are conjecture or opinion unsubstantiated by research, can be grouped into five main categories. These categories for reduction are 1) the seminar or circle approach, 2) various coping strategies, 3) increased support from the college supervisor and cooperating teacher, 4) increasing the length of the practicum, and 5) an earlier detection of stress and concomitant identification of key stressors.

Braun (1977) recognized the need to provide student teachers with some kind of a structure that would allow them to process the thoughts, feelings, fears, and behaviors that occurred during student teaching. Citing Firth's research (1974) on the effectiveness of the Magic Circle technique, Braun promoted the addition of the Circle Session as a necessary component in any teacher education stress prevention program (p. 5).

The Circle Session utilizes the concept of group dynamics and counseling. Student teachers are gathered by their supervisor into small, independent groups, and are provided the opportunity to share both their instructional and class-management concerns as well as the many positive events resulting from their weekly experiences in the classroom. Each participant is also encouraged to respond to the similar comments of their peers. Braun's work with the Circle technique has led him to conclude that

The students find the experience an excellent opportunity to gain support from members of the group. They find the Circle a very stimulating and cathartic experience. The accepting atmosphere of the Circle creates an environment where such candid discussion can be productive. Group support and potential solutions that are generated are most effective in changing distressful situations to productive, meaningful learning experiences (p. 6).
Braun's premise for promoting the Circle idea as an anxiety/stress preventor is thus rather simple: when student teachers realize their peers are experiencing the same stressful situations, this knowledge alone can be critical in helping them adjust to the numerous threats to mental health which occur during the student teaching process (p.9). It is the Circle that provides this knowledge.

Recognizing that stress was not a commodity confined to teachers in the field but one that likewise affected student teachers, Haipt (1980) echoed Braun's strategy for reducing stress when she too pointed out the benefits of group counseling sessions for student teachers.

In an age when self-help groups are growing by leaps and bounds, it is instructive for student teachers to learn that a group can assist in satisfying a common need (p.8).

In Haipt's opinion, the weekly meeting between supervisor and student teachers provided a perfect support group where the anxieties and stresses of student teaching could be naturally and effectively relieved (p.3). Haipt viewed these sessions as having the potential to

Become a natural support group where student teachers can learn 1) to understand the stressful aspects of fieldwork, 2) to develop coping skills, and 3) to receive help and encouragement from peers and supervisor in working with personal stress (p.4).
Haipt concluded that in the absence of specific recommendations from the rather sparse data regarding the reduction of student teacher anxiety, stress, and burnout, her suggestion of group sharing among student teachers would provide at least a modicum of relief from the anxieties of student teaching as well as help them better prepare for stresses in the real world of teaching.

Mungo (1981) took a slightly different tack, but wound up sailing to the same destination as Braun and Haipt. Promoting a specially designed field experience for preservice education students immediately prior to their student teaching, Mungo believed would-be teachers needed exposure to the harsh realities of classroom life through an immersion in multi-ethnic, inner-city school experiences to best prepare for the stress, burnout, and culture shock of full-time teaching. This pre-student teaching experience was especially designed to produce stressful situations.

But the lambs were not to be thrown to the wolves without a shepherd. In Mungo’s plan, the program director would hold weekly seminars to create a network support system consisting of the participants themselves. Mungo stated that

In order to survive the challenging experiences, the culture shock, the stress they will be initially exposed to, students must be given the opportunity to develop into a close-knit, cooperative, caring unit. The development of a support group among the participants must take place. This is essential for the mitigating of stressful life events (p.10).
Mungo alluded to the fact that the development of such strategies (e.g., support systems, sharing with others) during student teaching could become even more beneficial if they were effectively carried over to full-time teaching at the inservice level.

Kaunitz et al (1986) discovered quite accidentally that providing student teachers with a forum in which to vent their anxieties was quite therapeutic. While in the process of collecting data geared towards the discovery of key student teacher stressors, Kaunitz et al. found that

The general consensus of the respondents was that there were many stressors in the student-teaching environment and that taking the time to focus on the stressors, and to recount the incidents, was very much needed and appreciated (p.179).

In their interview with the student teachers, these researchers were parley to such comments as "It feels good to get this off my chest"; "This is a great opportunity to get out my anger"; or "I never realized how stressful this experience was (P.179)." This type of informal feedback led Kaunitz to observe

When the stresses of student teaching were addressed directly, student teachers benefited in that tension and strain were released (p.179).

and to recommend
During student teaching seminars, workshops, and meetings, a type of elicitation procedure could be used to identify stressful situations and stimulate discussion (p. 179).

Without purposely intending to investigate the effects of seminars on reducing student teacher anxiety, stress, or burnout, Kaunitz et al. nevertheless provided some support for the use of such an intervention in minimizing this problem.

Bradley (1984) was the first to emphasize the importance of both the cooperating teacher and college supervisor in playing a leading role in reducing the anxieties and strains of the student teaching experience. Believing student teachers to be under excessive stress (p. 18), Bradley tasked those who work closest with these preservice educators (i.e., the building principal, the cooperating teacher, and the college supervisor) to be responsible for taking specific actions that would minimize stress. Bradley posited that student teachers would be exposed to far less stress if they knew precisely the expectations and parameters of their assignments. Thus, he provided "how to" lists to serve as guides for all three of these principal figures in their quest for the ultimate reduction of student teacher stress. Bradley summarized his hypothesis as follows:

That student teachers are under a tremendous amount of stress is very real. The principal, the cooperating teacher, and the college coordinator must have an organized plan for keeping stress factors to a minimum if student teachers are to get the most out of their programs of student teaching (p. 21).
Gold (1985) conducted a brief study that suggested frequent communication and the scheduling of numerous conferences between student teachers, cooperating teachers, and college supervisors can have a significant impact on reducing student teacher anxiety levels throughout the practice teaching experience (p.349).

A brief, qualitative study conducted by Jelinek (1986) also illustrated how critical the role of college supervisor was in minimizing student teacher anxiety as well as acting as an advocate to promote the successful completion of the practice teaching experience. Using the illustration of an impasse that stemmed from tensions between two of her own practice teachers and their cooperating instructors, Jelinek stated that only the college supervisor could

Bridge the gap in expectations, step in, and relieve the pressure so the environment could become conducive to learning. Both Sally and Hank illustrate that stress is a factor causing reactions, sometimes good, sometimes not. The role of the university supervisor is to deal with those reactions and modify events so that they produce the best changes possible for each person involved (p.8).

Zerr (1988) provided the most recent advice for those involved in reforming teacher education programs. She promoted a more careful look at the importance of the student teacher-cooperating teacher diad if reform-minded educators are truly serious about making improvements in current teacher preparation programs. Zerr clearly alludes to the fact that a failure to provide a student teacher with an adequate cooperating instructor will become a major contributing factor to increased anxiety and stress experienced by that particular student.
Zerr sprinkled her study with a liberal dose of such comments as, "the pivotal role of the cooperating teacher in both teacher preparation and job placement," "the student teacher spends more time with the cooperating teacher than with any other college instructor," "recommendations from the cooperating teacher exert the greatest influence in teacher selection," and "Success in student teaching is most contingent upon the relationship between student teacher and cooperating teacher."

Beliefs such as these led Zerr to recommend that

(And) in keeping with national recommendations (e.g., Holmes and Carnegie Reports) to upgrade teacher education, serious consideration must be given to the preparation of cooperating teachers in terms of advanced degrees (p.18).

Zerr hypothesized that only with a careful scrutiny of cooperating teacher preparation and selection will inroads into alleviating student teacher anxiety and stress be made. Like marriage, Zerr contends that you can’t have one - reduced student teacher anxiety - without the other - an adequately trained cooperating teacher.

The medical profession espouses that the best way to beat cancer is early detection followed by aggressive treatment. Two teams of researchers have promoted the same tactic for use in reducing anxieties and stress resulting from student teaching.

Bowers, Eicher and Sacks (1983) initiated a study to investigate probable areas of stress that could affect performance in student teaching hoping that such information
could be used as a basis for recommending changes in teacher preparation programs. Their research indicated that

Student teachers exhibit high levels of anxiety prior to student teaching but that little is done to ameliorate this anxiety to minimize its effect on performance (p. 23).

Bowers et al. (1983) recommended that the best way to reduce or minimize these increased feelings of anxiety and stress would be for the teacher education departments to initiate a number of activities (e.g., more and earlier field experiences, opportunities to interact with professional educators prior to student teaching, experiences in the development of interpersonal and human relations skills essential for positive interaction with pupils, teachers and other members of the professional staff) that would help identify the sources of stress as well as provide opportunities for the supervisor, student teacher, and cooperating teacher to make the induction into the formal practice teaching program as anxiety-free as possible (pp. 23-24).

Most recently, Feitler and Argyle (1990) have promoted an "early detection" strategy with their research. They argued that educational researchers have spent far too much time with studies dealing with teacher stress, stress symptoms, coping strategies and burnout, and have not devoted enough energy to the study of stress in student teachers.
Less well examined is the level of stress experienced by persons preparing to be teachers, especially stress generated by or at the time of entry to a field experience, often prior to student teaching (p.3).

and

Little is known about the level of stress experienced by undergraduates as they proceed through school and prepare to become teachers (p.12).

Information gleaned from the survey responses of 54 undergraduate education students led Feitler and Argyle (1990) were to believe that the best place to begin any study of stress and develop strategies to reduce it was with undergraduate education students since detection of stress sources and levels at this point would allow for the development of anxiety-relieving modifications to the teacher education program.

Silvernail and Costello (1983) were the first to investigate the length of the student teaching practicum as a possible variable in reducing student teacher anxiety and stress. The purpose of their evaluative research was to, among other things,

Assess the impact of a traditional semester-long student teaching program on teaching anxiety levels and determine if an earlier, more extensive year long internship type student teaching program had an effect on preservice teacher anxiety levels (p.32).

The findings generated by these two investigators were interesting. Both of the intern samples, consisting of those student teachers involved in the year-long teaching experience, exhibited a significant reduction (p < .01) in teaching anxiety levels (as
measured by Parsons' (1973) TCHAS) compared to those students involved in the more traditional, 15 week program. These results led Silvernail and Costello to state:

With respect to teaching anxiety, while traditional student teaching programs do not have a positive effect on modifying teaching anxiety levels, it appears that more extensive programs are effective in reducing preservice teachers' teaching anxiety (p.35).

In the case of student teacher anxiety reduction, it may certainly be true that the longer the practicum, the less the anxiety. Unfortunately, it is difficult to verify such a finding on the basis of one study since to date no one has replicated Silvernail and Costello's original work.

Surprisingly, Wendt (1980) was the only educator to promote coping skills as an important weapon in the student teacher's arsenal for anxiety reduction. Although she steered clear of listing specific coping activities for stress reduction, Wendt did enumerate the importance of equipping education students with such broad skills as the ability to analyze problems, understanding the difference between constructive and destructive coping mechanisms, keeping personal and professional problems separate, and developing outside interests as a diversion and hedge against burnout (p.7). Emphasizing the importance of these and other such tools, Wendt tasked teacher training institutes with the responsibility of providing such skills to their students prior to the advent of field work and the student teaching practicum. Such a strategy, according to Wendt, would add reality training to teacher education and prepare would-be educators with the ability
to cope with realities of the public school (p.11). In sum, Wendt's philosophy of stress reduction for student teachers revolves around

Professional preparation programs (which) should eliminate the element of surprise of being hit on the blind side by stress situations. Bring the stress into the training period where it can be dealt with under laboratory conditions (p.10).

BURNOUT STANDS ALONE

As mentioned earlier, only the study initiated by Gold and Michael (1985) dealt with the question of student teacher burnout. These researchers were interested in discovering whether or not there were one or more effective measuring scales that could either be associated with or predict a student teacher's propensity to exhibit burnout behaviors. A secondary purpose was to determine whether any of the personal and demographic variables selected for inclusion in their study might indicate a predisposition towards burnout.

Gold and Michael administered the Dimensions of Self Concept (DOSC, Michael & Smith, 1976) test (which measures students on five separate subscales of self-concept) to a sample of 109 graduate students in their first semester of elementary school student teaching. They found that
Considerable support was apparent for the substantive hypothesis that beginning practice teachers at the elementary school level who stood relatively high on indicators of positive academic self-concept would place relatively low on measures reflecting behaviors associated with burnout (p.914).

The scant results stand as mute testimony to the need for extended research in the area.

SUMMARY

This chapter has provided a review of the current educational literature relating to the issues of student teacher anxiety, stress, stress-related health disorders, and burnout. The review illustrates that while student teacher anxiety and stress have been investigated for a period of more than 30 years, it was only during this last decade that educators have begun to provide these topics with the attention they deserve (see figure 2.2 below). The question is asked, "Will this trend continue?"
Figure 2.2
A Graph Representing the Numbers of Professional Articles dealing specifically with student teacher anxiety, stress, stress-related health disorders, and burnout for the years 1960-1992.
The review has also shown that researchers have concentrated their efforts on the identification of key anxiety and stress producers while studies highlighting reduction techniques and coping skills have largely been relegated to the next generation of those who work with student teachers.

Since anxiety and stress are well known for their adverse physiological affects on the human body, it was surprising to uncover in this review the little interest shown for studies exploring the relationships between student teacher health disorders and the level of anxiety and stress experienced during practice teaching.

Similarly, although recognized as a major problem affecting inservice teachers and despite hundreds of articles written about it since Freudenberger first introduced the term (1974) and Maslach and Johnson conceptualized its definition, the study of student teacher burnout is conspicuously absent from the research journals.

It is hoped that this literature review accomplished two purposes: providing an overview of current research in the area of student teacher anxiety, stress, stress-related health disorders and burnout, and serving as yet another support for the initiation of this study.
CHAPTER III
METHODOLOGY

The research question is not, "Does teacher education do any good?" but rather, "What kinds of interventions by what kinds of interveners in what contexts elicit what responses from which subjects?" (Fuller & Bown, 1975, p.26).

INTRODUCTION

This chapter presents the method of sample selection and the population to which the study seeks to generalize its findings. An explanation of the development of the Student Teacher Health Survey, the post-practicum stressor questionnaire, as well as a description of the three instruments used to measure student teacher anxiety, stress-related health disorders and burnout (i.e., the Maslach Burnout Inventory, the Student Teacher Health Survey, and the Teacher Anxiety Scale) are included. The chapter also includes a review of the selected research design, a listing and review of the variables specified in the research questions and hypotheses, and a listing of the various statistical analyses employed.

POPULATION AND SAMPLE

The population to which this study seeks to generalize its findings are the 140 elementary education students scheduled to complete their student teaching at Concordia College, Portland, during the Fall, Winter, and Spring quarters of the 1993-1994 and 1994-1995 academic years.
This study utilized the 1992-1993 elementary student teacher cohort from Concordia College, Portland, Oregon, as a purposive sample. From this original sample of 70 students enrolled for the practicum experience, 69 ultimately participated in the research.

To determine whether the purposive sample was indeed similar to the population in specific demographic characteristics for purposes of generalizability, data from all '92-'95 elementary education student cohorts were obtained and compared on four selected variables outlined in the table below.

<table>
<thead>
<tr>
<th>TABLE 3.1</th>
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<tbody>
<tr>
<td>SUMMARY OF SELECTED DEMOGRAPHIC CHARACTERISTICS FOR STUDENT TEACHER POPULATIONS AT CONCORDIA COLLEGE, PORTLAND DURING THE 1992 - 1995 SCHOOL YEARS</td>
</tr>
<tr>
<td>Population</td>
</tr>
<tr>
<td>------------</td>
</tr>
<tr>
<td>1992-1993 70 Students</td>
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<tr>
<td>1993-1994 63 Students</td>
</tr>
<tr>
<td>1994-1995 77 Students</td>
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</table>
A series of ANOVAs were run to check for any significant differences between the sample and the remainder of the population on the four variables of gender, age, cumulative gradepoint average, and years at Concordia. The analyses resulted in no significant differences at the $P \leq 0.01$ level between the sample and the other two elementary education cohorts.

Thus, with very little exception, student teachers in the '92-'93 sample were found to be very similar in characteristics to the student teacher population to which the study sought to generalize.

This study will also generalize its findings to the theory of stress conceptualized by David Friesen’s transactional stress cycle (see p. 26, Chapter I) as its five additional seminar sessions aid student teachers in perceiving anti-stress resources and in utilizing specific responses to stress.

For purposes of the study, the '92-'93 student teacher cohort (i.e., the purposive sample) was separated into control and experimental groups via the following procedure. An equal proportion (one-half) of subjects from each of the six strata listed below were randomly assigned for participation in one of the two groups. Students randomly assigned to the experimental group received the treatment (i.e., five additional seminars).
TABLE 3.2
STRATA USED FOR RANDOM SELECTION

CUMULATIVE GRADEPOINT AVERAGE
1. Students exhibiting a cumulative grade point average greater than a 3.5 on a 4.0 scale (62% of the '92-'93 student teacher population).
2. Students exhibiting a cumulative grade point average less than or equal to a 3.5 on a 4.0 scale (38% of the '92-'93 student teacher population).

AGE
1. Student teachers 30 years old or older (43% of the '92-'93 student teacher population).
2. Student teachers under the age of 30 (57% of the '92-'93 student teacher population).

YEARS AT CONCORDIA COLLEGE, PORTLAND
1. Student teachers attending Concordia College for less than 2.3 years (65% of the '92-'93 student teacher population).
2. Student teachers attending Concordia for 2.3 years or more (35% of the '92-'93 student teacher population).

One half of the students in each stratum were assigned to the control group, the remainder received the experimental treatment.
This sampling technique, supported by student teacher placements exclusively within urban schools of the greater Portland-Metro area, was selected to help nullify school placement site, years in attendance at Concordia College, a student's general ability as measured by GPA, and the general life experience that comes with age as possible confounding variables.

The experimental research was first conducted during the Fall academic quarter and then repeated for the Winter and Spring terms. A few weeks prior to the start of their professional quarter, each of the 70 prospective student teachers received a personal letter outlining in general terms the nature of the study and requesting their participation in helping Concordia College improve its student teacher seminar program. Ninety-nine percent of the teacher education students who received these invitations volunteered to participate in the study.

**SELECTION OF VARIABLES**

Variable selection was determined by two factors: 1) a review of the rather sparse, current teacher education literature indicating factors believed to effect levels of student teacher anxiety, stress-related health disorders, and burnout; and 2) questions about particular student teacher stressors the Concordia Education Department believed were critical to investigate.

The first of the independent variables, the Cohort Support Sessions or experimental treatment (referred throughout the remainder of this paper as simply "group"), was the initial variable around which the entire study evolved. The author,
having worked through two student teacher practicums during the 1991-1992 school year, was rather surprised at the amount of anxiety and stress expressed by student teachers barely midway through their experience. It was just as surprising to discover how the simple activation of a few after-school meetings between the supervisor and a small group of student teachers could help alleviate - through encouragement and a realization that many of the problems were shared by others - so much of the fear and anxiety engendered by practice teaching. This experience with informal seminars, and the seemingly positive effect they were having on relieving student teacher stress, led directly to the formulation of this research study.

As this topic was investigated, support for this idea of specially designed student teacher seminars (i.e., the Cohort Support Sessions) as an experimental treatment surfaced from other sources. Mungo (1981) stated that

You do not just "drop" students in these challenging situations, but to maximize their learning and analysis of their experience, it is necessary to provide support and feedback. In order to survive the challenging experiences, the culture shock, the stress, they will be initially exposed to, students must be given the opportunity to develop into a close-knit, cooperative, caring unit. In other words, the development of a support group must take place (p.11).

Writing about support sources for student teachers experiencing stress, Mildred Haipt (1980) stated that the student teaching practicum "Has the potential to become a natural support group where student teachers can learn to understand the stressful aspects
of fieldwork, develop coping skills, and receive help and encouragement from peers and supervisor in working with personal stress" (p.4). She further explained that

The practicum provides a support group for coping with stress. The important message is that we cannot, nor are we expected to cope alone... it is instructive for student teachers to learn that a group can assist in satisfying a common need. This cycle of reflective discussion and field activities engenders renewed courage, hope and determination (p.8).

Discussing emotional needs of the preservice teacher, Braun (1977) stated that the prevention of stress may best be remedied by utilizing a process which fosters strong mental health as a component of the clinical preparation of teachers (p.4).

There is a need to help students process the variety of thoughts, feelings, and behaviors that occur during field experiences. Most seminars do not provide a structure that allows for a supportive, nurturing exploration of the experience. There is a need for a stress preventative program that addresses the affective needs of a teacher in training (p.5).

and

The realization that other members of the group are also experiencing potentially stressful situations can be critical in helping the student teacher adjust to the variety of threats to mental health which occur during clinical education (p.9).

Lastly, from a research point of view, Fuller and Bown (1975) promote just such an intervention when they state
interventions which contribute to particular goals for particular learners need to be identified. It appears that few teacher education interventions do that now (p.26).

These comments, and others like them, helped determine the prime goal for the Cohort Support Sessions: to teach the student teacher the skills of managing personal stress and anxiety that could, if unchecked, lead to ineffective practice teaching and an unsuccessful professional quarter.

The independent variables of gender, age and marital status were selected for two reasons. First, although they were mentioned in other research studies, these same studies (largely due to their design) were unable to report the effect of these variables on student teacher anxiety, stress-related health problems, or burnout levels. More importantly, since Concordia College, Portland, has seen a greater influx of married, adult learners over the past three years, there is a desire to determine whether these older students of differing marital status are more or less resilient than Concordia's traditional (18-22 year old) students to anxiety, stress-related health disorders and burnout brought about by the rigors of the student teaching practicum.

Appearing in none of the research studies reviewed, yet assumed by Concordia's Education Department to affect student teacher anxiety and stress, is the variable "number of dependent children living at home" during the student teaching practicum.

Likewise, "cumulative grade point average" did not appear in the literature reviewed. Inclusion of this variable may point to relationships existing between high and low achieving students and levels of anxiety, stress, and burnout.
As alluded to earlier in this document, Concordia's education program has exhibited significant growth in the last three years due primarily to two factors: financial retrenchment in state-operated education programs throughout Oregon, and Concordia's own, continued reputation for excellence in teacher training earned through 88 years of serving schools throughout the Portland-Metro area. This sudden and significant growth has generated the influx of numerous "license only" students who, having received their undergraduate degrees from other institutions, are matriculating at Concordia specifically for their professional education course work. The question has been raised whether these students, experiencing the Concordia environment in some cases for as little as three quarters, will feel more anxiety, experience more stress-related health disorders, or exhibit greater burnout than students who have been at the college for a greater amount of time. The independent variable, "number of years at Concordia," has been added to the study to gain some perspectives on this issue.

A very high percentage of Concordia's students are employed to help meet book and tuition costs. Knowing how important and demanding the student teaching experience is, Concordia's Education Department mandates that student teachers drastically reduce, if not altogether forego, the number of hours worked per week during the professional quarter. This issue provides the rationale for including "number of hours employed per week" as an independent variable.

While some mention has been made in the literature expressing the hypothesis that differing degrees of stress may be experienced by elementary, middle and high school teachers, nothing was conclusive. Additionally, scant investigation into the extent of
anxiety, stress-related health problems, or burnout generated by the experience of student teaching at various grade levels has been done. For instance, do fifth grade teachers experience more stress-related problems than kindergarten teachers? What about a similar comparison of sixth grade and second grade teachers? Which teachers at what grade levels tend to experience anxiety and burnout at higher levels? These questions prompted the addition of "student teaching grade level assigned" as an additional independent variable.

As reported in chapter I of this study, conflicting findings were reported in previous studies investigating whether increased amounts of field experiences prior to the student teaching practicum were helpful or not.

An assumption underlying the call for more extensive experiences is that more equals better; that is, more clinical experiences will produce a better beginning teacher. However, this assumption is debatable (Silvernail and Costello, 1983, p.32).

To furnish information that might aid in the resolution of this debate, and to see what its possible affect on either reducing or increasing student teacher anxiety, stress-related health problems, or burnout might be, the independent variable "number of field experience hours prior to student teaching" has been included in this study.

In sum, the 10 independent variables used for this study are group (control or experimental where student teachers either receive the traditional seminars only or the new treatment - the five additional Cohort Support Sessions - in addition to the traditional seminars,) gender, age, marital status, number of dependent children living at home,
number of years at Concordia College, student teaching grade level assigned, number of hours employed per week, number of field experience hours prior to student teaching, and cumulative grade point average.

DATA GATHERING PROCEDURES

Three questionnaires developed by the author, and two previously designed and validated instruments will be administered to collect data on variables that include demographic factors, stress-related health symptoms, perceived indicators of stress, and overall levels of student teacher anxiety and burnout.

Data were gathered at the pre-student teaching orientation meeting, the five experimental seminars (Cohort Support Sessions), and again at a meeting two weeks prior to the formal completion of the practicum.

At the orientation prior to student teaching, each practicum student completed the Student Teacher Demographic Data Sheet. Data collected from this instrument made possible the equal proportion stratified assignment.

A Weekly Assessment was completed at each of the five additional seminars by members of the experimental group only. This assessment asked participants to report such items as the number of hours of sleep per school night, hours exercised each week, what teaching in the classroom the past week has shown them they could improve, what special strength they realized they had, as well as special concerns and joys experienced.
with their students. During their fifth seminar, treatment group members also completed a mini-evaluation of their seminar experiences.

At the final meeting for all student teachers, additional data were collected as preservice students completed three posttests: the Maslach Burnout Inventory, the Teacher Anxiety Scale, and the Student Teacher Health Survey. A Student Teaching Debrief Questionnaire was also completed by the student teachers at this last session.

INSTRUMENTATION

As mentioned, data for this study were generated by four instruments: the Teacher Anxiety Scale, The Maslach Burnout Inventory, the Student Teacher Health Survey, and the Student Teaching Debrief Questionnaire.

THE TEACHING ANXIETY SCALE

The Teaching Anxiety Scale (TCHAS) was developed by the Stanford Center for Research and Development in Teaching for use with research conducted with preservice, intern teachers. Its most recent uses have been in a study assessing student teacher anxiety about teaching conducted by Parsons (1973) at the former Research and Development Center for Teacher Education at Texas University, and by Silvernail and Costello (1983) investigating the impact of student teaching programs on preservice teachers' pupil control perspectives, anxiety levels, and teaching concerns.
Parson's (1973) revised TCHAS was used for this study. The TCHAS is a 29 item, self-report instrument that contains statements about student teacher reactions to certain elements of classroom teaching, relations with supervisors and cooperating teacher, and general feelings about teaching confidence. These reactions are of two general types: emotional and attitudinal. To respond to these statements, students have a 1-5 choice option format where 1 signifies a low agreement (never) with the statement, and 5 a high agreement (always). Approximately half the items are phrased positively and half negatively. Reverse scoring of those statements that are positively phrased is performed to produce item scores with consistent meaning. Once reverse scoring has been done, the higher the score, the greater the degree of student teacher anxiety, while low scores describe the opposite.

Discussing the issue of reliability, Parsons (1973) reported alpha coefficients of internal consistency for the TCHAS ranging from a low of .87 to a high of .94 and stated that "All coefficients indicate that the internal consistency of the TCHAS is high" (p.9). Test-retest stability coefficients were also investigated by Parsons using a group of 30 undergraduate University of Texas education students. Using the Pearson Product Moment parametric technique, Parsons found a very high positive correlation (.95) between the first and second administrations of the TCHAS despite the fact the two administrations occurred under differing conditions.

To determine its validity, the TCHAS was compared with two other self-report measures of anxiety, the Taylor Manifest Anxiety Scale and the Test Anxiety Scale. Consistently positive and predominantly significant correlations between the TCHAS and
these two instruments were reported by Parsons (p.13). Additionally, correlations between student teaching supervisors' lists of preservice students who were most anxious about teaching exhibited a high, positive correlation (.77) with students who scored "high anxious" on the TCHAS.

In their review of instruments measuring teacher anxiety, Keavney and Sinclair (1978) saved their only positive remarks in the entire review for the TCHAS when they stated

The Teaching Anxiety Scale (TCHAS) has been subjected to validation checks. The data reported suggest a respectable degree of reliability and construct validity (p.277).

To defend against the response bias of acquiescent set (the tendency of subjects to respond to all queries on a self-report instrument in largely the same fashion), approximately half of the items on the TCHAS are worded in such a manner as to require reverse scoring. This creates a situation where the same amount of agreement or disagreement should not overly influence student scores, thus cancelling out the effect of response bias.

Previous work with the TCHAS has shown that it is a measure of student teacher anxiety, it is stable, and preservice teacher responses to the TCHAS are related significantly to the behaviors of these preservice teachers as observed and interpreted by their teaching supervisors (Parsons, p. 21).
However, since the scaling properties of the TCHAS are as yet unknown, simply adding student teacher responses together ala Parsons (1973) and Silvernail and Costello (1983) to arrive at a composite score could provide questionable results and threaten the validity of any findings.

To nullify this dilemma, five responses from the TCHAS deemed most appropriate for this study by virtue of their relationship with factors purported to relate to student teacher anxiety, stress, and burnout, were selected for use as separate dependent measures. Listed directly below are the five items selected from the TCHAS with a brief rationale from the literature for their selection as variables.

**TABLE 3.3**  
SELECTED DEPENDENT VARIABLES FROM THE TCHAS

<table>
<thead>
<tr>
<th>INSTRUMENT NUMBER</th>
<th>DEPENDENT VARIABLE</th>
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<tbody>
<tr>
<td>TCHAS5</td>
<td>I'm worried whether I can be a good teacher.</td>
</tr>
<tr>
<td>TCHAS6</td>
<td>I feel sure I will find teaching a satisfying profession.</td>
</tr>
<tr>
<td>TCHAS10</td>
<td>I feel secure with regard to my ability to keep a class under control.</td>
</tr>
<tr>
<td>TCHAS13</td>
<td>I feel confident about my ability to improvise in the classroom.</td>
</tr>
<tr>
<td>TCHAS17</td>
<td>I feel better prepared for teaching than other preservice teachers in my teacher preparation program.</td>
</tr>
</tbody>
</table>
TCHAS 5 - I'm worried whether I can be a good teacher.

This variable measures what Sorenson and Halpert (1968), Fuller (1975), and Morris and Morris (1988) referred to as a student teacher's feeling of self-doubt, worry, adequacy as a teacher, and general lack of confidence. It is hypothesized that student teachers in the experimental group will exhibit less worry than students assigned to the control group.

TCHAS 6 - I feel sure I will find teaching a satisfying profession.

This study hypothesized that the less anxiety, stress, and burnout experienced by a student teacher during the practicum, the more satisfying teaching will appear as a vocation. This variable measures the degree of satisfaction student teachers believe they will obtain once they cross the threshold from preservice to inservice teacher. It is anticipated that this measure will yield high scores for the experimental and lower scores for the control group.

TCHAS 10 - I feel secure with regard to my ability to keep a class under control.

Anderson (1960), Petrusich (1967), Cohen, Mirels and Schwebel (1972), Sinclair and Nicoll (1980), Womack (1977), and Hart (1987) have all stated discipline and classroom management concerns as factors creating perhaps the greatest anxiety, stress, and burnout for preservice teachers. The selection of this measure as a dependent variable will help illustrate how confident student teachers feel in regard to their ability
to maintain a classroom environment conducive to learning. Again, higher scores on this measure are expected for members of the treatment group.

TCHAS 13 - I feel confident about my ability to improvise in the classroom, and
TCHAS 17 - I feel better prepared for teaching than other preservice teachers in my teacher preparation program.

These two dependent variables measure the level of instructional confidence perceived by the student teachers themselves once they have completed the practicum. Fuller and Bown (1975) hypothesized that only an increased degree of confidence in the classroom (i.e., mastering the survival skills) could move a teacher from one developmental level of teaching mastery to the next. This study hypothesizes that the five additional seminars, the treatment, will provide student teachers with increased confidence in their skills as instructors and give them a feeling of being better prepared to cope with the daily exigencies of the classroom. Scores for the experimental group on these two measures should be higher than those from the control group.

THE MASLACH BURNOUT INVENTORY

In his review of this instrument, Offerman (1985) states that "The Maslach Burnout Inventory (MBI) is the best known and most widely used questionnaire for the assessment of individual occupational burnout among human service workers and others whose work involves intense interaction with other people" (p.419).
The MBI (Form Ed; Maslach, Jackson & Schwab, 1986) is a self-report inventory comprised of three separate subscales created to measure what Maslach and Jackson consider the three "ingredients" or dimensions that best define burnout: emotional exhaustion, depersonalization, and lack of personal accomplishment.

Described in a school setting, emotional exhaustion occurs when a teacher exhibits extreme physical and emotional fatigue as a result of giving enormous amounts of time and energy to students, parents, lesson preparation, and other school-related activities. Depersonalization, the second element of burnout, is illustrated by the teacher's increasingly negative attitudes towards his profession, school in general, and students in particular.

The third and last component of burnout is lack of personal accomplishment, a situation where teachers feel unhappy or dissatisfied with such items as work they are doing, the amount and quality of work produced, and thus exhibit an increased tendency to evaluate themselves negatively.

Gold (1984), working with inservice teachers, and Powers and Gose (1986), working with preservice education students, conducted research that supported this tri-dimensional construct:

The data analyses suggested . . . the MBI demonstrates factorial validity consistent with the rationale for its three subscales (Gold, p. 1016).

and

In summary, these results furnish some empirical support for the reliability and factorial validity of the MBI with respect
to the measurement of three aspects of the burnout syndrome - emotional exhaustion, depersonalization, and lack of personal accomplishment (Powers and Gose, p.255).

Maslach and Jackson (1986) also state that since the knowledge base applicable to the relationship between the three dimensions of burnout is still limited, the scores for each of the subscales are treated separately and are not combined into a single score.

If there is a meaningful way of combining the subscales, this should be established on an empirical basis. In the absence of such data, it is not clear if the subscales should be added together, or if there should be a differential weighting of the subscales (p.14).

Burnout, as measured by the MBI, should also continue to be treated as a multidimensional construct as recommended in the manual. At this time it is not clear whether the three subscales are equal contributors to the phenomenon of burnout or not. Given this level of knowledge, there is no way to determine whether a simple additive burnout score is preferable, or whether differential weighting of subscales is more appropriate (Offerman, p.424).

Most critical for the proper understanding and measurement of burnout, however, is a knowledge that Maslach and Jackson conceptualize burnout as a continuous rather than a dichotomous variable. In other words, no one is really ever burnout free; all human service professionals experience burnout to varying degrees.

It is not appropriate to classify a person as "burned out" or not "burned out." Instead, it is important to assess the degree to which a person is experiencing the feelings associated with each of the
three aspects of burnout (Schwab and Iwanicki, 1982, p. 61).

The MBI Form Ed used in this study was constructed collaboratively by Maslach, Jackson and Schwab largely as a result of Schwab and Iwanicki’s pioneering research with teacher burnout. Their purpose was to design a version of the MBI that could be expressly utilized to measure teacher burnout. As a result of Schwab and Iwanicki’s efforts, the MBI Form Ed was developed specifically to test for teacher burnout. Though basically the same instrument as the original MBI, there is one exception: the Form Ed edition has changed the word "recipient" to "student." Schwab (1986A) reports that this change was made "To insure clarity and consistency in the interpretation of the items" (p. 19).

The instrument itself is a brief, 22-item, self-report inventory structured on a 6 point, fully-anchored scale ranging from 0 (never feel this way about student teaching) to 6 (feel this way about student teaching every day). Each item on the test consists of a statement about the individual’s feelings and attitudes vis a vis his job. Numerical cutoffs provided with the scoring key allow researchers to categorize each of the three separate subscale scores into low, moderate or high. The instrument has been labelled "Educators Survey" to help reduce the possibility of respondent bias.

Reliability coefficients reported for the original MBI were taken from samples not used for the actual item selection. Maslach and Jackson stated that reliability coefficients, estimated by Cronbach’s coefficient alpha (n = 1,316), were .90 for Emotional
Exhaustion, .79 for Depersonalization, and .71 for Personal Accomplishment. The standard error of measurement for each of the three subscales was determined as 3.80 for Emotional Exhaustion, 3.16 for Depersonalization, and 3.73 for Personal Accomplishment (Maslach and Jackson, 1986, p.8). Offerman reports in his review that Iwanicki and Schwab have found similarly high estimates of internal consistency (p.422).

In addition, analyses of the MBI's test-retest reliability have all been found significant beyond the .01 level even when test sessions were separated by a time interval as long as one year. In sum, data presented by the MBI manual suggests a reasonable degree of reliability for research purposes.

Byrne (1991) also supports the use of the MBI as a "reliable and valid measure of teacher burnout" citing

(a) Internal consistency reliability, with alpha coefficients ranging from .52 to .91; (b) test-retest reliability with coefficients based on a 2 to 4-week interval ranging from .60 to .82; (c) convergent validity with external criteria including personal experience (observations), dimensions of job experience, and personal outcomes; (d) discriminant validity as evidenced by low and non-significant correlations between MBI scores, job satisfaction and social desirability (p.9).

Sandoval (1985) also reports on the "impressive" amount of data supporting the validity of the MBI inventory scores:

In convergent validity studies, the MBI scores have been correlated with behavior ratings made by knowledgeable informants, with job characteristics that are expected to contribute to burnout, and with other measures of outcome related to burnout (p.475).
Reliability data from the MBI Form Ed are consistent with those reported by these previous studies on the MBI. Schwab's study (1981) with 469 Massachusetts teachers, Gold's study (1984) with 462 California university level students, and Edwards' (1986) assessment of the burnout levels of 165 University at Long Beach college seniors preparing for teaching and other human services professions, support the three-factor structure of the MBI Form Ed as well as substantiate its validity and reliability (e.g. Iwanicki and Schwab's Cronbach alpha estimates of .90 for Emotional Exhaustion, .76 for Depersonalization, and .76 for Personal Accomplishment closely parallel those of the original MBI) (Schwab, 1986A, p. 19). Additionally, the Edwards (1986) study provided further support for the use of the MBI Form Ed on the college level by illustrating that burnout is a valid construct for college students and that the MBI Form Ed yields scores that are consistent with other school-related burnout patterns (p.6).

Since the MBI and the MBI Form Ed both exhibit adequate evidence of reliability and validity for their intended purpose, and since Maslach, Jackson and others cited here recommend its use as an organizational assessment device to determine if there are employees experiencing burnout in a particular setting (e.g., student teaching), this study accepts its use as an appropriate instrument for measuring student teacher burnout.

As a research tool, the MBI remains one of the best instruments available for researchers interested in the study of job burnout (Offerman, 1985, p. 425).
Thus the three subscales of the MBI (i.e., Emotional Exhaustion, Personal Accomplishment, and Depersonalization) will be used in this study as they were originally intended - as three separate measures.

THE STUDENT TEACHER HEALTH SURVEY

The Student Teacher Health Survey (STHS) is a 20-item, self-report inventory structured on a five point scale ranging from a low of 1 (never experiences the symptom) to a high of 5 (always experiences the symptom). Student Teachers used these numbers to represent the frequency with which they experienced the various stress-related health problems listed on the survey instrument (e.g., headaches, shortness of breath, frequent colds, etc.) during the 10 weeks of the practicum. The higher the numerical score, the more frequently that specific stress-related health problem was experienced. Lower scores reflect less stress-related health disorders.

The instrument was developed for use in this study to assess changes in student teacher health conditions as a result of exposure to the student teaching experience. Rationale for its development and inclusion stems from the review of numerous literature citations by Sorenson and Halpert (1968), Harlin (1978), Kyriacou and Sutcliffe (1978), and Feitler and Argyle (1990) regarding the negative physiological effects of stress and anxiety (see chapter II). Additionally, the fact that no instrument designed to collect general health data from student teachers existed further prompted its development.

Content validity of the STHS was verified by requesting educational professionals, (a panel of experts consisting of four college professors, four public school
administrators, and four cooperating teachers) to examine the health survey. Half of the members representing each category were given an untitled copy of the instrument and asked to comment on what they thought it measured, while the other educators were provided with an explanation of the test and its objectives and asked to evaluate it to determine if, in their judgment, the instrument indeed measured what it alleged to measure.

Results from the former group included such comments as "The perils of a teaching career", "Results of high doses of continued stress", and "Health problems brought about by stress."

The six members of the latter team stated unequivocally that the STHS did indeed list what they would consider to be common health disorders resulting from continued exposure to anxiety and stress. In fact, members of the panel were hard pressed to add other manifestations of stress to the list.

However, items chosen from the Student Teacher Health Survey as dependent variables for use in the study were limited to those mentioned most frequently (i.e., those symptoms appearing in a minimum of three professional articles discussing health disorders brought about by anxiety, stress, and burnout) in the literature. These variables are listed in the following table.
TABLE 3.4
SELECTED DEPENDENT VARIABLES FROM THE
STUDENT TEACHER HEALTH SURVEY (STHS)

<table>
<thead>
<tr>
<th>HEALTH SURVEY NUMBER</th>
<th>SYMPTOM</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Stomach pains, upset stomach and/or gastrointestinal disturbances.</td>
</tr>
<tr>
<td>2</td>
<td>Feeling tired and fatigued</td>
</tr>
<tr>
<td>4</td>
<td>Frequent colds</td>
</tr>
<tr>
<td>8</td>
<td>Backaches</td>
</tr>
<tr>
<td>9</td>
<td>Headaches</td>
</tr>
<tr>
<td>11</td>
<td>Sleeplessness</td>
</tr>
<tr>
<td>13</td>
<td>Loss of appetite</td>
</tr>
<tr>
<td>15</td>
<td>Increased appetite</td>
</tr>
</tbody>
</table>

Test-retest reliability coefficients for the STHS were derived by utilizing a group of 33 undergraduate education students. Using SPSS (Windows) Spearman correlation, high positive correlations were found between the first and second administrations of the survey which were administered precisely seven days apart (see table 3.5 below).
TABLE 3.5
RELIABILITY COEFFICIENTS FOR SELECTED
STUDENT TEACHER HEALTH SURVEY VARIABLES

<table>
<thead>
<tr>
<th>STHS VARIABLE</th>
<th>CORRELATION COEFFICIENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>STHS1</td>
<td>.74</td>
</tr>
<tr>
<td>STHS2</td>
<td>.93</td>
</tr>
<tr>
<td>STHS4</td>
<td>.79</td>
</tr>
<tr>
<td>STHS8</td>
<td>.80</td>
</tr>
<tr>
<td>STHS9</td>
<td>.71</td>
</tr>
<tr>
<td>STHS11</td>
<td>.80</td>
</tr>
<tr>
<td>STHS13</td>
<td>.70</td>
</tr>
<tr>
<td>STHS15</td>
<td>.64</td>
</tr>
</tbody>
</table>
THE STUDENT TEACHING DEBRIEF QUESTIONNAIRE

The Student Teaching Debrief Questionnaire (STDQ), also found in Appendix D, is a 21-item, self-report inventory consisting of two separate sections. Section I consists of a list of 15 student teacher stressors compiled from two sources: the stress, anxiety, and burnout literature (stressors most frequently mentioned), and the Concordia Education Department (stressors often witnessed as a result of previous supervisory experience). Student teachers rate the amount of stress each of the listed stressors cause by assigning a number from 1 (gives me no stress) to 5 (gives me excessive amounts of stress).

Section II of the STDQ consists of six short-answer questions developed to provide the Concordia Education Department with data regarding what student teachers themselves consider their most stressful and troublesome experiences during the professional quarter. This section also provides an opportunity for student teachers to report their total number of absences during the 10 week practicum.

This instrument will be used to determine whether student teacher perceptions of the major stressors cited throughout the literature will differ significantly between students assigned to the control group and those assigned to the experimental.

STUDENT TEACHER DEMOGRAPHIC DATA SHEET

The Student Teacher Demographic Data Sheet (STDDS) was developed to collect those items which, in addition to the Cohort Support Sessions, served as independent
variables for this study. Each student teacher provided information on their sex, age, marital status, number of dependent children living at home, years spent at Concordia College, student teaching grade level assignment, number of hours employed per week, and number of field experience hours completed prior to student teaching.

DESIGN

While the pretest is a concept deeply imbedded in the thinking of research workers in education and psychology, it is not essential to true experimental design (Campbell & Stanley, 1963, p.25).

This study will utilize the Posttest Only Control Group Design. A variation of the Pretest-Posttest Control Group format, the selected design differs in that it gives no pretest to either the control or experimental groups. While educators have exhibited a tendency to neglect this experimental design, Campbell and Stanley find their reluctance unwarranted and unnecessary. These researchers believe the reluctance to utilize the Posttest Only Control Group Design grows largely from its confusion with a quasi-experimental design known as the Static Group Comparison, as well as a general distrust of randomization having the power to legitimately equate the study groups. While they refute the first of these arguments with a simple warning to read more carefully, they emphatically attack the second by saying
The most adequate all-purpose assurance of lack of initial biases between groups is randomization. Within the limits of confidence stated by the tests of significance, randomization can suffice without the pretest (p. 25).

While Campbell and Stanley close their defense and promotion of the Posttest Only Control Group design by reporting that

The Posttest Only Control Group design is usually to be preferred to the Prestest-Posttest Control Group design unless there is some question as to the genuine randomness of the assignment. The Posttest Only Control Group design is greatly underused in educational and psychological research (p. 26).

it is perhaps Huck, Cormier and Bounds (1974) who are the most persuasive in convincing researchers to make use of this design when they write

The Posttest-Only Control Group Design, through the random assignment of subjects to the two groups, controls selection, history, maturation, and statistical regression. Furthermore, the threats of testing and instrumentation do not exist since none of the Ss is measured twice. For these reasons there is general agreement that, unless there is some question as to the genuine randomness of the assignment, the posttest-only design is as good as, if not better than, the pretest-posttest design (p. 253).
The three components comprising the Posttest Only Control Group Design (subjects randomly assigned to groups, experimental group receiving the treatment, and a posttest administered to both groups) are outlined in a diagram of this study in Figure 3.1 located directly below.

\[
\begin{array}{ccc}
\text{R} & \text{X} & \text{O} \\
\text{Random Assignment} & \text{Independent Variables} & \text{Dependent Variables} \\
& & \text{Posttest} \\
34 \text{ Subjects} & \text{Cohort Support Sessions} & \text{TCHAS} \\
to \text{exp. group} & & \text{STHS} \\
& & \text{MBI} \\
69 \text{ Student Teachers} & & \\
\end{array}
\]

\[
\begin{array}{ccc}
\text{R} & \text{O} \\
\text{Random Assignment} & \text{Dependent Variables} \\
& \text{Posttest} \\
35 \text{ Subjects} & \text{TCHAS} \\
to \text{control group} & \text{STHS} \\
& \text{MBI} \\
\end{array}
\]

**Figure 3.1**
A Rendering of the Posttest Only Control Group Design illustrated with the instruments utilized in this study.
Since the usefulness of this design rests on the validity of the assumption that random assignment into groups is effective, 34 elementary student teachers from a sample of 69 registered for the Fall, Winter, and Spring practicums were assigned through a proportional stratified assignment technique for participation in the experimental group. The remaining 35 students were assigned to the control group. Group compositions per quarter are printed below.

<table>
<thead>
<tr>
<th>TABLE 3.6</th>
<th>GROUP MEMBERSHIP PER ACADEMIC QUARTER</th>
</tr>
</thead>
<tbody>
<tr>
<td>GROUP</td>
<td>FALL</td>
</tr>
<tr>
<td>Total Population</td>
<td>16</td>
</tr>
<tr>
<td>Control</td>
<td>8</td>
</tr>
<tr>
<td>Experimental</td>
<td>8</td>
</tr>
</tbody>
</table>

After receiving the experimental treatments (the five additional seminars or Cohort Support Sessions), the two groups of subjects completed the instruments (i.e., the Teaching Anxiety Scale, the Student Teacher Health Survey, and the Maslach Burnout Inventory form Ed.) and had their scores compared. At this same time, student teachers also completed the Student Teacher Debrief Questionnaire (STDQ). As mentioned previously, data from this last instrument was used to identify items perceived by student
teachers as major stressors during the student teaching experience, and to search for differences between their numerical ratings of key stressors.

The experimental group was exposed to the treatment - the five Cohort Support Sessions - on an intermittent basis throughout the practicum to determine whether these additional seminars would affect anxiety and stress levels or stress-related health problems.

The titles and content of four of the five additional seminars used as the treatment were derived from the most frequently mentioned student teacher concerns cited in the literature review as causing the most anxiety and stress during the practicum. (see Chapter II). These concerns included relationships, managing anxiety and stress, the ability to manage time, and the effective management of students.

Relationships between student teachers and their cooperating teachers or supervisors were mentioned as elements critical for successful completion of the practicum by Erickson and Ruud (1967) and Yee (1968). So too were relationships between student teachers and their pupils as cited by Campbell and Williamson (1973) and Sinclair and Nicoll (1981). Recognizing the onslaught of anxiety and stress, and ultimately developing coping mechanisms to deal with these maladies, was another student teacher need mentioned by Braun (1977), Sullivan (1979), and Haipt (1980). Sullivan (1979), Manera and Wright (1985) emphasized the strain of constantly battling time (e.g. preparation for class, grading, having enough time for sleep), while Travers, Rabinovitz, and Nemovicher (1950), Cohen, Mirels and Schwebel (1972), Manera and
Wright (1985), and Hart (1987) all discussed a student teacher's difficulty with deciphering the mystery of effective classroom management.

The fifth seminar, entitled "Sharing your Best," was developed as part of the experimental treatment from a belief by the author that student teachers and teachers both need to end the arcane atmosphere of loose-coupling and instead create a "team" atmosphere at their school by mutually supporting each other and developing the habit of professional sharing. This concept of becoming "sharing professionals" who avidly communicate instructional strategies and ideas with fellow instructors, must become second nature to the next generation of teachers who, based on current educational trends for the 21st century, will be expected to plan and deliver instruction as an integral member of a teaching team.

Seminar five asks student teachers to bring a copy of their "best" lesson (i.e., the one that they believe was either the most fun for their students, or sparked the most student interest, or was simply the most enjoyable to teach) and share it with their peers. From this brief encounter with creativity, the study hopes to infuse student teachers with the idea that sharing professionally entails numerous, practical benefits, the least of which is obtaining an armload of snappy new lesson plans ready for immediate use perhaps in their own classrooms. It is hoped that this concept of mutual help and support emphasized by the cohort support sessions will be continued by the student teachers with their new colleagues as they make the quantum leap from preservice to inservice instructor.
These five Cohort Support Sessions were interspersed with the three regularly scheduled seminars (i.e., Constructing a Work Sample, Credential File and Licensing, and Interview Techniques) and held at the same weekly intervals during each of the three academic quarters according to the following schedule:

<table>
<thead>
<tr>
<th>WEEK NUMBER</th>
<th>SEMINAR TOPIC</th>
<th>LENGTH</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Relationships</td>
<td>75 mins.</td>
</tr>
<tr>
<td>3</td>
<td>Stress Management</td>
<td>75 mins.</td>
</tr>
<tr>
<td>5</td>
<td>Time Management</td>
<td>75 mins.</td>
</tr>
<tr>
<td>6</td>
<td>Positive Discipline</td>
<td>75 mins.</td>
</tr>
<tr>
<td>7</td>
<td>Presenting Your Best</td>
<td>75 mins.</td>
</tr>
</tbody>
</table>

Since these Cohort Support Sessions are in addition to the three traditional seminars already offered by Concordia College for its student teachers, it is hoped that threats to the internal validity of the study due to the Hawthorne affect (e.g., artificial changes in scores on the dependent measures) will be negligible.
The treatment answered Braun (1977) and Haispt's (1980) request for some kind of structure or group counseling session for student teachers that would provide a forum where thoughts, opinions, feelings and fears of student teaching could be effectively and safely discussed. As mentioned in Chapter I, the seminars also strategically intervened in phase two of Friesen's stress cycle.

Each of the five additional seminars followed the same structural format. Student teachers gathered after school between 3:00 and 3:15 in a comfortable classroom directly across from Concordia's Education Office. As students entered, they were greeted informally and invited to have refreshments (soft drinks and various snack foods are provided at every seminar). Casual conversations ensued between students and between students and the seminar leader for the first few minutes, thus establishing a relaxed atmosphere and a feeling of sanctuary from the bustle of the typical teaching day.

Between 3:15 and 3:20 the seminar was formally opened with a brief devotion centering on a specific prayer from Chalkdust or Recess (collections of humorous, school-related prayers by Elspeth Murphy) or a scripture reading directly applicable to the day's topic.

Next, students completed a Cohort Support Session Weekly Assessment which asks for quantitative (e.g., how many hours of sleep have you averaged this week, how many times have you exercised) as well as qualitative (e.g., Student teaching this past week has helped me realize that one of my professional strengths is ...) data.

The seminar leader collected the assessment sheets and set the stage for the session's topic with an anticipatory set usually consisting of an open-ended question, an
appropriate story from a previous classroom experience, or some type of a self-
assessment instrument. Student teachers respond, comment, question, and begin drawing
parallels to their own teaching situation during this opening phase.

New material is now presented following two vital parameters: the amount of
material introduced is critical but minimal, and it is presented in an informal (leader
seated but able to make eye contact with all the students) and interesting fashion (e.g.,
demonstration, game, riddle, quiz, open-ended dilemma). The seminar leader punctuates
this phase with active questioning asking students to defend or refute, based on their
classroom experience, the information and advice promoted. Material covered in the
session serves as a probe or catalyst igniting student interest and guiding them to make
connections between their classroom world and the information received now and in
previous education classes.

By this time, students naturally slide into the final phase of the session where they
become actively engaged in relating appropriate, personal classroom episodes, draw
important connections between ideas generated by the topic and their own student
teaching situation, question the leader and each other, share "war stories" from their own
classrooms, and provide advice and suggestions to peers who have voiced particular
difficulties with the topic currently under discussion. Often the advice provided by peers
is far more practical, beneficial, and easier to "swallow" than that supplied by the
seminar leader.

Closure occurs during the last 10-12 minutes when the seminar leader asks each
student to share one item from section II or III of their Cohort Support Session Weekly
Assessment. Students now have an opportunity to briefly mention either a special, professional strength they perceive in themselves as a result of the past week's classroom encounters, an instructional area in which they feel they can yet improve, a particular student or management problem causing them difficulty in their classroom, perhaps a strategy to cope with this problem (if they do not have one, this serves as a perfect time for peers or the leader or both to suggest some), or simply relate the best event that happened to them during the past week at their school or home site. Once this sharing or, in some cases, venting is over, the student teachers were free to leave. (Note: Experience with the support sessions has shown, however, that few students seldom leave immediately. Most participants remain to talk, share, snack and simply visit with peers experiencing the same test of fire.)

All materials used for each of the five Cohort Support Sessions were developed prior to the commencement of the study. As previously mentioned, topics for each session were selected from recommendations appearing in the literature (the most commonly mentioned stress and anxiety producing situations encountered by student teachers), as well as discussions with Concordia's education faculty, interviews conducted with student teachers during the 1991-1992 school year, and various problems outlined on the previous year's student teacher weekly reflection sheets (a mandatory assignment during the professional practicum which serves as a student's weekly "diary" as well as an indicator for the supervisor as to how well student teaching is progressing).

These materials were documented and copied for the purpose of replicating the exact treatments during the Fall, Winter, and Spring sessions.
ANALYSIS OF VARIABLES

The research design and methods of data collection were both selected to facilitate an exploration of differences in group scores on the 16 separate dependent measures (selected from the MBI, TCHAS and STHS) at the conclusion of each student teaching quarter. Would differences between mean scores of the experimental and control groups on any of these 16 measures illustrate that the treatment made a difference? To determine this, data from each of the dependent variables would be subject to separate analysis.

Additionally, the study aimed to determine what relationships might exist between the 10 independent variables (i.e. group, gender, age, marital status, years at Concordia College, hours of field experience, grade level assigned during student teaching, number of dependent children living at home, hours employed per week during student teaching, and cumulative grade point average), and the 16 dependent variables. As a result, both univariate (the t test and One Way ANOVA) and multivariate (Multiple Correlation and Multiple Regression) statistical procedures would be used to examine the variables and their interactions.

The statistical test suggested by Campbell & Stanley (1963) as well as Huck, Cormier, and Bounds (1974) for use in the posttest only control group design is the t test.

The Posttest-Only control group design is perhaps the only setting for which this test is optimal (Campbell and Stanley, p.26).
The $t$ test is a univariate, inferential statistic procedure which compares two groups via their mean scores. The sample means are compared by calculating Student's $t$. This is accomplished by placing the two sample means, the sample sizes, and the group variances into a formula that provides a calculated $t$ value. This calculated $t$ must then be compared with the appropriate critical value found in a $t$ table. The critical value is found by first determining the degrees of freedom (total number of data observations or subjects minus 2) and the level of significance used for the study. Both of these figures are then cross-referenced in the $t$ table to determine the critical $t$. If the calculated $t$ value is greater than the critical $t$ value listed in the table, the researcher can state that a significant difference does exist between the two sample means. In that case, the null hypothesis is rejected. Conversely, if the $t$ test exhibits a non-significant difference between the two sample means, the null hypothesis cannot be rejected.

This study met the requirements for utilization of the independent samples $t$ test. The student teachers have been randomly assigned to two sub-groups (control and experimental), scores in the one group have no relationship to the scores in the other and there is an unequal number of subject scores in the two groups.

In situations where groups were unequal in subject size, Levene's test was used to determine whether or not the sample data supported the assumption of homogenous variation.

As stated, the $t$ test was run to compare the mean scores of each of the two groups on the dependent measures in an attempt to discover whether or not these mean scores were far enough apart to yield a significant difference. In the case of this study,
a two-tailed test was run since there is no certainty of the direction of difference between the two groups.

The computer software program SPSS (Windows) t test was utilized to test the hypotheses relating to differences between group means. This program provided Student’s t, degrees of freedom, and two-tailed probability for a comparison of two means. In addition, the mean, standard deviation, and standard error can be displayed for each variable.

Where independent variables exhibited more than two levels, SPSS One-way ANOVA was used to compare the groups in terms of their means scores on the 16 criterion measures. As in the case of the univariate t, if there were an unequal number of scores in each of the two groups, Levene’s Test was used to assure homogeneity of variance.

Whenever an hypothesis searched for relationships between the independent variables and dependent measures, the Pearson Product-Moment test was utilized to check for any significant, non-chance correlations.

A multiple regression analysis is a multivariate technique that allows a researcher to examine variables together by examining the correlations among these same variables. One of the prime functions of this statistical procedure is to help a researcher uncover a predictor variable or variables.

The purpose in running the multiple regression analysis in this study was to determine if any of the 10 independent variables were important predictors of student teacher burnout, anxiety, or general health. It was hoped that separate prediction
equations could be constructed to illustrate relationships between each of the 16 criterion variables derived from the MBI, STHS and TCHAS and all of the predictor variables. Such an analysis would help to identify those specific independent variables that acted to categorize student teachers into high, low, or moderate levels of burnout, and high or low levels of anxiety and stress-related health disorders.

SPSS was utilized to provide the multiple regression prediction equations. This computer program provided two important items: coefficients of multiple correlation (R) which provided an index of how accurate the prediction equation for a particular measure actually was, and beta weights, which are converted regression coefficients that identified the best predictor variables.

METHOD OF ANALYSIS FOR TESTING EACH HYPOTHESIS

Hypothesis #1 asked the following question: Will placing student teachers in an experimental treatment group that provides five additional seminars produce significant differences between their scores and those of a control group on measures derived from the MBI, TCHAS or STHS?

An ANOVA was first run to gauge the success of the randomizing used to establish the control and experimental groups. This initial test discovered whether the randomized group compositions exhibited any significant differences between means when compared on each of the nine remaining independent variables. If they did not, and
the null hypothesis was rejected, any significant differences discovered by further tests for hypothesis #1 would have additional veracity.

Further, another ANOVA was used to determine whether the academic quarter in which a student teacher participated in the study could act as a confounding variable. This One-Way ANOVA determined whether student scores from any of the 17 dependent measures differed significantly from one another as a result of completing the practicum during different academic quarters.

With this initial testing completed, the univariate T-Test was used to test hypothesis #1 to check for significant differences in scores between the two groups on any of the 17 dependent measures.

Hypothesis #2 sought to determine whether or not a student teacher's gender can serve to produce a significant difference in or correlate strongly with student teacher anxiety, health, or burnout scores. Three separate statistical tests were used to accept or reject this null hypothesis.

A T-Test for independent samples was run on the entire sample using gender as the independent variable affecting scores on the 16 dependent measures. Using the split-file command which separated the population into two groups (i.e., control and experimental), the same T-Test was run. This analysis determined whether male/female scores differed significantly from each other when the groups were tested separately.

Finally, testing of hypothesis #2 was concluded by utilizing a Pearson correlation to determine whether any significant, non-chance correlations existed between scores on the dependent measures and the gender of the participants. As in the case of the T-Tests
above, separate correlations were run for the entire sample and again, using the split-file command, to test each group separately.

Hypothesis #3 asks whether a student teacher’s age can produce a significant difference in or correlate with anxiety, health, or burnout scores. Four separate statistical tests - two One Way ANOVAS and two Pearsons were used for this analysis.

The variable age was collapsed to a maximum of only four categories: less than 25 years, 25 to 30, 31-36, and 37 years or older). SPSS One-Way ANOVA was then selected to compare these age groups via their mean scores on the 16 measures. Tukey’s HSD Test, a multiple comparison procedure, was used to determine between which age groups the significant difference was found.

The same One-Way ANOVA was used in conjunction with the split-file command to test each of the groups separately.

Significant, non-chance correlations between the variable age and the 16 measures was tested for by using an Pearson correlation on the uncollapsed age data. As in the case of hypothesis #2, correlations were first run on the entire sample and later, using the split-file command, on each group separately.

Hypothesis #4 asks if a student teacher’s marital status can produce a significant difference in or correlate strongly with anxiety, health, or burnout scores.

Data collected for the variable marital status was collapsed from four levels to two - single status, and all others (i.e., married, divorced, separated) - in order to use SPSS independent samples T-Test to check for significant differences in mean scores between these two groups on any of the 16 dependent measures.
Using the split-file command, another T-Test was run with the sample separated into control and experimental groups to determine if the effects of marital status on the dependent measures might be different when each group was tested separately.

Finally, a Pearson correlation was run twice on the uncollapsed data: once to test for significant, non-chance correlations between marital status and the scores of the entire sample, and again, using the split-file command, to locate significant, non-chance correlations for the control and experimental groups separately.

Hypothesis #5 explores whether the number of dependent children living at home can produce a significant difference in or correlate strongly with a student teacher's scores on the anxiety, health, or burnout measures.

For purposes of testing, data was collapsed from five levels to two: children or no children. A T-Test for independent samples was selected to compare mean scores of these two groups - children or no children - on all 16 of the dependent measures. The same test was used with the split-file option to analyze the control and experimental groups separately.

As in the case of hypotheses numbers two through four, a Pearson correlation was used on the uncollapsed data of the entire sample, and again, using the split-file command, on each separate group (control or experimental) to check for any significant, non-chance correlations between dependent children and any of the 16 dependent measures.
Hypothesis #6 asks if teaching at a different grade level during the student teaching practicum can produce a significant difference in or correlate strongly with student teacher scores on the anxiety, health, or burnout measures.

Data collected on the variable grade level taught (i.e., the grade level assigned to the student teacher for the duration of the practicum) was collapsed to create two categories: upper grades, representing students assigned to grade levels four through six, and lower grades, representing students assigned to grade levels kindergarten through grade three (grades K-3).

Once the data was collapsed, a T-Test for independent samples was used to locate significant differences in scores between these two grade level groups. In addition, the same test was used in conjunction with the split-file command to test the control and experimental groups separately.

A Pearson Product-Moment correlation was used on the uncollapsed grade level data to test for significant, non-chance correlations between this same variable and the 16 dependent measures. This testing was continued by using the same statistical analysis in conjunction with the split-file command to check for the appearance of correlations when the two groups were analyzed separately.

Hypothesis #7 seeks to discover whether the total number of hours worked per week by a student teacher during the practicum can cause a significant difference in or correlate strongly with scores on the anxiety, health, or burnout measures.

This data regarding the number of hours employed per week was collapsed to create two levels: students who were employed during the practicum, and those who
were not. This collapsing of data permitted the use of an independent samples T-Test to help identify significant differences between mean scores on the 16 measures of students who were employed and those who were not. This same analysis was repeated using the split-file command to test the control and experimental groups separately.

Again, a Pearson correlation was run on the uncollapsed student employment data from the entire population and, using the split-file option, on the control and experimental groups separately. These last two tests determined if significant, non-chance correlations existed between student employment and scores on the 16 dependent measures for the entire sample as well as when each of the two groups was analyzed separately.

Hypothesis #8 asks if the number of years a student attends Concordia College can cause a significant difference in or correlate strongly with scores on the anxiety, health, or burnout measures.

The student data denoting the number of years in attendance at Concordia College was collapsed to two levels: students attending 1.66 years or less, and those attending two or more years. With this procedure completed, an independent samples T-Test was used to determine if there were significant differences between mean scores of these two attendance groups on any of the 16 dependent measures. The T-Test was used again with the split-file option to test the control and experimental groups separately.

The existence of any significant, non-chance correlations between student teacher test scores and the number of years in attendance at Concordia College, Portland, was analysed via a Pearson correlation using the uncollapsed data. The same test was used,
with the split-file command, to determine any changes in results when the two groups were analyzed separately.

Hypothesis #9 seeks to determine if a student teacher’s total number of field experience hours prior to the professional practicum can cause a significant difference in or correlate strongly with that individual’s scores on the anxiety, health, or burnout measures.

Data from the entire sample was again collapsed to create two groups: student teachers with field experience hours at or below the mean (i.e., 135 hours or less), and those with total accumulated hours above the mean (i.e., 136 hours or more). With the data in this format, an independent samples T-Test was selected to compare mean scores to determine if there were significant differences between these two field experience groups on any of the 16 dependent measures. Running the same test with the addition of the split-file command yielded results for each group (control or experimental) separately.

To determine whether any significant, non-chance correlations existed between student teacher scores on any of the dependent measures and the number of field experience hours obtained prior to the student teaching experience, a Pearson correlation was used on the data. Use of the split-file command with the same statistical analysis provided separate results for each of the two groups.

Hypothesis #10 seeks to determine whether student teachers’ cumulative gradepoint averages (i.e., their cumulative gradepoint average up to but not including the practicum) can cause a significant difference in or correlate strongly with scores on the anxiety, health, or burnout measures.
An average cumulative grade point average (GPA) for the entire student teacher population was calculated. Next, this data was collapsed to create two levels: student teachers with cumulative GPA's at or below the mean (3.50 or less), and those with cumulative GPA's above the mean (3.51 or greater).

The collapsed data permitted the use of an independent samples T-Test to identify significant differences between these two GPA groups on any of the 16 dependent measures. In similar fashion, the same test was used with the split-file command to explore the possible effects on these same dependent measures when the control and experimental groups were analyzed separately.

A Pearson correlation was used on the uncollapsed GPA data to test for the appearance of any significant, non-chance correlations between student teacher GPA and scores on any of the 16 dependent measures. With the addition of the split-file command, this identical test sought correlations for the control and experimental groups separately.

Hypothesis #11 seeks to determine whether student teacher perceptions of the major practicum stressors cited throughout the literature would differ significantly between student teachers assigned to the control group and those assigned to the experimental.

An independent samples T-Test was again selected to compare the means of the two groups on their numerical ratings of the 10 key stressors listed on the Student Teacher Debrief Questionnaire (STDQ (1 = causing no stress, 2 = little stress, 3 = a
fair amount of stress, 4 = a great amount of stress, and 5 = an excessive amount of stress). The 10 key stressors are printed in the table on the following page.

**TABLE 3.8**  
**KEY STUDENT TEACHER STRESSORS FROM THE LITERATURE REVIEW, CONCORDIA EDUCATION DEPARTMENT, AND PREVIOUS STUDENT TEACHER INTERVIEWS.**  
(From the Student Teacher Debrief Questionnaire)

<table>
<thead>
<tr>
<th>QUESTIONNAIRE NUMBER</th>
<th>KEY STRESSOR</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Preparing lesson plans.</td>
</tr>
<tr>
<td>2</td>
<td>Being evaluated by my Supervising Teacher.</td>
</tr>
<tr>
<td>3</td>
<td>Preparing work samples.</td>
</tr>
<tr>
<td>5</td>
<td>Trying to balance family time with class preparation time.</td>
</tr>
<tr>
<td>6</td>
<td>Lack of time to accomplish all class objectives.</td>
</tr>
<tr>
<td>7</td>
<td>Being evaluated by my Cooperating Teacher.</td>
</tr>
<tr>
<td>8</td>
<td>Maintaining classroom discipline.</td>
</tr>
<tr>
<td>9</td>
<td>Having educational beliefs that differed greatly from those of my Cooperating Teacher.</td>
</tr>
<tr>
<td>13</td>
<td>Adjusting to the Cooperating Teacher's approach to management and discipline.</td>
</tr>
<tr>
<td>15</td>
<td>Inconsistent expectations of the Cooperating Teacher and Concordia Supervisor.</td>
</tr>
</tbody>
</table>
Hypothesis #12 was formulated to determine if it is possible to predict a student teacher's anxiety, health, or burnout score during the practicum on the basis of one or more of the following predictor variables:

<table>
<thead>
<tr>
<th>TABLE 3.9 PREDICTOR VARIABLES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
</tr>
<tr>
<td>Dependent Children</td>
</tr>
<tr>
<td>Field Experience</td>
</tr>
<tr>
<td>Gender</td>
</tr>
<tr>
<td>Grade Level</td>
</tr>
</tbody>
</table>

SPSS regression (stepwise) was used to determine which, if any, of the 10 predictor variables indicated the greatest percentage of variance among the 16 criterion scores. To accomplish this, a stepwise, multiple regression analysis was run for each of the 16 criterion variables.

In addition to the quantitative analyses, student teacher qualitative data obtained from responses on the debrief questionnaire and seminar mini-evaluation were reported.
SUMMARY

Chapter III has provided a summary of the methodology used for this study. A description of the population, the method used for sample assignment (proportional stratified random assignment on the basis of age, cumulative gradepoint average, and years spent at Concordia), and a brief review of the Posttest Only Control Group design were provided. It was also noted that this study seeks to generalize its findings to all 140 members of the 1993-1994 and 1994-1995 elementary student teacher cohorts at Concordia College, Portland, Oregon, as well as David Friesen's Stress Theory (1986).

The 10 independent variables (group/treatment, gender, age, marital status, number of dependent children, cumulative gradepoint average, number of years at Concordia, grade level assigned, hours employed per week, and hours of field experience prior to the student teaching quarter) were also listed and discussed. Data gathering procedures were described as were the selection of the 16 criterion variables from the three testing instruments (TCHAS, STHS, and the MBI).

Lastly, the methods of statistical analyses for each of the twelve hypotheses were presented and explained.
CHAPTER IV
RESULTS OF THE STUDY

The findings in this chapter are presented in three separate sections. Section one will relay a descriptive summary of student teacher scores on the 17 dependent measures gleaned from the Student Teacher Health Survey (STHS), Teaching Anxiety Scale (TCHAS), and the Maslach Burnout Inventory (MBI). Section two will provide a review of the demographic data collected via the initial questionnaire (Student Teacher Demographic Data Sheet), a review of each of the 12 hypotheses, and results from the actual statistical analyses used to test each of the hypotheses. Finally, section three will provide a summary of the qualitative data collected from the student teacher debrief questionnaires.

SECTION I
SUMMARY OF STUDENT TEACHER TEST SCORES FROM THE MBI, STHS, AND TCHAS.

All student teacher tests (i.e., the MBI, STHS and TCHAS) were scored concurrently in mid-June of 1993 soon after the completion of the Spring academic quarter. Tabulating was done at this time, rather than at the end of each separate academic quarter, to prevent any inadvertent revisions to the content of each seminar as a result of additional knowledge or insights gained from student comments on the 16 measures as well as the debrief questionnaire.

The three subscales of the MBI, each serving as a dependent measure for the
study, were scored first. The first subscale, emotional exhaustion, was scored by totalling student numerical responses that ranged from 0 (never) to 6 (everyday) from nine of the questions on the 22 item test (numbers 1-3, 6, 8, 13-14, 16 and 20). Using Maslach and Jackson's categorization where a score of 27 or greater illustrates a high degree of burnout, 17-26 moderate burnout, and 0-16 a low incidence of burnout, results from the student teacher raw scores were as follows:

<table>
<thead>
<tr>
<th>GROUP</th>
<th>MEAN</th>
<th>% of Student Teachers with LOW EE scores 0-16</th>
<th>% of Student Teachers with MODERATE EE scores. (17-26)</th>
<th>% of Student Teachers with HIGH EE scores. &gt; 27</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Population</td>
<td>20</td>
<td>38%</td>
<td>34%</td>
<td>28%</td>
</tr>
<tr>
<td>Control</td>
<td>24</td>
<td>19%</td>
<td>40%</td>
<td>41%</td>
</tr>
<tr>
<td>Experimental</td>
<td>16</td>
<td>58%</td>
<td>26%</td>
<td>16%</td>
</tr>
</tbody>
</table>

The second dependent variable measured by the MBI was depersonalization, earlier described in chapter three as the development of negative, cynical attitudes towards one's students. Scores on this subscale range from 0-8 as low, 9-13 as moderate, and 14 or greater as exhibiting a high level of depersonalization.
22 items on the MBI (numbers 5, 10-11, 15 and 22) were totalled to arrive at a "depersonalization" score for each student teacher with results listed directly below.

<table>
<thead>
<tr>
<th>GROUP</th>
<th>MEAN</th>
<th>% of Student Teachers with LOW DP (0-8)</th>
<th>% of Student Teachers with MODERATE DP (9-13)</th>
<th>% of Student Teachers with HIGH DP (14 &gt;)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Population</td>
<td>5</td>
<td>81%</td>
<td>11%</td>
<td>8%</td>
</tr>
<tr>
<td>Control</td>
<td>6</td>
<td>75%</td>
<td>13%</td>
<td>12%</td>
</tr>
<tr>
<td>Experimental</td>
<td>4</td>
<td>87%</td>
<td>10%</td>
<td>3%</td>
</tr>
</tbody>
</table>

The last of the MBI subscales, personal accomplishment, measures the tendency of student teachers to evaluate themselves negatively, especially in relation to work each day with students in the classroom. Unlike the two previous subscales of the MBI, personal accomplishment subscale is scored in the opposite direction from emotional exhaustion and depersonalization: the lower the numerical score on this subscale, the greater a student teacher’s feeling of personal accomplishment.
Eight of the 22 responses on the MBI (numbers 4, 7, 9, 12, 17-19, and 21) are added to determine scores for the personal accomplishment subscale. Results from the study are printed in the following table.

<table>
<thead>
<tr>
<th>GROUP</th>
<th>MEAN</th>
<th>% of Student Teachers with LOW PA (&gt;37)</th>
<th>% of Student Teachers with MODERATE PA (31-36)</th>
<th>% of Student Teachers with HIGH PA (0-30)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Sample</td>
<td>41</td>
<td>77%</td>
<td>18%</td>
<td>5%</td>
</tr>
<tr>
<td>Control</td>
<td>41</td>
<td>75%</td>
<td>22%</td>
<td>3%</td>
</tr>
<tr>
<td>Experimental</td>
<td>40</td>
<td>77%</td>
<td>20%</td>
<td>3%</td>
</tr>
</tbody>
</table>

As stated in Chapter three, the eight stress-related health disorders cited most frequently in the literature as affecting student teachers were selected as measures for testing purposes from the 20 that appeared on the Student Teacher Health Survey. Student subjects completed this test using a Likert-type, forced choice method rating physical symptoms experienced during the practicum on a numeric scale of 1 (never experienced) to 5 (always experienced).
A table including the summary of student teacher scores for the health survey is printed directly below.

**TABLE 4.4**

REPORT OF STUDENT TEACHER SCORES FROM THE STUDENT TEACHER HEALTH SURVEY (STHS)

1 = Never  2 = Infrequently  3 = Occasionally  4 = Frequently  5 = Always

<table>
<thead>
<tr>
<th>GROUP</th>
<th>VARIABLE</th>
<th>MEAN</th>
<th>% ABOVE MEAN</th>
<th>% BELOW MEAN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Sample</td>
<td>HS1 - Stomach Disorders</td>
<td>2.2</td>
<td>33%</td>
<td>67%</td>
</tr>
<tr>
<td>Control</td>
<td></td>
<td>2.5</td>
<td>44%</td>
<td>56%</td>
</tr>
<tr>
<td>Experimental</td>
<td></td>
<td>1.9</td>
<td>64%</td>
<td>36%</td>
</tr>
<tr>
<td>Total Sample</td>
<td>HS2 - Fatigue</td>
<td>3.2</td>
<td>60%</td>
<td>40%</td>
</tr>
<tr>
<td>Control</td>
<td></td>
<td>3.4</td>
<td>46%</td>
<td>53%</td>
</tr>
<tr>
<td>Experimental</td>
<td></td>
<td>3.0</td>
<td>32%</td>
<td>68%</td>
</tr>
<tr>
<td>Total Sample</td>
<td>HS3 - Frequency of Colds</td>
<td>2.0</td>
<td>32%</td>
<td>68%</td>
</tr>
<tr>
<td>Control</td>
<td></td>
<td>2.2</td>
<td>40%</td>
<td>60%</td>
</tr>
<tr>
<td>Experimental</td>
<td></td>
<td>1.8</td>
<td>42%</td>
<td>58%</td>
</tr>
<tr>
<td>Total Sample</td>
<td>HS8 - Backaches</td>
<td>2.1</td>
<td>38%</td>
<td>62%</td>
</tr>
<tr>
<td>Control</td>
<td></td>
<td>2.2</td>
<td>40%</td>
<td>60%</td>
</tr>
<tr>
<td>Experimental</td>
<td></td>
<td>1.9</td>
<td>58%</td>
<td>42%</td>
</tr>
<tr>
<td>Total Sample</td>
<td>HS9 - Headaches</td>
<td>2.3</td>
<td>41%</td>
<td>59%</td>
</tr>
<tr>
<td>Control</td>
<td></td>
<td>2.4</td>
<td>53%</td>
<td>47%</td>
</tr>
<tr>
<td>Experimental</td>
<td></td>
<td>2.1</td>
<td>29%</td>
<td>71%</td>
</tr>
<tr>
<td>Total Sample</td>
<td>HS11 - Sleeplessness</td>
<td>2.1</td>
<td>36%</td>
<td>64%</td>
</tr>
<tr>
<td>Control</td>
<td></td>
<td>2.3</td>
<td>40%</td>
<td>60%</td>
</tr>
<tr>
<td>Experimental</td>
<td></td>
<td>1.9</td>
<td>55%</td>
<td>45%</td>
</tr>
<tr>
<td>Total Sample</td>
<td>HS13 - Appetite Loss</td>
<td>1.6</td>
<td>35%</td>
<td>65%</td>
</tr>
<tr>
<td>Control</td>
<td></td>
<td>1.6</td>
<td>34%</td>
<td>66%</td>
</tr>
<tr>
<td>Experimental</td>
<td></td>
<td>1.6</td>
<td>35%</td>
<td>65%</td>
</tr>
<tr>
<td>Total Sample</td>
<td>HS15 - Appetite Gain</td>
<td>1.9</td>
<td>49%</td>
<td>51%</td>
</tr>
<tr>
<td>Control</td>
<td></td>
<td>1.8</td>
<td>47%</td>
<td>53%</td>
</tr>
<tr>
<td>Experimental</td>
<td></td>
<td>2.0</td>
<td>52%</td>
<td>48%</td>
</tr>
</tbody>
</table>
The Teaching Anxiety Scale (TCHAS), developed at Stanford University and revised by Parsons in 1973, originally consisted of 29 self-report items that asked student teachers to react to the types of personal relations and classroom situations that occur when student teaching (see Teaching Anxiety Scale, Chapter three). As explained in Chapter three, only 5 items from the original 29 (numbers 5, 6, 10, 13 and 17) were selected for the purposes of measurement and analysis.

As in the case of both the MBI and STHS, student teachers responded to items with a Likert-type format where 1 signified a low agreement with the statement (never) and a 5 represented a high agreement (always). Scores on all of the dependent measures, with the exception of number 5 (worry), are interpreted with a 1 or 2 signifying a low score, a 3 a moderate score, and a 4 or 5 classified as a high score. Stated simply, the higher a student teacher scores on these measures, the less anxiety experienced. Scoring for number 5, however, is completed in just the opposite fashion. In this one case, the lower the numeric score, the less a student teacher is worrying about whether he or she can become a competent teacher. Student teacher results from these 5 selected measures of the TCHAS are reported directly below.
TABLE 4.5
REPORT OF STUDENT TEACHER SCORES FROM THE TEACHING ANXIETY SCALE (TCHAS)

1 = Never 2 = Infrequently 3 = Occasionally 4 = Frequently 5 = Always

<table>
<thead>
<tr>
<th>GROUP</th>
<th>VARIABLE</th>
<th>MEAN</th>
<th>% ABOVE MEAN</th>
<th>% BELOW MEAN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control</td>
<td>TCHAS 5 - Worry*</td>
<td>2.4</td>
<td>44%</td>
<td>56%</td>
</tr>
<tr>
<td>Experimental</td>
<td></td>
<td>2.7</td>
<td>56%</td>
<td>44%</td>
</tr>
<tr>
<td>Control</td>
<td>TCHAS6 - Satisfaction</td>
<td>4.1</td>
<td>25%</td>
<td>75%</td>
</tr>
<tr>
<td>Experimental</td>
<td></td>
<td>4.5</td>
<td>55%</td>
<td>45%</td>
</tr>
<tr>
<td>Control</td>
<td>TCHAS10 - Classroom Control</td>
<td>4.0</td>
<td>21%</td>
<td>79%</td>
</tr>
<tr>
<td>Experimental</td>
<td></td>
<td>3.8</td>
<td>35%</td>
<td>65%</td>
</tr>
<tr>
<td>Control</td>
<td>TCHAS10 - Confidence</td>
<td>3.9</td>
<td>71%</td>
<td>29%</td>
</tr>
<tr>
<td>Experimental</td>
<td></td>
<td>4.4</td>
<td>45%</td>
<td>55%</td>
</tr>
<tr>
<td>Control</td>
<td>TCHAS17 - Preparation</td>
<td>3.0</td>
<td>35%</td>
<td>65%</td>
</tr>
<tr>
<td>Experimental</td>
<td></td>
<td>2.6</td>
<td>50%</td>
<td>50%</td>
</tr>
</tbody>
</table>

*The only measure on this scale scored in the opposite direction.

SECTION II
REVIEW OF AND TEST RESULTS FROM THE HYPOTHESES

HYPOTHESIS #1 - This hypothesis dealt with the most important research question framed by the study since, more than any of the other research questions, it provided the impetus to inaugurate the research: would student teacher placement in a
group receiving five additional seminars affect their scores on any of the 16 measures derived from the three separate instruments?

Stated in the null form, hypothesis #1 read as follows: There is no significant difference between the anxiety, health, or burnout scores of the experimental group (i.e., students receiving the treatment of the five additional seminars) and scores of the control group (i.e., students participating in the three traditional Concordia seminars only).

The equal proportion, stratified random assignment technique selected to divide the original student teacher population of 69 subjects into control and experimental groups used the variables of age, cumulative grade point average, and number of years in attendance at Concordia as the strata. The selection process resulted in the following group compositions presented in the table below.

<table>
<thead>
<tr>
<th>GROUP</th>
<th>NO. of S's</th>
<th>Mortality</th>
<th>MEAN AGE</th>
<th>Mean GPA</th>
<th>Mean Years at Concordia</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Sample</td>
<td>69</td>
<td>6</td>
<td>29.2</td>
<td>3.5</td>
<td>2.3</td>
</tr>
<tr>
<td>Control</td>
<td>35</td>
<td>3</td>
<td>28.4</td>
<td>3.5</td>
<td>2.4</td>
</tr>
<tr>
<td>Experimental</td>
<td>34</td>
<td>3</td>
<td>30.0</td>
<td>3.5</td>
<td>2.2</td>
</tr>
</tbody>
</table>
As a further precaution, success of the randomization method used in the study was tested by running an ANOVA using "group" - control or experimental - as the independent variable to determine whether the randomized group compositions would exhibit any significant differences when compared with each of the nine remaining independent variables.

Using SPSS ANOVA, control and experimental group means on the variables of age, number of dependent children, number of hours of field experience prior to student teaching, gender, student teaching grade level assigned, cumulative grade point average, number of hours employed per week during student teaching, marital status, and number of years in attendance at Concordia College were compared for significant differences.

Results of the test illustrated no significant difference between the two groups on any of the nine independent variables, thus validating the success of the stratified random assignment.

Also, since the study necessitated duplicating the experimental treatment procedures for three successive academic quarters, another ANOVA was run as a test
to determine whether the academic quarter in which a student participated in the study might be a confounding or intervening variable. In other words, could a significant difference in scores occur as a result of academic quarter?

An ANOVA was used to determine whether any scores from the dependent measures would differ significantly from one another as a result of student teachers completing their practicum during different academic quarters.

Results of this test illustrated that only one of the 16 separate dependent measures (TCHAS 10 on the Anxiety Scale - classroom control) differed at the $P < .05$ level of significance thus effectively eliminating the variable "academic quarter" as a confounding variable in 94% of the tests.

Finally, since the two groups in the study were of unequal size (32 and 31 subjects), Levene’s Test for the assumption of equal variances was run whenever a T-Test was selected to test an hypothesis.

With these initial analyses completed, the path was cleared for the actual testing of hypothesis #1. A T-Test for independent samples was first selected to compare the mean scores of the control and experimental groups. Since the MBI was comprised of three separate, independent subscales (Emotional Exhaustion, Depersonalization, Personal Accomplishment), the Teacher Anxiety Scale (TCHAS) five separate items (worry, satisfaction, classroom control, confidence and preparation), and the Student Teacher Health Survey eight measures (stomach disorders, fatigue, frequency of colds, backaches, headaches, sleeplessness, appetite loss, appetite gain, and health survey total), a separate T-Test was run comparing the two groups on each of the 16 dependent measures.
As illustrated by the table printed below, significant differences between control and experimental group scores at the $P \leq .05$ level were found on seven of the 16 dependent measures.

**TABLE 4.8**  
**EFFECT OF THE TREATMENT ON TEST SCORES**  
**HYPOTHESIS #1**

<table>
<thead>
<tr>
<th>VARIABLE</th>
<th>GROUP</th>
<th>M</th>
<th>SD</th>
<th>T</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emotional</td>
<td>Control</td>
<td>24.1</td>
<td>8.8</td>
<td>3.3**</td>
</tr>
<tr>
<td>Exhaustion</td>
<td>Experimental</td>
<td>16.0</td>
<td>10.1</td>
<td></td>
</tr>
<tr>
<td>STHS1 Stomach</td>
<td>Control</td>
<td>2.4</td>
<td>.95</td>
<td>2.3*</td>
</tr>
<tr>
<td>Disorders</td>
<td>Experimental</td>
<td>1.9</td>
<td>.89</td>
<td></td>
</tr>
<tr>
<td>TCHAS5 Worry</td>
<td>Control</td>
<td>2.6</td>
<td>1.0</td>
<td>2.4*</td>
</tr>
<tr>
<td></td>
<td>Experimental</td>
<td>2.0</td>
<td>0.8</td>
<td></td>
</tr>
<tr>
<td>TCHAS6 Satisfaction</td>
<td>Control</td>
<td>4.0</td>
<td>.66</td>
<td>-3.4*</td>
</tr>
<tr>
<td></td>
<td>Experimental</td>
<td>4.5</td>
<td>.50</td>
<td></td>
</tr>
<tr>
<td>TCHAS10 Classroom</td>
<td>Control</td>
<td>3.8</td>
<td>.78</td>
<td>-2.7**</td>
</tr>
<tr>
<td>Control</td>
<td>Experimental</td>
<td>4.2</td>
<td>.58</td>
<td></td>
</tr>
<tr>
<td>TCHAS13 Confidence</td>
<td>Control</td>
<td>3.9</td>
<td>.84</td>
<td>-2.6**</td>
</tr>
<tr>
<td></td>
<td>Experimental</td>
<td>4.4</td>
<td>.56</td>
<td></td>
</tr>
<tr>
<td>TCHAS17 Preparation</td>
<td>Control</td>
<td>2.5</td>
<td>.80</td>
<td>-4.7**</td>
</tr>
<tr>
<td></td>
<td>Experimental</td>
<td>3.5</td>
<td>.85</td>
<td></td>
</tr>
</tbody>
</table>

* = $P \leq .05$

** = $P \leq .01$
HYPOTHESIS #2 - This hypothesis was designed to answer the research question inquiring whether a student teacher's gender would have any effect on or correlation with scores on the health, anxiety, or burnout measures. Three separate statistical tests were used to decipher the data for this hypothesis which read as follows: A) There is no significant difference between anxiety, health, or burnout scores of student teachers as a result of gender; B) There is no significant difference between anxiety, health, or burnout scores of student teachers as a result of gender in either the control or experimental group; C) There are no significant, non-chance correlations between student teacher anxiety, health, or burnout scores and student teacher gender; and D) There are no significant, non-chance correlations between student teacher anxiety, health, or burnout scores and student teacher gender in either the control or experimental group.

Eighty-four percent of the population involved in the study were females, a number approximately 14% higher than the national ratio of female to male teachers. Gender composition for each group by academic quarter is printed directly below:
TABLE 4.9
GENDER COMPOSITION BY GROUP AND ACADEMIC QUARTER
HYPOTHESIS #2

<table>
<thead>
<tr>
<th>QUARTER</th>
<th>CONTROL</th>
<th>EXPERIMENTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>MALE</td>
<td>FEMALE</td>
</tr>
<tr>
<td>FALL</td>
<td>0</td>
<td>8</td>
</tr>
<tr>
<td>WINTER</td>
<td>1</td>
<td>7</td>
</tr>
<tr>
<td>SPRING</td>
<td>5</td>
<td>11</td>
</tr>
<tr>
<td>TOTAL</td>
<td>6</td>
<td>26</td>
</tr>
</tbody>
</table>

A T-Test for independent samples was run on the entire sample (N=63) using gender as the independent variable affecting all 16 of the dependent measures. This first analysis was designed to simply compare the mean scores of the 53 females with those of the 10 males to discover whether or not gender could account for any significant differences in test scores.

Significant differences between mean scores were found on five dependent measures, listed in table 4.10 below.
TABLE 4.10
T-TEST FOR THE VARIABLE GENDER - TOTAL SAMPLE
HYPOTHESIS #2A

<table>
<thead>
<tr>
<th>VARIABLE</th>
<th>GROUP</th>
<th>M</th>
<th>SD</th>
<th>T</th>
</tr>
</thead>
<tbody>
<tr>
<td>STHS4 - Freq of colds</td>
<td>Female</td>
<td>2.0</td>
<td>1.1</td>
<td>2.11*</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>1.5</td>
<td>0.7</td>
<td></td>
</tr>
<tr>
<td>STHS8 - Backaches</td>
<td>Female</td>
<td>2.2</td>
<td>1.0</td>
<td>3.4*</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>1.3</td>
<td>0.6</td>
<td></td>
</tr>
<tr>
<td>STHS9 - Headaches</td>
<td>Female</td>
<td>2.3</td>
<td>1.1</td>
<td>2.3*</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>1.7</td>
<td>0.8</td>
<td></td>
</tr>
<tr>
<td>MBI - Personal Acc.</td>
<td>Female</td>
<td>41.1</td>
<td>5.3</td>
<td>2.2*</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>37.9</td>
<td>3.8</td>
<td></td>
</tr>
</tbody>
</table>

* = P ≤ .05

Using SPSS split-file command, the same independent samples T-Test was run. However, this time the split-file command separated all subjects into their two respective groups - control and experimental - to determine whether male/female scores would differ significantly from each other when the two groups were tested separately.

Results of the test illustrated significant differences between male and female scores on three of the dependent measures for the control group (fatigue, backaches, and headaches) and on none of the dependent measures for the experimental group (see table below).
TABLE 4.11
T-TESTS FOR THE VARIABLE GENDER - BY GROUP
HYPOTHESIS #2B

<table>
<thead>
<tr>
<th>VARIABLE</th>
<th>GROUP</th>
<th>M</th>
<th>SD</th>
<th>T</th>
</tr>
</thead>
<tbody>
<tr>
<td>STHS2 - Fatigue</td>
<td>CONTROL</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>3.5</td>
<td>.85</td>
<td>2.3*</td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>2.6</td>
<td>.81</td>
<td></td>
<td></td>
</tr>
<tr>
<td>STHS8 - Backaches</td>
<td>CONTROL</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>2.4</td>
<td>1.2</td>
<td>4.2**</td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>1.1</td>
<td>.40</td>
<td></td>
<td></td>
</tr>
<tr>
<td>STHS9 - Headaches</td>
<td>CONTROL</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>2.6</td>
<td>1.1</td>
<td>2.3*</td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>1.6</td>
<td>.81</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* = P ≤ .05
** = P ≤ .01

Thirdly, a Pearson correlation test was used to determine whether any significant, non-chance correlations existed between the test scores and gender of the participants.

As in the case of the T-Tests, separate correlations were run first for the entire sample (N=63), and, using the split-file command, for each group (control and experimental) separately.

Results printed on the correlation matrices illustrated significant, non-chance correlations between gender and three of the 16 dependent measures when running the correlation for the entire population.
A significant, non-chance correlation was found to exist between gender and two STHS measures - fatigue and backaches - in the control group when the same correlation was run using the split-file command to test each group separately. However, no significant, non-chance correlations of any kind existed between gender and any of the 16 dependent measures when the same correlation was run for the experimental group.
HYPOTHESIS #3 - The research question investigated by this hypothesis raised the issue of whether or not the variable of age could have any effect on or correlation with scores on the MBI, TCHAS, and STHS. Four separate statistical tests - two one-way ANOVA's and two Pearsons - were utilized to test the following: A) There is no significant difference between anxiety, health, or burnout scores of student teachers as a result of different age levels; B) There is no significant difference between anxiety, health, or burnout scores of student teachers as a result of different age levels in either the control or experimental group; C) There are no significant, non-chance correlations between student teacher anxiety, health, or burnout scores and student teacher age level; and D) There are no significant, non-chance correlation between student teacher anxiety, health, or burnout scores and student teacher age level in either the control or experimental group.

Student population ages ranged from a low of 21 years to a high of 49 with a mean of 29.2 years. Twenty-five percent of the student teachers were over 35 years of age, while 50% were 26 or younger.

Using the SPSS command "transform data" to recode the variable age, the ages of all 63 subjects were first compressed from 21 to only four categories: <25, 25-30, 31-36, and >37. A One-Way ANOVA was then selected to compare the four different age groups via their mean scores on the 16 dependent measures derived from the three tests. Only one of the calculated F values was found to be larger than the critical F value as a result of this ANOVA. Scores on the 16 other dependent measures did not differ significantly from one another as a result of the age of the participants. The one
significant difference as a result of age occurred on the Student Teacher Health Survey, number 11 - sleeplessness (ANOVA < 0.01, F = 3.6122, df = 62).

To determine which age group's means differed significantly from the others, Tukey’s HSD Test with a significance level of P = <.05 was used. This multiple comparison procedure illustrated that the significant difference occurred between age group one (< 25 years old) and age group two (25-30 years old).

The same One-Way ANOVA was run using the split-file command to test each of the groups separately (hypothesis 3B). Results of this test accepted the null hypothesis: no significant differences existed between participant age and any of the dependent measures for either group when tested separately. In the case of hypothesis 3B, the null hypothesis was accepted.

Hypotheses 3C and 3D were tested using a Pearson correlation on the uncollapsed student teacher age data to determine whether significant, non-chance correlations existed between any of the 16 dependent measures and age levels of the student teachers. Two separate analyses were run: one on the entire sample (63 S’s), and then, again using the split-file command, on the control and experimental groups separately.

Significant negative, non-chance correlations were found for the total sample on two measures of the STHS:
TABLE 4.14
CORRELATIONS FOR AGE - TOTAL SAMPLE
HYPOTHESIS #3C

<table>
<thead>
<tr>
<th>TEST</th>
<th>VARIABLE</th>
<th>CORRELATION COEFFICIENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>STHS</td>
<td>STHS4 - Frequency of Colds</td>
<td>-.286*</td>
</tr>
<tr>
<td>STHS</td>
<td>STHS11 - Sleeplessness</td>
<td>-.286*</td>
</tr>
</tbody>
</table>

* = P ≤ .05

Significant correlations were found to exist between student teacher age and two of the 16 measures for the control group only when the same test was run separately for each of the two groups.

TABLE 4.15
CORRELATIONS FOR AGE BY GROUP
HYPOTHESIS #3D

<table>
<thead>
<tr>
<th>TEST</th>
<th>GROUP</th>
<th>VARIABLE</th>
<th>CORRELATION COEFFICIENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>STHS</td>
<td>Control</td>
<td>STHS4 - Frequency of Colds</td>
<td>-.358*</td>
</tr>
<tr>
<td>TCHAS</td>
<td>Control</td>
<td>TCHAS6 - Satisfaction</td>
<td>-.412**</td>
</tr>
</tbody>
</table>

* = P ≤ .05
** = P ≤ .01

HYPOTHESIS #4 - Hypothesis number four was designed to answer the research question inquiring into the existence of any relationship that might exist between a
student teacher's marital status and resultant scores on the dependent measures. The hypothesis was stated as follows: A) There is no significant difference between anxiety, health, and burnout scores of student teachers exhibiting different marital status; B) There is no significant difference between anxiety, health, and burnout scores of student teachers exhibiting different marital status in either the control or experimental group; C) There are no significant, non-chance correlations between anxiety, health, and burnout scores of student teachers and their marital status; and D) There are no significant, non-chance correlations between the anxiety, health, and burnout scores of student teachers and their marital status when in either the control or experimental group.

The breakdown of the marital status for the total sample is portrayed in the table below:

<table>
<thead>
<tr>
<th>GROUP</th>
<th>SINGLE</th>
<th>MARRIED</th>
<th>DIVORCED</th>
<th>SEPARATED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Sample</td>
<td>32</td>
<td>26</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Control</td>
<td>19</td>
<td>12</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Experimental</td>
<td>13</td>
<td>14</td>
<td>2</td>
<td>2</td>
</tr>
</tbody>
</table>

Prior to proceeding with any statistical analyses, however, data collected for the variable marital status was collapsed from the original four categories (single, married, divorced, separated) to only two: single status, represented by the number 1, and all others, represented by the number 2.
Using this new variable to separate all subjects into these two groups, an
independent samples T-Test was used to ascertain whether any significant differences in
mean scores between these two groups on any of the 16 dependent measures could be
found. This T-Test for hypothesis 4A discovered significant differences existed between
the two marital groups on three of the 16 measures. These were the TCHAS 5, 17, and
STHS 11 (worry, preparation, sleeplessness) illustrated in table 4.17 below.

<table>
<thead>
<tr>
<th>VARIABLE</th>
<th>GROUP</th>
<th>M</th>
<th>SD</th>
<th>T</th>
</tr>
</thead>
<tbody>
<tr>
<td>STHS11-Sleeplessness</td>
<td>Single</td>
<td>2.3</td>
<td>1.1</td>
<td>2.14*</td>
</tr>
<tr>
<td></td>
<td>All others</td>
<td>1.8</td>
<td>.98</td>
<td></td>
</tr>
<tr>
<td>TCHAS5-Worry</td>
<td>Single</td>
<td>2.6</td>
<td>.90</td>
<td>2.11*</td>
</tr>
<tr>
<td></td>
<td>All others</td>
<td>2.1</td>
<td>.95</td>
<td></td>
</tr>
<tr>
<td>TCHAS17-Preparation</td>
<td>Single</td>
<td>2.7</td>
<td>.94</td>
<td>2.3*</td>
</tr>
<tr>
<td></td>
<td>All others</td>
<td>3.3</td>
<td>.90</td>
<td></td>
</tr>
</tbody>
</table>

* = \( P \leq .05 \)

Using the split-file command, another T-Test was run with the 63 subjects now
separated into their respective groups (control or experimental). The purpose again was
to determine whether the independent variable, group membership, would have any effect
as a moderating variable on a student teacher's marital status and its effect on the
dependent measures.
Results of this T-Test for hypothesis 4B exhibited significance on the health survey appetite gain ($T = 2.39$, $DF = 30$, $P \leq .01$) and the anxiety measure confidence ($T = -2.33$, $DF = 30$, $P \leq .01$) for the control group, and on appetite gain ($T = -2.29$, $DF = 29$, $P \leq .01$) for the experimental group.

Hypothesis 4C was tested using a Pearson correlation to determine whether any significant, non-chance correlations existed between a student teachers’ marital status and scores on any of the 16 dependent measures.

The Pearson was run twice: once to test for correlations between marital status and test scores of the entire population, and again, using the split-file command, to discover any correlations that might exist when the two groups were tested separately.

Test results for the entire sample yielded four significant, non-chance, negative correlations between test scores and marital status, and one significant, positive, non-chance correlation as illustrated in the table below.
**TABLE 4.18**  
CORRELATIONS FOR THE VARIABLE MARITAL STATUS - TOTAL SAMPLE  
HYPOTHESIS 4C

<table>
<thead>
<tr>
<th>TEST</th>
<th>VARIABLE</th>
<th>CORRELATION COEFFICIENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>MBI</td>
<td>Emotional Exhaustion</td>
<td>-.345*</td>
</tr>
<tr>
<td>STHS</td>
<td>STHS9 - Headaches</td>
<td>-.258*</td>
</tr>
<tr>
<td>STHS</td>
<td>STHS11 - Sleeplessness</td>
<td>-.256*</td>
</tr>
<tr>
<td>TCHAS</td>
<td>TCHAS5 - Worry</td>
<td>-.310*</td>
</tr>
<tr>
<td>TCHAS</td>
<td>TCHAS17 - Preparation</td>
<td>.281*</td>
</tr>
</tbody>
</table>

When the correlations were run separately for each group (hypothesis 4D), the control group exhibited a significant, non-chance, positive correlation between marital status and TCHAS13 (confidence). The experimental group on the other hand illustrated a significant, non-chance, negative correlation between marital status and emotional exhaustion. These results are found in the table printed below.

**TABLE 4.19**  
CORRELATIONS FOR THE VARIABLE MARITAL STATUS - BY GROUP  
HYPOTHESIS 4D

<table>
<thead>
<tr>
<th>TEST</th>
<th>GROUP</th>
<th>VARIABLE</th>
<th>CORRELATION COEFFICIENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>TCHAS</td>
<td>CONTROL</td>
<td>TCHAS13 - confidence</td>
<td>.371*</td>
</tr>
<tr>
<td>STHS</td>
<td>EXPERIMENTAL</td>
<td>Emotional Exhaustion</td>
<td>-386*</td>
</tr>
</tbody>
</table>

\* = \( P \leq .05 \)
HYPOTHESIS #5 - This research question and resultant hypothesis sought to determine whether the number of dependent children living at home with a student teacher during the practicum could effect scores on any of the anxiety, health, or burnout measures.

Stated in the null form, the hypothesis read as follows: A) There is no significant difference between the anxiety, health, and burnout scores of student teachers with children and those without; B) There is no significant difference between the anxiety, health, and burnout scores of student teachers with children or those without in either the control or experimental group; C) There are no significant, non-chance correlations between the anxiety, health, and burnout scores of student teachers and their number of children; and D) There are no significant, non-chance correlations between the anxiety, health, and burnout scores of student teachers and their number of children in either the control or experimental group.

Data collected from the initial questionnaire provided the following information regarding the number of dependent children at home with student teachers:
Prior to running any tests, data on the number of dependent children was collapsed from the five original levels to only two: children, represented by the number 1, or no children, represented by 0. This resulted in the sample exhibiting 38 S's with no children, and 25 S's with at least one child at home during the practicum.

To test hypothesis 5A, a T-Test for independent samples was selected to compare the mean scores of these two groups - children or no children - on all 16 of the dependent measures. Results exhibited significant differences between scores of student teachers with and without children only on the STHS as illustrated in the table below:
TABLE 4.21
T-TEST FOR THE VARIABLE CHILDREN/NO CHILDREN - TOTAL SAMPLE
HYPOTHESIS #5A

<table>
<thead>
<tr>
<th>VARIABLE</th>
<th>GROUP</th>
<th>M</th>
<th>SD</th>
<th>T</th>
</tr>
</thead>
<tbody>
<tr>
<td>STHS4 - Frequency of Colds</td>
<td>Children</td>
<td>2.3</td>
<td>1.1</td>
<td>3.32**</td>
</tr>
<tr>
<td></td>
<td>No Children</td>
<td>1.4</td>
<td>.87</td>
<td></td>
</tr>
<tr>
<td>STHS9 - Headaches</td>
<td>Children</td>
<td>2.5</td>
<td>1.0</td>
<td>1.96*</td>
</tr>
<tr>
<td></td>
<td>No Children</td>
<td>1.9</td>
<td>1.0</td>
<td></td>
</tr>
<tr>
<td>STHS11 - Sleeplessness</td>
<td>Children</td>
<td>2.3</td>
<td>1.1</td>
<td>2.77**</td>
</tr>
<tr>
<td></td>
<td>No Children</td>
<td>1.6</td>
<td>.80</td>
<td></td>
</tr>
</tbody>
</table>

* = $P \leq .05$
** = $P \leq .01$

A T-Test for independent samples was used with the split-file option in order to run the same test separately for each group. In this case, the ratio of students with no dependent children to those with dependent children in the control group was 22:10, while in the experimental group it was 16:15.

Results for hypothesis 5B yielded significant differences for both groups on two separate measures as illustrated below.
TABLE 4.22
T-TEST FOR THE VARIABLE CHILDREN/NO CHILDREN - BY GROUP
HYPOTHESIS #5B

<table>
<thead>
<tr>
<th>VARIABLE</th>
<th>GROUP</th>
<th>M</th>
<th>SD</th>
<th>T</th>
</tr>
</thead>
<tbody>
<tr>
<td>StHS4 - Frequency of Colds</td>
<td>CONTROL Children</td>
<td>2.4</td>
<td>.96</td>
<td>2.82**</td>
</tr>
<tr>
<td></td>
<td>CONTROL No Children</td>
<td>1.5</td>
<td>.85</td>
<td></td>
</tr>
<tr>
<td>StHS11 - Sleeplessness</td>
<td>CONTROL Children</td>
<td>2.5</td>
<td>1.1</td>
<td>3.24**</td>
</tr>
<tr>
<td></td>
<td>CONTROL No Children</td>
<td>1.5</td>
<td>.70</td>
<td></td>
</tr>
<tr>
<td>StHS15 - Appetite Gain</td>
<td>EXPER Children</td>
<td>1.6</td>
<td>1.0</td>
<td>-2.17*</td>
</tr>
<tr>
<td></td>
<td>EXPER No Children</td>
<td>2.4</td>
<td>1.1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>EXPER Children</td>
<td>38.5</td>
<td>4.8</td>
<td>-2.05*</td>
</tr>
<tr>
<td></td>
<td>EXPER No Children</td>
<td>42.1</td>
<td>4.8</td>
<td></td>
</tr>
</tbody>
</table>

* = P ≤ .05
** = P ≤ .01

Testing for hypothesis 5C was accomplished by selecting The Pearson correlation option. This correlation, run on the uncollapsed data from the entire sample (i.e. the actual numbers signifying how many children were living at home), yielded the three significant, non-chance, negative correlations provided below.
<table>
<thead>
<tr>
<th>TEST</th>
<th>VARIABLE</th>
<th>CORRELATION COEFFICIENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>STHS</td>
<td>STHS4 - Frequency of Colds</td>
<td>-.360*</td>
</tr>
<tr>
<td>STHS</td>
<td>STHS11 - Sleeplessness</td>
<td>-.275*</td>
</tr>
</tbody>
</table>

* = \( P \leq .05 \)

Modified with the split-file command to test hypothesis 5D, the same correlation was run this time exhibiting two significant, negative, non-chance correlations for the control group, and one significant, non-chance, positive correlation for the experimental group as reported below.
TABLE 4.24
CORRELATIONS FOR THE VARIABLE DEPENDENT CHILDREN
BY GROUP
HYPOTHESIS #5D

<table>
<thead>
<tr>
<th>TEST</th>
<th>GROUP</th>
<th>VARIABLE</th>
<th>CORRELATION COEFFICIENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>STHS</td>
<td>Control</td>
<td>STHS4 - Frequency of Colds</td>
<td>-.450*</td>
</tr>
<tr>
<td>STHS</td>
<td>Control</td>
<td>STHS11 - Sleeplessness</td>
<td>-.349*</td>
</tr>
<tr>
<td>MBI</td>
<td>Experimental</td>
<td>Personal Accomplishment</td>
<td>.352*</td>
</tr>
</tbody>
</table>

* = P ≤ .05

HYPOTHESIS #6 - Hypothesis six originated from a research question designed to explore the possible effects and relationships that might exist between the grade level assigned to a student teacher during the practicum and resultant scores on the 16 dependent measures of the three tests used in the study. This one question was framed into four separate hypotheses: A) There is no significant difference in anxiety, health, and burnout scores between student teachers teaching at different grade levels; B) There is no significant difference in anxiety, health, and burnout scores between student teachers teaching at different grade levels in either the control or experimental group; C) There are no significant, non-chance correlations between student teacher grade level assigned and student teacher scores on the anxiety, health, and burnout measures; and D) There are no significant, non-chance correlations between student teacher grade level
assigned and student teacher scores on the anxiety, health, and burnout measures in either
the control or experimental group.

Grade levels taught by the sample ranged from kindergarten through grade six
with 38 of the student teachers instructing at grade three or below, and 25 teaching in
grades four through six.

<table>
<thead>
<tr>
<th>Grade Level</th>
<th>K</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Sample</td>
<td>5</td>
<td>9</td>
<td>13</td>
<td>11</td>
<td>9</td>
<td>10</td>
<td>6</td>
</tr>
<tr>
<td>Control</td>
<td>2</td>
<td>2</td>
<td>8</td>
<td>7</td>
<td>4</td>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td>Exprmntl</td>
<td>3</td>
<td>7</td>
<td>5</td>
<td>4</td>
<td>5</td>
<td>4</td>
<td>3</td>
</tr>
</tbody>
</table>

For the purpose of analysis, this data was collapsed to create two categories:
upper grades, levels four through six represented by the number 1, and lower grades,
levels Kindergarten through three represented by 0. This procedure resulted in a count
of 38 students teaching at the Kindergarten through grade three level, and 25 instructing
at the fourth through sixth grade level.

With the data collapsed, a T-test for independent samples was run using the test
scores and grade levels taught from the entire sample. Results of this test for hypothesis
6A exhibited significant differences between the two groups (i.e., upper or lower grades taught) on four of the dependent measures as shown by the table below.

### TABLE 4.26
T-TESTS FOR THE VARIABLE GRADE LEVEL TAUGHT - TOTAL SAMPLE
HYPOTHESIS #6A

<table>
<thead>
<tr>
<th>VARIABLE</th>
<th>GROUP</th>
<th>M</th>
<th>SD</th>
<th>T</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depersonal.</td>
<td>K-3</td>
<td>3.6</td>
<td>4.0</td>
<td>-2.86**</td>
</tr>
<tr>
<td></td>
<td>4-6</td>
<td>7.6</td>
<td>6.2</td>
<td></td>
</tr>
<tr>
<td>STHS4 - Frequency of Colds</td>
<td>K-3</td>
<td>2.3</td>
<td>1.1</td>
<td>3.32**</td>
</tr>
<tr>
<td></td>
<td>4-6</td>
<td>1.4</td>
<td>.87</td>
<td></td>
</tr>
<tr>
<td>STHS15 - Appetite Gain</td>
<td>K-3</td>
<td>2.2</td>
<td>1.1</td>
<td>2.67**</td>
</tr>
<tr>
<td></td>
<td>4-6</td>
<td>1.5</td>
<td>.91</td>
<td></td>
</tr>
</tbody>
</table>

** = P ≤ .01

The same data and testing procedures were used modified only by the split-file command in order to test hypothesis 6B. Results provided significant mean differences for both the control and experimental groups on two of the dependent measures.
TABLE 4.27
T-TESTS FOR THE VARIABLE GRADE LEVEL TAUGHT - BY GROUP
HYPOTHESIS #6B

<table>
<thead>
<tr>
<th>VARIABLE</th>
<th>GROUP</th>
<th>M</th>
<th>SD</th>
<th>T</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depersonal.</td>
<td>CONTROL</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>K-3</td>
<td>3.5</td>
<td>4.3</td>
<td>-3.07**</td>
</tr>
<tr>
<td></td>
<td>4-6</td>
<td>10.0</td>
<td>6.6</td>
<td></td>
</tr>
<tr>
<td>STHS15 - Appetite Gain</td>
<td>CONTROL</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>K-3</td>
<td>2.2</td>
<td>1.0</td>
<td>2.78**</td>
</tr>
<tr>
<td></td>
<td>4-6</td>
<td>1.3</td>
<td>.75</td>
<td></td>
</tr>
<tr>
<td>STHS4 - Frequency of Colds</td>
<td>EXPER</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>K-3</td>
<td>2.2</td>
<td>1.3</td>
<td>3.24**</td>
</tr>
<tr>
<td></td>
<td>4-6</td>
<td>1.1</td>
<td>.38</td>
<td></td>
</tr>
<tr>
<td>STHS9 - Headaches</td>
<td>EXPER</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>K-3</td>
<td>2.4</td>
<td>1.1</td>
<td>2.30*</td>
</tr>
<tr>
<td></td>
<td>4-6</td>
<td>1.6</td>
<td>.65</td>
<td></td>
</tr>
</tbody>
</table>

* = P ≤ .05
** = P ≤ .01

A Pearson correlation was next run on the uncollapsed grade level data from the entire sample in order to test hypothesis 6C. Results of this test provided the following significant, non-chance relationships:
Using the split-file option with the same correlation test procedures to test for hypothesis 6D, three significant, non-chance correlations were uncovered for the control group, while none were found existing between grade level assigned and scores from the experimental group. These correlations are printed in the table below.

### TABLE 4.29
CORRELATIONS FOR THE VARIABLE GRADE LEVEL TAUGHT - BY GROUP
HYPOTHESIS #6D

<table>
<thead>
<tr>
<th>TEST</th>
<th>GROUP</th>
<th>VARIABLE</th>
<th>CORRELATION COEFFICIENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>MBI</td>
<td>Control</td>
<td>Depersonalization</td>
<td>.386*</td>
</tr>
<tr>
<td>STHS</td>
<td>Control</td>
<td>STHS4 - Frequency of Colds</td>
<td>-.345*</td>
</tr>
<tr>
<td>STHS</td>
<td>Control</td>
<td>STHS4 - Frequent Colds</td>
<td>-.378*</td>
</tr>
</tbody>
</table>

* = P ≤ .05
HYPOTHESIS #7 - This hypothesis was formulated to answer the research question inquiring into the effect of or relationship between the number of hours a student teacher is employed per week and resultant scores on the 16 dependent measures from the three tests. The hypothesis was stated in the null form as follows: A) There is no significant difference in anxiety, health, and burnout scores between student teachers employed or not employed during the practicum; B) There is no significant difference in anxiety, health, and burnout scores between student teachers employed or not employed during the practicum in either the control or experimental group; C) There are no significant, non-chance correlations between the number of hours a student teacher is employed per week and his or her scores on the anxiety, health, and burnout measures; and D) There are no significant, non-chance correlations between student teachers employed for various hours of work per week and their scores on the anxiety, health, and burnout measures in either the control or experimental group.

The data regarding number of hours employed per week ranged from student teachers who were not employed to those employed for as many as 30 hours per week providing an average of 7.2 hours per week per student. This data was collapsed to create two levels from the original 11 resulting in the following two categories: those who were employed during student teaching (29 S’s represented by the number 1), and those who were not (34 S’s represented by 0).
TABLE 4.30
STUDENT TEACHER EMPLOYMENT DURING THE PRACTICUM
HYPOTHESIS #7

<table>
<thead>
<tr>
<th>GROUP</th>
<th>EMPLOYED</th>
<th>NOT EMPLOYED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Sample</td>
<td>29</td>
<td>34</td>
</tr>
<tr>
<td>Control Group</td>
<td>18</td>
<td>14</td>
</tr>
<tr>
<td>Experimental Group</td>
<td>11</td>
<td>20</td>
</tr>
</tbody>
</table>

Hypothesis 7A was tested using an independent samples T-Test. Results of this test identified only one significant difference between mean scores of students who were employed and those who were not (T = -2.72, DF = 53, P ≤ .01). This difference occurred on STHS4 (frequency of colds).

The same analysis was repeated using the split-file command to test hypothesis 7B. As the table below illustrates, while none were obtained for the experimental group, significant differences were obtained for the control group on three of the dependent measures.
To test for the existence of any significant, non-chance correlations between hours employed and student teacher test scores, a Pearson Product-Moment correlation was selected. When run on the uncollapsed employment data from the entire sample, only one significant, positive, non-chance correlation (.244 at $P = .05$) was obtained between hours employed and STHS 4 (frequency of colds).

However, when the split-file option was selected for the same correlation to test each group separately, four significant, non-chance relationships between hours employed and the dependent measures were obtained for the control group, while one was yielded for the experimental group (see the table below).
TABLE 4.32
CORRELATIONS FOR THE VARIABLE EMPLOYMENT - BY GROUP
HYPOTHESIS #7B

<table>
<thead>
<tr>
<th>TEST</th>
<th>GROUP</th>
<th>VARIABLE</th>
<th>CORRELATION COEFFICIENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>MBI</td>
<td>Control</td>
<td>Emotional Exhaustion</td>
<td>-.333*</td>
</tr>
<tr>
<td>TCHAS</td>
<td>Control</td>
<td>TCHAS5 - Worry</td>
<td>-.372*</td>
</tr>
<tr>
<td>TCHAS</td>
<td>Control</td>
<td>TCHAS6 - Satisfaction</td>
<td>.438**</td>
</tr>
<tr>
<td>TCHAS</td>
<td>Control</td>
<td>TCHAS17 - Preparation</td>
<td>.540**</td>
</tr>
<tr>
<td>STHS</td>
<td>Experimental</td>
<td>STHS4 - Frequency of Colds</td>
<td>.373*</td>
</tr>
</tbody>
</table>

* = P ≤ .05  
** = P ≤ .01

HYPOTHESIS #8 - Hypothesis eight was formulated to answer the research question inquiring into whether the number of years students attend Concordia College, Portland, could have any effect on or relationship with their scores on any of the 16 dependent measures derived from the three tests. With that purpose in mind, the eighth hypothesis read as follows:  
A) There is no significant difference between the anxiety, health, and burnout scores of student teachers based on their number of years in attendance at Concordia College, Portland;  
B) There is no significant difference between the anxiety, health, and burnout scores of student teachers based on their number of years in attendance at Concordia College, Portland, in either the control or experimental group;
C) There are no significant, non-chance correlations between the number of years student teachers attend Concordia College, Portland, and their scores on the anxiety, health, and burnout measures; and D) There are no significant, non-chance correlations between the number of years student teachers attend Concordia College, Portland, and their scores on the anxiety, health, and burnout measures in either the control or experimental group.

Data regarding the number of years student teachers attended Concordia was collapsed from the original 12 levels (where students reported years in attendance to the closest quarter on their demographic data sheet) to the two levels (students attending 1.66 years or less, represented by 0, and those attending two or more years, represented by 1) presented in the table below.

<table>
<thead>
<tr>
<th>NUMBER OF YEARS</th>
<th>1 - 1.66 YEARS</th>
<th>2 OR MORE YEARS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Sample</td>
<td>22</td>
<td>41</td>
</tr>
<tr>
<td>Control Group</td>
<td>14</td>
<td>18</td>
</tr>
<tr>
<td>Experimental Group</td>
<td>8</td>
<td>23</td>
</tr>
</tbody>
</table>

TABLE 4.33
HYPOTHESIS #8
SUMMARY OF STUDENT TEACHER YEARS ATTENDING CONCORDIA
To test hypothesis 8A, an independent samples T-Test was selected to determine if there were any significant differences between mean scores of these two groups on the 16 dependent measures.

Results of the T-Test on data for the entire sample exhibited significance on only one of the 16 measures: the confidence measure of the TCHAS (T = -2.08, DF = 42, P ≤ .05).

The same test was run again using the split-file option to discover what influence the variable group might have on the outcome of the same scores (hypothesis 8B). While results of this test provided no significance between any of the measures and the number of years in attendance for the control group, significant differences were found on three of the dependent measures for the experimental group as illustrated in the table below.

| TABLE 4.34 |
| T-TESTS FOR THE VARIABLE YEARS ATTENDING CONCORDIA BY GROUP |
| HYPOTHESIS #8B |

<table>
<thead>
<tr>
<th>VARIABLE</th>
<th>GROUP</th>
<th>M</th>
<th>SD</th>
<th>T</th>
</tr>
</thead>
<tbody>
<tr>
<td>TCHAS13-Confidence</td>
<td>EXPER</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt; 2 yrs</td>
<td>4.1</td>
<td>.35</td>
<td>2.26*</td>
<td></td>
</tr>
<tr>
<td>≥ 2 yrs</td>
<td>4.5</td>
<td>.59</td>
<td></td>
<td></td>
</tr>
<tr>
<td>STHS1-Stomach Disorders</td>
<td>EXPER</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt; 2 yrs</td>
<td>1.5</td>
<td>.53</td>
<td>-2.14*</td>
<td></td>
</tr>
<tr>
<td>≥ 2 yrs</td>
<td>2.0</td>
<td>.94</td>
<td></td>
<td></td>
</tr>
<tr>
<td>STHS8-Backaches</td>
<td>EXPER</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt; 2 yrs</td>
<td>1.5</td>
<td>.53</td>
<td>-2.14*</td>
<td></td>
</tr>
<tr>
<td>≥ 2 yrs</td>
<td>2.0</td>
<td>.94</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* = P ≤ .05

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To test for the existence of any significant, non-chance correlations between student test scores and the number of years attending Concordia College, a Pearson was selected. Run on the uncollapsed data from all 63 S’s to answer hypothesis 8C, there were no significant, non-chance correlations found between years in attendance and any of the 16 measures. Thus, in this particular case, the null hypothesis was accepted.

One significant, non-chance, positive correlation was discovered between the confidence measure of the TCHAS and the variable years attending Concordia for the experimental group (.383 at $P \leq .05$) when the same test, using the split-file command, was run to address hypothesis 8D.

HYPOTHESIS #9 - Hypothesis nine was created to answer the research question posed to investigate whether a student teacher’s level of prior field experience (i.e., actual contact time in the classroom with students prior to the practicum) might have any effect on or relationship with scores on the three tests. Written in the null form, the hypothesis read as follows: A) There is no significant difference between the anxiety, health, and burnout scores of student teachers based on their number of hours of prior field experience; B) There is no significant difference between the anxiety, health, and burnout scores of student teachers based on their number of hours of prior field experience in either the control or experimental group; C) There are no significant, non-chance correlations between the number of hours of field experience and a student teacher’s scores on the anxiety, health, and burnout measures; and D) There are no significant, non-chance correlations between the number of hours of field experience and
a student teacher's scores on the anxiety, health, and burnout measures in either the control or experimental group.

Hours of prior field experience for the student teacher sample ranged from a minimum of 60 hours to a maximum of 225 hours. Taking into account the statistical average of 136 hours, this data was collapsed to create two levels from the original 20 initially formed from responses taken directly from the student teacher demographic data questionnaire. This procedure resulted in a division of the sample into two groups: student teachers with field experience totalling 135 hours or less (N = 40, represented by 0), and those with 136 hours or more (N = 23, represented by the number 1). The breakdown by group is represented below.

<table>
<thead>
<tr>
<th>GROUP</th>
<th>135 HOURS OR LESS OF FIELD EXPERIENCE</th>
<th>136 HOURS OR MORE FIELD EXPERIENCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control</td>
<td>23</td>
<td>9</td>
</tr>
<tr>
<td>Experimental</td>
<td>17</td>
<td>14</td>
</tr>
</tbody>
</table>

A T-Test for independent samples was again selected to compare the mean scores on the 16 dependent measures for both of these groups. Testing for hypothesis 9A provided the results printed on the following page.
To test for hypothesis 9B, another T-Test for independent samples was selected with the addition of the split-file command to analyze each group separately. As illustrated in the table printed below, this T-Test yielded a significant difference on four of the 16 dependent measures.
To determine whether any significant, non-chance correlations existed between student teacher scores on any of the dependent measures and the number of field experience hours obtained prior to their student teaching practicum, another Pearson correlation was run. Results of this test, run on the entire sample to answer the inquiry posed by hypothesis 9C, rejected the null hypothesis on three of the 16 measures as printed below.

<table>
<thead>
<tr>
<th>VARIABLE</th>
<th>GROUP</th>
<th>M</th>
<th>SD</th>
<th>T</th>
</tr>
</thead>
<tbody>
<tr>
<td>STHS2 - Fatigue</td>
<td>CONTROL</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>≤ 135</td>
<td></td>
<td>3.6</td>
<td>.77</td>
<td>2.98**</td>
</tr>
<tr>
<td>≥ 136</td>
<td></td>
<td>2.6</td>
<td>.86</td>
<td></td>
</tr>
<tr>
<td>STHS11 - Sleeplessness</td>
<td>CONTROL</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>≤ 135</td>
<td></td>
<td>2.5</td>
<td>1.1</td>
<td>2.54*</td>
</tr>
<tr>
<td>≥ 136</td>
<td></td>
<td>1.5</td>
<td>.88</td>
<td></td>
</tr>
<tr>
<td>STHS15 - Appetite Gain</td>
<td>EXPER</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>≤ 135</td>
<td></td>
<td>1.6</td>
<td>1.0</td>
<td>-2.20*</td>
</tr>
<tr>
<td>≥ 136</td>
<td></td>
<td>2.5</td>
<td>1.0</td>
<td></td>
</tr>
<tr>
<td>TCHAS5 - Worry</td>
<td>EXPER</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>≤ 135</td>
<td></td>
<td>2.4</td>
<td>.71</td>
<td>2.55*</td>
</tr>
<tr>
<td>≥ 136</td>
<td></td>
<td>1.7</td>
<td>.72</td>
<td></td>
</tr>
</tbody>
</table>

* = P ≤ .05  
** = P ≤ .01
TABLE 4.38
CORRELATIONS FOR THE VARIABLE HOURS OF PRIOR FIELD EXPERIENCE - TOTAL SAMPLE
HYPOTHESIS #9C

<table>
<thead>
<tr>
<th>TEST</th>
<th>VARIABLE</th>
<th>CORRELATION COEFFICIENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>STHS</td>
<td>STHS11 - Sleeplessness</td>
<td>-.328**</td>
</tr>
<tr>
<td>TCHAS</td>
<td>TCHAS5 - Worry</td>
<td>-.271*</td>
</tr>
<tr>
<td>TCHAS</td>
<td>TCHAS13 - Confidence</td>
<td>.307**</td>
</tr>
</tbody>
</table>

Using the same testing procedure with the addition of the split-file command to test each group separately, significant, non-chance, negative correlations were obtained between three of the dependent measures and the number of field experience hours for the control group, while the experimental group’s test provided a significant, non-chance, negative correlation between hours of prior field experience and only one of the dependent measures (see table below for results of hypothesis 9D).
<table>
<thead>
<tr>
<th>TEST</th>
<th>GROUP</th>
<th>VARIABLE</th>
<th>CORRELATION COEFFICIENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>STHS</td>
<td>Control</td>
<td>STHS1 - Stomach Disorders</td>
<td>-.366*</td>
</tr>
<tr>
<td>STHS</td>
<td>Control</td>
<td>STHS2 - Fatigue</td>
<td>-.361*</td>
</tr>
<tr>
<td>STHS</td>
<td>Control</td>
<td>STHS11 - Sleeplessness</td>
<td>-.361*</td>
</tr>
<tr>
<td>MBI</td>
<td>Experimental</td>
<td>Depersonalization</td>
<td>-.435**</td>
</tr>
</tbody>
</table>

* = $P \leq .05$

** = $P \leq .01$

HYPOTHESIS #10 - Hypothesis 10 was formulated to test the research questions dealing with any relationships or effects student teacher cumulative grade point averages (GPA) might have on anxiety, health or burnout scores. Stated in the null form, the hypothesis was stated as follows: A) There is no significant difference between the anxiety, health, and burnout scores of student teachers as a result of their cumulative GPA's; B) There is no significant difference between the anxiety, health, and burnout scores of student teachers as a result of their cumulative GPA's in either the control or experimental group; C) There are no significant, non-chance correlations between student teacher anxiety, health, and burnout scores and their cumulative GPA's; and D) There are no significant, non-chance correlations between student teacher cumulative GPA's.
GPA and scores on the anxiety, health, and burnout measures in either the control or experimental group.

The sample of 63 student teachers yielded 45 different GPA's ranging from a low of 2.54 to a high of 4.00 on a four point scale. Since the average cumulative GPA for the sample was 3.50, the data was collapsed to create two levels by dividing students according to the following criteria: those with cumulative GPA's at or below the mean (24 S's, represented by 0), and those with cumulative GPA's above the mean (39 S's, represented by the number 1).

<table>
<thead>
<tr>
<th>GROUP</th>
<th>GPA OF 3.50 OR LESS</th>
<th>GPA OF 3.51 OR GREATER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control</td>
<td>12</td>
<td>20</td>
</tr>
<tr>
<td>Experimental</td>
<td>12</td>
<td>19</td>
</tr>
</tbody>
</table>

Once the data was collapsed, hypothesis 10A was tested using a T-Test for independent samples. The test resulted in the identification of no significant differences between any of the scores on the 16 dependent measures as a result of a student teacher's cumulative GPA. In this case, the null hypothesis was accepted.

Testing for hypothesis 10B, which sought to explore the effects of cumulative GPA when the control and experimental groups were tested separately, another T-Test
was selected with the addition of the split-file command. This analysis likewise resulted in no significant differences on any of the 16 dependent measures at the $P \leq .05$ level. Again, the null hypothesis was accepted.

A Pearson correlation was selected to test hypotheses 10C and 10D. These tests yielded no significant, non-chance correlations when run for either the entire sample or, using the split file command, when the experimental and control groups were tested separately. In both of these cases, the null hypothesis was accepted.

HYPOTHESIS #11 - This hypothesis was written to determine whether perceptions concerning the amount of stress generated by those key student teacher stressors mentioned in the literature and appearing on the Student Teacher Debrief Questionnaire (STDQ) would differ significantly between the control and experimental groups. Stated in the null form, it read as follows: There is no significant difference between the control and experimental group’s rating of key student teacher stressors as reported on the Student Teacher Debrief Questionnaire (STDQ).

Using the SPSS command to compare means, the independent samples T-Test was selected to compare the means of the two groups on their rating of these key stressors listed directly below.
### TABLE 4.41
SUMMARY OF STUDENT TEACHER RATINGS OF SELECTED KEY STRESSORS FOUND ON THE STUDENT TEACHER DEBRIEF QUESTIONNAIRE (STDQ) REPORTED BY TOTAL SAMPLE
HYPOTHESIS #11

<table>
<thead>
<tr>
<th>STDQ LIST NUMBER</th>
<th>MEAN</th>
<th>STRESSOR</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>3.39</td>
<td>Preparing Work Samples.</td>
</tr>
<tr>
<td>8</td>
<td>3.0</td>
<td>Classroom Discipline</td>
</tr>
<tr>
<td>6</td>
<td>2.87</td>
<td>Lack of time to accomplish all class objectives.</td>
</tr>
<tr>
<td>5</td>
<td>2.82</td>
<td>Trying to balance family time with class preparation time.</td>
</tr>
<tr>
<td>1</td>
<td>2.57</td>
<td>Preparing Lesson Plans.</td>
</tr>
<tr>
<td>2</td>
<td>2.44</td>
<td>Being evaluated by my Supervisor.</td>
</tr>
<tr>
<td>7</td>
<td>2.27</td>
<td>Being evaluated by my cooperating teacher.</td>
</tr>
<tr>
<td>13</td>
<td>2.11</td>
<td>Adjusting to the cooperating teacher’s approach to management and discipline.</td>
</tr>
<tr>
<td>9</td>
<td>1.87</td>
<td>Having educational beliefs that differed greatly from those of my cooperating teacher.</td>
</tr>
</tbody>
</table>

Results of the T-Test showed significant differences between the control and experimental groups on STDQ15 (Inconsistent expectations of the cooperating teacher and
Hypothesis 12 was constructed to answer the following question: is it possible to predict anxiety, health, or burnout scores of student teachers during their student teaching experience on the basis of one or more of the following 10 predictor variables?

<table>
<thead>
<tr>
<th>AGE</th>
<th>CUMULATIVE GPA</th>
</tr>
</thead>
<tbody>
<tr>
<td>GROUP</td>
<td></td>
</tr>
<tr>
<td>NUMBER OF HOURS OF FIELD EXP.</td>
<td>HOURS EMPLOYED PER WEEK</td>
</tr>
<tr>
<td>GENDER</td>
<td>MARITAL STATUS</td>
</tr>
<tr>
<td>GRADE LEVEL TAUGHT</td>
<td>YEARS AT CONCORDIA</td>
</tr>
</tbody>
</table>

Stated in the null form, the hypothesis read as follows: None of the 10 predictor variables will significantly explain the variance among the 16 criterion scores.

SPSS regression, stepwise, was selected as the most appropriate test to determine which, if any, of the 10 predictor variables would indicate the greatest percentage of variance among the 16 criterion scores. To accomplish this, a stepwise, multiple
regression analysis was run for each of the 16 criterion variables. Results of this analysis for the entire sample are summarized in the tables printed directly below.

**TABLE 4.43**
MULTIPLE REGRESSION ANALYSIS RESULTS FOR SUBSCALES OF THE MASLACH BURNOUT INVENTORY (MBI)
TOTAL SAMPLE
HYPOTHESIS #12

<table>
<thead>
<tr>
<th>Step</th>
<th>R²</th>
<th>ΔR</th>
<th>Criterion</th>
<th>Predictor</th>
<th>T</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.157</td>
<td>-</td>
<td>Emotional Exhaustion</td>
<td>Group</td>
<td>-3.36</td>
<td>.001</td>
</tr>
<tr>
<td>2</td>
<td>0.224</td>
<td>.067</td>
<td>Marital Status</td>
<td>Field Experience</td>
<td>-2.28</td>
<td>.025</td>
</tr>
<tr>
<td>3</td>
<td>0.278</td>
<td>.054</td>
<td></td>
<td>Grade</td>
<td>-2.10</td>
<td>.039</td>
</tr>
</tbody>
</table>

Total Model F = 7.595, Prob. = 0.000

<table>
<thead>
<tr>
<th>Step</th>
<th>R²</th>
<th>Criterion</th>
<th>Predictor</th>
<th>T</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.078</td>
<td>Depersonalization</td>
<td>Grade Level</td>
<td>2.27</td>
<td>.026</td>
</tr>
</tbody>
</table>

Total Model F = 5.174, Prob. = 0.026

There were no predictor variables at the P ≤ .05 level for the Personal Accomplishment subscale.
TABLE 4.44
MULTIPLE REGRESSION ANALYSIS RESULTS
FOR THE STUDENT TEACHER HEALTH SURVEY (STHS)
ENTIRE SAMPLE
HYPOTHESIS #12

<table>
<thead>
<tr>
<th>Step</th>
<th>$R^2$</th>
<th>AR</th>
<th>Criterion</th>
<th>Predictor</th>
<th>T</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.079</td>
<td>-</td>
<td>STHS1 - Stomach Disorders</td>
<td>Group</td>
<td>-2.29</td>
<td>.025</td>
</tr>
</tbody>
</table>

Total Model $F = 5.268$, Prob. = 0.026

<table>
<thead>
<tr>
<th>Step</th>
<th>$R^2$</th>
<th>AR</th>
<th>Criterion</th>
<th>Predictor</th>
<th>T</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.067</td>
<td>-</td>
<td>STHS2 - Fatigue</td>
<td>Gender</td>
<td>-2.09</td>
<td>.040</td>
</tr>
</tbody>
</table>

Total Model $F = 4.391$, Prob. = 0.040

<table>
<thead>
<tr>
<th>Step</th>
<th>$R^2$</th>
<th>AR</th>
<th>Criterion</th>
<th>Predictor</th>
<th>T</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.122</td>
<td>-</td>
<td>STHS11 - Frequent Colds</td>
<td>Dependent Children</td>
<td>-2.92</td>
<td>.004</td>
</tr>
</tbody>
</table>

Total Model $F = 8.531$, Prob. = 0.004

<table>
<thead>
<tr>
<th>Step</th>
<th>$R^2$</th>
<th>AR</th>
<th>Criterion</th>
<th>Predictor</th>
<th>T</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.096</td>
<td>-</td>
<td>STHS8 - Backaches</td>
<td>Gender</td>
<td>-2.55</td>
<td>.013</td>
</tr>
</tbody>
</table>

Total Model $F = 6.521$, Prob. = 0.013

<table>
<thead>
<tr>
<th>Step</th>
<th>$R^2$</th>
<th>AR</th>
<th>Criterion</th>
<th>Predictor</th>
<th>T</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.066</td>
<td>-</td>
<td>STHS9 - Headaches</td>
<td>Marital Status</td>
<td>-2.08</td>
<td>.040</td>
</tr>
</tbody>
</table>

Total Model $F = 4.363$, Prob. = 0.040

<table>
<thead>
<tr>
<th>Step</th>
<th>$R^2$</th>
<th>AR</th>
<th>Criterion</th>
<th>Predictor</th>
<th>T</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.078</td>
<td>-</td>
<td>STHS11 - Sleepless</td>
<td>Dependent Children</td>
<td>-2.27</td>
<td>.026</td>
</tr>
<tr>
<td>2</td>
<td>0.150</td>
<td>.072</td>
<td>Field Experience</td>
<td></td>
<td>-2.25</td>
<td>.027</td>
</tr>
</tbody>
</table>

Total Model $F = 5.314$, Prob. = 0.007

<table>
<thead>
<tr>
<th>Step</th>
<th>$R^2$</th>
<th>AR</th>
<th>Criterion</th>
<th>Predictor</th>
<th>T</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.098</td>
<td>-</td>
<td>STHS13 - Appetite Loss</td>
<td>Field Experience</td>
<td>-2.58</td>
<td>.012</td>
</tr>
</tbody>
</table>

Total Model $F = 6.658$, Prob. = 0.012

There were no predictor variables at the $P \leq .05$ level for STHS15 (Appetite Gain).
<table>
<thead>
<tr>
<th>Step</th>
<th>$R^2$</th>
<th>$\Delta R$</th>
<th>Criterion</th>
<th>Predictor</th>
<th>T</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.096</td>
<td>-</td>
<td>TCHAS5 - Worry</td>
<td>Marital Status</td>
<td>-2.55</td>
<td>.013</td>
</tr>
<tr>
<td>2</td>
<td>0.178</td>
<td>.082</td>
<td>Field Experience</td>
<td>-2.44</td>
<td>.017</td>
<td></td>
</tr>
</tbody>
</table>

Total Model $F = 6.524$, Prob. = 0.002

<table>
<thead>
<tr>
<th>Step</th>
<th>$R^2$</th>
<th>$\Delta R$</th>
<th>Criterion</th>
<th>Predictor</th>
<th>T</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.147</td>
<td>-</td>
<td>TCHAS6 - Satisfaction</td>
<td>Group</td>
<td>3.24</td>
<td>.001</td>
</tr>
</tbody>
</table>

Total Model $F = 10.521$, Prob. = 0.001

<table>
<thead>
<tr>
<th>Step</th>
<th>$R^2$</th>
<th>$\Delta R$</th>
<th>Criterion</th>
<th>Predictor</th>
<th>T</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.109</td>
<td>-</td>
<td>TCHAS10 - Control</td>
<td>Group</td>
<td>2.73</td>
<td>.008</td>
</tr>
</tbody>
</table>

Total Model $F = 7.494$, Prob. = 0.008

<table>
<thead>
<tr>
<th>Step</th>
<th>$R^2$</th>
<th>$\Delta R$</th>
<th>Criterion</th>
<th>Predictor</th>
<th>T</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.104</td>
<td>-</td>
<td>TCHAS13 Confidence</td>
<td>Group</td>
<td>2.66</td>
<td>.009</td>
</tr>
<tr>
<td>2</td>
<td>0.185</td>
<td>.081</td>
<td>Field Experience</td>
<td>2.44</td>
<td>.017</td>
<td></td>
</tr>
</tbody>
</table>

Total Model $F = 6.821$, Prob. = 0.002

<table>
<thead>
<tr>
<th>Step</th>
<th>$R^2$</th>
<th>$\Delta R$</th>
<th>Criterion</th>
<th>Predictor</th>
<th>T</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>-0.269</td>
<td>-</td>
<td>TCHAS17 Preparation Group</td>
<td>Group</td>
<td>4.74</td>
<td>.000</td>
</tr>
</tbody>
</table>

Total Model $F = 22.467$, Prob. = 0.000
**TABLE 4.46**  
**MULTIPLE REGRESSION ANALYSIS RESULTS**  
**FOR SUBSCALES OF THE MASLACH BURNOUT INVENTORY (MBI)**  
**BY GROUP**  
**HYPOTHESIS #12**

<table>
<thead>
<tr>
<th>Group</th>
<th>Step</th>
<th>$R^2$</th>
<th>$\Delta R$</th>
<th>Criterion</th>
<th>Predictor</th>
<th>T</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control</td>
<td>1</td>
<td>0.149</td>
<td>-</td>
<td>Deperson -alization</td>
<td>Grade Level</td>
<td>2.29</td>
<td>.028</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total Model F = 5.273, Prob. = 0.028</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exper.</td>
<td>1</td>
<td>0.149</td>
<td>-</td>
<td>Emotional Exhaustion</td>
<td>Marital Status</td>
<td>-2.25</td>
<td>.031</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total Model F = 5.097, Prob. = 0.031</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

There were no predictor variables at the $P \leq .05$ level for the Personal Accomplishment subscale of the MBI for either the control or experimental group.
### TABLE 4.47
MULTIPLE REGRESSION ANALYSIS RESULTS
FOR THE STUDENT TEACHER HEALTH SURVEY (STHS)
BY GROUP
HYPOTHESIS #12

<table>
<thead>
<tr>
<th>Group</th>
<th>Step</th>
<th>$R^2$</th>
<th>$\Delta R$</th>
<th>Criterion</th>
<th>Predictor</th>
<th>$T$</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control</td>
<td>1</td>
<td>0.126</td>
<td>-</td>
<td>STHS 13 Appetite Loss</td>
<td>Field Experience</td>
<td>-2.08</td>
<td>.045</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>Total Model $F = 4.360$, Prob. = 0.045</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control</td>
<td>1</td>
<td>0.147</td>
<td>-</td>
<td>STHS 15 Appetite Gain</td>
<td>Years at Concordia</td>
<td>2.27</td>
<td>.030</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>Total Model $F = 5.175$, Prob. = 0.030</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exper.</td>
<td>1</td>
<td>0.134</td>
<td>-</td>
<td>STHS 15 Appetite Gain</td>
<td>Age</td>
<td>2.12</td>
<td>.042</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>Total Model $F = 4.500$, Prob. = 0.042</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control</td>
<td>1</td>
<td>0.145</td>
<td>-</td>
<td>STHS 2 Fatigue</td>
<td>Gender</td>
<td>-2.25</td>
<td>.031</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>0.254</td>
<td>0.109</td>
<td></td>
<td>Dependent Children</td>
<td>-2.06</td>
<td>.048</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>0.367</td>
<td>0.113</td>
<td></td>
<td>Field Experience</td>
<td>-2.23</td>
<td>.033</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>Total Model $F = 5.417$, Prob. = 0.004</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control</td>
<td>1</td>
<td>0.152</td>
<td>-</td>
<td>STHS 4 Frequent Colds</td>
<td>Dependent Children</td>
<td>-2.32</td>
<td>.026</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>Total Model $F = 5.411$, Prob. = 0.026</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exper.</td>
<td>1</td>
<td>0.139</td>
<td>-</td>
<td>STHS 4 Frequent Colds</td>
<td>Hours Employed</td>
<td>2.16</td>
<td>.038</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>0.267</td>
<td>0.128</td>
<td></td>
<td>GPA</td>
<td>2.21</td>
<td>.035</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>0.451</td>
<td>0.184</td>
<td></td>
<td>Age</td>
<td>-3.01</td>
<td>.005</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>Total Model $F = 7.421$, Prob. = 0.001</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control</td>
<td>1</td>
<td>0.164</td>
<td>-</td>
<td>STHS 8 Backaches</td>
<td>Gender</td>
<td>-2.42</td>
<td>.021</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>Total Model $F = 5.892$, Prob. = 0.021</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
There were no predictor variables at the $P \leq .05$ level for any of the other student health survey measures for either the control or experimental group.

### TABLE 4.48
MULTIPLE REGRESSION ANALYSIS RESULTS
FOR THE TEACHER ANXIETY SCALE (TCHAS)
BY GROUP
HYPOTHESIS #12

<table>
<thead>
<tr>
<th>Group</th>
<th>Step</th>
<th>$R^2$</th>
<th>$\Delta R$</th>
<th>Criterion</th>
<th>Predictor</th>
<th>$T$</th>
<th>Prob.</th>
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</thead>
<tbody>
<tr>
<td>Control</td>
<td>1</td>
<td>0.291</td>
<td>-</td>
<td>TCHAS 17 Preparation</td>
<td>Hours Employed</td>
<td>3.51</td>
<td>.001</td>
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<tr>
<td>Control</td>
<td>2</td>
<td>0.384</td>
<td>0.093</td>
<td>TCHAS 17 Preparation</td>
<td>Dependent Children</td>
<td>2.08</td>
<td>.046</td>
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Total Model $F = 9.042$, Prob. = .001

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<tr>
<th>Group</th>
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<th>Criterion</th>
<th>Predictor</th>
<th>$T$</th>
<th>Prob.</th>
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<tbody>
<tr>
<td>Control</td>
<td>1</td>
<td>0.138</td>
<td>-</td>
<td>TCHAS 5 Worry</td>
<td>Hours Employed</td>
<td>-2.19</td>
<td>.035</td>
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<tr>
<td>Control</td>
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<td>0.110</td>
<td>TCHAS 6 Satisfaction</td>
<td>Marital Status</td>
<td>-2.05</td>
<td>.048</td>
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Total Model $F = 4.796$, Prob. = .012

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<th>Criterion</th>
<th>Predictor</th>
<th>$T$</th>
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<tbody>
<tr>
<td>Control</td>
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<td>-</td>
<td>TCHAS 6 Satisfaction</td>
<td>Hours Employed</td>
<td>2.67</td>
<td>.012</td>
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</table>

Total Model $F = 7.138$, Prob. 0.012

There were no predictor variables at the $P \leq .05$ level for the two other TCHAS measures of classroom control or confidence for either the control or experimental group.
SECTION III
SUMMARY OF STUDENT TEACHER QUALITATIVE DATA

STRESSORS IDENTIFIED BY STUDENT RESPONSES ON THE STUDENT TEACHER DEBRIEF QUESTIONNAIRE (STDQ).

Student teachers from both the control and experimental groups completed the two-part debrief questionnaire at the conclusion of their student teaching practicum. Results from the first section of this questionnaire have already been reported under the narrative section of hypothesis # 11 in table 4.41. Information compiled from Part II is reported directly below for each of the separate academic quarters.

Part II of the debrief questionnaire was completed by all student teachers during the last seminar which dealt with job interview techniques. The questionnaire was designed to solicit student teacher reactions in three areas: 1) what caused the most stress during student teaching; 2) what were their three top stressors during the practicum; and 3) what do student teachers believe will cause them the most stress (their greatest problem) when they have their own classrooms? Responses to these inquiries were obtained by asking the student teachers to complete three unfinished sentences.

Nine of Fall quarter's sample of 15 students listed relational problems with cooperating and supervising teachers or classroom management as items causing the most stress during student teaching. The relational problems cited included such difficulties as differences of opinion between the cooperating teachers and supervisor, cooperating teachers who observed and provided no feedback, the cooperating teacher interrupting
a lesson to rediscipline students, and cooperating teachers who demanded that instruction and management be performed exactly in the same manner as theirs.

Management problems that surfaced included difficulties with lesson transitions, general classroom decorum, and particular students who were deemed "out of control" by the cooperating teacher and school administration.

When asked to list their top three stressors during the practicum, the Fall sample mentioned three stressors most often: time (e.g., balancing time between family and student teaching commitments, managing time, running out of time when teaching a lesson, needing more time to write lesson plans and the state-required work sample), constructing a work sample, and relations with their cooperating and supervising teachers. "Relations" primarily involved evaluations (being evaluated by either their cooperating teacher, building principal, or college supervisor), personality clashes with the supervisor, the awkwardness of getting to know the cooperating teacher during the initial days of the practicum, having the cooperating teacher present during the first days of solo teaching, and occasionally having to serve as referee between the cooperating teacher and the college supervisor.

Other stressors mentioned in this section included self-expectations (being one's own worst enemy), family stressors (e.g., balancing the roles of wife, mother, and student teacher), knowing this really isn't your own class and living with the resultant limitations, working two jobs (student teaching and working to make ends meet), dealing with parents, and the first days of solo teaching.
Regarding future stressors in their own classrooms, both the control and experimental groups of the Fall sample mentioned classroom management most frequently as the element they believed would cause the most trouble. Having quality teaching materials veteran teachers already possess (the creative "stuff" of daily lesson plans), organizing for instruction, parent relations, meeting student needs, and fears of becoming a workaholic were also noted as possible future stressors.

Eleven of the 16 students comprising the winter quarter sample cited either classroom management or preparation of the work sample as the two teaching activities causing the most stress during the practicum. Grade level placement, time management concerns (especially regarding a lack of time for children at home), and the fear of the unavailability of a teaching position once the practicum was completed, were also mentioned as key stressors.

The most frequently mentioned stressors under the second category where student teachers were to list their top three stressors during the professional quarter included classroom management (mentioned by 11 students), preparation of the work sample (listed by nine students), and time management (reported by seven students). Other stressors mentioned in this unfinished sentence were family conflicts and demands, meeting expectations of the college supervisor, concern about employment prospects, financial concerns, extra supervisory duties assigned by the host school, classroom students pulled out for special school events, preparing lesson plans, and arranging day care for one's own children.
When queried about what they believed would be their greatest stressor when their own classroom was obtained, ten of the 16 Winter quarter students responded with classroom management. Organizing for instruction, having the same teaching materials an expert teacher would have, managing time, and planning units and lessons were also mentioned as future stressors.

The Spring participants cited their relations with the cooperating teacher and college supervisor (eight citations), classroom management (10 citations), and preparation of the state required work sample (seven citations) as the items causing the most stress during student teaching. Relations with parents, planning or brainstorming for creative lesson ideas, working with a substitute teacher, dealing with the special needs of attention deficit disorder students, personal finances, organizing for instruction, time management, and abrupt, unannounced schedule changes, were mentioned less frequently as items and events causing the most stress during student teaching.

Items listed most frequently under "Top three stressors during my professional quarter" were classroom management (14 references), completing the work sample (13 references), time management concerns (especially those regarding time for class preparation and being with one's family), financial concerns (five references), personal health (four references), writing lesson plans (five references), being evaluated by the cooperating teacher and college supervisor (four references), family problems and concerns (e.g. car wreck, planning for a wedding, divorce in the family), parents appearing in class unannounced (two references), frequent schedule changes (two references), and apathetic students (two references).
The Spring sample listed "finding the proper management technique" (18 references) as the one stressor most apt to cause the most difficulty when they received their own classroom. Time concerns (e.g. having enough time to complete lesson plans, lesson transition times, balancing home and school time, having enough time for oneself, taking too much time to prepare lessons) finished a distant second with seven references.

RESULTS OF THE STUDENT TEACHER SEMINAR MINI-EVALUATIONS.

During the opening minutes of the last seminar session, members of the Winter and Spring quarter experimental groups were given the opportunity to complete a "mini-evaluation" which asked them to complete two unfinished sentences: "The best things about the seminars were . . . ," and "The worst things about the seminars were . . . ."

Student responses collected from these evaluations are printed by academic quarter below.
WINTER QUARTER:
STUDENT TEACHER RESPONSES TO "THE BEST THINGS ABOUT THE SEMINARS"

1. We can talk about our frustrations or problems; it’s nice to know that other student teachers have the same problems I have; that makes me feel better about myself.

2. Having the opportunity to hear of difficulties others are experiencing; having an opportunity to share concerns and receive feedback from peers; the seminars made me schedule a time when I was not focusing on lesson planning, etc.

3. Information provided during the seminars was helpful and could be put to immediate use.

4. I was able to vent some of my frustrations with student teaching.

5. Being able to hear what others go through and see that I am normal (or, in my case, that I am blessed to have a good school, teacher, and supervisor!). I think this program should be continued.

6. Gave us all a chance to air our frustrations and share our successes. It's comforting to know that others are experiencing the same difficulties with time management, lesson planning, etc.

7. Being able to get together with fellow student teachers and see how and what they are doing. I received helpful information and great support.

8. Support from other student teachers and hearing their experiences.
WINTER QUARTER:
STUDENT TEACHER RESPONSES TO "THE WORST THINGS ABOUT THE SEMINARS"

1. Taking time for the seminars; fitting it into the day.
2. Filling out forms.
4. Seminars were not long enough to accommodate our discussions.
5. Having to be here on Wednesday's.
7. The time; it was hard for me to arrive on time.
8. Not long enough to hear everyone's positives and negatives; not knowing exactly what the forms we filled out each week were trying to prove or disprove.

SPRING QUARTER:
STUDENT TEACHER RESPONSES TO "THE BEST THINGS ABOUT THE SEMINARS"

1. I liked the topics that were covered; interaction with other student teachers.
2. Being in a small group able to talk about similar experiences. These sessions allowed us to be with people who understood our situations and were able to empathize.
3. Talking with our friends.
4. Seeing my cohorts (that they were alive and well or, sometimes, not well); giving support to those who needed it. Hearing that some people have an equally easy or hard time with their classrooms.
5. Being with other student teachers; able to relate to their joys and problems.
6. Being with a small group of other education students who can relate to your experiences. Being able to talk things through and get other ideas.

7. Being able to see classmates and discuss the trials and tribulations of student teaching.

8. Listening to other situations students were having and discovering that my class was pretty good.

9. Sharing the happenings of the other student teachers' experiences, thus knowing I'm not alone with the good and the bad things happening at my school.

10. The extra information that helped handle the different stressors; the positive reinforcement that came from being with others.

11. Sharing with one another our problems and concerns. Also, seeing our classmates was great! Strategies we learned were very helpful. I found the stress seminar particularly useful; I now make a "to do" list every morning before school.

12. The opportunity to have an exchange of personal experiences from the student teachers. It is therapeutic to have the chance to listen to other people's problems, and to talk about your own.

13. Being able to communicate openly with my cohorts in student teaching since I am the only student teacher at my school.

14. The topics discussed - they were very beneficial; being able to talk to other student teachers that are feeling the same way; make sure to keep the same topics since they were very helpful, especially the time management session.

15. It was nice to hear others share their frustrating experiences. We were able to help each other resolve conflicts. Reviewing ways to cope with stress really helped.
SPRING QUARTER:
STUDENT TEACHER RESPONSES TO "THE WORST THINGS ABOUT THE SEMINARS"

1. I needed more interaction time with others during student teaching. 3:15 was a tough time to come, but I can't think of an alternative.

2. Some people tended to get away from the discussion topic (but everyone wants talk - it's natural).

3. Getting here was tough because there were days I had lots to do.

4. At times a few dominated conversation making me feel that sometimes it was a session for some rather than help for all.

5. Not enough sharing time or social time with peers.

6. Need to keep to the topic.

7. When some people tended to go off on tangents and sway the session.

8. 3:30 would have been a better time to start.

9. When some people didn't stay on the subject.

10. Seminars not long enough.

11. Not enough time.

12. Driving over from Battle Ground (Washington); sometimes I felt too tired to get here.

13. Not enough time to share our experiences in more detail.

14. Having to put the pedal to the metal in trying to get to the seminars on time. It might be advantageous to have the seminars start a bit later.

15. When some participants went off on a topic not related to the subject matter we were discussing.

16. When a seminar turned into a one-person counseling session. I am glad we were able to help this person, but I think we need to redirect ourselves to the seminar topic.
CHAPTER V
SUMMARY, CONCLUSIONS AND
RECOMMENDATIONS

INTRODUCTION

This chapter provides a concise summary of the study, a brief overview of the theoretical basis for the research, a review of the 12 hypotheses and an examination of results from the various statistical analyses performed. Specific sections of the chapter will present the various findings that surfaced as a result of this inquiry designed to investigate relationships between anxiety, stress-related health dysfunctions, burnout and the student teaching practicum. These sections will include a general summary of the findings, those results that support or refute previous findings cited in the literature, and findings that are new as a result of this research.

The chapter will close with conclusions, specific recommendations for teacher educators and implications for future research.

SUMMARY OF THE RESEARCH STUDY

Anxiety, stress-related health dysfunctions and burnout have been identified in the literature as occurring most frequently in human service professions in which staff members are required to spend considerable amounts of time in direct contact with their clients (Maslach & Jackson, 1986). Such educators as Coates and Thoreson (1976),
Hendrickson (1979), Reed (1979), and Cardinell (1988) support the contention that inservice teachers often fall victim to great amounts of anxiety, stress and resultant feelings of burnout. However, as Nicoll and Sinclair (1980), Gold (1985), Hourcade, Parette, and McCormack (1988) indicate, scant attention has been given to these same maladies when student teachers are concerned.

In brief, anxiety, stress and burnout receive rather intense study on the inservice level, but scarcely any attention whenever the preservice level is considered. As the literature review confirms, more than two decades of ample research have been devoted to the dilemma of stress, stress-related health problems and burnout in the teaching profession, but very little of this research has been directed towards preservice teachers who enter the same arena with far less experience and confidence.

What has been done to investigate and perhaps discover methods to alleviate this recognized dilemma on the preservice level? Unfortunately, as seen through the literature review, not much. For that reason and others, this study sought to develop and answer a number of questions. Is it possible to identify variables that can cause or predict whether a student teacher will ultimately fall victim to waves of anxiety, stress-related health dysfunctions or burnout? What effect do such variables as gender, age, cumulative gradepoint average, marital status, grade level taught, hours of prior field experience, years in attendance at a college, hours employed per week, and number of dependent children have on either increasing or reducing levels of anxiety, stress-related health dysfunctions, and burnout? Are there combinations of these factors that might predict the level of anxiety, stress or burnout a student teacher would experience during
the practicum? Could a prediction equation be found to include specific variables that could determine, with some degree of accuracy, which student teachers would have higher or lower levels of anxiety, stress-related health dysfunctions or burnout during the practicum?

The theoretical basis for this study was David Friesen’s transactional stress cycle, a conceptual model developed in 1986. Friesen hypothesized that if anxiety or stress was to be relieved or reduced, it becomes critical to effect changes in how individuals perceive the demands and pressures of their environment. Friesen believes that it is a discrepancy between perceived demands and perceived resources that ultimately determines the degree of stress experienced by an individual. For example, if student teachers experience unruly students but believe they have the requisite skills to handle such children, anxiety and stress remain low. However, if the same student teachers perceive this new demand of properly disciplining students is more than they can handle, anxiety and stress blossom.

In sum, Friesen’s theoretical model persuades one to believe that if student teachers perceive they have the necessary resources available to not only successfully complete the practicum, but also to combat the additional stressors often associated with the experience (e.g., undisciplined students, an overly critical cooperating teacher or even a marginally helpful college supervisor), their stress levels will remain low.

Armed with questions as well as a theoretical basis to undertake an investigation, this study attempted to discover whether the addition of five, topic-specific Cohort Support Sessions to the existing student teacher seminar program at Concordia College,
Portland, could have any affect on student teacher anxiety, shealth or burnout scores. In other words, could such seminars, covering high-interest topics for student teachers, help alter or solidify the perceptions Friesen outlined in his model and thereby affect anxiety, stress-related health problems or burnout levels during the practicum?

Twelve hypotheses were designed to answer these questions. Stated in the null form, these were:

1. There is no significant difference between the anxiety, health or burnout scores of the experimental group (i.e., student teachers receiving the treatment of the five additional seminars) and the scores of the control group (i.e., students participating in the three traditional Concordia seminars only).

2. A) There is no significant difference between anxiety, health or burnout scores of student teachers as a result of gender; B) There is no significant difference between anxiety, health or burnout scores of student teachers as a result of gender in either the control or experimental group; C) There are no significant, non-chance correlations between student teacher anxiety, health or burnout scores and student teacher gender; and D) There are no significant, non-chance correlations between student teacher anxiety, health or burnout scores and student teacher gender in either the control or experimental group.
3. A) There is no significant difference between anxiety, health or burnout scores of student teachers as a result of different age levels; B) There is no significant difference between anxiety, health or burnout scores of student teachers as a result of different age levels in either the control or experimental group; C) There are no significant, non-chance correlations between student teacher anxiety, health or burnout scores and student teacher age level; and D) There are no significant, non-chance correlations existing between student teacher anxiety, health, or burnout scores and student teacher age level in either the control or experimental group.

4. A) There is no significant difference between anxiety, health or burnout scores of student teachers exhibiting different marital status; B) There is no significant difference between anxiety, health or burnout scores of student teachers exhibiting different marital status in either the control or experimental group; C) There are no significant, non-chance correlations between student teacher anxiety, health or burnout scores and their marital status; and D) There are no significant, non-chance correlations between student teacher anxiety, health or burnout scores and their marital status in either the control or experimental group.

5. A) There is no significant difference between the anxiety, health and burnout scores of student teachers with children and those with no children; B) There is no significant difference between the anxiety, health and burnout scores of
student teachers with children and those without children in either the control or experimental group; C) There are no significant, non-chance correlations between the anxiety, health and burnout scores of student teachers and their number of children; D) There are no significant, non-chance correlations between the anxiety, health and burnout scores of student teachers and their number of children in either the control or experimental group.

6. A) There is no significant difference in anxiety, health and burnout scores between student teachers teaching at different grade levels; B) There is no significant difference in anxiety, health and burnout scores between student teachers teaching at different grade levels in either the control or experimental group; C) There are no significant, non-chance correlations between student teacher grade level assigned and student teacher scores on the anxiety, health and burnout measures; and D) There are no significant, non-chance correlations between student teacher grade level assigned and student teacher scores on the anxiety, health and burnout measures in either the control or experimental group.

7. A) There is no significant difference in anxiety, health and burnout scores between student teachers employed or not employed during the practicum; B) There is no significant difference in anxiety, health and burnout scores between student teachers employed or not employed during the practicum in either the control or experimental group; C) There are no significant, non-chance
correlations between the number of hours student teachers are employed per week and their scores on the anxiety, health or burnout measures; and D) There are no significant, non-chance correlations between the number of hours student teachers are employed per week and their scores on the anxiety, health or burnout measures in either the control or experimental group.

8. A) There is no significant difference between the anxiety, health and burnout scores of student teachers based on their number of years in attendance at Concordia College, Portland; B) There is no significant difference between the anxiety, health and burnout scores of student teachers based on their number of years in attendance at Concordia College, Portland, in either the control or experimental group; C) There are no significant, non-chance correlations between the number of years student teachers attend Concordia College, Portland, and their scores on the anxiety, health and burnout measures; and D) There are no significant, non-chance correlations between the number of years student teachers attend Concordia College, Portland, and their scores on the anxiety, health and burnout measures in either the control or experimental group.

9. A) There is no significant difference between the anxiety, health and burnout scores of student teachers based on their number of hours of prior field experience; B) There is no significant difference between the anxiety, health and burnout scores of student teachers based on their number of hours of prior field
experience in either the control or experimental group; C) There are no significant, non-chance correlations between the number of total hours of field experience and student teacher scores on the anxiety, health and burnout measures; D) There are no significant, non-chance correlations between the number of total hours of field experience and student teacher scores on the anxiety, health and burnout measures in either the control or experimental group.

10. A) There is no significant difference between the anxiety, health and burnout scores of student teachers as a result of their cumulative gradepoint averages (GPA’s); B) There is no significant difference between the anxiety, health and burnout scores of student teachers as a result of their cumulative gradepoint averages in either the control or experimental group; C) There are no significant, non-chance correlations between student teacher anxiety, health and burnout scores and their cumulative GPA’s; and D) There are no significant, non-chance correlations between student teacher anxiety, health and burnout scores and their cumulative GPA’s in either the control or experimental group.

11. There is no significant difference between the control and experimental groups' rating of key student teacher stressors as reported on the Student Teacher Debrief Questionnaire (STDQ).
12. None of the 10 predictor variables used in the study will significantly explain the variance among the 16 criterion scores.

Lastly, although not a major inquiry of the study, an additional question was asked in regards to the possible confounding effect the variable academic quarter might have on the outcomes since the experiment was duplicated three times: once during each of the 1992-1993 school year's three academic quarters. This additional question, phrased in null hypothesis format, was as follows: There will be no significant difference between the anxiety, health or burnout scores of students participating in the Fall, Winter, or Spring academic quarters.

The three key terms utilized throughout the study - anxiety, stress-related health dysfunctions and burnout - were clarified and defined. The relationship between these three terms was further enumerated in a conceptualized model constructed specifically for this study (Figure 1.3, chapter 1). Specific assumptions and limitations of the study, especially in regards to instrumentation and generalizability of the findings, were noted.

Literature investigating student teacher anxiety, stress and burnout is scarce. Morris and Morris' (1980) most recent review of Education Index since 1950 revealed only an occasional reference to the topic. This study's ERIC search validated this scarcity by uncovering a total of only 82 citations on this topic for the years 1960-1992.

The articles and papers that were located concentrated on three areas: 1) What causes student teacher anxiety, stress-related health dysfunctions and burnout? 2) What are the effects of student teacher anxiety and stress on such variables as health and
attitudes towards students? and 3) What strategies can effectively reduce student teacher anxiety, stress and burnout?

Early investigators (Travers, Rabinovitz, Nemovicher, 1950) determined that maintaining discipline, coupled with a desire to be liked by one's students, caused student teachers the greatest anxiety. Anderson (1960) and Petrusich (1967) both concluded that student teacher anxiety and stress were largely a result of fear: fear of an inability to effect learning and control classes. Erickson and Rudd (1967), Yee (1968), Campbell and Williamson (1973), and Jones (1982) all cited the various relationships between student teachers and their cooperating teacher and college supervisor as major stress producers. Most recently, Hart (1987) reaffirmed class control and discipline, the supervisor's observations, and the evaluation of classroom teaching, as anxiety-producing situations. And in their extensive literature review, Morris and Morris (1988) cited student behavior, relationships with supervisors, questions about self-adequacy and learner achievement as the four major areas most responsible for causing anxiety and stress in student teaching.

Investigating the effects of anxiety, stress and burnout, Dutton (1962) recognized that such feelings impacted negatively on the attitudes student teachers held towards their pupils. Later, Jones (1982) supported this earlier contention when he found that the anxieties and stresses so prevalent in student teaching resulted in a marked change of how student teachers treat their students. He found that anxiety and stress caused student teachers to move from a more humanistic orientation towards a more custodial one in reference to the treatment of their students. Sorenson and Halpert (1968) discovered that
student teacher anxiety and stress manifested themselves in symptoms of physical discomfort and irritability (e.g., changes in eating habits and loss of sleep). In a related finding, Harlin (1978), Kyriacou and Sutcliffe (1978) reported that student teachers under stress experience a number of health dysfunctions including headaches, gastrointestinal disturbances, higher blood pressure and feelings of exhaustion and fatigue.

A strategy for reducing student teacher anxiety, stress and burnout through the use of a student support group was proposed by Braun (1977) and Haipt (1980) who both promoted Firth's (1974) Magic Circle technique as an effective stress preventor. Mungo (1981) integrated this group support concept or, as he termed it, weekly network, with his idea of specially designed field experiences for preservice education students.

That student teacher anxiety, stress and burnout could be reduced through a more proactive role by the cooperating teacher and college supervisor was championed by Bradley (1984) and supported by Gold (1985) and Jelinek (1986). Wendt (1980) was the only educator to suggest specific coping skills for student teachers, while Silvernail and Costello (1983) were the sole researchers to investigate the possible connection between length of the practicum as a factor in either increasing or decreasing student teacher anxiety and stress. Most recently, because of their critical role in the success of student teachers, Zerr (1988) proposed better preparation and selection of cooperating teachers as an important strategy to reduce student teacher anxiety, stress, and burnout.

The population to which this study sought to generalize its findings consisted of the 140 elementary education students at Concordia College, Portland, who will be completing their student teaching during the '93-'94 or '94-'95 school years. This
population exhibited the same demographic characteristics as the sample of student
teachers with whom the research was completed (i.e., the 1992-1993 Concordia
elementary student teachers. See Table 3.1 in Chapter 3). The study also hoped to
generalize its findings to David Friesen’s Transaction Stress Cycle theorized in 1986.

A purposive sample of 70 elementary level student teachers were randomly
assigned to either the control or experimental group via an equal proportion (1/2),
stratified random assignment technique using age, cumulative grade-point average and
years at Concordia College, Portland, as the three strata. This sampling method, coupled
with the fact that all student teachers were placed in urban schools of the greater
Portland-Metro area, would reduce the effects of such confounding variables as school
site, student socio-economic status and class size.

After the randomization was completed, a one-way ANOVA was used to
determine whether the experimental and control group compositions would exhibit any
significant differences when compared on each of the nine remaining variables. Results
of this ANOVA illustrated no significant differences between the two groups on any of
the nine independent variables, thus validating the success of the stratified randomization.

There were seventeen criterion or independent variables used in the investigation.
These measures were selected from the subscales of three instruments: the Maslach
Burnout Inventory (MBI), the Teacher Anxiety Scale (TCHAS), and the Student Teacher
Health Survey (STHS). Data on these measures were gathered during the last seminar
of the practicum when student teachers completed the battery of instruments.
The 10 predictor variables used in the inquiry were group (i.e., treatment), age, gender, marital status, dependent children, cumulative gradepoint average, employment, field experience, years attending Concordia and grade level taught. Data regarding these predictors or independent variables were gathered during the initial student teacher orientation by means of the Student Teacher Demographic Questionnaire (STDQ).

This study utilized a Posttest Only Control Group Design whose major purpose was to discover whether the addition of five topic-specific Cohort Support Sessions to the existing student teacher seminar program at Concordia College, Portland, could have any affect on student teacher anxiety, stress-related health dysfunctions or burnout during the ten-week practicum. Since the literature repeatedly alluded to significant relationships between anxiety, stress and burnout and such student teacher dilemmas as classroom management, classroom confidence, preparing lesson plans and other problem items specific to student teachers, this study designed the interventions (i.e., the five additional seminars) to specifically address these areas.

After completion of the final treatment in the Spring of 1993, all data and variables were loaded into the statistics software SPSS (Windows) from which the various statistical analyses selected for testing purposes were run. The independent samples T-Test was the primary analysis used to identify any significant differences in reported anxiety, stress-related health dysfunctions or burnout scores between the two groups of student teachers (i.e. control and experimental), whereas the Pearson Product-Moment correlation technique was selected to identify the existence of any significant relationships, positive or negative, between the 10 independent variables and the 16
criterion measures. Last, a step-wise, multiple regression analysis was used to determine which predictor variables accounted for the greatest amount of variance between scores. It was surmised that this last analysis would identify which variables might best predict a student teacher's level of anxiety, stress or burnout during the practicum.

To check for possible intervening effects, a one-way ANOVA was first selected to determine whether scores from the dependent measures would differ significantly from one another as a result of student teachers completing their practicums during different academic quarters. Statistical analyses were then performed to test the 12 hypotheses.

Hypotheses numbers 1 and 11 were the only two postulates that used the independent samples T-Test exclusively. Hypotheses numbers 2, 3, 4, 5, 6, 7, 8, 9 and 10 examined differences and tested for correlations between the 10 independent variables and the 16 subscales via use of the T-Test and Spearman Rho correlation technique. Hypothesis number 12 was the only case in which a step-wise multiple regression analysis was used for the express purpose of identifying those predictor variables that could account for the most variance in criterion scores.

Lastly, qualitative data was collected by means of the Student Teacher Debrief Questionnaire mainly to determine what this particular student teacher population viewed as the most anxiety and stress-producing activities emanating from their practicum experience. There was also interest in discovering what the experimental group participants appreciated most from their experiences with the additional seminars. Such information, when coupled with the qualitative data, could provide a reliable basis on which to revise this particular college's education program in general, and its student
teacher seminar program in particular. Additionally, there was also a desire on the part of the study to see how closely this student teacher sample’s listing of stressors would mirror those already uncovered in the literature.

DISCUSSION OF THE FINDINGS

The findings of this research will be presented in four separate sections: a general overview of results from measures of the three instruments used (the MBI, TCHAS and STHS), a summary of the findings from each of the 12 hypotheses, a specific listing of those findings that support the literature, followed by a report of those findings that are new as a result of the study.

SUMMARY OF FINDINGS FROM THE MASLACH BURNOUT INVENTORY (MBI), TEACHER ANXIETY SCALE (TCHAS), AND STUDENT TEACHER HEALTH SURVEY (STHS).

That student teachers receiving the experimental treatment reported lower anxiety, fewer occurrences of stress-related health dysfunctions, and lower burnout scores than their control group counterparts was clearly exhibited on seven of the 16 dependent measures gleaned from the three instruments (i.e., the Maslach Burnout Inventory, the Teacher Anxiety Scale and the Student Teacher Health Survey). More specifically, over one-half (58%) of the student teachers in the experimental group showed low emotional exhaustion scores on this first subscale of the MBI, whereas the same could be said for barely one-fifth (19%) of student teachers assigned to the control group. On the same subscale, only 16% of the experimental group’s students exhibited a high incidence of
emotional exhaustion, although the percentage on this subscale swelled to 28% for the control group participants. Student teachers in the experimental group did not report as high a degree of emotional exhaustion as those assigned to the control group.

This same finding was repeated for the depersonalization subscale of the MBI although the differences between scores here were not as pronounced. A high rating of depersonalization - a feeling of negative, cynical attitudes towards one's students - was exhibited by 12% of members in the control group, whereas only 3% of the experimental group exhibited such scores.

The third and final subscale of the MBI, personal accomplishment, was the only measure from this instrument that failed to illustrate a marked difference in scores between the two groups. Roughly 75% of the members in both groups showed low scores, signifying a low degree of satisfaction and sense of accomplishment from teaching, while 3% of each group exhibited high scores which signified a greater degree of satisfaction and feeling of accomplishment with the act of teaching.

Student Teacher health during the practicum was reviewed and summarized by the students themselves via the Student Teacher Health Survey (STHS). Again, those student teachers randomly selected for participation in the control group generally reported a higher incidence of stress-related health disorders (e.g., fatigue, sleeplessness, headaches) as well as a higher total score on this measure than their experimental group counterparts.

Considering the Teaching Anxiety Scale (TCHAS), designed specifically to measure the degree of anxiety experienced by student teachers during the practicum, the
experimental group once again reported higher confidence, preparation, classroom control and satisfaction scores, and lower worry scores than their control group counterparts. Scores on these five dependent measures illustrated that student teachers receiving the treatment reported that they worried less about whether they could become good teachers, felt a greater degree of satisfaction with student teaching, felt more secure in their ability to maintain classroom control, felt more confident about their skills to improvise during teaching and believed they were better prepared for teaching than their control group peers reported.

SUMMARY OF FINDINGS FROM THE TWELVE HYPOTHESES.

The raison d'etre for the study was to discover whether additional seminars, specifically designed to address the most commonly cited student teaching concerns, could affect student teacher scores on instruments developed to measure anxiety, stress-related health dysfunctions and burnout. While the aforementioned results appear to verify this, a scrutiny of the findings for each hypothesis is in order for further validation.

The study did reject the null hypothesis for 7 of the 16 dependent measures on hypothesis #1. Student teachers assigned to the experimental group and participating in the cohort support sessions exhibited significantly lower scores on one subscale of the MBI, one item of the Student Teacher Health Survey, and all five measures of the Teacher Anxiety Scale. As a result of their participation in the support sessions, members of the experimental group reported they were not as emotionally exhausted, had
fewer stomach disorders, worried less about success in the classroom, believed they would find teaching a very satisfying profession, had fewer problems with classroom control, felt more confident with their ability to improvise in the classroom during instruction, and felt better prepared for a teaching career than their associates in the control group. It was found that on these measures, group membership did indeed make a significant difference.

Who resists better the stresses and anxieties of the practicum, men or women? Does gender make any significant difference in a student teacher's ability to withstand the additional stresses of the practicum? Hypothesis #2 delved into this issue and found that only on the Student Teacher Health Survey (STHS) were there any significant differences in scores as a result of gender. Female student teachers reported a higher incidence of colds, backaches and headaches; male student teachers reported lower scores (less incidence) for the same stress-related health disorders.

There was a significant difference between male and female scores on the personal accomplishment subscale of the MBI. Female student teachers reported a significantly greater degree of personal accomplishment (i.e., feeling happy, satisfied and fulfilled in one's work) with the practicum experience than their male counterparts.

When the experimental and control groups were tested separately, significant differences between males and females appeared on three of the STHS measures (fatigue, backaches, headaches) exclusively for the control group, with females reporting the higher (more health disorders) scores again. No significant difference appeared between male and female scores in the experimental group.
A similar pattern of findings held true when a correlation between test scores and gender was explored. When the entire sample was analyzed, it was found that fatigue and backaches exhibited significant, negative, non-chance correlations with gender. These low, negative correlations illustrate that these variables (i.e., gender and the health measures) reflect an inverse relationship with each other: in this case, the lower the coefficient of correlation (i.e., the more female) the higher the incidence of stress-related health disorders, while the higher the coefficient (i.e., the more male) the lower the incidence of stress-related health disorders.

When the groups were tested separately, the same inverse relationships mentioned were found to hold true for the control group only. These correlation coefficients, however, were somewhat stronger illustrating that the experimental group scores, when factored into the entire sample, weakened or "levelled" these negative relationships between gender and the three health measures.

What about the question of age? Would younger or older student teachers be more adept at withstanding the demands of the 10 week practicum, or would the variable age fail to factor into this question at all?

Results reported for hypothesis #3 found that variable age accounted for no significant differences between student scores on any of the MBI or TCHAS measures, and on only one item of the STHS - sleeplessness. It was discovered that, out of the entire sample, the youngest age group of student teachers (i.e., those between the ages of 21 and 25) experienced a significantly greater degree of sleeplessness than student
teachers in the 26 to 30 year old category. In fact, the youngest student teachers reported a greater incidence of sleeplessness than any of the other age groups.

When the groups were analyzed separately for the affects of age, the null hypothesis was accepted: there were no significant differences between student teacher scores on any of the dependent measures as a result of age in either the control or experimental group.

However, negative correlations were found between the variable age and two of the health measures—frequency of colds and sleeplessness—when the entire population was tested. This inverse relationship meant that the younger a student teacher’s age, the higher his or her scores on these two health measures.

Hypothesis #4 concerned itself with the issue of the marital status of student teachers. Do the additional demands and responsibilities of married life place even more anxiety and stress on an already harried student teacher, or does a spouse instead supply special assistance and comfort that serves as a buffer to help prevent increased amounts of anxiety, stress-related health problems or burnout during the practicum?

The research found that a student teacher’s marital status significantly affected two measures on the TCHAS, and one measure on the STHS. For the entire sample, student teachers who were either married, divorced or separated exhibited significantly lower scores on the subscales of sleeplessness and worry, and significantly higher scores on the subscale preparation. This translated as married students reporting less difficulty in falling asleep, less worry about whether they could become good teachers, and feeling significantly better prepared for teaching than their single counterparts.
When marital status was tested separately by group, single students in the control group exhibited significantly higher scores on the health measure appetite gain, and significantly lower scores on the anxiety measure confidence, than married, divorced or separated student teachers. In the experimental group, marital status accounted for only one significant difference: single student scores were significantly lower on the health measure appetite gain than those of their married, divorced or separated comrades.

Relationships were found between the variable marital status and five of the dependent measures when a correlation was run on the entire sample. Specifically, inverse relationships were discovered between the emotional exhaustion subscale of the MBI, two of the health survey measures (headaches and sleeplessness), two of the anxiety measures (worry and preparation), and a student teacher’s marital status. In sum, being a single student teacher correlated negatively (i.e., yielded higher scores) on the emotional exhaustion subscale of the MBI, as well as the headache and sleeplessness measures of the STHS and the worry measure of the TCHAS. No such relationships were found with scores on the same subscales for married, divorced or separated students. However, a positive relationship was discovered between marital status and the anxiety measure preparation. Being married, divorced or separated correlated positively with feeling better prepared for teaching.

The same correlation run separately for each group found that for the control group, there was a positive relationship between marital status and the confidence measure on the TCHAS. In other words, anything other than single-status correlated positively with student teachers’ confidence about their ability in the classroom.
In the experimental group, one negative relationship with the MBI emotional exhaustion subscale was unearthed. In this case, there was a negative correlation or inverse relationship between being married, divorced and higher emotional exhaustion subscale scores.

Could the presence of children at home contribute to an increase in student teacher anxiety, stress-related health dysfunctions or burnout during the practicum? Hypothesis #5 dealt with this question and discovered that, as far as the entire sample was concerned, student teachers with children reported significantly lower scores on three items of the STHS: frequency of colds, headaches and sleeplessness. Student teachers with children in this particular sample reported fewer colds, less headaches and an easier time falling asleep than their childless counterparts.

When this same analysis was used to test each group separately, childless student teachers in the control group scored significantly ($P \leq .01$) higher on the frequency of colds and sleeplessness measures of the STHS than students with children, while those without children in the experimental group scored significantly lower on the personal accomplishment subscale of the MBI and significantly lower on one item of the STHS (appetite gain) than their groupmates who reported children at home. In sum, control group students with no children reported more colds and more difficulty in falling asleep than student teachers in the same group with dependent children, while their equals in the experimental group reported a decrease in appetite and less of a feeling of personal accomplishment than other student teachers in their group who resided with children at home.
Negative relationships were found to exist between this same variable, dependent children, and two measures of the STHS for the entire sample of student teachers. In those with fewer or no dependent children, there was a negative correlation with frequency of colds and sleeplessness. The fewer the children, the higher the reported incidence of these stress-related health problems.

Modifying this same test for relationships by analyzing the control and experimental group separately, two significant, negative correlations were discovered for the control group, and one positive correlation for the experimental group. In both cases, these findings paralleled those already mentioned. For the control group, this same variable correlated negatively with the two health survey measures frequency of colds and sleeplessness (i.e., the fewer children at home, the higher the reported scores on these health measures), whereas, for the experimental group, the same variable correlated positively with the personal accomplishment subscale of the MBI (the more children living at home, the higher the reported score on this measure). Do note, however, that higher scores on the personal accomplishment subscale of the MBI translates as a lower feeling of accomplishment.

Teachers have often argued that particular grade levels have a tendency to cause more stress and anxiety than others. Hypothesis #6 attempted to address this element of teacher folklore and found that student teachers placed in grade levels 4-6 during the practicum exhibited scores significantly higher on the depersonalization subscale of the MBI (i.e., they expressed more frequent, negative attitudes towards their students) than those reported by student teachers instructing in grade levels K-3. However, those
student teachers who were placed at the K-3 grade levels reported significantly higher scores than their 4-6 grade counterparts on three of the health measure subscales. K-3 student teachers scored significantly higher on the frequency of colds, appetite gain, and health survey total subscales than their equals in the upper grades. The 4-6 grade level student teachers might have become more cynical and negative in regards to their feelings and attitudes towards students, but they appeared to remain a bit healthier.

When the experimental and control groups were analyzed separately with this same variable, student teachers in the control group assigned to teach at the 4-6 grade level again exhibited significantly higher scores on the depersonalization subscale of the MBI ($P \leq .01$) than their K-3 partners in the same group. In the experimental group, however, student teachers placed in grades 4-6 did not experience significantly higher depersonalization subscale scores than their K-3 cohorts; instead, experimental group student teachers placed in levels K-3 reported significantly higher scores on two health measures: frequency of colds and headaches. In this case, the variable group counteracted the effect of teaching at level 4-6 on the depersonalization subscale.

When a Pearson correlation was run on the uncollapsed grade level data, the following results were obtained. For the entire sample, a direct relationship between the variable grade level taught and the depersonalization subscale of the MBI was found. In addition, an inverse relationship was discovered between this variable and the frequency of colds subscale from the health survey. Supporting findings from the T-Test, these relationships confirmed that student teachers assigned to the lower grade levels reported
a higher incidence of stress-related health problems but lower depersonalization scores than student teachers assigned to the upper grades.

When the same data were measured by the variable group, the direct relationship between the MBI subscale depersonalization and the variable grade level taught became stronger for the control group, but disappeared far below the level of significance for the experimental group. In addition, the inverse relationship between the frequency of colds subscale and grade level taught became slightly stronger for the control group but disappeared for the experimental group. Once again, the variable group altered the effect of grade level taught for the experimental group on these subscales.

Rising expenses of a college education compel a greater percentage of students to work continuously during their undergraduate years. As a result, student teachers often find themselves in a special predicament: having to work at a full or part-time job during the student teaching practicum in order to survive economically. Does this additional responsibility contribute to the amount of anxiety, stress-related health problems or burnout incurred during the practicum?

Hypothesis #7 addressed this issue and, when analyzed for the entire sample, it was found that contrary to what was expected, employment during student teaching had no effect on 15 of the 16 subscales. The one exception was the frequency of colds subscale found on the health survey; students who were employed during the practicum reported a significantly greater frequency of colds than students who were not employed.

When measured by the variable group, findings were also surprising. First, for the experimental group, there were no significant differences between the scores of
employed and unemployed students on any of the 16 dependent measures. However, student teachers assigned to the control group and employed during the 10-week practicum scored significantly higher than their unemployed groupmates on the satisfaction and preparation subscales of the TCHAS and significantly lower on the worry subscale of the same instrument (N.B., a lower score on this subscale actually means less worry). In sum, scores from the employed student teachers in the control group reflected that they felt prepared for teaching, believed teaching would prove to be a satisfying profession, and worried less than their unemployed groupmates about their success as teachers.

When relationships between the variable hours employed and the 16 dependent measures were tested within the entire sample, only one significant, direct relationship was uncovered. This positive correlation occurred between the frequency of colds subscale of the STHS and the variable hours of employment. The more hours a student teacher was employed, the higher the reported incidence of colds.

When analyzed separately by the variable group, relationships for the control group were found between hours employed, three subscales of the TCHAS, and one subscale of the MBI. Emotional exhaustion (MBI) and worry (TCHAS5) both correlated negatively with hours employed, while satisfaction and preparation, both subscales of the TCHAS, correlated positively with the same variable. On the other hand, only one direct relationship was uncovered for the experimental group between frequency of colds, a subscale of the STHS, and the variable hours of employment.
It was surmised that students who spent a longer period of time (i.e., more academic quarters) at Concordia College, Portland, might be more resilient to the anxiety, stress-related health dysfunctions and burnout associated with student teaching due to their familiarity with the program, supervisors and experiences in local area schools. Hypothesis #8 investigated this inquiry and found that, for the entire sample, a significant difference between group scores was found on only one of the 16 measures: education students who had been at Concordia for two or more years scored significantly higher on the confidence subscale of the TCHAS than students matriculating for five quarters (1.66 years) or less. Students spending two or more years in Concordia’s education program reported feeling more confident in the classroom during their practicum than students who had matriculated for a shorter period of time.

When this same test was measured by the variable group, no significant differences surfaced between the years at Concordia variable and any of the 16 dependent measures in the control group. However, the same result as mentioned above was found for students in the experimental group: student scores on the confidence measure of the TCHAS for those at Concordia two or more years, were significantly higher than those of their five quarters or less counterparts.

Although the null hypothesis was accepted for hypothesis 8C - no significant, non-chance relationships were found between the variable number of years attending and any of the 16 dependent measures in the entire sample - one direct relationship was found between the same independent variable and the confidence subscale of the TCHAS in the
experimental group. Simply stated, there was a direct correlation between an increase in the time spent at Concordia and an increase in a student teacher’s confidence score.

A small debate has been waged off and on by teacher educators (Silvernail and Costello, 1983) regarding this question: How much classroom experience is necessary (i.e., field experience) for an education student to acquire prior to student teaching? Is an education student with vast amounts of field experience better prepared than others with far less classroom time? Do increased amounts of this clinical training provide an education student with a "leg up" on others with less experience? Hypothesis #9 turned its attention to this issue.

Findings for the entire sample showed that student teachers with 136 hours or more of previous contact time in classrooms scored significantly lower on the emotional exhaustion subscale of the MBI than their less experienced associates. Further, these same students also reported significantly less sleeplessness, fatigue and worry, and significantly more confidence in teaching than their confederates with 135 hours or less of prior field experience.

Analyzing these results with the variable group, the findings followed a similar pattern. In the control group, student teachers with 136 hours or more of field experience reported significantly less sleeplessness and fatigue than their less experienced groupmates, whereas in the experimental group, the more experienced students reported significantly lower scores on the worry subscale of the TCHAS than their companions with less experience.
Searching for correlations that might exist for the entire sample between the hours of prior field experience variable and the 16 dependent measures, three inverse and one direct relationship were found. The positive correlation existed between the variable field experience and the confidence subscale of the TCHAS: more field experience correlated directly with more confidence in the classroom.

The inverse or negative relationships surfaced on one item of the health survey and one subscale again from the TCHAS. In these cases, hours of prior field experience correlated negatively with reports of sleeplessness and worry about classroom performance. In sum, for student teachers with less hours logged, the higher their reported incidence of these stress-related health problems.

When the experimental and control groups were tested separately, inverse relationships between hours of prior field experience and three of the dependent measures, all items from the health survey, were located for the control group. Again, fewer reported hours of field experience correlated with a higher student reported incidence of stomach disorders, fatigue and sleeplessness.

For the experimental group, a negative relationship was discovered between hours of prior field experience and the depersonalization subscale of the MBI. Fewer field experience hours related to higher depersonalization scores.

Not a few educators believe that students with higher gradepoint averages will generally perform better at certain tasks than students with lower GPA's. This assumption holds true for student teaching: if students exhibit a high GPA, the
assumption is often made that they will most likely display outstanding abilities in the classroom.

Findings from hypothesis #10, which addressed this particular issue, dispelled this commonly held belief for at least this particular sample. After running the usual analyses, it was determined that a student teacher’s gradepoint average had no significant effect, nor resulted in any significant, non-chance relationships whatever with any of the 17 anxiety, health or burnout measures used in the study.

Hypothesis #11 was formulated to determine whether participation in either of the two groups (i.e., control or experimental) could significantly alter a student teacher’s perception of how much stress was generated by the more prominent student teaching stressors mentioned most frequently in the literature. In other words, would one group’s rating of these stressors differ significantly when compared with that of the other?

The study found that student teachers in the control group did rate two key stressors - inconsistent expectations of the cooperating teacher and the Concordia supervisor (STDQ15), and being evaluated by the supervisor (STDQ2) - significantly higher (i.e., causing greater stress) than students in the experimental group.

For the most part, group membership, experimental or control, was the variable around which the research questions revolved since every hypothesis was formulated to either test it separately, or utilized this variable to test for its affect on the 16 other independent variables. Hypothesis #12 thus turned its attention to discovering exactly which variable, or which variables in conjunction with each other, accounted for the greatest percentage of variance between mean scores.
Tests for hypothesis #12 found that the variable group (i.e., the treatment), more than any other factor, was the single-most potent predictor. While this variable was a significant predictor on six of the criterion scores (one subscale of the MBI, one from the STHS, and four subscales from the TCHAS), the percentage of the variance in the scores it accounted for was greatest on the three subscales of emotional exhaustion (16%), satisfaction with teaching as a profession (15%), and feeling better prepared for teaching than other preservice teachers (27%). When combined with two other predictor variables - marital status and field experience - group membership helped to account for 28% of the variance in student teacher scores on the emotional exhaustion subscale of the MBI.

Another notable predictor discovered through the stepwise multiple regression analysis was the combination of marital status and field experience. These two predictors together accounted for 18% of the variance in scores on the criterion measure of worry (TCHAS5).

Finally, the two predictors, group and field experience, in combination with each other, accounted for 19% of the variance in scores on the criterion measure confidence (TCHAS13).

This quantitative data provided a number of important and interesting findings, but qualitative data uncovered by the Student Teacher Debrief Questionnaire (STDQ) provided insights of a different nature. It is here that a researcher can discover, from certainly a more personal and visceral level, how this particular sample of student
teachers viewed and handled their daily battles with stress as well as read their candid comments critiquing the additional seminars.

By far the majority of student teachers (88%), regardless of group membership or academic quarter, reported in their written comments that (1) the state-required work sample, (2) relations with the cooperating teacher or supervisor, and (3) classroom management concerns, were their top three stressors during the practicum. Exhibiting an even greater agreement, 98% of the study's student teacher population listed classroom management as the problem they anticipated would cause the most stress when they eventually had their own classrooms.

Specific patterns emerged from comments written by student teachers in the treatment group regarding what they liked best and least about the additional seminars. As far as "best liked" aspects of the seminars, student remarks disclosed a value placed on simply being together with other student teachers for the sake of mutual support. This finding was concluded from the experimental sample group's repeated use of such words as talk, share, hear, receive, vent, air frustrations, receive information, get together, support from others, interaction, empathy, giving and gaining support, listening, positive reinforcement, and communication, to represent what these participants appreciated most from the additional seminars.

When asked to report what they liked least about the seminars, these same student teachers responded overwhelmingly with items directly related to time. For some, there was not enough time to share during the sessions; for others, not enough travel time for a punctual arrival at the seminar (due to driving distance). Still others wanted more time
to interact, while other students simply wanted more time to prepare their next day's lesson plans.

These comments and feelings, scribed sincerely and meticulously, echoed the generally reduced health, anxiety and burnout scores for the experimental group participants discovered by the previous qualitative analyses.

One final piece of qualitative information derived from the study - a piece that was not quantitatively verified but which was definitely experienced - dealt with what is generally termed "classroom dynamics." Readers will note that the composition of both the control and experimental groups was rather small during the Fall and Winter Quarters (see Table 4.7). With the advent of Spring however, the student numbers for both groups doubled. This increase in group membership did create different student-to-student and teacher-to-student relationships. For example, during the Spring seminars, students began to form small discussion cliques and became focused inwardly with the concerns of that particular group rather than focusing on mutual concerns of the larger group. The seminars assumed more of an aura of a regular undergraduate classroom situation rather than a more casual and intimate seminar.

The above-mentioned situation cannot by any means be termed a problem, but it is reported here because it did lead to some diminution in the feeling of comradeship and intimacy that had previously been experienced during the Fall and Winter academic quarters when the experimental group constituencies were smaller in number. Although
this change in dynamics certainly affected the seminar leader’s opinions concerning the numbers of participants that should be assigned to any future sessions, the quantitative results from all three academic quarters exhibited nothing unusual about the fact that the Spring experimental group fielded a larger population.

**FINDINGS THAT SUPPORT THE LITERATURE**

Student teacher scores summarized on the MBI result tables (see Tables 4.1 - 4.3 in Chapter 4) as well as conclusions drawn from hypotheses numbers 1,2,4,5,6,7,9, and 12, support Maslach and Jackson’s contention that continued exposure to a stress-producing environment in such people-caring professions as student teaching can lead to emotional exhaustion, depersonalization and the loss of a feeling of personal accomplishment (Maslach and Jackson, 1981).

Though certainly not illustrative of a massively burned out group of education students, these same scores do support the statements of Stones and Morris (1973), Sullivan (1979), and Gold (1985) who stressed that the student teaching experience is one fraught with great amounts of anxiety and intense periods of stress.

Additionally, the lower scores reported by members of the experimental group on the three subscales of the MBI do lend credence to the transactional stress cycle theorized by Friesen. As explained more thoroughly below, a number of findings can be generalized to Friesen’s model.

Results of this study proved that when, as suggested by Friesen, intervention techniques such as the Cohort Support Sessions are utilized at Stages II and III of the
cycle, such interventions have an affect on reducing stress or, more specifically in this case, scores on the emotional exhaustion and depersonalization subscales of the MBI.

Finding significant differences between control and experimental group scores on anxiety scale measures of worry, satisfaction, classroom control, confidence and preparation from the analyses of hypotheses numbers 1, 7, and 8, again support Friesen's hypothesis that changes in an individual’s perceptions of stressors and resources, changes that convince the individual he can cope, can serve to alleviate the stress brought about by such new demands as student teaching.

Findings from hypotheses #1 further support Friesen's model in the areas of perceptions and response to stress (Stages II and III, figure 1.1, chapter I). Promoting the idea that new demands or stressors themselves do not necessarily cause stress, Friesen states it is how one perceives the imbalance between these new demands (in the case of this study, the student teaching practicum) and the available resources (e.g., the Cohort Support Sessions) to meet these new demands that actually cause the stress and anxiety. The Cohort Support Sessions (i.e., the treatment) designed for this study aimed specifically to provide student teachers with the perception that they not only possessed the educational skills, but also had available the necessary peer, supervisor and cooperating teacher support to effectively withstand the increased demands of student teaching. Friesen’s model did indeed portray this relationship between the onslaught of stress and approaches for its reduction.

Further, results from hypothesis #11, which compared stress perceptions of the two groups, again provided additional evidence in support of Friesen’s theoretical model
in the following manner. One of the chief purposes of Cohort Support Session number one was to help student teachers in the experimental group perceive their supervisors and cooperating teachers as allies and collaborators rather than solely evaluators or critics. This theme was repeated during the four remaining sessions whenever these roles were discussed in the hope that students would perceive these critical individuals in a more confident and relaxed light.

The fact that the experimental group's students ultimately did change their perceptions regarding the supervisor and cooperating teacher was clearly seen in how differently that group reported the amount of stress caused by the 10 week relationship forged with these professionals. Student teachers in the experimental group reported relations with their supervisors and cooperating teachers caused them significantly lower levels of stress whereas those assigned to the control group reported this same relationship as a significantly greater stress factor.

It appears from the results of this study that Friesen's belief of altering perceptions (e.g., helping student teachers to believe they are equipped to handle the additional demands of the practicum) can reduce the growth of anxiety and stress has merit as evidenced by the significantly lower scores for the treatment group on 6 of the 17 measures. Perceptions of the experimental group's student teachers were altered.

Firth (1974), Braun (1977), Haipt (1980), Mungo (1981), and Kaunitz et. al. (1986) promoted the formation and inclusion of small group discussion seminars for student teachers as a technique that could be used to discuss classroom difficulties, gain peer support, and reduce feelings of loneliness and alienation during the practicum.
Findings from hypothesis #1, which specifically tested the effects of the variable group on all 16 measures, supported their premise. In this study, the formation of a small support group did, as these authors hypothesized, cause a significant reduction in stress and anxiety. In particular, all five subscales from the TCHAS (four of which - satisfaction, classroom control, confidence and preparation - were significant at the $P \leq .01$ level) were significantly higher, and one critical subscale of the MBI (emotional exhaustion, also at the $P \leq .01$ level of significance) was significantly lower for the experimental group.

In addition, results from hypothesis #12 support these authors' suggestions of a student teacher support group acting as a powerful vehicle to help reduce the anxiety and stress associated with student teaching. For here again, as mentioned above, the variable group, by itself or in combination with other independent variables, was the single most powerful predictor in terms of the percentage of the variance in scores it accounted for. Significant reductions in the student teachers' emotional exhaustion, as well as significant increases in their satisfaction with teaching, ability to control a classroom, confidence in teaching and feeling of being adequately prepared, were all caused in part by their random assignment to the experimental group.

Indeed, these results further buttress these assumptions as well as support one of the author's original premises: specifically designed student teacher seminars, focused on alleviating the special fears and worries associated with practice teaching (e.g., discipline problems, time management) can serve to increase the confidence and
satisfaction levels of student teachers and at the same time relieve their feelings of anxiety and stress.

In addition, student teacher comments from the debrief questionnaire (STDQ), completed by Winter and Spring student teachers randomly selected for participation in the experimental group, also served as testimonials to the efficacy of such seminar support groups with remarks similar to those quoted here:

"It was good just to get together and talk; I always felt like my batteries were getting recharged for the upcoming week."

and

"I especially appreciated the support we gained from each other. It was comforting to know others were in the same boat."

and

"Being able to air frustrations and just vent when we had to was terrific. Thanks for listening!"

That prolonged contact with the anxiety and stress associated with the practicum can lead to such stress-related health disorders as headaches, gastrointestinal disturbances, sleeplessness, and other similar problems affecting student teachers had earlier been documented by Sorenson and Halpert (1968), Harlin (1978), Kyriacou and Sutcliffe (1978), and Feitler and Argyle (1990). Findings from scores reported on the Student Teacher Health Survey (STHS, Table 4.4), as well as results from hypotheses numbers 2, 3, 4, 5, 6, and 9, all of which reported increases in stress-related health
disorders, support these earlier claims: there was an over all increase in reported stress-related health disorders for this sample of student teachers. In most cases the increase of these stress-related health disorders was found to be statistically greater for members of the control group, but the entire sample of student teachers exposed to the rigors of the practicum and the concomitant demands of their supervisors, mentors, and classroom charges, reported stress-related health problems.

Previous researchers such as Lantz (1964), Dumas (1969), Jacobs (1968) and Hoy (1969) have dealt with the issue of benefits that might be derived when a student teacher receives greater or lesser amounts of clinical experience (i.e., actual classroom contact). Results from this study, specifically hypothesis #9, which addressed this very issue, found in favor of those who promote additional hours of this type of classroom experience. Student teachers in this sample who had amassed 136 hours or more of field experience prior to their practicum reported significantly lower scores on the subscales emotional exhaustion, fatigue, sleeplessness, health survey total, amount of worry, and significantly higher scores on the confidence subscale than student teachers who had accumulated 135 hours or less.

Thompson’s study (1963) was the last to investigate differences in anxiety and stress levels between male and female student teachers. Although caution must be used due to the small numbers of males in this study’s sample (only 16%), the results from hypothesis #2 do support Thompson’s original contention that female student teachers experience more anxiety and stress than their male counterparts during the course of the practicum. In this case, their increased anxiety and stress were manifested by their
scores on the health survey. As the STHS reported, female student teachers reported a significantly higher incidence of colds, backaches and headaches on their questionnaires than male student teachers did for these same stress-related health disorders. The female student teachers simply reported feeling worse than the males over the same 10-week period.

Jelinek (1986) and Zerr (1988) stressed that the nature of the relationships between student teachers, their supervisors and cooperating teachers was an extremely critical one. Such relationships could literally make or break the practicum experience. These relational issues, however, did not seem as critical to this sample of student teachers as some other, non-relational factors as the data from hypothesis #11 were to prove. On the contrary, when student teachers were given the opportunity on their debrief questionnaires to rate their key stressors, work samples, lesson plans and lack of time to accomplish class objectives, all scored higher on the scale than those dealing with cooperating teacher or supervisor relationships.

In his research, Dutton (1962) found that the anxiety and stress resulting from the student teaching experience impacted negatively on the attitudes student teachers held towards their pupils. Findings from hypothesis #6, where students assigned to teach in grades four through six reported significantly higher scores on the depersonalization subscale of the MBI, supported this earlier discovery.

That student teachers involved in this study were anxious regarding the issue of discipline or classroom management was illustrated by this factor's high stress rating on the Student Teacher Debrief Questionnaire (second only to preparing a work sample).
This concern with discipline was further accentuated by its prominence in the unfinished sentence section of the same questionnaire. When students were asked to list what they imagined would be their greatest problem once they had a class of their own, the vast majority (97%) answered disciplining students. This not so surprising response supports the findings of Travers, Rabinowitz and Nemovicher (1950), Anderson (1960), Petrusich (1967), Cohen, Mirels and Schwebel (1972), Sinclair and Nicoll (1980), and, most recently, Hart (1988).

FINDINGS NOVEL TO THE RESEARCH

New insights were provided concerning relationships between some rather frequently used variables and a student’s practice teaching experience. Certainly the inclusion of such variables as gender, age, marital status, dependent children, grade level assigned, number of hours employed, length of time at a college, hours of field experience and grade point average in educational research circles is neither new nor original, but utilizing these variables for the purposes previously outlined provided a number of new findings. As will be shown, some of these findings relate directly to issues of anxiety, stress or burnout; others do not.

Hypothesis #2 uncovered a significant difference as a result of gender. Although they may have reported higher stress-related health scores and subsequently felt worse, female student teachers did report significantly higher scores on the personal accomplishment subscale of the MBI. Female student teachers from this sample reported
that they experienced significantly greater feelings of happiness, satisfaction and fulfillment in their practicum experience than their male counterparts.

Investigating with hypothesis #3 the variable age and its relationship to stress during student teaching uncovered another interesting finding. As already mentioned, it was the youngest age group of student teachers, those between the ages of 21 and 25, who reported a significantly greater degree of sleeplessness than student teachers in any of the other age groups. Perhaps it was an overabundance of energy, the fact that this age group had fewer children living at home or that they were mostly single and thus had fewer responsibilities after school hours that accounted for this problem. Or maybe it was simply that they were anxious and worried about their next day in the classroom. Whatever the reason, this group reported a significantly difficult time falling asleep.

Statistics do show that America's college students today are older, with many who are well into their 30's and 40's returning to the halls of academia. Unlike most campus situations of 15 to 20 years ago, these cadres of non-traditional age students create a campus population in which many are either married, divorced or separated.

Nearly half (49%) of this study's student teacher sample was either married, divorced or separated. Studies previously reviewed reflected no consideration given to how the marital status of student teachers might affect their level of anxiety, stress-related health dysfunctions or burnout. This investigation asked that question with hypothesis #4 and did find two significant differences between students who were single and those who were either married, divorced or separated.
Student teachers who were or had been married reported significantly higher scores on the anxiety subscale feeling better prepared for teaching, and significantly lower scores on the worry subscale of the same instrument, than the scores of their single counterparts. Additionally, such stress-related health disorders as sleeplessness and headaches correlated negatively with single student teachers, whereas the anxiety measure of feeling better prepared correlated positively with being married, divorced or separated. Thus, the status of being married or having been married was found, for this particular sample, to have been more of a help than a hinderance since these students reported more confidence in the classroom and fewer health problems during the practicum.

Another premise students and their practicum allies (e.g., their supervisors and cooperating teachers) often assume is this: the fewer the external drains on a student teacher’s physical resources during the practicum, the better. This would mean that, in the case of children, it would seem reasonable to expect that the fewer living at home the better.

This variable of children at home, conspicuously absent from the literature, was explored by hypothesis #5. Student teachers in this sample who verified having at least one child at home reported a significantly lower incidence of colds and headaches, as well as significantly less difficulty in falling asleep, than did the student teachers with no children. These same findings held true for the correlations run on the entire sample (fewer children correlated inversely with reports of headaches, frequency of colds, and sleeplessness) and for the control group only when the two groups were analyzed separately.

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As the literature review reported, the inclusion of grade level taught as a possible factor in influencing the amount of stress, anxiety or burnout experienced by a student teacher had not been considered in any study with preservice teachers to date. It was included in this study and, in this case, expectations did follow the dictates of teaching logic.

Considering the entire sample, student teachers who were assigned to teaching positions in the upper grades (i.e., grades four through six) scored significantly higher (P ≤ .01) on the depersonalization subscale of the MBI than did their confederates instructing at the Kindergarten through third grade levels. What this means is, for this sample at least, student teachers assigned to upper grades had a tendency to develop cynical, more negative attitudes towards their classroom students. This finding supports the element of teacher folklore that believes the older children get, the more difficult they are to manage. The more difficult they are to manage, the less likely a teacher’s affinity for close contacts and positive attitudes towards them.

As one would expect, the Kindergarten through third grade student teachers reported significantly higher scores on both the frequency of colds and health survey total subscales of the STHS. Perhaps there is a medical or scientific reason for this result (e.g., the younger students immune systems are not as fully developed as the fourth through sixth grade group, so they are more apt to catch colds; hence, so are their teachers), but the finding is merely reported here.

When the grade level results were measured by the variable group, the health findings again appeared generally the same for both groups, but the depersonalization
subscale result was the same for the control group only; the experimental group student teachers working with the upper grades did not report themselves as depersonalized. These findings were repeated when a correlation was run for the entire sample, but not when the same test analyzed each group separately. In that case, only control group student teaching in the upper grades showed a direct relationship with depersonalization, whereas instructing in the lower grades exhibited a negative relationship with the health survey.

Another finding novel to the research, since studies to date have not raised the issue, dealt with the concern of student teacher employment during the practicum. One would expect that student teachers who work during the practicum place themselves at a distinct disadvantage; after all, they could be creating additional anxiety and stress with the burden of an extra job during the most critical part of their teacher training. Indeed, practicum policies at Concordia College, Portland, discourage student teachers from holding any employment and, in fact, demand that at the minimum, they at least curtail the number of hours spent at their job sites.

This study found, however, that far from acting as a debilitating, anxiety or stress-producing factor, employment during the practicum had virtually no negative effects. That is to say, there were no significant findings of causes or relationships between student teacher employment and any of the more critical subscales of the three instruments. The only statistically significant discovery for the entire sample occurred between the variable employment and the frequency of colds subscale. If you worked during student teaching, you had more colds.
Most interesting though were the series of findings for the control group. In particular, students with no employment reported significantly more worry, less satisfaction, and feeling less prepared for teaching than their employed peers in the same group. Also, the negative correlations found between this employment variable, one subscale (worry) from the TCHAS, and one subscale of the MBI (emotional exhaustion), reinforced this same finding: fewer hours of employment related to higher worry, lower satisfaction and preparation scores.

Teacher colleges and universities would like to believe that the longer students matriculate at their school, the better prepared they will be for the exigencies of teaching. Unfortunately, results from hypothesis #8 found that the length of time student teachers from this sample spent at Concordia College made a significant difference on only one subscale of the TCHAS. However, it should be noted that statistical results from this solitary subscale - confidence in the classroom - were indeed significant. Students from both groups who attended Concordia College for two or more years reported a significantly greater amount of confidence in the classroom than students who had attended for a shorter period of time.

The overused and perhaps overrated variable, cumulative grade point average, which figures as a predictor in many educational research articles, was conspicuously absent from the research dealing with student teacher anxiety, stress-related health problems, and burnout. As it turned out, this absence was by no means critical. On the contrary, student teacher cumulative grade point average was found to have absolutely no effect on any of the 16 measures used in the study. In sum, as far as this study and
sample were concerned, student teachers' gradepoint averages had no effect on either increasing or reducing their anxiety, stress-related health dysfunctions or burnout during the practicum.

Lastly, this study investigated the benefit of placing student teachers into a support group and providing them with topic-specific activities directly related to the everyday challenges of the classroom. Although Firth (1974), Braun (1977), Haipt (1980), and others mentioned previously alluded to the efficacy of such a strategy, none of the studies found during the literature review actually utilized this strategy as a treatment nor attempted to measure its possible effectiveness as a method to reduce student teacher anxiety, stress-related health disorders or burnout during the practicum.

This study found that providing such a cohort support group, replete with specially designed seminars, could indeed serve to reduce preservice stress, anxiety, and burnout as measured by 16 selected measures from the MBI, STHS, and TCHAS.

More specifically, hypothesis #1 showed that student teachers randomly assigned to such a support group (i.e., the experimental group) reported lower scores on the emotional exhaustion subscale of the MBI as well as higher scores on four subscales of the TCHAS (satisfaction, classroom control, confidence and preparation) than their control group counterparts at the $P \leq .01$ level of significance. The amount of worry (TCHAS5) and stomach disorders (STHS1) reported by this experimental group was also significantly lower ($P \leq .05$ level of significance) than the same subscale scores for students in the control group.
In the case of hypothesis #2, when the variable group was tested for its affect on another variable, gender, there were no significant differences in any of the 16 measures in the experimental group, but there were three in the control group (STHS subscales fatigue, backaches, and headaches). In this case, the variable group nullified the effects of gender for students participating in the experimental group. Male and female students in the experimental group were equally as healthy, whereas in the control group, male students had a health advantage.

In similar fashion, when the variable group was used to test its affects on the variable grade level taught for hypothesis #6, a significant difference between scores on the depersonalization subscale of the MBI appeared for the control group only, but not for the experimental group; this occurred despite the fact that results from the same T-Test analysis for the entire sample had demonstrated a significant difference in depersonalization scores between students instructing at the Kindergarten through third and fourth through sixth grade levels. Again, for this study, being randomly assigned to the experimental group voided the effects of another variable - grade level taught.

The variable group exhibited its power as moderator once again during the testing for hypothesis #7. The results of the first T-Test, which analyzed the effect of student employment during the practicum on the 16 various measures for the entire sample, uncovered a significant difference on only one measure (STHS4 - frequency of colds). However, running the same analysis for each group separately, significant differences between students who were employed and those who were not were discovered on three subscales of the TCHAS (worry, satisfaction, and preparation) in the control group.
population only. Control group student teachers employed during the practicum worried less, felt more satisfied and better prepared than their unemployed counterparts. No such difference existed between employed and unemployed students in the experimental group. Once again, group acted to nullify the effects of another variable.

Finally, as shown in Tables 4.43 through 4.45 and stated in the preceding findings section, the variable group, either by itself or in conjunction with other variables, accounted for the greatest percentage of variance among the greatest number of criterion scores than any other variable used in the study (16% for emotional exhaustion, 8% for stomach disorders, 15% for satisfaction, 11% for classroom control, 10% for confidence, and 27% for preparation). Whatever else may have factored into these results, group (i.e., the treatment) as a variable had a decidedly powerful influence in its own right.

CONCLUSIONS

Several research questions were proposed for this study in the guise of 12 hypotheses. Based on information gleaned from the statistical analyses utilized to examine these particular inquiries, a number of conclusions can be deduced.

The major finding of this study that student teaching does indeed appear to produce anxiety, stress and burnout corroborates previous research by Stones and Morris (1973), Ryan (1974), Sinclair and Nicoll (1980), Morris and Morris (1980), Bradley (1984), Abernathy, Manera and Wright (1985), and Gold (1985). Scores reported on the three subscale measures from the MBI illustrate that within the span of a 10-week
practicum, student teachers do report emotional exhaustion, depersonalization and reduced feelings of personal accomplishment.

Similarly, subscales used from the Student Teacher Health Survey (STHS) show that these students experience the same stress-related health dysfunctions first noted by Sorenson and Halpert (1968), Harlin (1978), Kyriacou and Sutcliffe (1978), and Feitler and Argyle (1990). Thus, that student teachers are not immune from the same types of stresses and strains experienced by inservice teachers has been verified.

As displayed by the multiple regression analysis, this study has disclosed particular variables that can help predict student teacher anxiety, stress-related health problems, and burnout. For example, three factors were identified in the prediction equation which included the emotional exhaustion subscale of the MBI. These were the variables group (i.e., the treatment), which contributed 16%, marital status and field experience, which both contributed 6% each. Combined, these three variables contributed 28% of the 53% the prediction equation was able to identify, or simply 28% of the variance in scores on the emotional exhaustion subscale.

For the prediction equation, which included the MBI subscale depersonalization, the variable grade level taught accounted for 8% of the 27% the prediction equation was able to identify, or 8% of the variance in scores on this subscale. And finally, for the prediction equation which included the Student Teacher Health Survey total, the predictor variable gender accounted for 9% of the total contribution of 30% which this equation was able to identify, or 9% of the variance in scores on this particular subscale.
Of the two variables identified in the prediction equation for the anxiety subscale confidence, the predictor variable group contributed 10%, while field experience contributed 9%. This 19% combination was a substantial percentage of the total 43% the prediction equation was able to identify. On three other subscales of the TCHAS - satisfaction, classroom control, and preparation - the predictor variable group explained 15, 11 and 15 percent respectively of the total variance among the scores on these measures.

Results of the study indicate that a number of variables assumed to be directly associated with anxiety, stress, burnout and stress-related health dysfunctions were decidedly not significant predictors. Most notably, the study found that for the most part, variables of age, marital status, number of dependent children, employment during student teaching, cumulative grade point average and years spent at Concordia, are hollow giants with far more bark than bite. In sum, many of the variables that were expected to contribute to the anxiety, stress-related health dysfunctions and burnout of student teachers did not.

On the other hand, variables were found that do warrant further study because of their significant effect on, or relationship to, the 16 stress, anxiety and burnout measures utilized in the study. These of course are the variables group (i.e., the treatment), which, as mentioned so often in previous sections of this study, had the greatest effect on, and the strongest relationships with, the largest number of dependent measures; gender, considering especially its effect on and relationship with the health measures;
grade level taught and its effects and relationships with the MBI subscale depersonalization; and the variable field experience.

Considering the qualitative data collected via the STDQ, it was interesting to note that for the student teachers comprising this sample, only the new work sample requirement (an Oregon state requirement that mandates student teachers to create and instruct from a self-made unit plan comprising no less than ten and no more than twenty lesson plans. This sample must include pre and posttests, and learning gain must be tracked via the formation of student quartiles) edged student discipline or classroom management concerns by a slim margin (3.39 to 3.0) on the Ratings of Key Stressors section. That classroom discipline concerns were still major anxiety and stress producers supported earlier findings of Travers, Rabinowitz and Nemovicher (1950), Anderson (1960), Thompson (1963) and Petrusich (1967).

Lastly, results of the study indicate that the five structured intervention sessions (i.e., the Cohort Support Sessions, or simply, the variable group or treatment) did have a statistically significant affect on reducing reported student teacher test scores on several of the 16 dependent variables - some, as noted above, more than others. Previous studies by Braun (1977), Haipt (1980), and Mungo (1981) hypothesized that such a group would. This study, on a small but significant scale, justified that assumption.

Further, because of the efficacy of these sessions and their significant relationship to so many of the anxiety, stress-related health dysfunctions and burnout subscales, the creation and integration of such a group strategy could be considered for inclusion in any teacher education seminar program. For the real key to the success of the experimental
group was nothing more than a sense of connectedness, simple human contact, a perception that peers, supervisors, cooperating teachers and even instructors on campus, genuinely cared about their success and were willing to take the time to prove it.

RECOMMENDATIONS

The results of this study may be helpful to Concordia College, Portland, in its efforts to initiate improvements in its teacher education program through the reduction of anxiety, stress-related health dysfunctions and burnout during the practicum. Specifically, the results may serve the next four cohorts of this institution’s elementary student teachers (@ 140 students), as well as the student teacher seminar programs at other Lutheran Church - Missouri Synod teacher training schools. With this in mind, the following recommendations are made:

1. Due to the statistically validated benefit of the five additional seminars (i.e., Cohort Support Sessions) in affecting anxiety, stress-related health dysfunctions, and burnout of student teachers during their practicum, the School of Education at Concordia College, Portland, should seriously consider the permanent addition of these structured intervention sessions to their present student teacher seminar program. Teacher preparation schools anywhere that experience or suspect the debilitating effects of anxiety, stress and burnout in their programs could confidently consider this same strategy. In activating such a plan, education
professors, college supervisors, cooperating teachers, as well as the student teachers themselves, should all be involved in developing and implementing these additional seminars.

2. David Friesen's theoretical transactional stress cycle is an excellent model for understanding how student teachers perceive their additional stressors at the onset of the practicum, perceive their various resources to meet these additional demands and ultimately respond to these stressors. Teacher training schools can utilize this model to more thoroughly understand the relationships between student teachers' perceptions of additional demands experienced during the practicum, and their perceptions of coping strengths. Thus armed, Friesen's model serves as an outline to assist these teacher trainers to plan appropriate topics and select the proper timing for their own intervention strategies.

3. The size of the Cohort Support Session groups should be kept small in order to guarantee that feelings of comraderie and openness among members are developed, and to make certain all students are provided ample opportunity to be "brought in" to the discussions and activities. This study found that during the Fall and Winter seminars, when the support groups were smaller, students were eager to express themselves, to speak about their teaching experiences as well as their relations with supervisors and cooperating teachers. In the larger Spring seminars, where student numbers approached those of a normal upper division,
undegraduate class, certain students tended to dominate discussion while others barely spoke. As a result of these observations and others previously cited from the qualitative data, the inclusion of six to eight students in the cluster would be optimal; 12 to 14 should be maximum.

4. As verified by both the qualitative and quantitative data, classroom discipline and management issues still rank as major student teacher concerns during the practicum. In fact, as student teachers look towards a classroom home of their own, they again mentioned this same concern as the greatest problem they would have to face. From a teacher training standpoint, it is therefore critical to provide preservice teachers with additional skills and competencies in this area. After all, in the case of this particular student teacher sample, nothing in their program to date - including field experience and professional education classes - had served to completely eradicate their anxiety over disciplining and managing students. As mentioned, this concern was ranked as their number two stressor during student teaching (immediately following the state required work sample) on their debrief questionnaire, and enjoyed a number one ranking on their list of future fears and problems in their own classrooms.

5. Completion of the state required work sample was ranked by the student teachers as their number one stressor during the practicum. To reduce the anxiety produced by this task, Concordia College, Portland, must help student teachers
to perceive the construction of the work sample as an exercise that can provide specific teacher skills (e.g., planning, preassessment, measuring learning gain) rather than a chore that exacerbates their anxiety and stress. Friesen's proposed strategy of changing perceptions to combat stress is, in this case, a necessity. Present perceptions of the work sample breed fear, anxiety, stress; it is a change in that perception that must be effected.

6. Relationships with the cooperating teacher and college supervisor, classroom discipline and management concerns, time to accomplish classroom objectives and to spend with family and completion of the state mandated work sample, were each ranked high by this sample of student teachers as stressors during the practicum. That being the case, it is recommended that four of the five original Cohort Support Session topics (i.e., those encompassing student teacher relationships with their supervisor, cooperating teacher and students, and three others covering the topics of discipline, time and stress management) should be included in future sessions. Additionally, for Concordia College, Portland, the inclusion of a session devoted specifically to work samples would seem most appropriate.

7. Relations between student teachers, their college supervisors and cooperating teachers, did not receive stress ratings on the debrief questionnaire anywhere near as high as other factors mentioned above (e.g. discipline and the dreaded work
sample). However, although these relationships only received an average stress rating of low, written comments by the students painted a different portrait. When provided with the opportunity to write down their stressors independent from the list provided, 88% of all student teachers included relations with their cooperating teacher or supervisor as one of the top three stressors of the practicum. This contradiction may certainly beg further study, but this finding echoes the recommendations of Bradley (1984), Gold (1985) and Zerr (1988) that deliberate steps be taken in any teacher education program to insure the proper screening and, if possible, training of both cooperating teachers and supervisors.

8. Student Teachers who exceeded 136 hours of field experience prior to their practicum scored significantly lower on the emotional exhaustion subscale of the MBI, reported significantly less sleeplessness, fatigue and worry on the health survey, and significantly higher scores on the confidence subscale of the TCHAS, than students who had fewer hours of field experience. Since the increased level of field experience appears to have had such positive benefits, it is recommended that teacher education schools review this element of their programs to determine if it might be in the best interests of their students to gain additional classroom experience prior to the practicum.

IMPLICATIONS AND RECOMMENDATIONS FOR FUTURE RESEARCH
Although providing some additional insights into the realm of student teacher anxiety, stress and burnout, this study was not meant to be comprehensive. Other questions concerning these archenemies of student teachers remain to be addressed. A few of these, developed from contacts with the students, the data and its analyses, are listed below. It is hoped that some of these additional inquiries may in part or in whole be adopted by others with an interest in this or related fields.

That a significant difference existed between the two student teacher groups (control and experimental) on a number of the subscale scores was documented. This study's experimental treatment - the five additional seminars - resulted in fewer reported health dysfunctions as well as lower scores on the anxiety and burnout subscales for students randomly assigned to the experimental group.

But what specifically was it that made this difference? Was it the seminar topics? If these were altered, could the same results be duplicated? Or were the differences a result of nothing more than the additional contact and sympathetic support provided the student teachers, regardless of the material they received in the seminars? It remains for educators to determine exactly what it was that caused this difference.

Student teachers assigned to grade levels four through six illustrated significantly higher scores on the depersonalization subscale of the MBI than students assigned to work on the Kindergarten through third level. This finding was true for the entire sample as well as for the control group when the two groups were tested separately. Why did these students, teaching at the upper elementary grades, develop significantly greater negative or cynical attitudes towards their students? Is this a natural phenomenon for any
student teacher working with students in the upper grades? Can student teachers who elect to teach upper grades expect correspondingly higher depersonalization scores? Answers to these inquiries need to be pursued.

The entire sample of student teachers reported subscale scores on the MBI that illustrated low feelings of personal accomplishment. Seventy-seven percent of the students tended to evaluate their work negatively, felt they could have done better and were not totally satisfied with their accomplishments in the classroom during the course of the practicum. Why such a preponderance of low scores on this particular subscale of the MBI? Does it have something to do with the personalities of students training for service professions in which the general feeling is that one can always serve more, do more, prepare more? Is it because college supervisors and cooperating teachers are too critical in their daily and weekly appraisals? Are expectations for performance simply too high and workloads too heavy? One would expect that student teachers who successfully complete practice teaching would walk away from the experience with an increased feeling of personal accomplishment. Why doesn’t success under fire afford this well-earned luxury?

Thompson’s earlier research (1963) that female student teachers experience more stress and stress-related health dysfunctions than male student teachers was supported by the findings of this study. But this study, like Thompson’s, did not suggest reasons why females were more prone to stress and its negative health manifestations. This topic of stress score differences as a result of gender is another area worthy of additional study.
The study uncovered four key predictors of student teacher anxiety, stress-related health disorders and burnout. These were, most notably, the variables of group (i.e., the treatment of the five additional seminars) marital status, field experience and grade level taught during the practicum. How should related issues, identified by these particular variables and the questions of program concerns they raise, be addressed and modified by teacher training schools genuinely interested in the improvement of their teacher education programs and the ultimate success of their education students?

Earlier, Kracht and Casey (1968), as well as Keavney and Sinclair (1978) attempted to discover relationships between student teacher stress and its effect on actual teaching performance. Their studies resulted in nothing conclusive, and follow up studies have never been made. It is suggested here that such relationships could perhaps be uncovered by correlating the college supervisor and cooperating teacher’s student teacher evaluations with student teacher scores on the same or similar anxiety, stress and burnout measures used for this study.

Now that this study and others have verified that student teachers experience stress and burnout during the practicum, how do those adversities affect the personality and performance of the students who are actually being taught in the practicum classrooms? Although Stevens (1982) has already pointed to a mounting body of evidence suggesting that job stresses and staff burnout adversely affect the welfare of the clients, no investigations into how student teachers’ stress and burnout might affect the academic performance of their students has been undertaken. In this era of increased teacher accountability, it would be well worthwhile for someone to see just how much
learning or lack thereof is taking place in classrooms as a result of student teacher anxieties and stresses.

Student teachers face additional handicaps concerning the successful completion of their practicum if their anxiety and stress levels are so great that they are prevented from functioning normally. This study, and the results of previous studies by Travers, Rabinovitz, Nemovicher (1952), Jones (1982), Bowers, Eicher and Sack (1983), and Hourcade, Parette and McCormack (1988) have pointed to a reduction in student teacher anxiety and stress as desirable. With that in mind, the challenge remains for the discovery of other methods, perhaps similar to those used in this study, whose purpose is to minimize the fear, anxiety, stress and burnout felt by an exceptional group of men and women on whom all of America’s children must depend.
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