THE RELATIONSHIP BETWEEN THE 2004 OHIO STATE UNIVERSITY
AGRICULTURAL EDUCATION STUDENT TEACHERS’ LEARNING STYLE,
TEACHER HEART, AND TEACHER SENSE OF EFFICACY.

DISSERTATION

Presented in Partial Fulfillment of the Requirements
for the Degree Doctor of Philosophy in the
Graduate School of The Ohio State University

By

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* * *

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Above all else, guard your heart, for it is the wellspring of life.

Proverbs 4:23 (Holy Bible, N.I.V.)
ABSTRACT

Students enter a preservice teaching program planning to teach in public schools. However, career intent appears to change during the preservice education program for many students. There is no research that examines the relationships of learning style, teacher heart, and teacher sense of efficacy to career intent. Further, Palmer (1998) stated that teacher heart cannot be developed only diminished. However, Peterson and Seligman (2004) stated that the virtues of care, enthusiasm, hope, faith, and purpose can be developed. No research exists to discern the heart of a teacher, its development or lack thereof, and its change during the preservice preparation program. The purpose of this descriptive correlational study was to determine the level of a preservice teacher’s heart and sense of efficacy and how these levels changed through the preservice preparation program in relation to the preservice teacher’s learning style. The study also investigated whether the level of the preservice teacher’s heart and level of sense of efficacy explained the Ohio State University’s 2004 preservice agricultural education student’s choice to pursue a career in education. The study found that at the conclusion of the student teaching experience learning style made no difference on the development of teacher heart or teacher efficacy. The study also found that 26% of the variance in career intent was due to teacher heart and 17% of the variance in career intent was due to teacher sense of efficacy. Over the period of the student teaching experience, the student teachers heart’s significantly increased while the teacher sense of efficacy significantly
decreased indicating that they found their purpose in the classroom while they simultaneously lost confidence in their abilities to teach.
Dedicated to my wife, Melinda Elizabeth, what a blessing you are!
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# TABLE OF CONTENTS

Abstract.........................................................................................................................iii
Dedication......................................................................................................................v
Acknowledgements.......................................................................................................vi
Vita.................................................................................................................................x
List of Tables...................................................................................................................xiii
List of Figures................................................................................................................xv
Chapter 1: Introduction.................................................................................................1
Chapter 2: Review of Related Literature......................................................................17
Chapter 3: Methods.......................................................................................................50
Chapter 4: Results.........................................................................................................68
Chapter 5: Conclusions, Implications, Recommendations..........................................90
References......................................................................................................................103
Appendix A : IRB Protocol # 0450324......................................................................108
Appendix B : Consent Letters.......................................................................................110
Appendix C : GEFT Instrument....................................................................................113
Appendix D : Pulse of a Teacher (PT) Instrument.........................................................115
Appendix E: Teacher Sense of Efficacy Scale (TSES) .................................................117
Appendix F: Change per Item on the TSES.................................................................119
Appendix G: Change per Item on the PT Instrument..................................................121
### LIST OF TABLES

<table>
<thead>
<tr>
<th>Table</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.1.</td>
<td>Student Teacher Return Date and Corresponding Frequency</td>
<td>62</td>
</tr>
<tr>
<td>3.2.</td>
<td>Name of Instrument, Scale Units of, and Scale of Measurement</td>
<td>63</td>
</tr>
<tr>
<td>3.3.</td>
<td>Measures of Linear Relationships Between Two Variables</td>
<td>64</td>
</tr>
<tr>
<td>3.4.</td>
<td>Bartz’s Adjectives Describing Strength of Relationships</td>
<td>63</td>
</tr>
<tr>
<td>3.5.</td>
<td>Cohen’s Interpretation of Effect Sizes</td>
<td>65</td>
</tr>
<tr>
<td>4.1.</td>
<td>Pearson Product Moment Coefficient (r), Strength of Relationship, Cohen’s Effect Size (1988) for Objectives 1-9</td>
<td>75</td>
</tr>
<tr>
<td>4.2.</td>
<td>Results for Objective 10: Determine if changes in teacher heart and teacher sense of efficacy occur between post-Spring block, pre-student teaching experience, and post-student teaching experience</td>
<td>77</td>
</tr>
<tr>
<td>4.3.</td>
<td>Results for Objective 11: Determine individual change of student teachers’ heart utilizing the Pulse of a Teacher instrument at and between Point I, II, and III</td>
<td>79</td>
</tr>
<tr>
<td>4.4.</td>
<td>Results for Objective 12: Determine individual change of student teachers’ sense of efficacy utilizing the Teacher Sense of Efficacy Scale at and between Point I, II, and III</td>
<td>81</td>
</tr>
<tr>
<td>4.5.</td>
<td>Results for Objective 13: Determine if change occurs in student teachers’ career intent from pre-student teaching experience to post-student teaching experience</td>
<td>83</td>
</tr>
<tr>
<td>4.6.</td>
<td>Results for Objective 14: Determine if change occurs in the student teacher heart between three points: post-Spring Block (Pt I), pre-student teaching experience (Pt II), and post-student teaching experience (Pt III) in relationship to Learning Style (L.S.)</td>
<td>84</td>
</tr>
</tbody>
</table>
4.7 Results for Objective 15: Determine if change occurs in the student teacher sense of efficacy between three points: post-Spring Block (Pt I), pre-student teaching experience (Pt II), and post-student teaching experience (Pt III) in relationship to Learning Style (L.S.)…………………………………………….86

4.8 Results for Objective 16: Determine if the student teacher level of heart and level of sense of efficacy influence the student teacher career intent at the end of the student teaching experience………………………………………..87

4.9 Statistical significance between Points I, II, and III on the Teacher Heart mean scores and Teacher Sense of Efficacy mean scores………………………………………..87
### LIST OF FIGURES

<table>
<thead>
<tr>
<th>Figure</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.1</td>
<td>Relationships between Learning Style, Teacher Heart, and Teacher Sense of Efficacy</td>
<td>25</td>
</tr>
<tr>
<td>2.2</td>
<td>Positive Psychology: Character Strengths and Virtues</td>
<td>28</td>
</tr>
<tr>
<td>2.3</td>
<td>Bandura’s Triadic Reciprocity Illustrating Social Cognitive Theory</td>
<td>29</td>
</tr>
<tr>
<td>2.4</td>
<td>Relationship between the Positive Psychology and Social Cognitive Theories</td>
<td>31</td>
</tr>
<tr>
<td>2.5</td>
<td>Teacher Heart Model</td>
<td>34</td>
</tr>
<tr>
<td>2.6</td>
<td>Social Cognitive Theory working within the Teacher Heart Model</td>
<td>36</td>
</tr>
<tr>
<td>2.7</td>
<td>The Relationship between Teacher Motivation, Efficacy, and Retention (Knobloch, 2002)</td>
<td>42</td>
</tr>
<tr>
<td>3.1</td>
<td>Relationships between Learning Style, Teacher Heart, and Teacher Sense of Efficacy</td>
<td>55</td>
</tr>
<tr>
<td>3.2</td>
<td>Relationship between Post-Spring Block (Point I), Pre-Field Experience (Point II), and Post-Field Experience (Point III)</td>
<td>56</td>
</tr>
<tr>
<td>4.1</td>
<td>Overall Group and Learning Style Group Teacher Heart Mean Score and Teacher Sense of Efficacy Mean Score at Points I, II, and III</td>
<td>89</td>
</tr>
</tbody>
</table>
CHAPTER 1

INTRODUCTION

Introduction to Problem

The interaction between a teacher and a student in the classroom environment determines the quality and effectiveness of the instruction, and is often measured by student achievement. When considering the source of student achievement, the actual teacher has been identified as making the greatest difference, above socio-economic status, educational level of parents, and the school in which the student is enrolled (Brophy & Good, 1970; Good, 1987; Good & Weinstein, 1986; Darling-Hammond, 1997; Alvidrez & Weinstein, 1999), indicating that good teachers are invaluable to the learning experience, learners, the classroom, and ultimately, society. Palmer’s forward (Intrator, 2002) shared that:

Teaching, like any truly human activity, emerges from one’s inwardness, for better or worse. As I teach, I project the condition of my soul onto my students, my subject, and our way of being together. The entanglements I experience in the classroom are often no more or less that the convolutions of my inner life. (p. 2)
In considering the teaching experience, the core of human experience must also be acknowledged. The innate qualities teachers possess, in addition to their skills and perceptions, shape the teaching experience, and by extension, the experience of the learners they instruct. Teachers’ perceptions of instruction are based, at least in part, on their learning style (Cano & Garton, 1994a; Garton, Spain, Lamberson, & Spiers, 1999). The continuity of teachers’ skills in the face of adversity is rooted in their sense of efficacy (Hoy, 2000; Tschannen-Moran, Hoy, & Hoy, 1998). The innate qualities that drive a person’s teaching reside in the core of that individual (Palmer, 1998). Each of these factors likely plays an instrumental role in the longevity and success of each teacher (Hoy, 2000; Tschannen-Moran, Hoy, & Hoy, 1998; Palmer, 1998).

As more veteran teachers approach retirement, the demand for new teachers is bound to increase. However, during the time period from 1988 to 2001, the total number of public school teachers at the national level increased by 25%, while at the same time, the numbers of teachers who left the public education field increased from 5.5% to 7.5%, respectfully, based upon the National Center for Educational Statistics report on Teacher Attrition and Mobility follow up study of 2000-01 teachers (2004).

With an increasing need for teachers, teacher education programs are called upon more than ever to prepare and supply teachers. A major issue exists as only 25% of the undergraduate students who begin in a teacher education program endure to the third year in the teaching profession in the public school system (National Commission on Teaching and America’s Future, 1996). The remaining 75% of these students transfer to a different major before they student teach, opt not to pursue a career in public education after
student teaching, or leave the profession prior to their third year of teaching (National Center for Educational Statistics, 1997).

The most recent national attrition rate for preservice agricultural education teachers found that those teachers who became qualified to teach compared to those who actually entered the teaching profession was 59.4% in 2001 (Camp, Broyles, Skelton, A National Study of the Supply and Demand for Teachers of Agricultural Education in 1999-2001, 2002, p. 8). In Ohio, The Ohio State University’s agricultural education program’s student teaching coordinator, J. Cano (personal communication, September 13, 2002), estimated that only one-third of the qualified preservice teachers entered the teaching profession. It appears that Ohio State’s agricultural education student teacher program attrition rate is above the national average.

Initially, it appears that the number of undergraduate students enrolling in teacher education programs is promising in regard to meeting the expected shortfall in the teacher supply for the next decade. Somewhere along the line however, the majority of program leavers discontinue their quest to become teachers before they begin their first teaching job. The lack of program completers puts a major responsibility on teacher education programs across the country to retain and prepare preservice teachers to do more than survive, but thrive, beginning with the student teaching experience.

The student teaching experience is the capstone in the preparation process to launch successful teaching careers. Pfister (1983) strongly believed that the student teaching experience must be of the highest quality because it was the most important piece in educating teachers. Thus, the changes that occur during the student teaching
experience are central to the understanding of what makes a quality teacher education program that develops effective teachers who have successful careers.

An understanding of a preservice teacher’s learning style, efficacy, and heart could give teacher educators a glimpse of the inner-landscape of each preservice teacher. Perhaps an understanding of a preservice teacher’s inner-landscape can assist teacher educators in preparing more preservice teachers for successful careers in education while reducing the number of leavers.

**Learning Style**

How a teacher perceives the environment around them can be explained by the notion of the lens they see through. Depending on the lens one sees through, a different environment is seen. An individual’s learning style is such a lens. An individual’s learning style refers to how the learner perceives information within specific contexts. Thus, an instructor’s learning style will influence his or her perception of teaching. Learning styles are a constant backdrop and do not change within an individual, but varies from person to person. The differences in perception of information can cause issues in understanding and communication (Garton, Spain, Lamberson, & Spiers, 1999). Student teacher’s learning styles act as filters that actually shape how they think about and process problems and challenges (Cano & Garton, 1994a; Garton et al., 1999). Depending upon how the student teacher perceives and deals with these problems and challenges, the student teacher will become frustrated and be overcome, or the student teacher will adapt and overcome the problem and challenge.
Teacher Heart

As attempts are made to discern how teachers interact with students in the classroom environment and how teachers perceive that environment, is there something at a deeper dimension of a teacher that should be explored? Insight into this possibility, as well as to the nature of what calls teachers to the teaching profession, and what fuels their appetite for teaching might provide explanations of what retains teachers in the profession in spite of adversity. Quite possibly, the answers to these quandaries lie within the core mission of each teacher.

Palmer (1998) asserted that the heart of the teacher was the key to vitality of both the teacher and learner within any classroom. Korthagen (2004) identified this most central notion of a teacher’s heart as the mission of the teacher.

At the core of every human being is a purpose, which gives that human a mission. A teacher’s mission is simply what keeps and sustains the teacher in the profession of education. The teacher mission illustrated by Korthagen (2004) is quite similar to Palmer’s (1998) heart of a teacher. For the remainder of this study, the core of the teacher will be referred to as the teacher heart. Palmer (1998) suggested that the amount of a teacher’s heart was not increasable, but through discouragement and lack of edification, the teacher heart could and probably would decrease.

Teacher Sense of Efficacy

Within the classroom, teachers are charged with maintaining an orderly environment where the students learn a prescribed curriculum. To answer this charge, teachers attempt to manage their classroom, engage their students in the learning process,
and instruct their learners to the best of their abilities. Each of these three areas demand distinctive, unique skills, and often occurs simultaneously. The skill level of each identified area is crucial to the quality and effectiveness of the instruction. The classroom management skill has been identified as having the highest relative influence on learning (Wang, Haertel, & Walberg, 1994). Teachers are often challenged within the classroom by inappropriate student behavior or low performance. The teachers’ ability to continue to manage the classroom, engage the students, and instruct the students in the face of challenge is vital to the teacher’s survival in the profession. The concept of self-efficacy explains how a person reflects on his or her own abilities towards a specific skill. Within the classroom setting, the skills of classroom management, learner engagement, and instruction have been grouped together and labeled teacher efficacy (Tschannen-Moran & Hoy, 2001).

Teachers are motivated to teach if they desire to be and see themselves as being successful. An individual’s belief about his or her own abilities on a specific task is called self-efficacy. As a teacher develops abilities and belief in executing tasks regarding classroom management, engaging students, and instructing students, teacher efficacy is developed.

Role of Experience within the Student Teaching Experience

The Role of the Student Teaching Experience

Up until the student teaching experience, preservice teachers might have at least one early field experience just to expose the undergraduate to the teaching side of learning. Beyond the early field experience(s), preservice teachers have formed ideas and
beliefs about different aspects about how teaching affects learning. In addition, preservice teachers have practiced teaching to their peers and have discussed engaging students and managing classrooms. But up until the student teaching experience, preservice teachers have not taught in front of real, live students.

The student teaching experience is the capstone in the preparation process to launch successful teaching careers. Pfister (1983) strongly believed that the student teaching experience must be of the highest quality because it is the most important piece in educating teachers. To best foster mastery experiences in the student teaching process, Wilson (1994) discovered that slowly emerging student teachers in the process with feedback and coaching, the student teachers build up confidence in their skills. Further, the student teachers’ perception of self, teacher identity, and teacher efficacy should be increased.

The cooperating teacher is an incredibly important part of the student teaching experience. The cooperating teacher serves most importantly as a role model and mentor. The effect of a bad or mediocre role model and mentor can have adverse affects on the student teacher. Li and Zhang (2000) discovered that the lower the cooperating teacher’s teaching efficacy, the higher the student teacher’s anxiety. In addition, as the cooperating teacher’s teaching efficacy lowered, the student teacher’s teaching efficacy slightly dropped.

The Ohio State University Agricultural Education Teacher Preparation Program strives to utilize excellent cooperating teachers in the hopes the student teachers would grow and emulate these cooperating teachers through a type of apprenticeship. Cooperating teachers and their schools are constantly being evaluated to ensure that if a
student teacher has had a bad experience, that cooperating teacher will not be utilized again.

Types of Student Teacher Experiences

Beyond the cooperating teacher, there are several other factors that affect how the student teacher changes, for better or worse. Bandura’s (1986, 1997) social cognitive theory offers some insight into how individuals develop cognitively. The four sources of change Bandura identified were: direct experiences, vicarious experiences, listening to judgment voices, and from thoughts about observing others’ experiences.

Direct Experiences

Direct experiences are those experiences the student teacher would be involved with and can be called learning by doing. Student teachers get the most out of their student teaching experiences because they are engaged with real, live secondary students in the teaching-learning process.

Vicarious Experiences

Vicarious experiences are those experiences the student teacher learns from by simply observing. Throughout the entire teacher preparation process, student teachers observe teacher educators and their peers teach. Student teachers also complete early field experiences where they observe and teach over short periods of time in public school settings.

Judgment Voices

Listening to judgment voices can shape a student teacher if the student teacher respects the voice and finds the voice credible. Voices can include: the cooperating
teacher, university supervisor, peers during teaching methods course and from real live students in the classroom during the student teaching experience.

**Indirect Experiences**

Inferential thoughts from indirect experiences can have an influence on a preservice teacher in several ways. For instance, a student teacher can observe the cooperating teacher do things poorly and learn not to do those things without having to experience it for themselves. From this example occurring, the preservice teacher can learn not to do the same thing.

**Definitions**

Virtue: Universal core human characteristics that are prerequisites for character strength. Among the 24 virtues are: vitality (enthusiasm), kindness (care), hope (future), and spirituality (faith and purpose) (Peterson & Seligman, 2004).

Character Strength: Psychological ingredients that are defined by virtues. The six character strengths include: wisdom and knowledge, courage, humanity, justice, temperance, and transcendence (Peterson & Seligman, 2004).

Caring: A virtue teachers demonstrate to their students through concern, interest, love or liking, providing for, and to take charge of or looking after (Agnes, 2002).

Enthusiasm: A virtue teachers demonstrate to their students by the persistent energy level they display in class often energizing the student’s level of interest and energy (Peterson & Seligman, 2004).

Field Experience: Opportunity for pre-service teachers to have a learning experience in a high school teaching agriculture.
Inner-Landscape: An inside perspective of who the teacher really is, what they believe, why they entered the teaching profession and continue in the profession. (Palmer, 1998).

Learning Style: A person’s tendency to perceive and interpret the world in a consistent manner and includes dependent and independent learners (Witkin, Moore, Oltman, Goodenough, Friedman, Owen, & Radkin, 1977).

Dependent Learning Style: A person who prefers to be around other people and generally enjoys social settings and is more successful in course work dealing with social aspects (Witkin, et al., 1977).

Independent Learning Style: A person who comes to a learning situation and imposes their own learning structure (Witkin, et al., 1977).

Positivist Paradigm: A concise way of looking at the world utilizing numbers and statistics to make interpretations, judgments, and decisions.

Spring Quarter Block: Also known as the Block. Pre-service teachers Spring quarter prior to their Autumn Student Teaching Field Experience. Spring Block is a ten week period of time between the end of March through the beginning of June where juniors in college enroll in 18 credit hours of agricultural education courses. These courses include teaching methods, laboratory pedagogy and management, utilizing technology in the classroom, program management, and a field experience course.

Post Block: The end of the Spring Block where preservice teachers completed their last assignments.
Post Field Experience: The period of time directly after the completion of the student teaching experience in mid November. All of the student teachers returned to the University for a week to debrief.

Pre Field Experience: The period of time at the beginning of the student teaching experience in late August as the high schools began their school year.

Student Teaching Experience: The ten to twelve week experience beginning in late August through mid November where student teachers work with a cooperating teacher at their high school assuming the roles of the cooperating teachers including: teaching their courses, working with other faculty, and advising FFA members.

Teacher Efficacy: A teacher’s belief in their ability to manage their classroom, engages their students in the learning process, and instructs their students (Hoy, 2004).

Teacher Faith: A teacher’s belief that their efforts with students will pay off in both the near and distant future.

Teacher Mission: The deepest core of who the teacher is and why they entered and continue to stay in the teaching profession.

Teacher Heart: Encompasses the teacher’s mission, faith, care, and enthusiasm in their professional role as a teacher.

**Problem Statement**

Students enter a preservice teaching program planning to teach in public schools. However, career intent appears to change during the preservice education program for many students. There is no research that examines the relationships of learning style,
teacher heart, and teacher sense of efficacy to career intent. Further, Palmer (1998) stated that teacher heart cannot be developed only diminished. However, Peterson and Seligman (2004) stated that the virtues of care, enthusiasm, hope, faith, and purpose can be developed. No research exists to discern the heart of a teacher, its development or lack thereof, and its change during the preservice preparation program.

**Purpose of the Study**

The purpose of this descriptive correlational study was to determine the level of a preservice teacher’s heart and sense of efficacy and how these levels changed through the preservice preparation program in relation to the preservice teacher’s learning style. The study also investigated whether the level of the preservice teacher’s heart and level of sense of efficacy explained the Ohio State University’s 2004 preservice agricultural education student’s choice to pursue a career in education.

**Research Objectives**

The following research objectives guided this study:

1. Describe the relationship between the student teachers’ learning style and teacher heart between post-Spring Quarter block and pre-student teaching experience.
2. Describe the relationship between the student teachers’ learning style and teacher heart between the pre-student teaching experience and post-student teaching experience.
3. Describe the relationship between the student teachers’ learning style and teacher heart between post-Spring Quarter block and post-student teaching experience.
4. Describe the relationship between the student teachers’ learning style and teacher sense of efficacy between post-Spring Quarter block and pre-student teaching experience.

5. Describe the relationship between the student teachers’ learning style and teacher sense of efficacy between pre-student teaching experience and post-student teaching experience.

6. Describe the relationship between the student teachers’ learning style and teacher sense of efficacy between post-Spring Quarter block and post-student teaching experience.

7. Describe the relationship between the student teachers’ heart and teacher sense of efficacy between the end of the teacher preparation block and the beginning of student teaching.

8. Describe the relationship between the student teachers’ heart and teacher sense of efficacy between pre-student teaching experience and post-student teaching experience.

9. Describe the relationship between the student teachers’ heart and teacher sense of efficacy between post-Spring Quarter block and post-student teaching experience.

10. Determine if changes in teacher heart and teacher sense of efficacy occur between post-Spring Quarter block, pre-student teaching experience, and post-student teaching experience.

11. Determine individual change of student teachers’ heart utilizing the Pulse of a Teacher instrument.
12. Determine individual change of student teachers’ sense of efficacy utilizing the Teacher Sense of Efficacy Scale.

13. Determine if change occurs in student teachers’ career intent from pre-student teaching experience to post-student teaching experience.

14. Determine if change occurs in the student teacher heart between three points: post-Spring Block, pre-student teaching experience, and post-student teaching experience.

15. Determine if change occurs in the student teacher sense of efficacy between three points: post-Spring Block, pre-student teaching experience, and post-student teaching experience.

16. Determine if the student teacher level of heart and level of sense of efficacy influence the student teacher career intent at the end of the student teaching experience.

Limitations of the Study

The limitations of the case study were that the results were only generalizable to the group of student teachers that student taught during the 2004 Autumn Quarter at The Ohio State University. The purpose of this exploratory study was not to generalize to a larger population, but to investigate relationships between a student teacher’s learning style, teacher efficacy, and teacher heart, and how the characteristics changed during preservice education between post-Spring block and post-student teaching experience. Of equal importance was to investigate how the student teachers’ hearts changed over the study to determine if student teachers would pursue a teaching position in education.

The study utilized correlations and effect sizes to determine relations and change. The study did not utilize alternative statistical approaches to measure change which
include: repeated measures ANOVA/MANOVA, ANCOVA, polynomial regression, growth curves, and latent growth modeling (Cronbach & Furby, 1970; Edward, 2002).

The study operated out of the positivist paradigm and did not use interviews to investigate the topic at hand. In terms of design, the study did not attempt to manipulate any variables or assign subjects to a group; therefore the study is a one-group pretest – posttest design (Fraenkel & Wallen, 2003, p. 274).

\[ X_1 \ X_2 \ 0 \ X_3 \ X_4 \ 0 \ X_5 \ X_6 \ X_7 \]

The \( X_1 \) and \( X_2 \) measurements were made at the end of the Spring block. The first time period noted as the first “0” represented the summer between the Spring Block ending in early June and the beginning of the Student Teaching Experience in late August. The \( X_3 \) and \( X_4 \) measurements were made at the beginning of the Student Teaching Experience. The second time period noted as the second “0” represented the student teaching experience in its entirety. The \( X_5 \), \( X_6 \), and \( X_7 \) measurements were made at the completion of the Student Teaching Experience. The \( X_1 \), \( X_3 \), and \( X_5 \) measurements represented the Teacher Heart instrument. The \( X_2 \), \( X_4 \), and \( X_6 \) measurements represented the Teacher Sense of Efficacy Scale. The \( X_7 \) measurement represented the Group Embedded Figures Test.

**Significance of the Problem**

As more teachers retire and the demand for teachers increases, it is of utmost importance for teacher education programs across the country to prepare the best prepared and dedicated teachers. The efforts of this study may begin to shed light onto how different learning styles of student teachers relate to how their beliefs and hearts
change through their final stages of preparation. Determining how student teachers of
different learning styles increase or decrease their beliefs in their abilities will give
teacher educators great insight into how to best prepare these groups of differing learning
styles. It will be equally important to see how the student teacher’s hearts change over
the study to determine if student teachers become so discouraged they don’t even want to
apply for jobs in the educational field.
CHAPTER 2

REVIEW OF RELATED LITERATURE

Purpose of the Study

The purpose of this descriptive correlational study was to determine the level of a preservice teacher’s heart and sense of efficacy and how these levels changed through the preservice preparation program in relation to the preservice teacher’s learning style. The study also investigated whether the level of the preservice teacher’s heart and level of sense of efficacy explained the Ohio State University’s 2004 preservice agricultural education student’s choice to pursue a career in education.

Research Objectives

The following research objectives guided this study:

1. Describe the relationship between the student teachers’ learning style and teacher heart between post-Spring Quarter block and pre-student teaching experience.

2. Describe the relationship between the student teachers’ learning style and teacher heart between the pre-student teaching experience and post-student teaching experience.
3. Describe the relationship between the student teachers’ learning style and teacher heart between post-Spring Quarter block and post-student teaching experience.

4. Describe the relationship between the student teachers’ learning style and teacher sense of efficacy between post-Spring Quarter block and pre-student teaching experience.

5. Describe the relationship between the student teachers’ learning style and teacher sense of efficacy between pre-student teaching experience and post-student teaching experience.

6. Describe the relationship between the student teachers’ learning style and teacher sense of efficacy between post-Spring Quarter block and post-student teaching experience.

7. Describe the relationship between the student teachers’ heart and teacher sense of efficacy between the end of the teacher preparation block and the beginning of student teaching.

8. Describe the relationship between the student teachers’ heart and teacher sense of efficacy between pre-student teaching experience and post-student teaching experience.

9. Describe the relationship between the student teachers’ heart and teacher sense of efficacy between post-Spring Quarter block and post-student teaching experience.

10. Determine if changes in teacher heart and teacher sense of efficacy occur between post-Spring Quarter block, pre-student teaching experience, and post-student teaching experience.
11. Determine individual change of student teachers’ heart utilizing the Pulse of a Teacher instrument.

12. Determine individual change of student teachers’ sense of efficacy utilizing the Teacher Sense of Efficacy Scale.

13. Determine if change occurs in student teachers’ career intent from pre-student teaching experience to post-student teaching experience.

14. Determine if change occurs in the student teacher heart between three points: post-Spring Block, pre-student teaching experience, and post-student teaching experience.

15. Determine if change occurs in the student teacher sense of efficacy between three points: post-Spring Block, pre-student teaching experience, and post-student teaching experience.

16. Determine if the student teacher level of heart and level of sense of efficacy influence the student teacher career intent at the end of the student teaching experience.

**Problem Statement**

Students enter a preservice teaching program planning to teach in public schools. However, career intent appears to change during the preservice education program for many students. There is no research that examines the relationships of learning style, teacher heart, and teacher sense of efficacy to career intent. Further, Palmer (1998) stated that teacher heart cannot be developed only diminished. However, Peterson and Seligman (2004) state that the virtues of care, enthusiasm, hope, faith, and purpose can be developed. No research exists to discern the heart of a teacher, its development or lack thereof, and its change during the preservice preparation program.
Introduction

The interaction between a teacher and a student in the classroom environment determines the quality and effectiveness of the instruction, and is often measured by student achievement. Since the teacher has been identified as making the greatest difference in student achievement (Brophy & Good, 1970; Good, 1987; Good & Weinstein, 1986; Alvidrez & Weinstein, 1999), the development of good teachers is of paramount importance to the success of students.

While the cultivation of good teachers is necessary, the development of longevity within these professionals is also critical. The innate qualities teachers possess, in addition to their skills and perceptions, shape the teaching experience, and by extension, the experience of the learners they instruct. Teachers’ perceptions of instruction are based, at least in part, on their learning style (Cano & Garton, 1994a; Garton, Spain, Lamberson, & Spiers, 1999). The continuity of teachers’ skills in the face of adversity is rooted in their self-efficacy (Hoy, 2000; Tschannen-Moran, Hoy, & Hoy, 1998). The innate qualities that drive a person’s teaching reside in the core of that individual (Palmer, 1998). Each of these factors likely plays an instrumental role in the longevity and success of each teacher (Hoy, 2000; Tschannen-Moran, Hoy, & Hoy, 1998; Palmer, 1998).

As more veteran teachers approach retirement, the demand for new teachers is bound to increase. As the need for teachers increases in the United States, a greater number of teachers are leaving the profession, based upon the National Center for Educational Statistics report on Teacher Attrition and Mobility follow up study of 2000-01 teachers (2004). With an increasing need for teachers, teacher education programs are
called upon more than ever to prepare and supply teachers. A major issue exists as only
25% of the undergraduate students who begin in a teacher education program endure to
the third year in the teaching profession in the public school system (National
Commission on Teaching and America’s Future, 1996). The remaining 75% of these
students transfer to a different major before they student teach, opt not to pursue a career
in public education after student teaching, or leave the profession prior to their third year
of teaching (National Center for Educational Statistics, 1997). The lack of program
completers puts a major responsibility onto teacher education programs across the
country to retain and prepare preservice teachers to do more than survive, but thrive,
beginning with the student teaching experience.

The student teaching experience is the capstone in the preparation process to
launch successful teaching careers. Pfister (1983) strongly believed that the student
teaching experience must be of the highest quality because it was the most important
piece in educating pre-service teachers. Thus, the changes that occur during the student
teaching experience are central to the understanding of what makes a quality teacher
education program that develops effective teachers who have successful careers.

An understanding of a preservice teacher’s learning style, efficacy, and heart
could give teacher educators a glimpse of the inner-landscape of each preservice teacher.
Perhaps an understanding of a preservice teacher’s inner-landscape can assist teacher
educators in preparing more preservice teachers for successful careers in education while
reducing the number of leavers.
**Learning Style**

How a teacher perceives the environment around them can be explained by the notion of the lens they see through. Depending on the lens one sees through, a different environment is seen. An individual’s learning style is such a lens. An individual’s learning style refers to how the learner perceives information within specific contexts. Thus, an instructor’s learning style will influence his or her perception of teaching. Learning styles are a constant backdrop and do not change within an individual, but varies from person to person. The differences in perception of information can cause issues in understanding and communication (Garton, Spain, Lamberson, & Spiers, 1999). Student teacher’s learning styles act as filters that actually shape how they think about and process problems and challenges (Cano & Garton, 1994a; Garton et al., 1999). Depending upon how the student teacher perceives and deals with these problems and challenges, the student teacher will become frustrated and be overcome, or the student teacher will adapt and overcome the problem and challenge.

**Teacher Heart**

As attempts are made to discern how teachers interact with students in the classroom environment and how teachers perceive that environment, is there something at a deeper dimension of a teacher that should be explored? Insight into this possibility, as well as to the nature of what calls teachers to the teaching profession, and what fuels their appetite for teaching might provide explanations of what retains teachers in the profession in spite of adversity. Quite possibly, the answers to these quandaries lie within the core mission of each teacher.
Palmer (1998) asserted that the heart of the teacher was the key to vitality of both the teacher and learner within any classroom. Korthagen (2004) identified this most central notion of a teacher’s heart as the mission of the teacher.

At the core of every human being is a purpose, which gives that human a mission. A teacher’s mission is simply what keeps and sustains the teacher in the profession of education. The teacher mission illustrated by Korthagen (2004) is quite similar to Palmer’s (1998) heart of a teacher. For the remainder of this study, the core of the teacher will be referred to as the teacher heart. Palmer (1998) suggested that the amount of a teacher’s heart was not increasable, but through discouragement and lack of edification, the teacher heart could and probably would decrease.

**Teacher Sense of Efficacy**

Within the classroom, teachers are charged with maintaining an orderly environment where the students learn a prescribed curriculum. To answer this charge, teachers attempt to manage their classroom, engage their students in the learning process, and instruct their learners to the best of their abilities. Each of these three areas demand distinctive, unique skills, and often occurs simultaneously. The skill level of each identified area is crucial to the quality and effectiveness of the instruction. The classroom management skill has been identified as having the highest relative influence on learning (Wang, Haertel, & Walberg, 1994). Teachers are often challenged within the classroom by inappropriate student behavior or low performance. The teachers’ ability to continue to manage the classroom, engage the students, and instruct the students in the face of challenge is vital to the teacher’s survival in the profession. The concept of self
efficacy explains how a person reflects on his or her own abilities towards a specific skill. Within the classroom setting, the skills of classroom management, learner engagement, and instruction have been grouped together and labeled teacher efficacy (Tschannen-Moran & Hoy, 2001).

Teachers are motivated to teach if they desire to be and see themselves as being successful. An individual’s belief about his or her own abilities on a specific task is called self-efficacy. As a teacher develops abilities and belief in executing tasks regarding classroom management, engaging students, and instructing students, teacher efficacy is developed.

The following figure (2.1) illustrates how the relationships between learning style, teacher heart, and teacher efficacy will be investigated. Figure 2.1 will provide direction for this review of related literature.
Figure 2.1: Relationships between Learning Style, Teacher Heart, and Teacher Sense of Efficacy.

**Conceptual Framework**

The teacher heart is the most important part of an individual and the state of the heart will likely determine the effectiveness of a teacher. The way a teacher perceives the world (learning style) affects how they interpret and interact with their environment. Teachers’ sense of efficacy or confidence in their abilities is crucial when interacting in their environment in order to be effective. Assuming the heart of a teacher can be cultivated; perhaps these interactions develop the heart of a teacher. By considering the levels of the teachers’ heart and levels of teacher sense of efficacy at the end of the
student teaching experience, intent towards entering education as a career may be explained.

**Theoretical Framework**

The perspective of this study was based upon two theoretical frameworks, positive psychology (Peterson & Seligman, 2004) and social cognitive theory (Bandura, 1986, 1997). The positive psychology framework was chosen because it gives thorough consideration to all character strengths and virtues that humans may possess. By utilizing the positive psychology framework, which assumes that all humans have strengths and weaknesses, individuals can focus on bolstering their strengths and improving their weaknesses. The social cognitive theory was chosen because it explained the personal factors that humans bring to their world and how those factors interact with their environment. Further, the behaviors that humans displayed were then shaped by the environment they encountered as well as the personal factors they possessed.

**Positive Psychology**

Positive psychology is a theoretical framework that focuses on the character strengths and virtues of individuals. Within the positive psychology framework are six character strengths composed of 24 total virtues. It is the hope of Peterson and Seligman (2004), that by assessing the 24 virtues, both strengths and weaknesses will be discovered and a baseline developed. Once established, each virtue can be improved upon, therefore developing the character strengths to advance the quality of life for the individual and the community they live within. The six character strengths that comprise the framework are
the strengths of: wisdom and knowledge, courage, humanity, justice, temperance, and transcendence (Peterson & Seligman, 2004).

Each of the six character strengths has between three and five virtues that are organized within that character strength. Within the character strength of wisdom and knowledge are the virtues of creativity, curiosity, open-mindedness, love of learning, and perspective. The character strength of courage includes the following virtues: bravery, persistence, integrity, and vitality [zest, enthusiasm, vigor, energy]. Within the character strength of humanity includes the virtues of love, kindness [generosity, nurturance, care, compassion, altruistic love, “niceness”], and social intelligence. The character strength of justice includes the virtues of citizenship, fairness, and leadership. Within the character strength of temperance includes the virtues of forgiveness and mercy, humility and modesty, prudence, and self-regulation. The last character strength is transcendence and includes the virtues of appreciation of beauty and excellence, gratitude, hope [optimism, future-mindedness, & future orientation], humor, and spirituality [religiousness, faith, & purpose]. These character strengths and virtues are found organized in Figure 2.2 (next page).
The current study looked at teachers’ enthusiasm, care, faith in the future, and mission. Within this positive psychology framework, teachers’ enthusiasm, care, faith in the future, and mission are clearly identified. Enthusiasm is found within the virtue of vitality, which is a component of the character strength of courage. Care is found within the virtue of kindness, which is a component of the character strength of humanity. Future-mindedness is found within the virtue of hope. Both faith and purpose are found within the virtue of spirituality. Both the virtues of hope and spirituality are components of the character strength of transcendence. The virtues of vitality [enthusiasm], humanity
Social Cognitive Theory

Bandura’s (1986, 1997) Social Cognitive Theory assisted with the overall theoretical framework for this study. To illustrate the role of experience and interaction with one’s personal factors and behaviors with the environment, Bandura developed the social cognitive theory. Bandura’s theory utilized the triadic reciprocity to illustrate (Figure 2.3) how behavior was shaped through personal and environmental factors. To tie these factors and behaviors together, Bandura offered that people were producers and products of their environment (1986).

![Diagram of Social Cognitive Theory]

Figure 2.3 Bandura’s Triadic Reciprocity Illustrating Social Cognitive Theory.

Social Cognitive Theory (Bandura, 1986; 1997) can be utilized within the context of student teachers and their student teaching experience. Personal factors are things that student teachers bring to the student teaching experience such as learning style, personality, gender roles, level of motivation, level of cognition, level of heart, and personal beliefs. Environmental factors are things such as interactions with students,
cooperating teacher(s), other faculty, administrators, and student’s parents. In addition, other environmental factors include school environment, community environment, and unplanned events. Behavior is the observable actions, whether normal or abnormal of the student teacher. Interaction between the three areas of personal factors, environmental factors, and behavior occurs almost constantly and simultaneously.

Relationships between Theoretical Frameworks

The positive psychology theoretical framework posits that the 24 virtues within the 6 character strengths can all be improved upon. The social cognitive theory provides an explanation for where these virtues are located and how they can be changed as the individual behaves and interacts with the environment. The virtues and character strengths belong within the personal factor section. *Figure 2.4* illustrates how the Positive Psychology Theory (Peterson & Seligman, 2004) and Social Cognitive Theory (Bandura, 1986; 1997) work with each other.
Learning Style

Each preservice teacher enters the agriculture classroom with a learning style. How these teachers perceive the environment around them is influenced by this learning style “lens”. In order to understand teacher perspective, teacher learning style must be discovered. If educators do not accept that some students learn differently from themselves, these students will not learn or learn very little. Only teaching a portion of the students in an agriculture classroom is not efficient, especially if differences in learners can be identified and addressed by the educator.

Through intense research in agricultural education over the past fifteen years, researchers have defined learning styles and measured learning styles (Lawrence, 1984,
as cited in Rollins, 1990, p. 64; Garger and Guild, 1984, as cited by Raven, Cano, Garton, & Shelhamer, 1993, p. 40; Thies, 1979, as cited in Rollins & Scanlon, 1991, p. 48; Keefe, 1982, as cited by Marrison & Frick, 1994; Gregorc, 1979, p. 234, as cited by Torres & Cano, 1994, p. 61; Dunn, 1984, as cited in Cox, Sproles, & Sproles, 1988, p. 11; Cano, Garton, & Raven, 1992, p. 46; Whittington & Raven, 1995, p.10) and correlated learning styles (Cano, Garton, & Raven, 1992; Raven, Cano, Garton, & Shelhamer, 1993; Marrison & Frick, 1994; Cano & Garton, 1994b; Cano, 1999; Garton, Spain, Lamberson, & Spiers, 1999; Garton, Dyer, & King, 2000; and Shin & Ganon, 2001; Cano & Metzger, 1995; Torres & Cano, 1995) with other student demographics to better understand students.

A person’s learning style includes combinations of cognitive, affective, and physiological traits, (Lawrence, 1984, as cited in Rollins, 1990, p. 64) and a stable, pervasive, (Garger and Guild, 1984, as cited by Raven, Cano, Garton, & Shelhamer, 1993, p. 40), biologically and developmentally imposed set of personal characteristics, (Thies, 1979, as cited in Rollins & Scanlon, 1991, p. 48) which serve as relatively stable indicators of how learners perceive, interact with, and respond to the learning environment (Keefe, 1982, as cited by Marrison & Frick, 1994). Learning style provides clues as to how a person’s mind operates (Gregorc, 1979, p. 234, as cited by Torres & Cano, 1994, p. 61) by the way each person absorbs and retains information and/or skills (Dunn, 1984, as cited in Cox, Sproles, & Sproles, 1988, p. 11) through a process that learners use to sort and process information, (Cano, Garton, & Raven, 1992, p. 46) including recalling information (Whittington & Raven, 1995, p.10). In other words,
learning style involves the traits and characteristics learners bring to a learning situation and how the learner takes in, processes, and recalls information.

Early research investigated learning style and student’s preferences to learning. Researchers (Cano & Garton, 1994a; Cano & Garton, 1994b; Torres & Cano, 1994) concluded that learning style differed from student to student as measured with the Myers-Briggs Type Indicator (MBTI), and the Group Embedded Figures Test (GEFT). Differences were labeled from the GEFT as field-dependent and field-independent.

**Teacher Heart**

A teacher teaches who they are in their heart (Palmer, 1998). On the next page (Figure 2.5), the Teacher Heart Model illustrates the components of a teacher’s heart in relation to the classroom environment in which the teacher interacts with the students.

The Teacher Heart Model developed out of Korthagen’s (2004) Onion model (p. 80) which illustrated the environment interacting with the teacher’s behavior (first layer), followed by subsequent interior layers: competencies, beliefs, identities, and mission (at the core).

The teacher’s heart is the combination of a teacher’s mission, the teacher’s faith in teaching, the teacher’s caring for the students they teach, and the teacher’s enthusiasm they display in the classroom (Palmer, 1998; Intrator, 2002). Webster’s (Agnes, 2002) defined the heart as:

The center or source of emotions, personality attributes, etc. specifically, a) inmost thought and feeling; consciousness or conscience/ to know in one's heart] b) the source of emotions (contrasted with head, n. 2a. the source of
intellect) c) one's emotional nature: disposition [to have a kind heart] d) any of various human feelings: love, devotion, sympathy, etc. e) mood; feeling [to have a heavy heart] f) spirit, resolution, or courage/ to lose heart]. (p. 657)
The teacher’s mission is at the core of the teacher’s heart. The teacher’s mission underlies the teacher’s faith in that what the teacher does impacts the student’s lives for their future. The teacher’s faith in teaching underlies the level of care and enthusiasm observed in the classroom environment by students and evaluators. Within the model there are two areas within the teacher’s heart, the teacher’s inner-landscape (teacher mission and faith) and the teacher’s observable behaviors (caring and enthusiasm).

**Observable Teacher Behaviors**

When a student or outside observer is in the classroom environment with the teacher interacting with the students, despite the teaching approach and subject matter, two things can be observed: the amount and quality of care a teacher gives to students and the amount of energy or enthusiasm displayed in the classroom. The following figure (2.6) illustrates how behavioral change is a product of change in the teacher’s inner-landscape based on the Social Cognitive Theory (Bandura, 1986; 1997) within the Teacher Heart Model.
Students are not always willing to work with the teacher and may in fact seem to be against the teacher. With repetitive resistance from the students, the teacher must be resilient enough to continue to put forth effort. Self-reflection is vital for teachers to gauge how their actions shape the learning environment (Intrator, 2002, p. xxviii). Teachers’ beliefs that their actions are responsible for student successes or failures are
determinants for motivation to put out their best efforts (Intrator, 2002, p. xxxvi).

Teachers who are motivated and put forth their best efforts can be described as energetic and enthusiastic.

**Enthusiasm**

While the source of enthusiasm comes from within, the related behavior is observable. Webster’s (Agnes, 2002) defines enthusiasm as “to be inspired by a god, supernatural inspiration or possession; inspired…” (p. 474). Thus, a teachers’ enthusiasm is tied to the investment in the hopes of ensuring that students become successful learning in the classroom today and for their future ahead (Intrator, 2002). A yearning and passion for teaching and maintaining that passion daily, weekly, monthly, and yearly is a prerequisite to remaining in the profession for any length of time (Intrator, 2002).

The virtue of vitality includes the aspect of enthusiasm. A person that is vital “is someone whose aliveness and spirit are expressed not only in personal productivity and activity – such individuals often infectiously energize those with whom they come in contact” (Peterson & Seligman, 2004, p. 274). When an enthusiastic teacher is in a room, this can be seen as someone who lights fires and motivates students to act by this infectious energy.

**Care**

Another observable behavior of teachers is the level of care with which they treat their students. A teacher who cares about their students develops a basis for trust and rapport. Webster’s (Agnes, 2002) defined caring: “to feel concern or interest, to feel love
or a liking for, to take charge of; look after, provide” (p. 222). The quantity of care a teacher extends to the students is reflective of the degree to which the teacher believes the student’s success depends upon the teacher (Intrator, 2002). Caring requires:

the assertion of a common humanity in which others are worthy of attention and affirmation for no utilitarian reasons but for their own sake. The affective or emotional ground of such kindness distinguishes it from a merely dutiful or principle-based respect for other persons”… (example: caring) …“that are not based on an assurance of reciprocity, reputational gain, or any other benefits to self. (Peterson & Seligman, 2004, p. 326)

Care extends beyond the teacher-student relationship and includes the valuing of students as individuals (Intrator, 2002). Care also cultivates a desire in the teacher to develop innovative instructional practices for the benefit of students (Intrator, 2002).

The National Commission on Teaching and America’s Future (NCTAF, 1996) proposed that by the year, 2006, every child in America would have access to a qualified, competent, and caring teacher. In addition to this report, the No Child Left Behind act (2002) followed up on the NCTAF stating that decrease the barriers that qualify people to get credentials and increase the competence (subject knowledge) levels people must have to join the teaching profession. The No Child Left Behind Act did not mention anything about caring. Noddings (2001) stated that the amount a teacher cares for their students cannot be legislated nor coerced. But if care can be measured in the teacher heart instrument and used as one of several measures to provide a gatekeeping mechanism to
allow or not allow entry into professional standing in teacher education, based upon a teacher’s heart, this should provide more caring teachers to the American classroom.

According to Noddings (2001), care is a two way street requiring a positive interaction in the classroom environment between a teacher (carer) and a student (caredfor). The level of care a carer gives a student is only as good as the level of care the caredfor believes they receive and the level they care back.

**Teacher’s Inner-Landscape**

At the core of every human being is a purpose, which gives that human a mission. A teacher’s mission is simply what keeps and sustains the teacher in the profession of education. The characteristics surrounding the core of a teacher are not observable behaviors. However, these qualities are bound to influence, sustain, or discourage the teacher from continuing in the profession. Teachers’ faith involves the belief that their current endeavors will profit their students in the future. “Hope connects someone directly to the dreamed-of future” (Peterson & Seligman, 2004, p. 519).

**Faith**

In addition to the belief that teachers’ efforts will benefit students in the future, faith may also incorporate a self confidence that the advice given to students is correct. Peterson and Seligman (2004) shared that:

Hope and optimism represent a stance toward the future and the goodness that it might hold. Thinking about the future, expecting that desired events and outcomes will happen, acting in ways believed to make them
more likely, and feeling confident that these might well ensue given appropriate efforts sustain good cheer in the here and now and galvanize goal-direction action. (p. 526)

It is therefore desirable for students to seek out and accept advice. As Intrator (2002) stated, teachers enjoy the opportunity for “…young people [to] look to [them] for direction, support, and guidance” (p. xxxvi). Naturally, teachers with faith desire to make a difference in the lives of students and seek opportunities to interact with them for the purpose of enrichment (Intrator, 2002).

**Teacher Mission**

The intrinsic motivation of a teacher is grounded in the desire to live out their mission. Webster’s (Agnes, 2002) defines mission as “6. the special task or purpose for which a person is apparently destined in life; calling” (p. 922). The task of being an effective teacher is a derivative of the teacher’s identity and integrity which extends beyond good teaching techniques (Palmer, 1998). Teachers’ identity includes their personal beliefs, values, and religion. A consensual (Peterson & Seligman, 2004) definition of religiousness and spirituality follows:

Refer to beliefs and practices that are grounded in the conviction that there is a transcendent (nonphysical) dimension of life. The beliefs are persuasive, pervasive, and stable. They inform the kinds of attributions that people make, the meanings they construct, and the ways they conduct relationships. (p. 600)
Personal values of a teacher are bound to affect teaching (Intrator, 2002). Peterson and Seligman (2004) further defined the strength of spirituality and religiousness as having “coherent beliefs about the higher purpose and meaning of the universe and one’s place within it. People with this strength have a theory about the ultimate meaning of life that shapes their conduct and provides comfort to them” (p. 533).

The decision to teach based on personal enjoyment rather than financial gain is a reflection of teacher mission (Farkas, Johnson, & Foleno, 2000). Virtues within the character strength of transcendence “allows individuals to forge connections to the larger universe and thereby provide meaning to their lives” (Peterson & Seligman, 2004, p. 519). In addition, the extent to which teachers share themselves honestly with their students is in alignment with who they really are at the deepest levels. The inability to be themselves with their students is a likely source of discontent. In contrast, for teachers who are able to achieve this honest connection with others is what makes teaching meaningful to a degree. Contentment in the profession may be related to how comfortable teachers are with sharing of their true selves.

Teacher Sense of Efficacy

Given the numerous challenges of the classroom, teacher efficacy is vital to both the teacher’s survival in the profession and success in the classroom. The advancement of teacher efficacy is certainly the goal of a good student teaching experience. Knobloch (2002) offered a flow chart (Figure 2.7, next page) to illustrate the relationship between the three constructs: teacher motivation, teacher efficacy, and teacher retention. The flow chart provided a framework of understanding how the motivation of the individual
teacher affected that person’s belief about their skills as a teacher. The beliefs in turn, affected both the teacher’s effectiveness and longevity in the profession.

![Diagram](teacher_motivation_efficacy_retention.png)

*Figure 2.7: The Relationship between Teacher Motivation, Efficacy, and Retention (Knobloch, 2002)*

Researchers (Tschannen-Moran, Hoy, & Hoy, 1998) have discovered that teachers who are intrinsically motivated tend to be highly efficacious about their teaching skills. Further, these teachers have good attitudes (Tschannen-Moran, et al., 1998), try new and creative ideas in their classrooms, experience less anxiety and stress, are viewed as more effective teachers, and stay in the teaching profession for the long haul (Coladarci, 1992; Evans & Tribble, 1986; Trentham et al., 1985; Burley et al., 1991; Glickman & Tamashiro, 1982, as cited in Tschannen-Moran, et al., 1998).

Knobloch (2002) specifically looked at the development of teacher sense of efficacy in agricultural education novice teachers. Four groups: student teachers, first year teachers, second year teachers, and third year teachers were all pre-tested and post-tested over the first 10 weeks of the school year. Dr. Anita Hoy (personal communication, July 1, 2004) shared that measuring change in a teacher’s sense of efficacy over a 10 week period of time is too short a period of time to see much movement in score. The student teacher group changed the most of all four groups, but only changed minimally from a mean score of 6.92 to 7.03 on the Teacher Sense of Efficacy Scale (TSES). The scale ranges from 1 (no efficacy) to 9 (high efficacy). When
Knobloch (2002) looked at individual TSES scores he saw a range of changes from -2.54 to +2.46 in teacher sense of efficacy, but when these scores were averaged out, there was not much overall change seen in the group (N=23).

**Student Teacher Behavior**

In terms of observing student teaching behaviors over the entire student teaching experience, it does not make sense to videotape or observe every second or even every day. Several investigators (Bettenhauser & Rogers, 1992; Gibson & Dembo, 1984, as cited in Tschannen-Moran, et al., 1998) have researched the relationship between student teacher’s beliefs and actual observed behaviors during their student teaching experience. Studies (Bettenhauser & Rogers, 1992; Gibson & Dembo, 1984, as cited in Tschannen-Moran, et al., 1998) have found that the behaviors observed were highly related to the student teacher’s beliefs. Where are these sources of efficacy? Bandura (1986) offered that these sources of efficacy were found in: mastery experiences, vicarious experiences, coaching (pep talks) experiences, and physiological and affective states.

The student teaching experience is a prime opportunity to engage in mastery experiences. Immersing student teachers slowly into the full load of teaching, taking each step slowly, will develop the teacher in all areas. Some student teachers will survive no matter what they’re put through. If the slow immersion process is adapted, the cooperating teacher should be instructed to use their own judgment of speeding up the immersion process if the student teacher handles instruction, engagement, and managing the classroom well.
The student teaching experience should involve the cooperating teacher coaching the student teacher through challenging times to improve attitude and emotional uneasiness. The student teacher will experience several different physical and affective states during the student teaching process. Attitude can be a large portion of the happiness or disgruntlement of the student teacher with implications for the student teaching experience.

Sense of Efficacy for Teaching was defined as the belief that one’s ability as a teacher can get through to even the most difficult to reach students (Woolfolk, 2004). Gibson and Dembo (1984, as cited in Tschannen-Moran, et al., 1998) utilized the two statements, two factor RAND corporation instrument and created a more expansive teacher efficacy scale building on the RAND corporation items. From that instrument, the Ohio State Teacher Efficacy Scale (OSTES) evolved. The OSTES name then became the Teacher Sense of Efficacy Scale (TSES) and currently has two forms, a short 12-item form and a long 24-item form. The creators of the TSES (Tschannen-Moran, Hoy, & Hoy, 1998) suggested the long form be administered to preservice teachers. Both TSES instruments have consistently produced three emerging teaching efficacy factors: instruction, engagement, and classroom management.

In addition to the TSES instruments, Bandura (1998) created his own 32-item teaching efficacy instrument. The reliability of the instrument has consistently earned above an alpha = 0.90, but every time a factor analysis was conducted, no factors emerged. Roberts and Henson (2001, as cited in Tschannen-Moran, et al., 1998) have used the TSES instrument to complete a confirmatory factor analysis in hopes of making further sense of teacher efficacy and what the instrument really measured. Through the
confirmatory factor analysis, the researchers (Roberts & Henson, 2001, as cited in
Tschannen-Moran, et al., 1998) concluded that only the instruction and engagement
factors should be retained and that the classroom management factor should be discarded
because it did not load highly on the other factors.

Although there are disputing factor analysis findings, either two or three factors
need to be chosen. Utilizing an instrument such as the TSES that has been used many
times to observe how student teachers’ beliefs about their abilities in the areas of
instruction, engaging students, and classroom management will continue to be beneficial.

Change

Utilizing Bandura’s (1986, 1997) social-cognitive theory, a student teacher’s
behavior will likely change in a new environment over the student teaching experience
due to their personal factors such as personality and the environment in which they find
themselves. If for instance, a student teacher behaves a certain way and the students react
negatively to it, the belief that drove the behavior is challenged. On the other hand, if the
student teacher behaved another way and the students react positively to it, the belief that
drove the behavior is confirmed to a degree.

Measuring Change in Student Teaching Process

Everyone involved with the student teaching experience expects the student
teacher to learn, which requires some change to occur. The following questions then
become relevant: to what extent does change occur? in what areas does change occur? in
what environment(s) did change most occur, and in what direction? and, how do we
measure these changes?
In an interview with Sudzina and Newman (1994), Woolfolk Hoy briefly identified four different methods to assess and measure change during the student teaching process. The four methods to measure change during the student teaching experience were surveys, metaphors, video analyses, and concept maps.

As student teachers bring their schemas to the student teaching experience and everyone expects the student teacher to learn, the student teachers’ schemas will inevitably change. Piaget (1954) called this changing of schema either assimilation or accommodation. When accommodation occurs, an existing schema or mental framework to organize information is simply reorganized within the framework. When something new occurs and no existing schema or framework fits, then accommodation is not available. The new occurrence is assimilated creating a new schema. Through these explanations, it follows that student teachers both accommodate and assimilate new and existing schema when confronted with familiar and new situations with real, live students in a school setting. As these new or different experiences challenge the student teachers, how does a student teacher’s self-confidence persevere or change?

Looking specifically at a student teacher’s self-confidence, their perception of self, sense of efficacy of teaching, and teacher identity, it is apparent that the four methods of measuring change that Woolfolk Hoy (Sudzina & Newman, 1994) offered would be possible. In terms of surveys, several surveys have been developed which produce valid and reliable results. In terms of metaphors, video analyses, and concept maps, it appears that some type of interpretation must be done to decipher the meaning of words, actions/behaviors, and drawings. To achieve a reliable and valid interpretation of
this information, a scoring rubric could be created to standardize the scoring. Interrater and intrarater reliability should be established to ensure consistent evaluation.

Self confidence or teacher efficacy is the belief in one's own abilities to complete a specific task (Woolfolk, 2004). The Teacher Confidence Scale developed at Ohio State measures preservice teacher’s perceptions about their specific skill level. Thirty-two items address 32 specific skills that the teacher education faculty believed that the preservice teachers needed and had been prepared to have and utilize the gained skills. When a factor analysis was completed, three factors emerged, but were highly intercorrelated, as the 32 items had high loadings on all three factors. The three emerging factors were ability to teach math and science, ability to use instructional innovations, and ability to manage a classroom. Since there were such high loadings on all three factors, the researchers retained one factor for the 32 items and interpreted it as overall confidence in teaching.

The perceptions of self can be defined as how an individual perceives or views themselves as a person. Thomson and Handley (1990) created the Myself as a Teacher Scale to investigate a teacher’s self concept. Thomson and Handley discovered that the higher the self concept, the higher the teachers’ perception of self.

Teacher Identity can be defined as how a teacher identifies him or her self in the profession. Metaphors and concept maps to describe student teacher’s perceptions of classroom management have been used to accomplish this measurement.
Summary

Despite the variety of positive and negative experiences the preservice teachers faced in their student teaching experience, change within the person is inevitable. Some aspect of the student teacher’s heart and/or belief in their ability will be developed or diminished. Does the student teacher’s perceptions of these experiences and how they approach and how they respond to each experience rely heavily on the learning style of the individual? If the culmination of the student teacher’s experiences turn the student teacher’s heart from teaching, perhaps this study will provide some light on why only one-third of the Ohio State University’s agricultural education qualified preservice teachers go into education. Measuring this change between the end of preparation, after the summer before the student teaching experience, and after the student teaching experience will provide important information detecting changes of heart.

When looking specifically at relationships between the three constructs of learning style, teacher heart, and teacher efficacy there has been very little research done providing any indication of relationships, one way or the other. Evidence suggests that teachers with a higher sense of efficacy tended to display a greater enthusiasm for teaching (Allinder, 1994; Guskey, 1984; Hall, Burley, Villeme, & Brockheimer, 1992, as cited in Tschannen-Moran, Hoy, & Hoy, 1998, p. 223). Other than this common conclusion it is not known what relationships exist between the three constructs.

Since the Pulse of a Teacher instrument is brand new and in the exploratory phase, there has been no evidence to determine a normal heart level. This study should provide the foundation in the measurement of a teacher’s heart.
When looking specifically at change in preservice agricultural education teacher efficacy, Knobloch (2002) found that student teacher’s efficacy changed more than the first, second, and third year novice teachers. Despite having the most change in teacher efficacy, the student teachers change was not strongly significant. Dr. Anita Hoy (personal communication, July 1, 2004) echoed the same sentiment by sharing that increase in teacher efficacy positively changed the most during the student teaching experience. Dr. Hoy and Dr. Jamie Cano (personal communication, July 1, 2004) both commented that measuring teacher sense of efficacy utilizing the TSES over a longer period of time, rather than 10 weeks, would probably see a more significant change.

In terms of student teachers’ career commitment between the beginning and end of student teaching, no data exists that examines a change in commitment. With only one-third of Ohio State agricultural education qualified preservice teachers committing to careers in the recent past, establishing where these students commitment level increases or decreases is important. Negative changes as a result of the student teaching experience would warrant investigation into the student teaching experience itself.
CHAPTER 3

METHODS

Introduction to Problem

The 2004 National Center for Educational Statistics report on Teacher Attrition and Mobility follow up study on the 2000-01 teachers indicated that the percent of leavers from the public educational field had increased from 5.5% (1988) to 7.5% (2001). Over that same time period, the number of public school teachers had increased by 25%.

With such a demand on teachers, teacher education programs are called upon more than ever to prepare and supply teachers. A major issue exists as only 25% of the undergraduate students beginning preservice teacher education get to the third year of teaching in the school system (National Commission on Teaching and America’s Future, 1996). A total of 75% of these students transfer to a different major before they student teach, don’t pursue teaching after student teaching, or don’t last up until the third year of teaching. More specifically, 17% of the individuals who do choose to teach in the school system do not continue on past their third year of teaching (National Center for Educational Statistics, 1997).

With such a shortfall in the teacher supply expected in the next decade, it appears that the number of undergraduate students initially enrolling to become teachers is
promising. Somewhere along the line however, the majority of the leavers discontinue their quest to be teachers before they get into their first teaching job. The lack of program completers puts a major responsibility onto the teacher education programs across the country to retain and prepare preservice teachers to do more than survive, but thrive.

An understanding of a preservice teacher’s learning style, efficacy, and heart could give teacher educators a glimpse of the inner-landscape of each preservice teacher. Perhaps an understanding of a preservice teacher’s inner-landscape can assist the teacher education program to prepare more preservice teachers for successful careers in education and decrease the increasing number of leavers.

**Problem Statement**

Students enter a preservice teaching program planning to teach in public schools. However, career intent appears to change during the preservice education program for many students. There is no research that examines the relationships of learning style, teacher heart, and teacher sense of efficacy to career intent. Further, Palmer (1998) stated that teacher heart cannot be developed; only diminished. However, Peterson and Seligman (2004) state that the virtues of care, enthusiasm, hope, faith, and purpose can be developed. No research exists to discern the heart of a teacher, its development or lack thereof, and its change during the preservice preparation program.
Purpose of the Study

The purpose of this descriptive correlational study was to determine the level of a preservice teacher’s heart and sense of efficacy and how these levels changed through the preservice preparation program in relation to the preservice teacher’s learning style. The study also investigated whether the level of the preservice teacher’s heart and level of sense of efficacy explained the Ohio State University’s 2004 preservice agricultural education student’s choice to pursue a career in education.

Research Objectives

The following research objectives guided this study:

1. Describe the relationship between the student teachers’ learning style and teacher heart between post-Spring block and pre-student teaching experience.

2. Describe the relationship between the student teachers’ learning style and teacher heart between the pre-student teaching experience and post-student teaching experience.

3. Describe the relationship between the student teachers’ learning style and teacher heart between post-Spring block and post-student teaching experience.

4. Describe the relationship between the student teachers’ learning style and teacher sense of efficacy between post-Spring block and pre-student teaching experience.

5. Describe the relationship between the student teachers’ learning style and teacher sense of efficacy between pre-student teaching experience and post-student teaching experience.
6. Describe the relationship between the student teachers’ learning style and teacher sense of efficacy between post-Spring block and post-student teaching experience.

7. Describe the relationship between the student teachers’ heart and teacher sense of efficacy between post-Spring block and the beginning of student teaching.

8. Describe the relationship between the student teachers’ heart and teacher sense of efficacy between pre-student teaching experience and post-student teaching experience.

9. Describe the relationship between the student teachers’ heart and teacher sense of efficacy between post-Spring block and post-student teaching experience.

10. Determine if changes in teacher heart and teacher sense of efficacy occur between post-Spring block, pre-student teaching experience, and post-student teaching experience.

11. Determine individual change of student teachers’ heart utilizing the Pulse of a Teacher instrument between post-Spring block, pre-student teaching experience, and post-student teaching experience.

12. Determine individual change of student teachers’ sense of efficacy utilizing the Teacher Sense of Efficacy Scale between post-Spring block, pre-student teaching experience, and post-student teaching experience.

13. Determine if change occurs in student teachers’ career intent from pre-student teaching experience to post-student teaching experience.

14. Determine if change occurs in the student teacher heart between post-Spring Block, pre-student teaching experience, and post-student teaching experience.
15. Determine if change occurs in the student teacher sense of efficacy between post-Spring Block, pre-student teaching experience, and post-student teaching experience.
16. Determine if the student teacher level of heart and level of sense of efficacy influence the student teacher career intent at the end of the student teaching experience.

**Research Design**

This descriptive, correlational study examined student teachers’ learning style, teacher efficacy, and teacher heart at three benchmark points in their development as potential teachers (*Figure 3.1*); i.e. Post-Spring Block, Pre-Field Experience, and Post-Field Experience. Repeated measures were used to assess the change in the student teachers at the three points: Post Block, Pre Field Experience, and Post Field Experience (*Figure 3.2*).
Figure 3.1: Relationships between Learning Style, Teacher Heart, Teacher Sense of Efficacy, and Career Intent.
Figure 3.2: Relationship between Post-Spring Block (Point I), Pre-Field Experience (Point II), and Post-Field Experience (Point III).
Population and Sample

The Ohio State University’s Agricultural Education student teachers who student taught during the 2004 Autumn Quarter were the target population. During the 2004 Spring Quarter’s block, 36 preservice student teachers began preparing for the 2004 Autumn Quarter’s student teaching experience. At the conclusion of the 2004 Spring Quarter block, two preservice teachers chose not to student teach, leaving 34 student teachers as the target population. Thus the population for this study was 34 preservice teachers of agricultural education who student taught Autumn Quarter, 2004 (N=34).

Consent

Before beginning research at a Research One University, including The Ohio State University, all research proposals must be sent to the Institutional Review Board (IRB). Because the population is of adult age and the research is not experimental in nature, a completed exempt short form was submitted to the IRB at the end of July, 2004. Upon receiving exemption from IRB in the third week of August, a protocol number, 0450324 (Appendix A) was issued. All 2004 student teachers (N=34) were mailed a consent letter (Appendix B) the last week of August, 2004, seeking consent for student teachers’ scores to be included in the study. Student teachers signing and returning the consent letter became the sample of the study (n=34). The letter itself sought permission from the student teachers for all seven completed instruments to be included in the study. The seven completed instruments were three Teachers’ Sense of Efficacy Scale instruments, three Pulse of a Teacher scales, and one Group Embedded Figures Test instrument completed by each student teacher.
Instrumentation

The current study utilized three instruments. The instruments included in the study were the Group Embedded Figures Test (GEFT) developed by Witkin, Oltman, Raskin, and Karp (1971), the Teachers’ Sense of Efficacy Scale (TSES) developed at The Ohio State University by Tschannen-Moran and Hoy (2001), and the Pulse of a Teacher (PT) Scale developed at The Ohio State University by Swan and Cano (2004).

Group Embedded Figures Test (GEFT)

The GEFT instrument (Appendix C) was utilized to determine an individual’s learning style. The GEFT was completed in a small booklet form provided by the publisher. The booklet contains three sections totaling 25 embedded pictures. Each item has a figure embedded within a larger distracting figure. Section I contained seven items, was unscored, and served as a practice. Section II and Section III each had nine items and were scored (Witkin, Oltman, Raskin, & Karp, 1971). The total maximum score one could receive on the GEFT is an 18 and the lowest score one could receive was a zero (0). The GEFT, considered a standardized test, has a national mean of 11.4. Individuals which score between a 0 and 11 were considered to be field dependent. At the other end of the continuum were those who scored between 12 and 18 and were considered to be field independent (Witkin, et al. 1971).

To determine the GEFT’s reliability, Witkin, et al. (cited in Cano & Metzger, 1995) used the Spearman-Brown formulation and found the coefficient to be 0.82. In terms of validity, the GEFT is considered a standardized instrument because of its relationship with other instruments that determine field dependence. The Rod and Frame
Test (RFT) and Embedded Figures Test (EFT) are instruments that determine field dependence. When comparing the EFT with the GEFT, Witkin, et al. (as cited in McCutcheon, 1997) produced a correlation of 0.84 to 0.90. When comparing the RFT with the GEFT, Witkin, et al. (as cited in McCutcheon, 1997) produced a correlation of 0.55.

*The Pulse of a Teacher*

The Pulse of a Teacher (PT) instrument (Appendix D) was developed in the spring of 2004 as an interpretation of the work by Intrator (2002) and Palmer (1998). The PT utilized an anchor scale on all 24 items. The 9-point scale was anchored with a 1 = “none/nothing”, 3 = “very little”, 5 = “some”, 7 = “quite a bit”, and 9 = “a great deal”. The instrument (Appendix D) was reviewed by six teacher educators (Jamie Cano, John Ewing, Tracy Kitchell, Neil Knobloch, Nan Kurz, and M. Susie Whittington) at three universities (University of Illinois, University of Missouri, and The Ohio State University) for face and content validity. Edits and comments from the teacher educators were implemented. To determine reliability, a group of 33 preservice teachers, none of which were in the study, completed the instrument. The overall reliability of The Pulse of a Teacher instrument produced an alpha = 0.77. In determining if any items should be removed, a new alpha was calculated if a specific item were to be removed. The new alphas ranged between 0.73 to 0.79. Comparing the new possible alphas with the established alpha of 0.77 was not critical enough to alter the instrument. Thus, the instrument was not altered and was administered to the population in the original format as pilot tested.
Teacher Sense of Efficacy Scale

The Teacher Sense of Efficacy Scale (TSES) (Appendix E) measured teachers’ beliefs about their abilities as a teacher. Tschannen-Moran and Hoy (2001) recommended that the TSES 24-item form be used rather than the 12 item form for preservice teachers’ as responses were more distinct with the long form with the preservice teacher group. The specific computations for scoring the TSES used unweighted means that loaded on each factor, which had been determined to be three specific teacher abilities: classroom management, student engagement, and classroom instruction.

The TSES utilized an anchor scale on all 24 items. The 9-point scale was anchored with a 1 = “none/nothing”, 3 = “very little”, 5 = “some”, 7 = “quite a bit”, and 9 = “a great deal”. Three factors have consistently emerged from the TSES and include: classroom management, student engagement, and instruction. The TSES instruments’ overall reliability produced an alpha of 0.94 (Tschannen-Moran and Hoy, 2001). In terms of factor analysis, the classroom management factor produced an alpha of 0.90, the student engagement factor produced an alpha of 0.87, and the instruction factor produced an alpha of 0.91.

Data Collection Procedures

There were three points of measurement during the study illustrated in Figure 3.2. The first point of measurement was at the conclusion of the 2004 Spring Quarter block. The second point of measurement was during the first week of the student teaching experience in late August or early September. The third and final point of measurement
was during the second week of November at the conclusion of the student teaching experience.

At all three points of measurement, the TSES and PT instruments were administered. At the third and final point of measurement, in addition to the TSES and PT instrument, the GEFT was administered. The GEFT score is a stable score (Witkin, Moore, Oltman, Goodenough, Friedman, Owen, & Raskin, 1977) and only needs to be assessed once, however, the same score was used for all three measurement points for statistical purposes.

The first point of measurement (Post-Spring Block) was completed during the AgEd 594, Laboratory Management and Pedagogy course in a face to face arrangement. The researcher administered both the TSES and PT instruments on separate days at the beginning of the period allowing up to ten minutes for the class to complete the instrument. No person took the entire ten minutes to complete the instruments.

The second point of measurement (Pre-Student Teaching Experience) was completed at the student teachers leisure as each student teacher received both the TSES and PT instruments during their first week of student teaching using surface mail. The student teachers were encouraged to return the instruments within one week of receiving the mailing. The following table (4.1) describes the return date and frequency of returns during that time frame.
<table>
<thead>
<tr>
<th>Group</th>
<th>Return Date</th>
<th>$F$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Early Respondents</td>
<td>August 26$^{th}$ – 31$^{st}$, 2004</td>
<td>22</td>
</tr>
<tr>
<td>Late Respondents</td>
<td>September 1$^{st}$ – 30$^{th}$, 2004</td>
<td>12</td>
</tr>
</tbody>
</table>

*Table 3.1: Student Teacher Return Date and Corresponding Frequency.*

The two groups, early respondents and late respondents, TSES and PT mean scores were tested to see if there were significant differences between the groups. With an independent samples t-test, the groups were not significantly different at the alpha at .05 level on either the TSES or the PT measure. Therefore, the early and late respondents were reported as one group for Point II for both measures.

The third point of measurement (Post-Student Teaching Experience) was completed as the students gathered during the second week in November at the Ohio FFA Center in Columbus, Ohio. The researcher administered the GEFT, TSES, and PT on Tuesday morning, November 16$^{th}$ to all of the student teachers ($n=34$). The GEFT was the first instrument administered to the student teachers by the researcher in a timed 20 minute face to face session. Following the timed GEFT administration, the student teachers were given 10 minutes to complete the TSES instrument. The PT instrument was then administered to the student teachers allowing 10 minutes to complete. The last piece of information ascertained from the group was a response to each of the following two questions: “Prior to your student teaching experience, on a scale of 1 to 10, how likely were you to enter a career in teaching?” and “Now that your student teaching experience is completed, on a scale of 1 to 10, how likely are you to enter a career in
teaching?” The end of the scale with a corresponding 1 indicated “not likely at all” and the opposite end with a corresponding 10 indicated “highly likely”. Respondents were asked to circle only one number for each question.

After all of the data had been collected, during Tuesday’s lunch hour, the researcher presented the student teachers an abstract of the project under study including discussion. In addition, the researcher served a City BBQ lunch, as promised, in an attempt to thank all of the student teachers for their participation in the study.

Data Analysis

Objectives 1-9:

All data were collected and stored in the researcher’s locked desk. At the end of February, 2005, the data set was analyzed using SPSS 13.0 (2005). Data were either interval or ratio in nature (Table 3.2) and correlated, producing Pearson product moment coefficients (Table 3.3) representing the linear relationships between the constructs of learning style, teacher heart, and teacher sense of efficacy.

<table>
<thead>
<tr>
<th>Name of Instrument</th>
<th>Scale Units</th>
<th>Scale of Measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group Embedded Figures Test (GEFT)</td>
<td>0 – 18</td>
<td>Ratio</td>
</tr>
<tr>
<td>Pulse of a Teacher (PT)</td>
<td>1 – 9</td>
<td>Interval</td>
</tr>
<tr>
<td>Teacher Sense of Efficacy Scale (TSES)</td>
<td>1 – 9</td>
<td>Interval</td>
</tr>
<tr>
<td>Career Intent</td>
<td>1 – 10</td>
<td>Interval</td>
</tr>
</tbody>
</table>

Table 3.2: Name of Instrument, Scale Units of, and Scale of Measurement.
Table 3.3: Measures of Linear Relationships Between Two Variables.

Although Teachers’ Sense of Efficacy Scores (TSES) have had consistent results producing three factors: classroom management, student engagement, and instructional strategies (Tschannen-Moran, Hoy, & Hoy, 1998), this study only looked at the summated scale as the representative TSES score. This score was calculated by summing all 24 TSES items and then dividing by 24 to give a mean TSES Score.

The researcher believed that four factors: teacher mission, faith in teaching, caring, and enthusiasm comprised the teacher heart score. At this time there have not been enough instruments completed by educators to run a factor analysis. Thus for this study, the twenty items of the Pulse of a Teacher (PT) instrument measuring a teacher’s heart were summated and then divided by 20 to give a mean PT score.
Correlations were calculated between the TSES scores, PT score, and learning style. A Pearson Product-Moment correlation coefficient (Table 3.3) was produced to determine strength and direction of relationships between the repeated measures of the TSES, PT, and the GEFT, an alpha level was set at \textit{a priori} at 0.05.

The negative or positive $r$ value determined the direction of the relationship. To describe the level of strength of the relationship, Bartz’s (1999, p. 184) adjective list (Table 3.4) was utilized and listed below.

<table>
<thead>
<tr>
<th>Value of $r$</th>
<th>Adjective</th>
</tr>
</thead>
<tbody>
<tr>
<td>.80 or higher</td>
<td>Very high</td>
</tr>
<tr>
<td>.60 to .79</td>
<td>Strong</td>
</tr>
<tr>
<td>.50 to .59</td>
<td>Moderate</td>
</tr>
<tr>
<td>.20 to .49</td>
<td>Low</td>
</tr>
<tr>
<td>.00 to .19</td>
<td>Very Low</td>
</tr>
</tbody>
</table>

\textit{Table 3.4: Bartz’s Adjectives Describing Strength of Relationships.}

The value of $d$ represents the level of power between two mean scores indicating a difference between the means. Cohen’s (1988) adjectives give an interpretation of the difference between the means. Trivial effect size indicates there is no real difference between the means. Small effect size is noticed by an expert researcher; one who really understands the phenomenon under study. A moderate effect size is noticed by a field expert. A strong effect size is noticed by a lay person, anyone can notice the difference. The values and the corresponding adjectives are found in Table 3.5.

<table>
<thead>
<tr>
<th>Value of $d$</th>
<th>Adjective for effect size</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.0 to 0.2</td>
<td>trivial</td>
</tr>
<tr>
<td>0.2 to 0.5</td>
<td>small</td>
</tr>
<tr>
<td>0.5 to 0.8</td>
<td>moderate</td>
</tr>
<tr>
<td>0.8 and above</td>
<td>strong</td>
</tr>
</tbody>
</table>

\textit{Table 3.5: Cohen’s Interpretation of Effect Sizes (1988).}
**Objective 10:**

To detect changes of teacher heart and teacher sense of efficacy between the three points: post-Spring block, pre-student teaching experience, and post-student teaching experience, analysis of variance (ANOVA) was used. If differences were detected at a significant F-value of less than or equal to .05, set *a priori*, the Tukey Honest Significant Difference test option on SPSS 13.0 (2005) was implemented to simultaneously detect change between and within all of the measures of the three points: post-Spring block, pre-student teaching experience, and post-student teaching experience.

**Objective 11 and 12:**

To determine if individual changes occurred in both teacher heart and sense of efficacy, mean scores were charted at the three points. A separate table was developed for teacher heart and teacher sense of efficacy. In addition, change 1 (Δ over the Summer) was determined by subtracting Point I (post-Spring Block) from Point II (pre-student teaching experience), change 2 (Δ over the student teaching experience) was determined by subtracting Point II (pre-student teaching experience) from Point III (post-student teaching experience), and finally, change 3 (Δ over both the Summer and student teaching experience) was determined by subtracting Point I (post-Spring Block) from Point III (post-student teaching experience). Positive and negative changes were summed to compare the number of student teachers changing and in what direction.
**Objective 13:**

To determine if change occurs in student teachers’ career intent from pre-student teaching experience to post-student teaching experience, means were calculated for both pre and post student teaching experience. In addition, change in career intent data was sorted depending on the student teacher’s learning style.

**Objective 14 & 15:**

To detect changes of teacher heart and teacher sense of efficacy between the three points: post-Spring block, pre-student teaching experience, and post-student teaching experience, analysis of variance (ANOVA) was used. If differences were detected at a significant F-value of less than or equal to .05, set *a priori*, the Tukey Honest Significant Difference test option on SPSS 13.0 (2005) was implemented to simultaneously detect change between and within all of the measures of the three points: post-Spring block, pre-student teaching experience, and post-student teaching experience.

**Objective 16:**

To determine if the student teacher level of heart and level of sense of efficacy influence the student teacher career intent at the end of the student teaching experience, regression will be utilized. Two independent variables, teacher heart and teacher sense of efficacy at the end of student teaching were selected because the researcher was limited to only two variables because of $n = K-1 = 3-1 = 2$. The dependent variable selected was career intent at the end of student teaching.
CHAPTER 4

RESULTS

Problem Statement

Students enter a preservice teaching program planning to teach in public schools. However, career intent appears to change during the preservice education program for many students. There is no research that examines the relationships of learning style, teacher heart, and teacher sense of efficacy to career intent. Further, Palmer (1998) stated that teacher heart cannot be developed only diminished. However, Peterson and Seligman (2004) state that the virtues of care, enthusiasm, hope, faith, and purpose can be developed. No research exists to discern the heart of a teacher, its development or lack thereof, and its change during the preservice preparation program.

Purpose of the Study

The purpose of this descriptive correlational study was to determine the level of a preservice teacher’s heart and sense of efficacy and how these levels changed through the preservice preparation program in relation to the preservice teacher’s learning style. The study also investigated whether the level of the preservice teacher’s heart and level of
sense of efficacy explained the Ohio State University’s 2004 preservice agricultural education student’s choice to pursue a career in education.

**Research Objectives**

The following research objectives guided this study:

1. Describe the relationship between the student teachers’ learning style and teacher heart between post-Spring block and pre-student teaching experience.

2. Describe the relationship between the student teachers’ learning style and teacher heart between the pre-student teaching experience and post-student teaching experience.

3. Describe the relationship between the student teachers’ learning style and teacher heart between post-Spring block and post-student teaching experience.

4. Describe the relationship between the student teachers’ learning style and teacher sense of efficacy between post-Spring block and pre-student teaching experience.

5. Describe the relationship between the student teachers’ learning style and teacher sense of efficacy between pre-student teaching experience and post-student teaching experience.

6. Describe the relationship between the student teachers’ learning style and teacher sense of efficacy between post-Spring block and post-student teaching experience.

7. Describe the relationship between the student teachers’ heart and teacher sense of efficacy between post-Spring block and the beginning of student teaching.
8. Describe the relationship between the student teachers’ heart and teacher sense of efficacy between pre-student teaching experience and post-student teaching experience.

9. Describe the relationship between the student teachers’ heart and teacher sense of efficacy between post-Spring block and post-student teaching experience.

10. Determine if changes in teacher heart and teacher sense of efficacy occur between post-Spring block, pre-student teaching experience, and post-student teaching experience.

11. Determine individual change of student teachers’ heart utilizing the Pulse of a Teacher instrument between post-Spring block, pre-student teaching experience, and post-student teaching experience.

12. Determine individual change of student teachers’ sense of efficacy utilizing the Teacher Sense of Efficacy Scale between post-Spring block, pre-student teaching experience, and post-student teaching experience.

13. Determine if change occurs in student teachers’ career intent from pre-student teaching experience to post-student teaching experience.

14. Determine if change occurs in the student teacher heart between post-Spring Block, pre-student teaching experience, and post-student teaching experience.

15. Determine if change occurs in the student teacher sense of efficacy between post-Spring Block, pre-student teaching experience, and post-student teaching experience.

16. Determine if the student teacher level of heart and level of sense of efficacy influence the student teacher career intent at the end of the student teaching experience.
Results by Objective:

Objective 1:

The relationship between the student teachers’ learning style and teacher heart between post-Spring Quarter block and pre-student teaching experience resulted in a low negative correlation (-.260) (Bartz, 1999). This correlation indicates that as teacher heart increased in level, between post-block and pre-student teaching experience, was seen in student teachers who tended to have a dependent learning style. The change in teacher heart between Points I and II had a trivial effect size considering learning style groups.

Objective 2:

The relationship between the student teachers’ learning style and teacher heart between the pre-student teaching experience and post-student teaching experience resulted in a very low negative correlation (-.167) (Bartz, 1999). This correlation indicated that over the student teaching experience, the student teachers that gained more heart were student teachers who tended to have a dependent learning style. In terms of effect size, the change of teacher heart between Points II and III was strong between dependent and independent learning style groups.

Objective 3:

The relationship between the student teachers’ learning style and teacher heart between post-Spring Quarter block and post-student teaching experience resulted in a low negative correlation (-.406) (Bartz, 1999). This correlation was significant at the .05 level indicating that between post-block and post-student teaching experience, the student
teachers that gained more heart were those student teachers who tended to have a dependent learning style. The effect size for the change in teacher heart between Points I and III was small considering learning style groups.

**Objective 4:**

The relationship between the student teachers’ learning style and teacher sense of efficacy between post-Spring Quarter block and pre-student teaching experience resulted in a very low positive correlation (.176) (Bartz, 1999). This correlation indicated that between post-block and pre-student teaching experience, the student teachers who gained more heart were those student teachers who tended to have an independent learning style. In terms of effect size, the change of teacher sense of efficacy between Points I and II was moderate between learning style groups.

**Objective 5:**

The relationship between the student teachers’ learning style and teacher sense of efficacy between pre-student teaching experience and post-student teaching experience was a low positive correlation (.203) (Bartz, 1999). This correlation indicated that over the student teaching experience, the student teachers who gained more heart were those student teachers who tended to have an independent learning style. The effect size for the change in teacher sense of efficacy between Points II and III was trivial considering learning style groups.
Objective 6:

The relationship between the student teachers’ learning style and teacher sense of efficacy between post-Spring Quarter block and post-student teaching experience was a very low positive correlation (.046) (Bartz, 1999). This correlation was very low indicating almost no relationship between student teacher’s learning style and sense of efficacy between post-block and post-student teaching experience. The effect size for the change in teacher sense of efficacy between Points I and III was trivial considering learning style groups.

Objective 7:

The relationship between the student teachers’ heart and teacher sense of efficacy between the end of the teacher preparation block and the beginning of student teaching resulting in a very low positive correlation (.055) (Bartz, 1999). This correlation between change in teacher’s heart and sense of efficacy between post-block and pre-student teaching experience had almost no relationship and the effect size was small.

Objective 8:

The relationship between the student teachers’ heart and teacher sense of efficacy between pre-student teaching experience and post-student teaching experience resulted in a strong negative correlation (-.680) (Bartz, 1999). This correlation was significant at the .01 level indicating that during the student teaching experience, as the student teacher’s heart increased, their sense of efficacy decreased and the effect size was quite strong.
**Objective 9:**

The relationship between the student teachers’ heart and teacher sense of efficacy between post-Spring Quarter block and post-student teaching experience resulting in a very low positive correlation (.140) (Bartz, 1999). When considering the change between Point I and Point III in the teacher heart and sense of efficacy, there was almost no relationship, while the effect size was quite strong.
<table>
<thead>
<tr>
<th>Objective</th>
<th>Strength of Relationship (r)</th>
<th>Effect Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>-.260</td>
<td>Low</td>
</tr>
<tr>
<td>2</td>
<td>-.167</td>
<td>Very Low</td>
</tr>
<tr>
<td>3</td>
<td>-.406*</td>
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<tr>
<td>4</td>
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<td>Very Low</td>
</tr>
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<td>5</td>
<td>.203</td>
<td>Low</td>
</tr>
<tr>
<td>6</td>
<td>.046</td>
<td>Very Low</td>
</tr>
<tr>
<td>7</td>
<td>.055</td>
<td>Very Low</td>
</tr>
<tr>
<td>8</td>
<td>-.680**</td>
<td>Strong</td>
</tr>
<tr>
<td>9</td>
<td>.140</td>
<td>Very Low</td>
</tr>
</tbody>
</table>

*significant at the .05 level.
**significant at the .01 level

Table 4.1: Pearson Product Moment Coefficient (r), Strength of Relationship, Cohen’s Effect Size (1988) for Objectives 1-9.
**Objective 10:**

Objective 10 determined if changes in teacher heart and teacher sense of efficacy occurred between post-block, pre-student teaching experience, and post-student teaching experience. The group of student teachers \((N = 34)\) heart score decreased between points I and II by -.0103, moving from 7.3044 to 7.2941, but increased over the student teaching experience (between points II and III) by .3059, changing from 7.2941 to 7.6000. The heart scores increased between post-block and pre-student teaching and over the student teaching experience by .2956, changing from 7.3044 to 7.6000.

The student teachers’ sense of efficacy scores decreased between all three points. Between points I and II, the TSES scores dropped by .2108, changing from 7.2966 to 7.0858. Over the student teaching experience (between points II and III), the TSES scores dropped by .7525, changing from 7.0858 to 6.3333. The TSES scores decreased between the post-block and pre-student teaching experience and over the student teaching experience by .9632, changing from 7.2966 to 6.3333. *Table 4.2* illustrates the teacher heart and TSES scores between points I, II, or III.

The change in Teacher Heart between Point I and II had a trivial effect size. Changes in Teacher Heart between Point I and III and II and III both had small effect size (Cohen, 1988). The change of teacher sense of efficacy between Point I and Point II had a small effect size (Cohen, 1988). The change of teacher sense of efficacy between Point II and Point III, and between Point I and Point III both had strong effect size (Cohen, 1988).
### Table 4.2: Results for Objective 10: Determine if changes in teacher heart and teacher sense of efficacy occur between post-Spring block, pre-student teaching experience, and post-student teaching experience.

<table>
<thead>
<tr>
<th>Measure</th>
<th>Point I to II</th>
<th>Point II to III</th>
<th>Point I to III</th>
</tr>
</thead>
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<tr>
<td></td>
<td>△ 1 Mean</td>
<td>△ 2 Mean</td>
<td>△ 3 Mean</td>
</tr>
<tr>
<td>Teacher Heart</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(S.D.)</td>
<td>=7.2941 (.678) -</td>
<td>=7.6000 (.699) -</td>
<td>=7.6000 (.699) -</td>
</tr>
<tr>
<td>Change</td>
<td>7.3044 (.713)</td>
<td>7.2941 (.678)</td>
<td>7.3044 (.713)</td>
</tr>
<tr>
<td>Effect Size</td>
<td>.0103</td>
<td>+.3059</td>
<td>+.2956</td>
</tr>
<tr>
<td>Teacher Sense of Efficacy</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(S.D.)</td>
<td>=7.0858 (.734) -</td>
<td>=6.3333 (.583) -</td>
<td>=6.3333 (.583) -</td>
</tr>
<tr>
<td>Change</td>
<td>7.2966 (.752)</td>
<td>7.0858 (.734)</td>
<td>7.2966 (.752)</td>
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<tr>
<td>Effect Size</td>
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<td>-.9632</td>
</tr>
</tbody>
</table>

Both Scales: 1 = none/nothing, 3 = very little, 5 = some, 7 = quite a bit, 9 = a great deal

**Objective 11:**

Objective 11 was to determine if individual change of student teachers’ heart utilizing the Pulse of a Teacher instrument at and between point I, II, and III. The mean change of all student teachers’ heart between point I to point II was -.0103. The individual heart scores ranged from decreasing by 1.00 to increasing by 1.40. In addition, the mean change of all student teachers’ heart between point II to point III was +.3059. Between point II and point III was the student teaching experience. The individual heart scores ranged from decreasing by .95 to increasing by 1.70. Further, the mean change of all student teachers’ heart between point I to point III was +.2956. Between point I and point III was the period of time between completing the Spring block and the completion of student teaching. The individual heart scores ranged from decreasing by .85 to increasing by 1.60.
The number of student teachers increasing heart score between the post-block and pre-student teaching experience was 15, while 19 student teachers decreased heart score during the same time period. During the student teaching experience, 25 student teachers increased heart score, while 9 decreased heart score. When assessing change in the student teachers’ heart between post-block and post-student teaching experience, 8 decreased heart score, while 26 gained heart score. *Table 4.3* illustrates the individual changes within all 34 student teachers’ hearts’ and sense of efficacy between point I, II, and III.
<table>
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<th>Pt III</th>
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<th>Δ 2</th>
<th>Δ 3</th>
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</tr>
</tbody>
</table>

| Mean | 7.30 | 7.29 | 7.60 | -.010 | .306 | .396 |
| (S.D.) | (.713) | (.678) | (.699) | (.448) | (.547) | (.513) |

Teacher Heart Scale: 1 = none/nothing, 3 = very little, 5 = some, 7 = quite a bit, 9 = a great deal

Table 4.3: Results for Objective 11: Determine individual change of student teachers’ heart utilizing the Pulse of a Teacher instrument at and between Point I, II, and III.
Objective 12:

Objective 12 was to determine individual change of student teachers’ sense of efficacy utilizing the Teacher Sense of Efficacy Scale (TSES) at and between Point I, II, and III. The teacher sense of efficacy scale ranged from 1 = no efficacy to 9 = a great deal of efficacy. At Point I (post-Spring Block), individual TSES scores ranged from 5.40 to 8.70, while the group mean was 7.30. At Point II (pre-student teaching experience), individual TSES scores ranged from 5.85 to 8.55, while the group mean was 7.29. Change 1, between Point I and Point II, had 15 student teachers increase their sense of efficacy score, while 19 student teachers decreased their sense of efficacy score, with a group decrease of .21 on the TSES score.

At Point III (post-student teaching experience), individual TSES scores ranged from 4.79 to 7.17, with a group mean of 6.33. Change 2, between Point II and Point III (the student teaching experience), had 7 student teachers increase their sense of efficacy, while 27 student teachers decreased their sense of efficacy, with a group decrease of .75 on the TSES score. Change 3, between Point I and Point II (post-block and post-student teaching experience), had 5 student teachers increase their sense of efficacy score, while 29 student teachers decreased their sense of efficacy score. The group mean dropped .96 on the TSES score. Table 4.4 illustrates the individual changes described above.
## Table 4.4: Results for Objective 12: Determine individual change of student teachers’ sense of efficacy utilizing the Teacher Sense of Efficacy Scale at and between Point I, II, and III.

<table>
<thead>
<tr>
<th>#</th>
<th>Teacher Sense of Efficacy Score(s)</th>
<th>Point I to II</th>
<th>Point II to III</th>
<th>Point I to III</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Pt I</td>
<td>Pt II</td>
<td>Pt III</td>
</tr>
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<td>1</td>
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<td>6.50</td>
<td>6.58</td>
<td>-.21</td>
</tr>
<tr>
<td>23</td>
<td>6.75</td>
<td>6.58</td>
<td>6.63</td>
<td>-.17</td>
</tr>
<tr>
<td>24</td>
<td>8.63</td>
<td>7.63</td>
<td>5.88</td>
<td>-1.00</td>
</tr>
<tr>
<td>25</td>
<td>8.13</td>
<td>8.25</td>
<td>6.83</td>
<td>.13</td>
</tr>
<tr>
<td>26</td>
<td>6.50</td>
<td>7.42</td>
<td>6.75</td>
<td>.92</td>
</tr>
<tr>
<td>27</td>
<td>7.21</td>
<td>6.58</td>
<td>5.92</td>
<td>-.63</td>
</tr>
<tr>
<td>28</td>
<td>8.25</td>
<td>7.75</td>
<td>6.71</td>
<td>-.50</td>
</tr>
<tr>
<td>29</td>
<td>6.33</td>
<td>5.83</td>
<td>6.17</td>
<td>-.50</td>
</tr>
<tr>
<td>30</td>
<td>7.46</td>
<td>7.21</td>
<td>6.13</td>
<td>-.25</td>
</tr>
<tr>
<td>31</td>
<td>7.75</td>
<td>8.17</td>
<td>6.92</td>
<td>.42</td>
</tr>
<tr>
<td>32</td>
<td>6.83</td>
<td>6.83</td>
<td>6.42</td>
<td>.00</td>
</tr>
<tr>
<td>33</td>
<td>7.58</td>
<td>7.67</td>
<td>5.88</td>
<td>.08</td>
</tr>
<tr>
<td>34</td>
<td>7.63</td>
<td>6.92</td>
<td>6.83</td>
<td>-.71</td>
</tr>
<tr>
<td>Mean</td>
<td>7.30</td>
<td>7.09</td>
<td>6.33</td>
<td>-2.11</td>
</tr>
<tr>
<td>(S.D.)</td>
<td>(.752)</td>
<td>(.734)</td>
<td>(.583)</td>
<td>(.697)</td>
</tr>
</tbody>
</table>

TSES Scale: 1 = none/nothing, 3 = very little, 5 = some, 7 = quite a bit, 9 = a great deal

Table 4.4: Results for Objective 12: Determine individual change of student teachers’ sense of efficacy utilizing the Teacher Sense of Efficacy Scale at and between Point I, II, and III.
Objective 13:

Objective 13 was to determine if change occurred in student teachers’ career intent from pre-student teaching experience to post-student teaching experience. The group (N=34) increased its’ desire to enter education as a career score from 8.18 to 8.82 on a scale of 1 = not likely at all, to 10 = highly likely. Pre-student teaching experience responses ranged from 2 to 10, while post-student teaching experience responses ranged from 1 to 10. When looking at the student teacher’s within the two learning style groups, the student teachers who have a dependent learning style (n_DLS = 8) increased career intent score from 8.00 to 8.25, while the independent learning style student teachers (n_ILS = 26) increased career intent score from 8.18 to 9.00 over the student teaching experience. Table 4.5 illustrates the results for Objective 13.

The effect size for the student teachers with a dependent learning style of change between pre and post student teaching experience was trivial (Cohen, 1988). The effect size for the student teachers with an independent learning style and for the entire group of change between pre and post student teaching experience towards career intent was small (Cohen, 1988).
Table 4.5: Results for Objective 13: Determine if change occurs in student teachers’ career intent from pre-student teaching experience to post-student teaching experience.

<table>
<thead>
<tr>
<th></th>
<th>Pre-S.T.E.</th>
<th>Post-S.T.E.</th>
<th><strong>△</strong> in Response</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Point II</td>
<td>Point III</td>
<td>Point III – Point II</td>
</tr>
<tr>
<td>Dependent L.S. ($n_{DS} = 8$)</td>
<td>Mean 8.00</td>
<td>8.25</td>
<td>+.25</td>
</tr>
<tr>
<td></td>
<td>Min. 2</td>
<td>1</td>
<td>-1</td>
</tr>
<tr>
<td></td>
<td>Max. 10</td>
<td>10</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>S.D. 2.673</td>
<td>3.105</td>
<td></td>
</tr>
<tr>
<td>Independent L. S. ($n_{ILS} = 26$)</td>
<td>Mean 8.19</td>
<td>9.00</td>
<td>+.81</td>
</tr>
<tr>
<td></td>
<td>Min. 5</td>
<td>3</td>
<td>-2</td>
</tr>
<tr>
<td></td>
<td>Max. 9</td>
<td>9</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>S.D. 1.698</td>
<td>1.673</td>
<td></td>
</tr>
<tr>
<td>Overall (N=34)</td>
<td>Mean 8.15</td>
<td>8.82</td>
<td>+.67</td>
</tr>
<tr>
<td></td>
<td>Min. 2</td>
<td>1</td>
<td>-1</td>
</tr>
<tr>
<td></td>
<td>Max. 10</td>
<td>10</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>S.D. 1.925</td>
<td>2.067</td>
<td></td>
</tr>
</tbody>
</table>

Likelihood of entering education profession: 1 = “not likely at all” and 10 = “highly likely”

$d$ = effect size

Objective 14:

Objective 14 determined if change occurred in the student teacher heart between post-Spring Block (Pt I), pre-student teaching experience (Pt II), and post-student teaching experience (Pt III) in relationship to learning style. The overall group ($N=34$) teacher heart mean score was 7.30 at post-Spring Block (Point I), decreased by .01 to 7.29 at the pre-student teaching experience (Point II), and then increased by .31 to 7.60 at the post-student teaching experience (Point III). The overall change in teacher heart score between Point I and III was .30; from 7.30 to 7.60.

The student teachers ($n = 8$) with a dependent learning style increased their teacher heart score between all three points. The student teachers ($n = 26$) with an
independent learning style had their teacher heart score decrease by .10; from 7.37 (Pt I) to 7.27 (Pt II), then their teacher heart score increased by .33; from 7.27 (Pt II) to 7.60 (Pt III).

The effect size for the dependent learning style teacher’s heart score (n = 8) between Point I and III was moderate (Cohen, 1988). All other effect sizes considering change in teacher heart were either trivial or small, despite learning style (Cohen, 1988). Table 4.6 explains the change that occurred in the student teacher heart scores between Points I, II, and III and also includes mean scores at each time point and change between time points for the entire group, and then specifically sorted by the student teachers’ learning style.

<table>
<thead>
<tr>
<th>Student Teachers</th>
<th>Teacher Heart Score(s)</th>
<th>Pt I</th>
<th>Pt II</th>
<th>Pt III</th>
<th>Pt I to II</th>
<th>Pt II to III</th>
<th>Pt I to III</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall Group (N = 34)</td>
<td></td>
<td>7.30</td>
<td>7.29</td>
<td>7.60</td>
<td>- .01</td>
<td>+ .31</td>
<td>+ .30</td>
</tr>
<tr>
<td>S.D.</td>
<td></td>
<td>.713</td>
<td>.678</td>
<td>.699</td>
<td>(D = .015)</td>
<td>(d = .450)</td>
<td>(d = .419)</td>
</tr>
<tr>
<td>Dependent L.S. (n=8)</td>
<td></td>
<td>7.09</td>
<td>7.34</td>
<td>7.59</td>
<td>+ .25</td>
<td>+ .25</td>
<td>+ .50</td>
</tr>
<tr>
<td>S.D.</td>
<td></td>
<td>.906</td>
<td>.849</td>
<td>.654</td>
<td>(D = -.285)</td>
<td>(d = .330)</td>
<td>(d = -.633)</td>
</tr>
<tr>
<td>Independent L.S. (n=26)</td>
<td></td>
<td>7.37</td>
<td>7.27</td>
<td>7.60</td>
<td>- .100</td>
<td>.330</td>
<td>.230</td>
</tr>
<tr>
<td>S.D.</td>
<td></td>
<td>.640</td>
<td>.606</td>
<td>.725</td>
<td>(D = .160)</td>
<td>(d = .494)</td>
<td>(d = .336)</td>
</tr>
</tbody>
</table>

Teacher Heart Scale: 1 = none/nothing, 3 = very little, 5 = some, 7 = quite a bit, 9 = a great deal
\(d\) = effect size

Table 4.6: Results for Objective14: Determine if change occurs in the student teacher heart between three points: post-Spring Block (Pt I), pre-student teaching experience (Pt II), and post-student teaching experience (Pt III) in relationship to Learning Style (L.S.).
Objective 15:

Objective 15 determined if change occurred in the student teachers’ sense of efficacy between three points: post-Spring Block (Pt I), pre-student teaching experience (Pt II), and post-student teaching experience (Pt III) in relationship to Learning Style (L.S.). The overall group ($N = 34$) teacher sense of efficacy score was 7.30 at post-Spring Block (Point I), decreased by .21 to 7.09 at the pre-student teaching experience (Point II), and then decreased by .76 to 6.33 at the post-student teaching experience (Point III). The overall change in teacher sense of efficacy score between Point I and III was -.97; from 7.30 to 6.33.

The effect size for the change in teacher sense of efficacy between Point I to II was small for the overall group ($N = 34$) and for the independent learning style group ($n = 26$) (Cohen, 1988). The overall group and independent learning style group between Point II and III, and Point I and III had strong effect sizes (Cohen, 1988). The dependent learning style group had moderate effect sizes for both the Point I to II and Point II to III changes in teacher sense of efficacy (Cohen, 1988). However, between Point I and III, the dependent learning style group had strong effect size (Cohen, 1988). Table 4.7 illustrates the changes in the student teachers’ sense of efficacy at and between Points I, II, and III.
Table 4.7: Results for Objective 15: Determine if change occurs in the student teacher sense of efficacy between three points: post-Spring Block (Pt I), pre-student teaching experience (Pt II), and post-student teaching experience (Pt III) in relationship to Learning Style (L.S.).

<table>
<thead>
<tr>
<th>Student Teachers</th>
<th>Teacher Sense of Efficacy Score(s)</th>
<th>Pt I</th>
<th>Pt II</th>
<th>Pt III</th>
<th>Pt I to II</th>
<th>Pt II to III</th>
<th>Pt I to III</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall Group</td>
<td></td>
<td>7.30</td>
<td>7.09</td>
<td>6.33</td>
<td>-.21</td>
<td>-.76</td>
<td>-.97</td>
</tr>
<tr>
<td>(N = 34)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>S.D.</td>
<td></td>
<td>.752</td>
<td>.734</td>
<td>.583</td>
<td>d = .283</td>
<td>d = 1.133</td>
<td>d = 1.436</td>
</tr>
<tr>
<td>Dependent L.S.</td>
<td></td>
<td>7.41</td>
<td>6.96</td>
<td>6.32</td>
<td>-.45</td>
<td>-.64</td>
<td>-1.09</td>
</tr>
<tr>
<td>(n = 8)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>S.D.</td>
<td></td>
<td>.811</td>
<td>.858</td>
<td>.545</td>
<td>d = .539</td>
<td>d = .890</td>
<td>d = 1.578</td>
</tr>
<tr>
<td>Independent L.S.</td>
<td></td>
<td>7.26</td>
<td>7.12</td>
<td>6.33</td>
<td>-.14</td>
<td>-.79</td>
<td>-.93</td>
</tr>
<tr>
<td>(n = 26)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>S.D.</td>
<td></td>
<td>.746</td>
<td>.706</td>
<td>.545</td>
<td>d = .193</td>
<td>d = 1.202</td>
<td>d = 1.370</td>
</tr>
</tbody>
</table>

TSES Scale: 1 = none/nothing, 3 = very little, 5 = some, 7 = quite a bit, 9 = a great deal
\[ d = \text{effect size} \]

Table 4.7: Results for Objective 15: Determine if change occurs in the student teacher sense of efficacy between three points: post-Spring Block (Pt I), pre-student teaching experience (Pt II), and post-student teaching experience (Pt III) in relationship to Learning Style (L.S.).

**Objective 16:**

Objective 16 determined if the student teachers’ level of heart and level of sense of efficacy influenced the student teachers’ career intent at the end of the student teaching experience. The student teachers’ heart score explained 26.0% of the variance in explaining their career intent. The student teachers’ sense of efficacy score explained 17.7% of the variance in explaining their career intent. Between the student teachers’ heart score and sense of efficacy score, 43.7% of the variance in the level of career intent was explained. *Table 4.8* illustrates the amount of variance explained by the levels of student teacher heart score and sense of efficacy score.
### Table 4.8: Results for Objective 16: Determine if the student teacher level of heart and level of sense of efficacy influence the student teacher career intent at the end of the student teaching experience.

To determine if the Teacher Heart and Teacher Sense of Efficacy mean scores were significantly different between Points I, II, and III a paired-samples t-test was completed for every set of points, set at the .05 level. Teacher Heart mean scores and Teacher Sense of Efficacy mean scores were both significantly different between Points I and III, and between Points II and III, both at the .05 level. Table 4.9 illustrates the levels of statistical significance for the Teacher Sense of Efficacy between Points I, II, and III.

<table>
<thead>
<tr>
<th>Points</th>
<th>df</th>
<th>Significance (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teacher Heart</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I &amp; II</td>
<td>33</td>
<td>.894</td>
</tr>
<tr>
<td>I &amp; III</td>
<td>33</td>
<td>.002*</td>
</tr>
<tr>
<td>II &amp; III</td>
<td>33</td>
<td>.003*</td>
</tr>
<tr>
<td>Teacher Sense of Efficacy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I &amp; II</td>
<td>33</td>
<td>.073</td>
</tr>
<tr>
<td>I &amp; III</td>
<td>33</td>
<td>.000*</td>
</tr>
<tr>
<td>II &amp; III</td>
<td>33</td>
<td>.000*</td>
</tr>
</tbody>
</table>

*Significant at the .05 level*

### Table 4.9: Statistical significance between Points I, II, and III on the Teacher Heart mean scores and Teacher Sense of Efficacy mean scores.

Overall mean scores for Teacher Heart decreased from 7.30 (Point I) to 7.29 (Point II), then increased to 7.60 (Point III). As seen in Table 4.9 the change in Teacher Heart mean scores between Points I and III (+.30), and Points II and III (+.31) were
statistically significant at the .05 level. Overall mean scores for Teacher Sense of Efficacy decreased from 7.30 (Point I) to 7.09 (Point II), then decreased to 6.33 (Point III). As seen in Table 4.9 the change in Teacher Sense of Efficacy mean scores between Points I and III (-.96), and Points II and III (-.75) were statistically significant at the .05 level. Figure 4.1 illustrates the changes between Points I, II, and III on the measures of Teacher Heart mean score and the Teacher Sense of Efficacy mean score. The mean scores were for the overall group, dependent learning style group, and independent learning style group.
Figure 4.1: Overall Group and Learning Style Group Teacher Heart Mean Score and Teacher Sense of Efficacy Mean Score at Points I, II, and III.
CHAPTER 5

CONCLUSIONS, IMPLICATIONS, RECOMMENDATIONS

Problem Statement

Students enter a preservice teaching program planning to teach in public schools. However, career intent appears to change during the preservice education program for many students. There is no research that examines the relationships of learning style, teacher heart, and teacher sense of efficacy to career intent. Further, Palmer (1998) stated that teacher heart cannot be developed only diminished. However, Peterson and Seligman (2004) state that the virtues of care, enthusiasm, hope, faith, and purpose can be developed. No research exists to discern the heart of a teacher, its development or lack thereof, and its change during the preservice preparation program.

Purpose of the Study

The purpose of this descriptive correlational study was to determine the level of a preservice teacher’s heart and sense of efficacy and how these levels changed through the preservice preparation program in relation to the preservice teacher’s learning style. The study also investigated whether the level of the preservice teacher’s heart and level of
sense of efficacy explained the Ohio State University’s 2004 preservice agricultural education student’s choice to pursue a career in education.

**Research Objectives**

The following research objectives guided this study:

1. Describe the relationship between the student teachers’ learning style and teacher heart between post-Spring block and pre-student teaching experience.

2. Describe the relationship between the student teachers’ learning style and teacher heart between the pre-student teaching experience and post-student teaching experience.

3. Describe the relationship between the student teachers’ learning style and teacher heart between post-Spring block and post-student teaching experience.

4. Describe the relationship between the student teachers’ learning style and teacher sense of efficacy between post-Spring block and pre-student teaching experience.

5. Describe the relationship between the student teachers’ learning style and teacher sense of efficacy between pre-student teaching experience and post-student teaching experience.

6. Describe the relationship between the student teachers’ learning style and teacher sense of efficacy between post-Spring block and post-student teaching experience.

7. Describe the relationship between the student teachers’ heart and teacher sense of efficacy between post-Spring block and the beginning of student teaching.
8. Describe the relationship between the student teachers’ heart and teacher sense of efficacy between pre-student teaching experience and post-student teaching experience.

9. Describe the relationship between the student teachers’ heart and teacher sense of efficacy between post-Spring block and post-student teaching experience.

10. Determine if changes in teacher heart and teacher sense of efficacy occur between post-Spring block, pre-student teaching experience, and post-student teaching experience.

11. Determine individual change of student teachers’ heart utilizing the Pulse of a Teacher instrument between post-Spring block, pre-student teaching experience, and post-student teaching experience.

12. Determine individual change of student teachers’ sense of efficacy utilizing the Teacher Sense of Efficacy Scale between post-Spring block, pre-student teaching experience, and post-student teaching experience.

13. Determine if change occurs in student teachers’ career intent from pre-student teaching experience to post-student teaching experience.

14. Determine if change occurs in the student teacher heart between post-Spring Block, pre-student teaching experience, and post-student teaching experience.

15. Determine if change occurs in the student teacher sense of efficacy between post-Spring Block, pre-student teaching experience, and post-student teaching experience.

16. Determine if the student teacher level of heart and level of sense of efficacy influence the student teacher career intent at the end of the student teaching experience.
Conclusion 1

The level of teacher heart for the student teachers increased. Teacher heart level increased for the student teachers between Points I and III, and between Points II and III. Teacher heart level remained relatively constant between Points I and II.

Implications

By employing the Teacher Heart Model, since the teacher heart increased over the student teaching experience, it can be assumed that the increase in level of care and enthusiasm in the classroom could be observed at the end of the student teaching experience by a expert researcher who really understands the phenomena (small effect size, Cohen, 1988). The change between Point I and II had a trivial effect size (Cohen, 1988) indicating that the summer off before student teaching had no impact on level of teacher heart.

Utilizing the Social Cognitive Theory (Bandura, 1986, 1997), we can see that the student teachers’ behavior and interaction with the classroom environment developed a positive change in the level of teacher heart for this group. Although the actual factors within the teacher heart model through factor analysis are not known, we do know that teacher heart can be developed and changed positively. Steps can be taken to improve and strengthen the individual’s heart. The question now becomes how much can a teacher’s heart increase?
**Recommendations**

A factor analysis of the Pulse of a Teacher instrument is the next logical step. In order to perform factor analysis on the Pulse of a Teacher instrument, the instrument would need to be completed by a larger group of educators, providing an adequate population size of at least 300. Interpreting factors from the instrument will greatly assist the development of the Teacher Heart Model. Understanding the interaction between components of the Teacher Heart Model (Teacher Mission, Faith, Care, and Enthusiasm) will give better direction to teacher educators in how best to develop and sustain novice teachers in pre-service and in-service education. The Positive Psychology framework (Peterson & Seligman, 2004) should be utilized to guide the interpretation of the emerging factors at the completion of the factor analysis. Catapulting novice teachers past the critical third year of their teaching careers is essential to making teacher education most effective. Since we now understand that the teacher heart is increasable (Palmer, 1998), components of the Positive Psychology framework (Peterson & Seligman, 2004) shared in common with the Teacher Heart Model should be investigated.

Following the current study’s group of novice teachers through their careers would track the development of their hearts. In addition, investigating teacher heart at earlier transition points in the pre-service curriculum would also be beneficial in tracking development. Investigating the relationship between teacher heart and teacher burnout in relation to teacher experience would also be a worthwhile venture.
Conclusion 2

The level of teacher sense of efficacy for the student teachers decreased. The further the student teachers moved away from the Spring Block preparation at Point I, the more they decreased in their sense of efficacy. The decrease in teacher sense of efficacy between Points I and II had a small effect size (Cohen, 1988). The decrease in teacher sense of efficacy between Points II and III, and Points I and III had a strong effect size meaning that anyone could notice a difference in teacher confidence (Cohen, 1988), including students and cooperating teachers.

Implications

The development of teacher sense of efficacy over the student teaching period for this group of student teachers was quite different than the group of student teachers studied by Knobloch (2002). The student teachers moved overall from being “quite a bit” efficacious (Point I) about their teaching ability to slightly less than “quite a bit” (Point II) towards “some” efficacy (Point III) regarding their teaching abilities. The group within the current study had a relatively high teacher sense of efficacy mean score at the end of the Spring-block preparation (Point I) compared to all of the teacher sense of efficacy scores in all four novice groups (student teachers, first year teachers, second year teachers, and third year teachers) studied by Knobloch (2002). At Point II, pre-student teaching experience, the student teachers within the current study indicated a slight decline in teacher sense of efficacy mean score compared to Point I. Even though the score decreased between Point I and II in the current student teacher group, their Point II mean score was greater than Knobloch’s four groups. However, by point III, the
current student teacher group’s sense of efficacy mean scores diminished well below Knobloch’s student teacher group. This is alarming as the current student teacher groups’ confidence had a great decline after their student teaching experience.

The decrease in teacher sense of efficacy between Point II and III and between Point I and III had strong effect sizes. The decrease in teacher sense of efficacy between Point I and II had a small effect size.

**Recommendations**

When considering the drop in student teacher efficacy after the student teaching experience, the implications are serious for the teacher education program. Assuming the initial teacher sense of efficacy scores were not inflated, the teaching experience presented a challenge in confidence for which the student teachers were unprepared. However, if the initial teacher sense of efficacy scores were greater than the student teachers’ actual skill level, the final scores after student teaching (Point III) may suggest these student teachers were not adequately prepared in terms of instructional skills for the student teaching experience.

There are some specific areas that need improvement within the current teacher education program when you look at the three components of teacher efficacy: classroom management, ability to engage learners, and instruction of students. First, there is not a specific course that deals with teacher management skills for the classroom. Development of such a course would emphasize key management skills essential for success in education. The second factor in teacher sense of efficacy is the student teacher’s ability to engage the learners and keep them interested throughout a lesson.
Again, this relates with motivation and this author believes it intertwines with classroom management and the ability to manage student behaviors. Classroom management and the engagement factor might be a great inservice topic for novice teachers. The third factor is actually instructing the students and includes the planning and delivery of content.

Another recommendation involves the preparation in which the teaching methods and lab pedagogy courses during the Spring Block prepare the student teachers for their student teaching experience. Both courses need to allow preservice teachers in the Spring Block the opportunity to teach larger groups of students, rather than three or four learners as is currently done in the 530 teaching methods course or seven learners in 591 laboratory pedagogy and management course. Practice teaching to ten or twenty students would be a more realistic setting. There may be less opportunity to teach in the proposed scenario because the lab sections would be larger, but perhaps students would learn more through vicarious experiences.

Another improvement would include tying the 530 lecture and lab together in order to provide students with an opportunity to practice teach with the actual professor who is the true expert. Having Masters students who may have just completed student teaching themselves lead those labs may be inadequate. While leading the lab practices is a good experience for the graduate students, is not optimal for the students who really need expert feedback and guidance.
Conclusion 3

The level of teacher heart increased while the level of teacher sense of efficacy decreased for the student teachers over the student teaching experience. The combination of these findings indicates that the two constructs of teacher heart and teacher sense of efficacy are not closely related. Although the increase in teacher heart level had a small effect size, the decrease in teacher sense of efficacy level had a strong effect size over the student teaching experience (Cohen, 1988).

Implications

For the student teacher group in the current study, there was an inverse relationship between teacher heart and teacher sense of efficacy scores. Between Points II and III, there was a strong correlation between the change in teacher heart and change in teacher sense of efficacy during the student teaching experience (Table 4.1). Over the student teaching experience, the increase in teacher heart level had a small effect size while the decrease in teacher sense of efficacy had a strong effect size (Cohen, 1988).

Even though the group of students decreased a full point on efficacy score (confidence dropped) they, as a group, had a heart score that increased. Meaning that as a group, despite their confidence dropping, the student teachers must have found their interaction with the students and peers during the student teaching experience edifying and this possibility warrants much further investigation.
**Recommendations**

A follow up with this group of student teachers, particularly those that choose to go into education, would further track teacher heart and sense of efficacy development over time. It would be expected that the teacher sense of efficacy scores would increase over time.

It would be helpful to track preservice teacher sense of efficacy and heart levels through their entire undergraduate curriculum and see how it develops. If it can be determined where drop offs occur, interventions are critical. An intervention could bring about a better self-awareness of the students’ inner landscape, where they are now and how they can change knowing that their level of heart is increasable.

The idea of efficacy and teacher heart should be investigated across all subject matter areas, levels of teaching, and all levels of teaching experience to identify trends and to learn if they align with Huberman’s Model of the Sequences of the Teacher Career Life Cycle (Joerger, Spindler, & Nelson, 2003).

**Conclusion 4**

The majority of the student teachers indicated they would likely enter education as a career at the conclusion of the student teaching experience.

**Implications**

The level of teacher heart and level of teacher sense of efficacy combined at the end of the student teaching experience explained nearly half of the variance in the score
of the group’s career intent to enter into a field of education. Career intent is directly related to teacher heart and teacher sense of efficacy.

**Recommendations**

Future studies evaluating the potential connection between career intent and actual job attainment in education, specifically agricultural education, would provide insight into teacher preparation. This may also reveal more information regarding the nature of career intent as it relates to teacher heart.

**Conclusion 5**

The learning style of the student teacher greatly determined the teacher heart level. There was a strong (Cohen, 1988) difference between independent and dependent learning style group member’s teacher heart levels at the end of the student teaching experience.

**Implications**

Student teachers with a dependent learning style increased their overall teacher heart score more than the student teachers with an independent learning style. At Point I, when looking specifically at learning style, the two groups of student teachers actually started at different points. At Point I, the dependent learning style group had a higher heart mean score at Point I than the independent learning style group, but at the end of student teaching (Point III), the two groups ended up at nearly the same score, thus regardless of learning style, the group of student teachers ended at the same point.
While student teachers with independent learning styles began with a higher teacher heart score, ultimately both groups of student teachers, regardless of learning style, finished the student teaching experience with nearly identical teacher heart mean scores. Does the cooperating teacher through the student teaching experience influence the development of the student teacher’s heart?

**Recommendation**

Investigating the impact of the cooperating teacher’s learning style, heart, and sense of efficacy on the student teacher’s heart, and sense of efficacy would provide insight to teacher educators on cooperating site placement. In addition, looking at the perceived quality of experience coupled with student teacher’s learning style would provide guidance for teacher educators placing student teachers.

**Further Suggestion**

Further suggestions for study would be the utilization of the Pulse of the Teacher instrument as a counseling tool regarding recruitment, professional gate keeping, and career redirection. High school teachers and counselors could administer the instrument to high school students who show potential for teaching. Teacher educators could administer the instrument before admitting students into professional standing in conjunction with an interview and screening of grade point average to provide a gate keeping mechanism. And lastly, if a pre-service teacher appears to be a poor teacher, perhaps re-administering the instrument to the individual may be in order. Although teacher heart level is increasable, to what extent is not known. Based on the results of
this follow-up, counseling the individual to redirect their career choice would be in everyone’s best interest. Investigating teacher heart in relations to teacher burnout, experience, flow, subject matter, grade level taught, and administrative support would be an excellent direction to continue this line of inquiry.
REFERENCES


Cano, J. & Garton, B.L. (1994b). The learning styles of agriculture preservice teachers as assessed by the MBTI. *Journal of Agricultural Education, 35*(1), 8-12.


APPENDIX A

IRB PROTOCOL # 0450324
# Application for Exemption

## Contact Information

**Principal Investigator**
- **Name:** Dr. Jamie Cano
- **Phone:** 614.292.6321

**Department or College:** HCRD - FAES

**Campus Address:** 208 Ag Admin Building

**Signature:**

**Date:** 05/01/04

**Co-Investigator**
- **Name:** Benjamin G. Swan
- **Phone:** 614.292.1354

**Mailing Address:**
- 250 Ag Admin Building
- 2120 Fyffe Road
- Columbus, OH 43210-1067

**Signature:**

**Date:** 7/30/04

**Co-Investigator**
- **Name:**
- **Phone:**

**Mailing Address:**

**Signature:**

**Date:**

**Fax:** 614-292-7007

## Protocol Title

The Relationship of Student Teachers' Learning Style and Teacher Mission and Teacher Beliefs during Phases of the Student Teaching Experience.

## Source of Funding

Personal

## Approval

- □ Approved.
  - Research has been determined to be exempt under these categories: **PE2**.
  - Research may begin as of the date of determination listed below.

- □ Disapproved.
  - The proposed research does not fall within the categories of exemption. Submit an application to the appropriate Institutional Review Board for review.

**Date of determination:** Aug 14, 2004

**Signature:**

Office of Research Risk Protection
APPENDIX B

CONSENT LETTER MAILED TO STUDENT TEACHERS
August 21st, 2004

<Student Teacher’s First Name> <Student Teacher’s Last Name>

Thank you for your consideration in allowing your information into my dissertation. By indicating YES below, you choose to allow seven (2 spring surveys, 2 current surveys, and 2 surveys plus a learning styles instrument during the student teaching seminar) pieces of your information into this study.

You will be completing the assignments regardless. The question is, will you allow your anonymous information to be included in the described study?

Do you choose to allow your completed information into the described study?

(Please Circle One): YES NO

(Please sign) : ____________________________________________

Date : ________

Please Return this Form Signed with the 2 Attached Surveys Completed in the Pre-Stamped Envelope within one week of receiving this letter.

THANK YOU :o)
August 21st, 2004

Dear <Student Teacher’s First Name>:

I hope this letter finds you well and prepared for your student teaching experience. Before this important experience begins, I wanted to wish you well and reassure you that you are making a great decision in pursuing a teaching credential to make an impact on our country’s youth.

Over the summer I surpassed a milestone by passing my Oral Examination. To complete my dissertation, I am required to do research and want to make sure that my study is valuable and useful to teacher educators. By investigating the relationships between student teachers’ learning styles, teacher mission, and teacher beliefs, teacher educators will begin to understand how these three areas work in a teacher’s life. The main goal of the study is to investigate your student teacher group’s learning styles, mission, and beliefs about your abilities and how these factors relate to each other during your preparation and student teaching experience.

My research will simply entail looking at seven pieces of information. You have already completed two during the spring. Two more are included in this packet, and then the final three will be completed during the final student teaching seminar. I do however need your permission to include this information in my dissertation. If for any reason you do not wish to include your information in the study, there will be absolutely no penalty. If for any reason you have any questions, please email me (swan.342@osu.edu) or call me at my office (614.292.1354).

At the completion of the student teaching experience and the study, I plan on explaining to all of you the specifics of my investigation. For those of you who commit your information to the study, my only hesitation is that now that you know you are within a study that you will answer differently. Please answer your true feelings, because your true response is what I am after. Your responses are strictly confidential and your assigned number is the only way you will be identified for data input. Your identity will be completely anonymous.

As a final token of my appreciation to those of you who grant permission to use your information in my study, I will provide a barbeque meal at the end of November’s student teaching seminar.

Please utilize the small token of my appreciation for completing the form on the next page by treating yourself to a refreshment.

Thank you all for completing the attached form and returning it promptly with your 2 surveys inside of the provided pre-stamped envelope.

Respectfully,

Benjamin G. Swan
APPENDIX C

GEFT INSTRUMENT
GROUP EMBEDDED FIGURES TEST

By Philip K. Oltman, Evelyn Raskin, & Herman A. Witkin

Name ________________________________ Sex ______

Today's date ________________________ Birth date __________________

INSTRUCTIONS: This is a test of your ability to find a simple form when it is hidden within a complex pattern.

Here is a simple form which we have labeled "X":

X

This simple form, named "X", is hidden within the more complex figure below:

Try to find the simple form in the complex figure and trace it in pencil directly over the lines of the complex figure. It is the SAME SIZE, in the SAME PROPORTIONS, and FACES IN THE SAME DIRECTION within the complex figure as when it appeared alone.

When you finish, turn the page to check your solution.
APPENDIX D

PULSE OF A TEACHER (PT) INSTRUMENT
### Pulse of a Teacher Scale

Your answers are confidential.

**Directions**
Please indicate your level of agreement about each of the statements below. For each item circle the one number that best describes your level of agreement.

<table>
<thead>
<tr>
<th>Statement</th>
<th>None</th>
<th>Nothing</th>
<th>Very Little</th>
<th>Some</th>
<th>Quite A Bit</th>
<th>A Great Deal</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. How much passion do you have for teaching?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>2. To what extent do you do things for students, even when they are against you?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>3. How much enthusiasm do you display to get your students to learn?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>4. To what extent do you desire to maintain your passion as a teacher?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>5. How much energy do you invest to ensure your students become successful in life?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>6. To what extent do your actions as a teacher shape the learning environment?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>7. How much do you care about your students as a person?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>8. To what extent did you follow your heart in choosing teaching as your career?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>9. To what extent do your personal values affect your teaching?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>10. To what extent are you responsible for your students’ failures?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>11. How much do you follow your heart when interacting with students?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>12. To what extent do you want your students to look to you for advice?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>13. To what extent did you choose to teach for the love of the work?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>14. To what extent do you model your teaching after teachers who are innovative teachers?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>15. How much do you want to make a difference in your students’ lives?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>16. To what extent do you participate with your students to enrich your life?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>17. To what extent do you teach because of material rewards (i.e. money and awards)?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>18. The degree of your students’ success depends on how much you personally care for them</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>19. To what extent are you responsible for your failures as a teacher?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>20. To what extent do you want to keep your values from influencing your students</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
</tbody>
</table>
APPENDIX E

TEACHER SENSE OF EFFICACY SCALE (TSES)
### Teachers' Sense of Efficacy Scale (Teacher Beliefs)

**Directions:**
This questionnaire is designed to help us gain a better understanding of the kinds of things that create difficulties for teachers in their school activities. Please indicate your opinion about each of the statements below. Your answers are confidential. Circle the one number that best describes your response.

<table>
<thead>
<tr>
<th>How much can you do?</th>
<th>Nothing</th>
<th>Very Little</th>
<th>Some</th>
<th>Quite A Bit</th>
<th>A Great Deal</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. How much can you do to get through to the most difficult students?</td>
<td>1 2 3 4 5 6 7 8 9</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. How much can you do to help your students think critically?</td>
<td>1 2 3 4 5 6 7 8 9</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. How much can you do to control disruptive behavior in the classroom?</td>
<td>1 2 3 4 5 6 7 8 9</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. How much can you do to motivate students who show low interest in school work?</td>
<td>1 2 3 4 5 6 7 8 9</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. To what extent can you make your expectations clear about student behavior?</td>
<td>1 2 3 4 5 6 7 8 9</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. How much can you do to get students to believe they can do well in school work...</td>
<td>1 2 3 4 5 6 7 8 9</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. How well can you respond to difficult questions from your students?</td>
<td>1 2 3 4 5 6 7 8 9</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. How well can you establish routines to keep activities running smoothly?</td>
<td>1 2 3 4 5 6 7 8 9</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. How much can you do to help your students value learning?</td>
<td>1 2 3 4 5 6 7 8 9</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. How much can you gauge student comprehension of what you have taught?</td>
<td>1 2 3 4 5 6 7 8 9</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. To what extent can you craft good questions for your students?</td>
<td>1 2 3 4 5 6 7 8 9</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12. How much can you do to foster student creativity?</td>
<td>1 2 3 4 5 6 7 8 9</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13. How much can you do to get children to follow classroom rules?</td>
<td>1 2 3 4 5 6 7 8 9</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14. How much can you do to improve the understanding of a student who is failing?</td>
<td>1 2 3 4 5 6 7 8 9</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15. How much can you do to calm a student who is disruptive or noisy?</td>
<td>1 2 3 4 5 6 7 8 9</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16. How well can you establish a classroom management system with each group of students?</td>
<td>1 2 3 4 5 6 7 8 9</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17. How much can you do to adjust your lessons to the proper level for individual students?</td>
<td>1 2 3 4 5 6 7 8 9</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18. How much can you use a variety of assessment strategies?</td>
<td>1 2 3 4 5 6 7 8 9</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19. How well can you keep a few problem students from ruining an entire lesson?</td>
<td>1 2 3 4 5 6 7 8 9</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20. To what extent can you provide an alternative explanation or example when students are confused?</td>
<td>1 2 3 4 5 6 7 8 9</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>21. How well can you respond to defiant students?</td>
<td>1 2 3 4 5 6 7 8 9</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>22. How much can you assist families in helping their children do well in school?</td>
<td>1 2 3 4 5 6 7 8 9</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>23. How well can you implement alternative strategies in your classroom?</td>
<td>1 2 3 4 5 6 7 8 9</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>24. How well can you provide appropriate challenges for very capable students?</td>
<td>1 2 3 4 5 6 7 8 9</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
APPENDIX F

CHANGE PER ITEM ON THE TEACHERS’ SENSE OF EFFICACY SCALE
AT EACH POINT (PT I, PT II, & PT III) AND
BETWEEN EACH POINT (Δ 1, Δ 2, & Δ 3).
<table>
<thead>
<tr>
<th>Teachers’ Sense of Efficacy Scale Items</th>
<th>Pt I</th>
<th>Pt II</th>
<th>Pt III</th>
<th>Δ1</th>
<th>Δ2</th>
<th>Δ3</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. How much can you do to get through to the most difficult students?</td>
<td>6.79</td>
<td>6.76</td>
<td>6.97</td>
<td>-0.03</td>
<td>0.21</td>
<td>0.18</td>
</tr>
<tr>
<td>2. How much can you do to help your students think critically?</td>
<td>7.74</td>
<td>7.21</td>
<td>7.59</td>
<td>-0.53</td>
<td>0.38</td>
<td>-0.15</td>
</tr>
<tr>
<td>3. How much can you do to control disruptive behavior in the classroom?</td>
<td>7.68</td>
<td>7.97</td>
<td>8.00</td>
<td>0.29</td>
<td>0.03</td>
<td>0.32</td>
</tr>
<tr>
<td>4. How much can you do to motivate students who show low interest in school work?</td>
<td>7.00</td>
<td>6.65</td>
<td>6.91</td>
<td>-0.35</td>
<td>0.26</td>
<td>-0.09</td>
</tr>
<tr>
<td>5. To what extent can you make your expectations clear about student behavior?</td>
<td>8.50</td>
<td>8.12</td>
<td>8.41</td>
<td>-0.38</td>
<td>0.29</td>
<td>-0.09</td>
</tr>
<tr>
<td>6. How much can you do to get students to believe they can do well in school work?</td>
<td>7.59</td>
<td>7.12</td>
<td>7.41</td>
<td>-0.47</td>
<td>0.29</td>
<td>-0.18</td>
</tr>
<tr>
<td>7. How well can you respond to difficult questions from your students?</td>
<td>6.94</td>
<td>6.68</td>
<td>7.41</td>
<td>-0.26</td>
<td>0.73</td>
<td>0.47</td>
</tr>
<tr>
<td>8. How well can you establish routines to keep activities running smoothly?</td>
<td>7.68</td>
<td>7.44</td>
<td>7.76</td>
<td>-0.24</td>
<td>0.32</td>
<td>0.08</td>
</tr>
<tr>
<td>9. How much can you do to help your student’s value learning?</td>
<td>6.94</td>
<td>6.71</td>
<td>6.85</td>
<td>-0.23</td>
<td>0.14</td>
<td>-0.09</td>
</tr>
<tr>
<td>10. How much can you gauge student comprehension of what you have taught?</td>
<td>7.35</td>
<td>7.39</td>
<td>7.68</td>
<td>0.04</td>
<td>0.29</td>
<td>0.33</td>
</tr>
<tr>
<td>11. To what extent can you craft good questions for your students?</td>
<td>7.12</td>
<td>7.00</td>
<td>7.74</td>
<td>-0.12</td>
<td>0.74</td>
<td>0.62</td>
</tr>
<tr>
<td>12. How much can you do to foster student creativity?</td>
<td>6.79</td>
<td>6.88</td>
<td>7.29</td>
<td>0.09</td>
<td>0.41</td>
<td>0.5</td>
</tr>
<tr>
<td>13. How much can you do to get children to follow classroom rules?</td>
<td>7.65</td>
<td>7.5</td>
<td>7.71</td>
<td>-0.15</td>
<td>0.21</td>
<td>0.06</td>
</tr>
<tr>
<td>14. How much can you do to improve the understanding of a student who is failing?</td>
<td>6.74</td>
<td>6.65</td>
<td>7.09</td>
<td>-0.09</td>
<td>0.44</td>
<td>0.35</td>
</tr>
<tr>
<td>15. How much can you do to calm a student who is disruptive or noisy?</td>
<td>7.26</td>
<td>7.00</td>
<td>7.38</td>
<td>-0.26</td>
<td>0.38</td>
<td>0.12</td>
</tr>
<tr>
<td>16. How well can you establish a classroom management system with each group of students?</td>
<td>7.47</td>
<td>7.03</td>
<td>7.47</td>
<td>-0.44</td>
<td>0.44</td>
<td>0</td>
</tr>
<tr>
<td>17. How much can you do to adjust your lessons to the proper level for individual students?</td>
<td>7.12</td>
<td>7.06</td>
<td>7.56</td>
<td>-0.06</td>
<td>0.5</td>
<td>0.44</td>
</tr>
<tr>
<td>18. How much can you use a variety of assessment strategies?</td>
<td>7.32</td>
<td>7.26</td>
<td>7.85</td>
<td>-0.06</td>
<td>0.59</td>
<td>0.53</td>
</tr>
<tr>
<td>19. How well can you keep a few problem students from ruining an entire lesson?</td>
<td>7.12</td>
<td>6.91</td>
<td>7.41</td>
<td>-0.21</td>
<td>0.5</td>
<td>0.29</td>
</tr>
<tr>
<td>20. To what extent can you provide an alternative explanation or example when students are confused?</td>
<td>7.50</td>
<td>7.32</td>
<td>8.03</td>
<td>-0.18</td>
<td>0.71</td>
<td>0.53</td>
</tr>
<tr>
<td>21. How well can you respond to defiant students?</td>
<td>6.85</td>
<td>6.79</td>
<td>7.24</td>
<td>-0.06</td>
<td>0.45</td>
<td>0.39</td>
</tr>
<tr>
<td>22. How much can you assist families in helping their children do well in school?</td>
<td>6.91</td>
<td>6.38</td>
<td>7.12</td>
<td>-0.53</td>
<td>0.74</td>
<td>0.21</td>
</tr>
<tr>
<td>23. How well can you implement alternative strategies in your classroom?</td>
<td>7.35</td>
<td>6.85</td>
<td>7.53</td>
<td>-0.5</td>
<td>0.68</td>
<td>0.18</td>
</tr>
<tr>
<td>24. How well can you provide appropriate challenges for very capable students?</td>
<td>7.71</td>
<td>7.59</td>
<td>7.85</td>
<td>-0.12</td>
<td>0.26</td>
<td>0.14</td>
</tr>
</tbody>
</table>
APPENDIX G

Change per Item on the Pulse of a Teacher Instrument at each point (Pt I, Pt II, & Pt III) and between each point ($\triangle 1$, $\triangle 2$, & $\triangle 3$).
<table>
<thead>
<tr>
<th>Pulse of a Teacher Instrument Items</th>
<th>Pt I</th>
<th>Pt II</th>
<th>Pt III</th>
<th>Pt I-II</th>
<th>Pt II-III</th>
<th>Pt I-III</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. How much passion do you have for teaching?</td>
<td>7.97</td>
<td>7.76</td>
<td>8.21</td>
<td>-.21</td>
<td>0.45</td>
<td>0.24</td>
</tr>
<tr>
<td>2. To what extent do you do things for students, even when they are against you?</td>
<td>6.94</td>
<td>7.12</td>
<td>7.59</td>
<td>0.18</td>
<td>0.47</td>
<td>0.65</td>
</tr>
<tr>
<td>3. How much enthusiasm do you display to get your students to learn?</td>
<td>7.29</td>
<td>7.24</td>
<td>7.82</td>
<td>-.05</td>
<td>0.58</td>
<td>0.53</td>
</tr>
<tr>
<td>4. To what extent do you desire to maintain your passion as a teacher?</td>
<td>8.06</td>
<td>7.94</td>
<td>8.32</td>
<td>-.12</td>
<td>0.38</td>
<td>0.26</td>
</tr>
<tr>
<td>5. How much energy do you invest to ensure your students become successful in life?</td>
<td>7.71</td>
<td>7.62</td>
<td>7.88</td>
<td>-.09</td>
<td>0.26</td>
<td>0.17</td>
</tr>
<tr>
<td>6. To what extent do your actions as a teacher shape the learning environment?</td>
<td>8.29</td>
<td>8.12</td>
<td>8.62</td>
<td>-.17</td>
<td>0.5</td>
<td>0.33</td>
</tr>
<tr>
<td>7. How much do you care about your students as a person?</td>
<td>8.26</td>
<td>8.26</td>
<td>8.5</td>
<td>0</td>
<td>0.24</td>
<td>0.24</td>
</tr>
<tr>
<td>8. To what extent did you follow your heart in choosing teaching as your career?</td>
<td>7.91</td>
<td>7.91</td>
<td>8.38</td>
<td>0</td>
<td>0.47</td>
<td>0.47</td>
</tr>
<tr>
<td>9. To what extent do your personal values affect your teaching?</td>
<td>7.91</td>
<td>8.26</td>
<td>8.18</td>
<td>0.35</td>
<td>-.08</td>
<td>0.27</td>
</tr>
<tr>
<td>10. To what extent are you responsible for your students’ failures?</td>
<td>6.44</td>
<td>6.45</td>
<td>6.44</td>
<td>0.01</td>
<td>-.01</td>
<td>0</td>
</tr>
<tr>
<td>11. How much do you follow your heart when interacting with students?</td>
<td>7.41</td>
<td>7.44</td>
<td>7.79</td>
<td>0.03</td>
<td>0.35</td>
<td>0.38</td>
</tr>
<tr>
<td>12. To what extent do you want your students to look to you for advice?</td>
<td>7.47</td>
<td>7.32</td>
<td>7.94</td>
<td>-.15</td>
<td>0.62</td>
<td>0.47</td>
</tr>
<tr>
<td>13. To what extent did you choose to teach for the love of the work?</td>
<td>7.41</td>
<td>7.65</td>
<td>8.18</td>
<td>0.24</td>
<td>0.53</td>
<td>0.77</td>
</tr>
<tr>
<td>14. To what extent do you model your teaching after teachers who are innovative teachers?</td>
<td>7.41</td>
<td>7.62</td>
<td>7.85</td>
<td>0.21</td>
<td>0.23</td>
<td>0.44</td>
</tr>
<tr>
<td>15. How much do you want to make a difference in your students’ lives?</td>
<td>7.97</td>
<td>8.41</td>
<td>8.47</td>
<td>0.44</td>
<td>0.06</td>
<td>0.5</td>
</tr>
<tr>
<td>16. To what extent do you participate with your students to enrich your life?</td>
<td>7.59</td>
<td>7.38</td>
<td>7.62</td>
<td>-.21</td>
<td>0.24</td>
<td>0.03</td>
</tr>
<tr>
<td>17. To what extent do you teach because of material rewards (i.e. money and awards).</td>
<td>4.68</td>
<td>4.47</td>
<td>4.68</td>
<td>-.21</td>
<td>0.21</td>
<td>0</td>
</tr>
<tr>
<td>18. The degree of your students’ success depends on how much you personally care for them</td>
<td>6.59</td>
<td>6.71</td>
<td>6.82</td>
<td>0.12</td>
<td>0.11</td>
<td>0.23</td>
</tr>
<tr>
<td>19. To what extent are you responsible for your failures as a teacher?</td>
<td>7.71</td>
<td>8</td>
<td>7.71</td>
<td>0.29</td>
<td>-.29</td>
<td>0</td>
</tr>
<tr>
<td>20. To what extent do you want to keep your values from influencing your students?</td>
<td>5.06</td>
<td>4.82</td>
<td>5</td>
<td>-.24</td>
<td>0.18</td>
<td>-.06</td>
</tr>
</tbody>
</table>