EXPLORATION OF EFFECTS CAUSED BY THE FIRST TEN WEEKS OF THE SCHOOL YEAR ON TEACHER EFFICACY OF STUDENT TEACHERS AND NOVICE TEACHERS IN AGRICULTURAL EDUCATION IN OHIO

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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ABSTRACT

Because first impressions of the teaching profession shape perceptions and expectations that influence how teachers perform, the researcher investigated how the initial teaching experience influenced student teachers’ and novice teachers’ efficacy during the quarter of the school year. The purpose of the study was to measure the degree of change in teacher efficacy during the first 10 weeks of the student teaching, first-year, second-year, and third-year teaching experience in agricultural education in Ohio related to stage of development and environmental variables of teacher trust in clients, collective efficacy, principal support, and academic emphasis of the schools. This was a causal comparative study using a non-equivalent control group design with a natural treatment. A pretest at the beginning of the school year, followed by a posttest at the 10th week of the school year was administered using mailed survey procedures. Ninety-two percent (N = 105, 106) of the teachers participated in the study.

Student teachers, first-year teachers, second-year teachers, and third-year teachers were similarly efficacious at week 1 of the school year, but varied in their level of teacher efficacy at the 10th week of the school year. This conclusion indicated that the first 10 weeks of teaching experience of the school year influenced teacher efficacy. However, there was essentially no change in teacher efficacy across the first 10 weeks of the school year for student teachers, second-year teachers, and third-year teachers,
but teacher efficacy decreased for first-year teachers during the first 10 weeks of the school year. Therefore, teacher efficacy of first-year teachers was influenced most during the first 10 weeks of the school year.

Collectively, stage of development and environmental variables did not significantly influence teacher efficacy change during the first 10 weeks of the school year for student and novice teachers in agricultural education, however, student teachers had the highest level of trust in students and parents when compared to the other stages of development. Although stage of development and environmental variables are theoretically important (Richardson & Placier, 2001), there was not enough variability in teacher efficacy and environmental variables across the four stages of development to find a significant relationship.

Regarding teacher characteristics and demographics, the researcher found that student teachers and novice teachers in agricultural education in Ohio were efficacious during the first 10 weeks of the school year and confident in their ability to teach agricultural education. Teachers in this study who had mentors felt that their mentors were competent and supportive, and the teachers had chosen teaching as a long-term career and felt that the job matched their personal and family needs.
Dedicated to…

The One who gave me the strength to complete it;

My wife and boys who were patient and made many sacrifices to this end;

My adviser who encouraged and guided me to get a Ph.D. with a j-o-b;

My professors, colleagues, and students who shared in my professional development;

All teachers who adventurously make a beginning in a career

that makes one rich in heart.
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FIELDS OF STUDY

Major:
Agricultural Education

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Psychology of Teaching and Teacher Education
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"Wherever a good teacher is found, a story may be uncovered of a long patient search for better ways of instructing young people. It is a story of growth through effort" (Lancelot, 1944, p. 4).

The quality of teachers attracted, retained, prepared and empowered to be productive teachers must change (American Council on Education, 1999). Nationally, there is a 75% attrition rate along the pipeline from the beginning of undergraduate teacher education through the third year of teaching (National Commission on Teaching and America’s Future, 1996). Furthermore, 17% of new public school teachers leave the profession within the first three years (National Center for Educational Statistics, 1997).

Working conditions, including professional autonomy, poor student motivation, student discipline problems, and lack of recognition and support from administration, play an important role in determining who stays in teaching (Darling-Hammond, 1997; National Center for Educational Statistics, 1997). Turnover in the first few years is particularly high for new teachers because they are typically given the most challenging teaching assignments, placed in the most disadvantaged schools, assigned the most
difficult-to-teach students, given the greatest number of preparations and extracurricular duties, and left to sink or swim with little or no support (National Commission on Teaching and America’s Future, 1996). The traditional sink-or-swim induction contributes to high attrition and to lower levels of teacher effectiveness (National Commission on Teaching and America’s Future). Teacher preparation appears to make some difference. Teacher education graduates, who were rated as better prepared to teach and more effective in their teaching by principals and their teaching colleagues, were as confident and effective in their teaching as experienced teachers (National Commission on Teaching and America’s Future). Furthermore, these teacher education graduates were more likely to enter teaching and remain in the profession (National Commission on Teaching and America’s Future).

Beginning teachers in agricultural education face many of the same challenges as their teaching colleagues in other disciplines. Teachers have greater job satisfaction when they believe they can teach and foresee that they can have positive impacts (Hoy & Miskel, 2001). Beginning agriculture teachers believed that events related to control, student respect, self-confidence, personal satisfaction, and student success had a major impact on teaching (Joerger & Boettcher, 2000). Personal achievement and feelings of satisfaction were critical to whether or not beginning teachers remained in or left the teaching profession (Henderson & Nieto, 1991). The first year of teaching is exceptionally challenging for most beginning agriculture teachers (Talbert, Camp, & Heath-Camp, 1994). Beginning agricultural education teachers were stressed, dissatisfied (Joerger & Boettcher), quiet, reserved, and hesitant to act (Mundt, 1991).
Further, beginning agriculture teachers had low self-esteem, low self-confidence (Mundt), and low morale (Henderson & Nieto). One out of four agricultural education teachers in Ohio left the teaching profession after their first year (Wardlow, Barrick, & Warmbrod, 1985).

There is evidence that teachers who leave teaching have lower teacher efficacy scores than teachers who remain in teaching (Burley, Hall, Villeme, & Brockmeier, 1991; Glickman & Tamashiro, 1982). Moreover, teacher efficacy has been linked to the level of professional commitment for preservice and inservice teachers (Coladarci, 1992; Evans & Tribble, 1986) and to level of stress experienced in teaching (Smylie, 1988). “If teachers go into their first year of teaching without the belief that they can make a difference, chances are pretty good that they may never develop such an attitude” (Burley, Hall, Villeme, & Brockmeier, p. 15). Therefore, teachers who lack the belief in their ability to teach will probably struggle in accomplishing one of the greatest needs that beginning agriculture teachers face—motivating students to learn (Garton & Chung, 1996).

Statement of the Problem

The teaching profession must be able to retain qualified, well-prepared teachers for all classrooms (National Commission on Teaching and America’s Future, 1996). Novice teachers must be equipped with the knowledge, skills, and dispositions that will enable them to succeed with all students (National Commission on Teaching and America’s Future). All schools should foster work environments that support the development of beginning teachers to grow as professionals in a lifelong career.
Retention of agriculture teachers in public schools has been a continuing concern (Joerger & Boettcher, 2000). Therefore, the agricultural education profession continues to face the problem of agriculture teachers being apprehensive to enter the teaching profession and those who choose to leave within their early years of the teaching. Although the reasons why beginning agriculture teachers did not pursue or continue a career in teaching needs to be investigated, the initial few weeks of the teaching experience for student teachers and beginning teachers in agricultural education needs to be investigated. “First impressions” of the teaching profession shape perceptions and expectations that influence how teachers perform. Particularly, the first 10 weeks of the school year need to be studied to determine how the “initial teaching experience” influences how teachers self-perceive their own ability to teach.

This study is based on the premise that motivated teachers will have greater teacher efficacy, thus they will be more satisfied with teaching as a career and will remain in the teaching profession longer than less efficacious teachers. Figure 1.1 illustrates the relationships among the three teaching constructs that framed this study.

![Figure 1.1: Relationships of teaching constructs](image-url)
Purpose of the Study

The purpose of the study was to measure the degree of change in teacher efficacy during the first 10 weeks of the student teaching, first-year, second-year, and third-year teaching experience in agricultural education in Ohio related to stage of development and environmental variables of teacher trust in clients, collective efficacy, supportive principal behavior, and academic emphasis of the schools. The following research objectives guided the researcher through the study.

Objectives of the Study

The objectives of the study were to:

1. Describe the differences in teacher efficacy between stages of development on the pretest and differences between stages of development on the posttest of student teachers, first-year teachers, second-year teachers, and third-year teachers in agricultural education in Ohio during the first 10 weeks of the 2001-02 school year;

2. Describe the degree of teacher efficacy change related to the stages of teacher development;

3. Explain the percent of variance in teacher efficacy change during the first 10 weeks of the school year related to stage of development and the environmental variables of teacher trust in clients, collective efficacy, supportive principal behavior, academic emphasis; and,

4. Describe the population of the study using selected teacher characteristics and perceptions.
Significance of the Study

Teachers’ perceptions and beliefs strongly influence teacher development and change (Smylie, 1988). Beliefs influence the development of preservice teachers (Richardson & Placier, 2001). Prospective teachers’ beliefs, expectations, and images influence how they learn to teach (Borko & Putnum, 1996). There is a strong relationship between teachers’ educational beliefs and their planning, instructional decisions, and classroom practices (Pajares, 1992). Educational beliefs of preservice teachers influences how they acquire, interpret, and apply knowledge about teaching and learning (Pajares, 1992). Pintrich (1990) recommended that research be conducted on how beliefs influenced the learning of preservice teachers. Although beliefs are difficult to measure, beliefs subconstructs, such as self-efficacy, are a valuable tool in educational research (Pajares, 1992). “Teacher efficacy has become an important construct in teacher education, and teacher educators should continue to explore how teacher efficacy develops, what factors contribute to strong and positive teaching efficacy in varied domains, and how teacher education programs can help preservice teachers develop high teacher efficacy” (Pajares, 2000, p. 21).

Teacher efficacy provides a promising future to help teachers, especially novices, be more successful in their teaching experiences. Teacher efficacy has been shown to be a powerful construct related to student outcomes such as achievement, motivation, and sense of efficacy (Ashton & Webb, 1986; Guskey & Passaro, 1994; Tschannen-Moran, Woolfolk Hoy, & Hoy, 1998). Moreover, teachers’ sense of efficacy was related to teachers’ behavior, effort, goals, aspiration, openness to new
ideas, innovation, planning and organization, persistence, resilience, reluctance to use criticism, enthusiasm, willingness to work with difficult students, and commitment to teaching and their careers (Tschannen-Moran, Woolfolk Hoy, & Hoy, 1998). Self-efficacy affects what activities the teacher will choose to teach with, how much effort and persistence they will exhibit when faced with difficulties, and to what degree the teacher will achieve (Ormrod, 2000).

Understanding the potency of teacher efficacy beliefs could help explain the impact teacher efficacy has on teacher motivation and persistence over the course of a career (Tschannen-Moran & Woolfolk Hoy, 2001). This study could inform teacher educators in agricultural education of how teacher efficacy develops in preservice and novice teachers. Student teaching experiences, induction-year experiences and beginning teacher programs could be tailored to support the development of teacher efficacy. Further, professional development of teachers in agricultural education could be structured based on the sources of teacher efficacy so that teachers could benefit from a greater sense of teaching efficacy with a focus on improved student achievement.

Limitations of the Study

There are always inherent risks when collecting self-reported data; the validity of these data may be limited. Some of the student teachers and first-year novice teachers may have been influenced by completing the questionnaires during the pilot tests in some of the classes that the researcher taught. The researcher in this study served in capacities as a teacher educator, which may have affected the responses given
by participants who may have been students enrolled in one of his classes, or who were supervised by him as a student teacher.

Although there is no supporting evidence, the participants in this study may not be representative of any other population, in the past or future, other than the student and novice teachers in agricultural education in Ohio who were teaching and participated in the study during the Autumn, 2001 quarter. Although the accessible population consisted of the most current frame available, some novice agriculture teachers may have not been included in the frame because some school administrators do not report new teacher employment to the Ohio Department of Education. Further, the student teachers in the accessible population were students at The Ohio State University. Although this population included all of the student teachers in agricultural education at the beginning of the 2001-02 school year, it did not include Wilmington College student teachers in agricultural education who complete their student teaching experience in the spring semester. Therefore, the findings of this study cannot be generalized beyond the accessible sample of student teachers and accessible population of novice teachers in agricultural education in Ohio.

The use of intact groups in natural settings with causal comparative and quasi-experimental designs presents several limitations. The small group sizes of the student teachers and novice teachers limited the effect size and statistical power of the data. Further, non-randomized selection and assignment of the subjects raises internal validity concerns related to the equivalence of groups. Moreover, a census limits the external validity and generalizability to the accessible population. Due to the
limitations of external validity, the study focused on controlling threats of internal validity (see Chapter 3 – Methods) to strengthen the relationship of plausible causality and make the findings more generalizable to the construct of teacher efficacy (Trochim, 2000).

Definitions of Terms

Academic emphasis – an environmental variable that measured a teacher’s perception of the extent to which the school is driven by a quest for academic excellence—high but achievable goals are set for students; the learning environment is serious and orderly; teachers believe in their students’ ability to achieve; and students work hard and respect those who do well academically (Hoy, Tarter, & Kottkamp, 1991).

Agriculture – the science or art of the production of plants and animals useful to humans and the preparation of these products for human use and marketing (Gove, 1981). The content of an agricultural education program relates to technical areas of agricultural production; agricultural supplies and services; agricultural mechanics; agricultural products; horticulture; natural resources; and forestry (Newcomb, McCracken, & Warmbrod, 1993).

Agricultural education – the scientific study of the principles and methods of teaching and learning as they relate to agriculture (Barrick, 1989; Williams, 1991).

Agriculture teacher – one who plans, delivers, and evaluates instruction, and facilitates the process in helping students learn about agriculture (Newcomb, McCracken, & Warmbrod, 1993).
Collective efficacy – a teacher’s perceived competence and task analysis that collectively teachers in the school can influence student achievement (Bandura, 1997).

Cooperating teacher – an experienced teacher who is the direct supervisor of a student teacher.

Learning – a process by which persons become changed in their knowledge, beliefs, attitudes, or behaviors through their own activity (Newcomb, McCracken, & Warmbrod, 1993) and educative experiences (Dewey, 1938).

Novice teacher – a teacher who is in the first, second, or third year of teaching.

Preservice teacher – a prospective teacher enrolled in teacher education courses, but has not earned a teaching certificate or license.

Self-efficacy – one’s self-percept belief about his or her ability to perform a specific task in a specific context. “Perceived self-efficacy refers to beliefs in one’s capabilities to organize and execute the courses of action required to produce given attainments” (Bandura, 1997, p. 3).

Stage of development – teacher groups based on their degree of teaching experience. The four stages of development in the study were student teachers, first-year teachers, second-year teachers, and third-year teachers.

Student teacher – a preservice teacher who is placed in a public school for an extended clinical experience of a minimum of 10 weeks under the supervision of a cooperating teacher and a university supervisor.

Supportive principal behavior – a teacher’s perception of a principal being helpful, genuinely concerned with teachers, and attempting to motivate teachers through
the use of constructive criticism, and setting an example through hard work (Hoy, Tarter, & Kottkamp, 1991).

Teacher trust in clients – a teacher’s willingness to be vulnerable to students and parents based on the confidence that the clients, students and parents, are benevolent, reliable, competent, honest, and open (Hoy & Tschannen-Moran, 1999).

Teaching – teaching is best described as guiding and directing the learning process where learners acquire new knowledge, skills, or attitudes (Newcomb, McCracken, & Warmbrod, 1993).

Teacher efficacy – “the teacher’s belief in his or her capability to organize and execute courses of action required to successfully accomplish a specific teaching task in a particular context” (Tschannen-Moran, Woolfolk Hoy, & Hoy, 1998, p. 233), and the teachers’ motivation to persist when faced with setbacks and their willingness to exert effort to overcome difficulties (Woolfolk, 2001).

Teacher socialization – the acquisition of the attitudes, values, perspectives, and roles of a new status position (Brodbelt & Wall, 1985), which occurs in the occupational setting and professional community when new teachers begin teaching. Socialization occurs through interactions that communicate what it means to be a teacher and influence their emerging identities and practices (Feiman-Nemser, Schwille, Carver, & Yusko, 1999).

University supervisor – a teacher educator from the university who supervises the student teacher and conducts on-site observations. The university supervisor is the
liaison between the student teacher and cooperating teacher who helps connect theory and practice.

Basic Assumptions

The researcher’s epistemological stance was based on the way of knowing called positivism. Being informed by positivism, the relationship between the researcher and the participants was objectivist and dualist (Lincoln & Guba, 2000). Positivism assumed that the inquiry was conducted objectively through rigorous steps and data were collected with reliable and valid instruments. Furthermore, positivism assumes that the data were collected and interpreted free of the researcher’s biases. Specifically, duality allows the participants to respond to the questions individually without being influenced by the presence of the researcher or other participants in the study. Reality was shaped through the duality of the researcher asking the participants to respond to objective, closed-ended items. Although mediated by the participants’ values, their responses to the items were with a limited influence of the researcher and other participants. Furthermore, the data were collected under the assumption that the respondents would complete the questionnaires honestly and accurately.
CHAPTER 2

REVIEW OF RELATED LITERATURE

Purpose of the Study

The purpose of the study was to measure the degree of change in teacher efficacy during the first 10 weeks of the student teaching, first-year, second-year, and third-year teaching experience in agricultural education in Ohio related to stage of development and environmental variables of teacher trust in clients, collective efficacy, supportive principal behavior, and academic emphasis of the schools. The following research objectives guided the researcher through the study.

Objectives of the Study

The objectives of the study were to:

1. Describe the differences in teacher efficacy between stages of development on the pretest and differences between stages of development on the posttest of student teachers, first-year teachers, second-year teachers, and third-year teachers in agricultural education in Ohio during the first 10 weeks of the 2001-02 school year;

2. Describe the degree of teacher efficacy change related to the stages of teacher development;
3. Explain the percent of variance in teacher efficacy change during the first 10 weeks of the school year related to stage of development and the environmental variables of teacher trust in clients, collective efficacy, supportive principal behavior, academic emphasis; and,

4. Describe the population of the study using selected teacher characteristics and perceptions.

The Conceptual Framework

The conceptual framework (Figure 2.1) of the study was grounded on Bandura’s (1986, 1997) social cognitive and self-efficacy theories. The centrality of the model is the triadic reciprocality of personal factors, environmental factors, and behaviors. People have five fundamental capabilities they use to cognitively process dynamic interaction of personal factors, environmental factors, and behaviors. People self-reflect on their own beliefs of performing tasks in specific situations, known as self-efficacy. Self-efficacy is a type of belief that is a concept of teacher motivation (Hoy, 2001). Teacher efficacy is a type of self-efficacy and it lies in the heart of the conceptual framework. Teacher efficacy is a belief that a teacher has in his or her ability to organize and execute courses of action that are required to successfully accomplish a specific teaching task in a particular context (Tschannen-Moran, Woolfolk Hoy, & Hoy 1998). Furthermore, a teacher with high teacher efficacy is one who is motivated to persist when faced with setbacks and who is willing to exert effort to overcome difficulties (Woolfolk, 2001). The three components—personal factors, environmental factors, and behaviors—of the triadic reciprocal system interact dynamically during the
initial and beginning phases of the teaching career. Interactions are mediated by the fundamental human capabilities, including self-reflection.
Figure 2.1: Conceptual framework
This study was focused on personal factors related to the stage of development and environmental factors related to interaction with students, parents, teaching colleagues, principal, and the school of student teachers and novice teachers in their first three years of teaching in agricultural education. The development of teachers, manifested by their teaching performances, influences and can be influenced by the interplay of their personal factors and environmental factors of the situations in which they teach.

**Personal Factors**

Personal factors in the left box of the conceptual framework can include an array of personal factors: (a) level of thought; (b) personality and learning styles; (c) level of motivation; (d) level of development; and, (e) gender and roles. These categories are briefly discussed.

**Level of Thought**

The level of thought related to multiple intelligences (Gardner, 1983) and triarchic theory of intelligence (Sternberg, 1985, 1990). The triarchic theory of intelligence posits that there are three sub-types of intelligence: componential intelligence, experiential intelligence, and socially influenced abilities. Componential intelligence relates to cognitive processing and is closely aligned with the traditional concept of intellectual ability. Experiential intelligence relates to the mental ability of applying experiential knowledge. Sternberg purports that experts become more automated and creative than novices. Although the first two sub-types of intelligence are universal, socially influenced abilities are more localized to challenging
environments. People cope with life’s challenges by adapting to the environment, shaping the environment, or choosing a different environment (Bandura, 1986).

**Personality and Learning Styles**

Personality type (Briggs Myers & Myers, 1995) and learning styles (Witkin, Oltman, Raskin, & Karp, 1971) can also serve as personal factors, especially related to how people perceive information and cognitively process that information. Psychological type can serve as an influence depending on extroversion or introversion, thinking or feeling, or judging and perceiving (Briggs Myers & Myers). Field independent learners and field dependent learners perceive and process information differently (Witkin et al.).

**Level of Motivation**

The level of motivation is another consideration of personal factors that can influence teacher development, performance, and efficacy. Teacher motivation is influenced by theories related to the needs, satisfaction, goals, and beliefs of the teachers. Self-efficacy theory is one of many theories of motivation that is highlighted to be an important personal factor connected to teacher efficacy in this conceptual framework.

**Level of Development**

Another area of personal factors relates to developmental theories of cognition, conceptualization, moral development, ego development, consciousness, and concerns (Glickman, Gordon, Ross-Gordon, 2001). This study focused on level of development based on intact grouping categories of student teachers, first-year teachers, second-year teachers, and third-year teachers.
Gender and Roles

Gender and roles, especially those related to family, work, and self (Juhasz, 1989), can also be personal factors that influence or be influenced through reciprocal deterministic relationships. Gilligan (1982) posits that women base their moral decisions on different criteria than men. Gilligan found that women valued maintaining a sense of connectedness and affiliation with others.

Environmental Factors

Environmental factors in the right box of the conceptual framework can be related to interactions with students, parents, colleagues, and the principal; school climate; levels in the ecosystem; and, transition and fortuitous events.

Interactions with Students, Parents, Colleagues, and the Principal

Teachers interact with many people in different roles. For the purpose of this study, a few of these interactions with people have been narrowed down to a few variables. The interactions between teachers and their clients—student and parents, tends to evolve around trust (Hoy & Tschannen-Moran, 1999). The interactions between teachers and their colleagues can evolve around collective efficacy (Goddard, Hoy, & Woolfolk Hoy, 2000). The interactions between teachers and their principals can evolve around the issue of administrative support (Hoy, Tarter, & Kottkamp, 2000).

School Climate

A healthy school has a positive climate because of a school board that resists narrowly vested interests from influential groups; a dynamic principal that provides task-oriented and relations-oriented leadership that supports teachers, high standards for learning, and instructional resources; committed and enthusiastic teachers who create an
orderly environment for learning and trust other teachers; and, students who work hard on academic matters and respect other students who do well academically (Hoy & Miskel, 2001). Hoy and Miskel defined the concept of school climate with the factors of institutional integrity, initiating structure, consideration, resource support, principal influence, morale, and academic emphasis can also play into the triadic reciprocality. Institutional integrity describes a school that has integrity in its educational program (Hoy & Miskel). Initiating structure describes behavior by the principal that is achievement and task oriented (Hoy & Miskel). Consideration describes principal behavior that is friendly, supportive, open, and collegial. Resource support refers to provisions at a school where adequate classroom supplies and instructional materials are available and easily obtained by teachers (Hoy & Miskel). Principal influence refers to the principal’s ability to affect the action of superiors (Hoy & Miskel). Morale refers to a sense of trust, confidence, enthusiasm, and friendliness exhibited among the teachers (Hoy & Miskel). Academic emphasis is the extent to which the school pursues academic excellence as demonstrated by high, yet achievable goals for students, an orderly and serious learning environment, teachers’ belief in their students’ ability to achieve, and students’ hard work and respect for others who do well academically (Hoy & Miskel; Hoy, Tarter, & Kottkamp, 2000).

Levels of the Ecosystem

Bronfenbrenner’s (1979) ecology of human development conceptualizes (Figure 2.2) the interactions that a person encounters at various levels in the environment—microsystem, mesosystem, exosystem, and macrosystem. The researcher contends that interactions with people within the concept of school climate occurs in microsystems
and mesosystems. Microsystems are the most immediate environments involving a person’s direct participation and interaction (Bronfenbrenner). Ashton (1985) identified that student characteristics, teacher characteristics, teacher-student interactive behavior, class size, role definitions, and activity structure can be factors in the microsystem.

Mesosystems are when two or more microsystems are connected such as school and home (Bronfenbrenner, 1979). Ashton (1985) identified that school norms, collegial relationships, principal-teacher relationships, and school decision-making structures were variables in the mesosystem. The exosystem involves connection between two or more environments, but unlike the mesosystem, the person does not interact with them. Exosystem factors can be related to the mass media, the nature of the school district, and legislative and judicial mandates (Ashton). The macrosystem consists of the economic, educational, legal, and political institutions of the culture that have an impact on teacher thought and performance. Ashton suggested that the conceptions of the teacher and the learner and the conceptions of the role of education conveyed in our cultural beliefs can be variables in the macrosystem that influence teachers and their performance.
Transition and Fortuitous Events

Transition events can also influence the developmental process. These are events that people encounter as they develop across their life spans. Transition events can have positive or negative outcomes and can be anticipated or unanticipated (Glickman, Gordon, Ross-Gordon, 2001). Bandura (1986) described unplanned transition events as fortuitous encounters. Fortuitous encounters can play a prominent role in shaping the course of people’s lives. The influence of a fortuitous or chance encounter lies in the interactive processes that chance encounters initiate. The selection
of environments and the production of environments are two outcomes that typically develop early after people psychological process a chance encounter (Bandura). Therefore, people tend to select activities and associate with people who share similar values after they acquire certain preferences and standards of behavior, and they achieve some regularity of behavior by constructing their own circumstances (Bandura).

The impact of fortuitous encounters depends on both personal and social determinants. Entry skills, emotional ties, values, and personal standards can be personal determinants (Bandura, 1986). First, the skills and interests people have determine the groups in which they associate and the kinds of social encounters they are most likely to experience. People must have adequate preparation in acquiring entry-level attributes if induction into a markedly different group is likely to take hold (Bandura, 1986). Second, personal attraction helps move chance encounters into lasting bonds. People are more likely to associate with a group that they like or with a group from which they will gain satisfaction. Third, human behavior is partially governed by value preferences and self-evaluative standards (Bandura, 1977). People direct their lives and gain satisfaction from their actions based on internal values. Fortuitous influences are more likely to affect personal lives if the people involved share similar standards and values. People’s lives become less predictable when personal standards have been inadequately developed and when there is much cultural confusion about what is valued (Bandura, 1986).

Fortuitous events can also happen through nonsocial events. Sometimes unexpected occurrences happen from unplanned interaction between factors. Serendipitous findings can occur through ingenuity and individualized interests,
perseverance, and specialized knowledge and experiences. Fortuity tends to favor those
who actively pursue life with an inquiring mind because the pursuit of new experiences
increases exposure to ideas that can lead to new directions (Bandura, 1986). Bandura
recommended that life events should be charted as they relate to processes that set into
motion to alter the courses of lives. These life events processes would include
educational pursuits, occupational choices, and formation of significant partnerships
(Bandura). Bandura recommended that inquiry ferret out events that play a key role in
setting the direction of life paths, including “life-path analysis of the patterns of
direction-setting choices and the set of factors that operate at each juncture” (p. 38).
People who know what factors mediate the impact of chance encounters on life paths
help guide how they foster and safeguard valued futures (Bandura).

Summary of the Conceptual Framework

The three components—personal factors, environmental factors, and
behaviors—of the triadic reciprocal system interact dynamically during the initial and
beginning phases of the teaching career. Among all, these interactions are mediated by
the fundamental human capabilities, including self-reflection, through the beliefs,
values, culture, and experiences (Buriak, McNurlen, & Harper, 1996) that are held by
each person. Each of the constructs can influence or be influenced by the other
constructs. For example, a teacher’s sense of low efficacy may be caused by a number
of transition events that recently occurred in the teacher’s life. The teacher’s low
efficacy could lead to lower efficacy when he or she faces challenging students in a
polarized work environment of feeling isolated. This struggling new teacher could
attribute the causes of the consequences of his or her performances to be outside of his
or her control, thus, leading to lower performance, poor student achievement, and a
diminished motivation to teach (Bandura, 1997). A motivated teacher with high
efficacy who developed as a teacher through interactions that lead to positive outcomes
will be more likely to have higher performance, good student achievement, and an
enriched motivation to remain in the teaching profession. The conceptual framework
served as the outline for the review of literature.

Review of Related Literature

The following theories that built the conceptual framework are reviewed: social
cognitive theory, self-efficacy theory as a motivational construct, teacher beliefs,
teacher efficacy theory, teacher characteristics, and teacher change.

Social Cognitive Theory

Pajares (2001b) asserted it made little sense to study the development of
individuals in isolated contexts because the developing teacher was embedded within
several environmental systems. Therefore, Bandura’s (1986) social cognitive theory
was selected as a theory underpinning the study because people develop and function
within a broad network of social influences, rather than in a socially isolated cognition.
Bandura purported that individuals possess a self-system and that human conduct
results from the interplay of that self-system and the environment. The three factors—
personal, environmental, and behaviors—interact dynamically through reciprocal
deterministic relationships to form a triadic reciprocal system. Bandura described the
social cognitive theory as

behavior, cognitive and other personal factors, and environmental influences all
operate interactively as determinants of each other. In this triadic reciprocal
determinism, the term reciprocal refers to the mutual action between casual factors. The term determinism is used here to signify the production of effects by certain factors, rather than in the doctrinal sense of actions being completely determined by a prior sequence of causes operating independently of the individual. Many factors are often needed to create a given effect. Because of the multiplicity of interacting influences, the same factor can be a part of different blends of conditions that have different effects (p. 23-24).

The study of understanding the reciprocal deterministic effects of personal factors, environmental factors, and behavior focuses on determining strategies for “improving emotional, cognitive, or motivational processes, increasing behavioral competencies, or altering the social conditions under which people live and work” (Pajares, 2001a, p. 2). Therefore, the social cognitive theory can be useful to understand and predict individual and group behavior; identify ways in which behavior can be modified or changed; and, serve as an intervention tool for psychological and sociological cases (Stone, 1998).

Bandura’s (1986) social cognitive theory posits that human functioning accords a central role to cognitive, vicarious, self-regulatory and self-reflective processes in human adaptation and change. Human functioning is viewed as the product of a dynamic interplay of personal, behavioral, and environmental influences (Bandura). These influences, or determinants, affect each other bi-directionally through a process called reciprocal determinism, which creates the model of triadic reciprocity. The value of a theory is judged by its predictability and usefulness to bring about psychological changes. In predicting how human behavior is influenced by the
environment, Bandura’s social cognitive theory focuses on how a person cognitively processes and interprets environmental outcomes. Although powerful, the element of triadic reciprocity (Figure 2.2) makes the social cognitive theory a complex theory to understanding human and social phenomena.

Figure 2.3: The triadic reciprocity of the social cognitive theory
The underlying premise of the social cognitive theory is that people are products and producers of their environment. Three factors—cognitive, environmental, and behavioral—interact as determinants in a reciprocal nature of human functioning (Bandura).

**Personal-Behavioral Reciprocality**

For the personal-behavioral reciprocity, personal factors such as cognitive processing can influence a person’s behavior by determining what decisions they will make to produce the behaviors that are manifested. On the other hand, the behaviors that a person exhibits can also determine personal factors as well. One who adventures into new experiences will have a new mental schema of those experiences (Bandura, 1986).

**Personal-Environmental Reciprocality**

For the personal-environmental reciprocity, personal factors such as previous experiences can help one influence and shape the environment. Likewise, the environment can influence and shape the person’s attitude about the environment through the interactions that occur (Bandura, 1986).

**Behavioral-Environmental Reciprocality**

For the behavioral-environmental reciprocity, behavior can shape and influence the environment that the person interacts with, however, the environment can also influence and shape how the person behaves and performs. The effects of the three factors should be considered as associated probabilistically because the relative influence of each set of interacting factors will vary for different individuals, different activities, and different circumstances (Bandura, 1986).
The Development of Personal, Behavioral, and Environmental Factors

Although the set of factors vary, the three sets of interacting factors usually become active and develop interdependently. Interdependence of the three interacting sets of factors do not typically develop symmetrically because of disparities in social power, competencies, and self-regulatory skills (Bandura, 1986). Reciprocal influences occur in alternating rather than concurrent patterns and a casual factor takes time to develop before it produces a reciprocal effect (Bandura).

People use their cognitive processes to become producers and products of their environments. Among the system of triadic reciprocity, people are agents proactively engaged in their development and can make things happen by their actions by exercising control over their thoughts, feelings, and actions because “what people think, believe, and feel affects how they behave” (Bandura, 1986, p. 25). People’s actions can be influenced by their thoughts about the rules governing outcomes, the meaning they attribute to the outcomes, and their beliefs about how likely their actions can change future outcomes over time (Bandura). People conceive thoughts about themselves, which develop and are verified, through four different processes: (a) direct experiences, (b) vicarious experience of the effects produced by someone else’s actions, (c) judgments voiced by others, and (d) deriving further knowledge from what they already know by using rules of inferences (Bandura).

The Role of Personal Characteristics and Status

Furthermore, people can activate different reactions depending on their physical characteristics and their socially conferred roles and status (Bandura, 1986). The relationship between thought and action involves two-way causation because
conceptions govern behavior through direct and social mediated transactions with the environment (Bandura). Personal and environmental factors do not influence behaviors automatically. Personal determinants are inoperative until activated and environmental determinants are inoperative until actualized by appropriate action (Bandura). In social transactions, the behavior of each participant governs which potential qualities and interest will be actualized and which ones will remain unexpressed. Therefore, in this bi-directional influence process, “the environment is influenceable, as is the behavior it affects” (Bandura, p. 29).

The Role of Personal Agency

Although Bandura recognized the influential power of the environment on personal factors and behaviors, he emphasized that an individual needs effective tools of personal agency or action, as well as a great deal of social support to exercise some measure of control over one’s developmental course (Bandura, 1986). People have an unparalleled capability to become many things. Bandura believed that “a strong sense of personal agency requires the development of competencies, self-percepts of efficacy, and self-regulatory capabilities for exercising self-directedness” (Bandura, p. 38).

Although, people can master the tools of personal agency, it does not necessarily assure them desired futures. However, people with such skills are better able to provide support and direction for their actions, capitalize on planned or fortuitous opportunities, resist social traps that can be detrimental, and disengage themselves from predicaments if they get entangled in them (Bandura, 1986). Personal resources expand their freedom to act and enable them to serve as causal contributors to their own life course by selecting, influencing, and constructing their own circumstances (Bandura).
The Role of Emotion

Emotional resources are important during formative years when preferences and personal standards are in a state of change, and there are many conflicting sources of influence with which to contend. Social ties also contribute toward the achievement of a secure sense of direction. People acquire internal standards through modeling and evaluative reactions by significant others. These internal standards motivate people to act. Furthermore, social support gives incentive, meaning, and worth to what people do.

However, people become more vulnerable to chance influences and offer their friendship in exchange for conformity to prescribed life styles and ideologies (Bandura, 1986). When social ties are weak or lacking, the life paths that become realistic opportunities are partly determined by the nature of the cultural agencies to which their development is entrusted (Bandura). People will have more opportunities to realize what they wish to become when social systems cultivate generalizable competencies, provide helpful resources, and allow ample room for self-directedness (Bandura).

The Freedom of Personal Choice

Because people can exercise some degree of control over how situations influence them, people are at least partial architects of their own destinies. People who exhibit greater foresight, proficiency, and means of self-influence, all of which are acquirable skills, are more likely to progress toward their goals (Bandura, 1986). Bandura conceived the concept of freedom, in reference to the exercise of self-influence, as “achieved through thought, using skills at one’s command, and other tools of self-influence which choice of action requires” (p. 39).
People who have the capabilities for exercising many options and are adept at regulating their own behavior will have greater freedom than those with limited personal agency. Making choices is aided by reflective cognitive activity. People can exert some influence over what they do by making decisions and solving problems. However, individuals rely on inferential thought for guidance when faced with circumstances that present uncertain environmental information (Bandura, 1986). The psychological analyses of the mechanisms of personal agency illustrate how people can contribute to the attainment of deserved futures by regulating their own behavior. People direct their efforts toward valued goals by engaging cognitive guides and self-incentives and by arranging environmental conditions leading to goal attainment (Bandura). Multi-authored influences determine behavior and people choose how they act based on the various options one can pursue in a particular situation (Bandura).

Although performance and functioning are directed by freedom of choice among a myriad of social influences, Bandura (1986) warned that a self-centered ethic of self-realization must be tempered by the concern for the social consequences of one’s conduct because of the close interaction with environmental influences. People accomplish their goals from the reciprocal influences of external circumstances, a host of personal qualities, including endowed abilities, acquired competencies, reflective thought, and a high level of self-initiative (Bandura). “Superior accomplishments, whatever the field, require considerable self-disciplined application. After individuals adopt standards of excellence, they spend large amounts of time, on their own, improving their performances to the point of self-satisfaction” (Bandura, p. 41).
Bandura believed that how people apply their knowledge and skills partly depends on their self-percepts of efficacy.

**Fundamental Human Capabilities**

The strength of the social cognitive theory is grounded on the cognitive processing of the interactions and how beliefs, values, cultural resources, and experiences that a person possesses mediate the five fundamental human capabilities. Bandura (1986) purported that people have five fundamental human capabilities that make them unique of all species: (a) people have an extraordinary capacity to symbolize; (b) people have the ability to solve cognitive problems and engage in self-directedness and forethought; (c) people learn vicariously by observing others; (d) people have self-regulatory mechanisms that provide the potential for self-directed changes in behavior; and, (e) people make sense of their experiences, explore their cognitions and self-beliefs, evaluate themselves, and alter their thinking and behavior through self-reflection. Bandura believed that one’s own percept of efficacy derived from self-reflection is the most powerful of the five fundamental human capabilities.

**Self-Efficacy Theory**

Self-efficacy theory emerged from Bandura’s social cognitive theory. Building on the social cognitive theory, Bandura (1986) posited that factors affect human behavior through psychological mechanisms of the self-system because “most external influences operate through cognitive processing” (p. 13). The motivation, affective states, and actions are based more on what people believe than what is objectively the case (Bandura). Furthermore, self-efficacy is both a personal and a social construct because individuals operate individually and collectively. Collective systems develop a
sense of collective efficacy, which is a group’s shared belief in its capability to attain goals and accomplished desired tasks. Therefore, economic conditions, socio-economic status, education, and family structures influence human behaviors to the degree that they influence their aspirations, self-efficacy beliefs, personal standards, emotional states, and other self-regulatory influences (Bandura), both from an individual’s perspective as well as a collective perspective of those in common association.

Bandura (1997) defined self-efficacy as “beliefs in one’s capabilities to organize and execute the courses of action required to produce given attainments” (p. 3). Although success or failure is influenced by a myriad of tasks as they occur in life, self-efficacy is important because it influences the choices people make, the courses of action they take, the effort they will expend on an activity, how long they will persevere when facing obstacles, how resilient they will be in adverse situations, their thought patterns and emotional reactions, and the level of accomplishment ultimately achieved (Bandura, 1986). Furthermore, the knowledge and skills that people have and how they interpret the results of their attainments also influences their success or failure. Self-efficacy determines how well knowledge and skills are learned and acquired.

Another closely related concept to self-efficacy is outcome expectancy (see Figure 2.4 and Table 2.1). Outcome expectancy is the anticipated value people have in the outcome of a particular performance or behavior (Bandura, 1997). Although outcome expectancy is a poor predictor of behavior, it can influence whether or not a person will conduct a performance or behavior. For example, outcome expectancy can play a mediational role of judgment by not putting forth much effort or even performing if they have a lack of incentive, lack of necessary resources, or perceived social
constraints. Moreover, faulty assessments of self-efficacy can often yield a poor prediction of performance if people have obscure aims and performance ambiguity (Bandura, 1986).

People cognitively process information from four sources of efficacy to analyze how they think they can perform a specific task in a particular situation. The four sources of efficacy are derived from mastery experiences, vicarious experiences, verbal persuasion, and physiological and affective states (Bandura, 1997).

Self-efficacy has been especially prominent in studies of educational constructs related to academic achievement, attributions of success and failure, goal setting, social comparisons, memory, problem-solving, career development, and teaching and teacher education (Pajares, 2001a). Specifically related to the study, teaching efficacy, a type of self-efficacy, is a belief-oriented motivation construct. Therefore, the next sections of the review of the literature focus on teacher beliefs, teacher efficacy, teacher characteristics, and teacher change and development.

Teacher Beliefs

Teacher beliefs play a pivotal role in how teachers acquire and interpret knowledge. Teacher beliefs influence how people teach. Unexplored beliefs of entering teachers may be the reason why teachers perpetuate antiquated and ineffective teaching practices (Pajares, 1992). Furthermore, preservice teachers’ self-efficacy beliefs might provide understanding on their academic, social, and preprofessional inclinations and choices (Pajares). Because teacher efficacy is a type of belief (Tschannen-Moran, Woolfolk Hoy, & Hoy, 1998), and because beliefs can be the best indicators of the decisions that people make throughout their lives (Bandura, 1986;
Dewey, 1910; Nisbett & Ross, 1980; Pajares, 1992; Rokeach, 1968), some literature on beliefs is briefly reviewed.

Definition of Beliefs

Researchers have long wrestled with defining beliefs and knowledge (Alexander & Dochy, 1995; Alexander, Schallert, & Hare, 1991). Pajares (1992) distinguished beliefs as based on evaluation and judgment, and knowledge as being based on objective fact. Pajares further elaborated that belief systems are composed of beliefs that form around constructs—beliefs that are complexly and intricately connected to other beliefs and other cognitive and affective structures. Rokeach (1968) called these belief-formed constructs attitudes. Although knowledge tends to be considered as factual, and beliefs tend to be personal and value-laden, people tend to also see knowledge and beliefs to be overlapped and interfaced with each other (Alexander & Dochy). For the purpose of this review, the concept of knowledge in teaching is considered as propositional and practical knowledge, which is related to beliefs.

The Role of Practical Knowledge

Fenstermacher (1994) defined practical knowledge in teaching as “a collective concept focusing on the mental lives of teachers, their thinking, ruminations, purposes, planning, desires, and a host of other features of what Dewey called ‘lived experience’” (p. 36). Teachers’ knowledge of students and content depends heavily on self-knowledge (Palmer, 1998). "We teach who we are" (p. 2) and, "as we learn more about who we are, we can learn techniques that reveal rather than conceal the personhood from which good teaching comes" (Palmer, p. 24). Therefore, if good teaching requires self-knowledge, then teachers’ beliefs play an integral role in the process of teaching.
The Influence of Beliefs

Although, knowledge and beliefs are inextricably intertwined, the potent affective, evaluative, and episodic nature of beliefs make them a filter through which new phenomena are interpreted (Pajares, 1992). The filter effect of beliefs and practical knowledge connects with Bandura’s (1997) description of self-reflection and self-efficacy. People form beliefs through experiences by observing regularities about the outcomes likely to result from actions in certain situations and regulate their behavior accordingly (Bandura, 1986).

Development of Beliefs

Beliefs develop across time as “people process and synthesize contextual and outcome information from sequences of events over long intervals about what behavior is needed to produce given outcomes” (Bandura, 1986, p. 13). One must know how outcomes are processed in order to predict how outcomes will affect behavior. Bandura (1986) posited that to understand “which consequences change behavior requires analysis of reciprocally contributing influence of cognitive factors” (p. 13). Bandura’s focus on understanding human behavior focused on the laws and structural properties of cognitive events because external stimuli do not covary closely with thought and action of an individual.

Modification of Beliefs

Although people, including teachers, resist changing their beliefs (McDiarmid, 1990; Nisbett & Ross, 1980), beliefs can be modified and changed through an external catalyst of new and compelling knowledge, education, and experience (Alexander & Dochy, 1995). Beliefs can also be changed through an internal stimulus if the believer
is willing to be open-minded, questioning, or doubting (Alexander & Dochy).

Moreover, Alexander and Dochy found that people with more education, age, and maturity were more flexible in their beliefs, including beliefs about themselves. Furthermore, there are attributes of the human character that contribute to or constrain one’s view about knowing and believing regardless of one’s intellectual and cognitive ability (Alexander & Dochy).

People can exert a selective influence on the development of beliefs once they give attention to their belief system (Bandura, 1986). Personal identity and security are not readily discarded once acquired because they are heavily invested in belief systems (Bandura). Beliefs can be instilled and strengthened in people by affiliating with groups that hold the same ideological commitments as they do. “Beliefs channel social interactions in ways that create their own self-validating realities” (Bandura, p. 36). Beliefs can provide direction and meaning, as well as distortion, to experience. People see what they want to see, reinterpret incongruities to fit their belief system, and rewrite memory of events that they have experienced.

**Fortuitous Events and Beliefs**

Furthermore, Bandura explained four ways of how fortuitous events can serve as social determinants to influence people’s beliefs through milieu rewards, symbolic environment and information management, milieu reach and closedness, and psychological closedness (Bandura, 1986). First, people affiliate with groups when social rewards are high and will withdraw when the rewards are low because “once individuals become attached to a primary group, they are socialized into its ideology and life style through a vast network of proximal rewards and social sanctions that
members provide for each other in their daily transactions” (Bandura, p. 35). Second, people act on their images of reality because constraints of time, resources, and physical separation severely limit the amount of information that can be gained through direct experience because “symbolic systems help build affinity and solidarity and shape ideological perspectives on life” (Bandura, p. 35). Third, people can be shaped by how extensively interpersonal influences in social contexts touch personal lives and the degree of closedness of the group (Bandura). Fourth, belief systems prove structure, direction, and purpose to life and people seek and firmly hold to beliefs that serve valuable functions.

**Fundamental Assumptions of Teacher Beliefs**

In his synthesis, Pajares (1992) offered some fundamental assumptions that may be reasonably made when initiating a study of teachers’ educational beliefs: (a) beliefs are formed early and tend to self-perpetuate and persevere even against contradictions caused by reason, time, education, or experience; (b) people develop a belief system that harbors all beliefs acquired through the process of cultural transmission; (c) the belief system helps people adapt by defining and understanding the world and themselves; (d) knowledge and beliefs are integrally intertwined; (e) thought processes are precursors to and creators of beliefs and beliefs filter and shape the interpretations of knowledge and phenomena; (f) epistemological beliefs play a key role in interpreting knowledge and monitoring cognition; (g) beliefs are prioritized according to their connections or relationship to other beliefs or cognitive and affective structures; (h) belief substructures, also known as attitudes and values, are connected to a central belief in the system; (i) some beliefs are more inconvertible than others; (j) belief change
rarely happens during adulthood, but it can occur through a conversion of one authority
to another or a gestalt shift; (k) beliefs are instrumental in defining tasks, selecting
cognitive tools, making decisions, and executing behaviors; (l) beliefs strongly
influence perception; (m) an individual’s beliefs strongly affect one’s behavior; (n)
beliefs must be inferred through belief statements, intentions, and behaviors; and, (o)
beliefs about teaching are well established by the time students get to college.

Richardson and Placier (2001) identified that teaching experiences, reflective
practices, and beliefs have been important concepts in teacher development research.
Beliefs affect and are affected by the change processes that teachers experience
(Richardson & Placier). Smylie (1988) concluded that teachers’ beliefs were the most
significant predictors of individual change. Tenably, practical knowledge, experiences,
self-reflection, and beliefs appear to be integrally woven with how teachers think, feel,
and perform. The next section reviews teacher efficacy as a type of self-efficacy beliefs
that motivate teachers to teach and help students learn when faced with difficulties.

Teacher Efficacy

Teacher efficacy is defined as “the teacher’s belief in his or her capability to
organize and execute courses of action required to successfully accomplish a specific
teaching task in a particular context” (Tschannen-Moran, Woolfolk Hoy, & Hoy, 1998,
p. 233). Guskey and Passaro (1994) defined teacher efficacy as “teachers’ belief or
conviction that they can influence how well students learn, even those who may be
difficult or unmotivated” (p. 4). Furthermore, Woolfolk (2001) added that teacher
efficacy is the teacher’s motivation to persist when faced with setbacks, and the
willingness to exert effort to overcome difficulties.
The Origin of Teacher Efficacy

Teacher efficacy had its genesis from the RAND studies (Armor et al., 1976) based on Rotter’s (1966) locus of control theory (Tschanne-Moran, Woolfolk Hoy, & Hoy, 1998). Teacher efficacy was initially defined as “the extent to which the teacher believes he or she has the capacity to affect student performance” (Berman, McLaughlin, Bass, Pauly, & Zellman, 1977, p. 137). Based on Rotter’s theory, teachers who agreed that the environment had a greater influence on their ability to impact student learning, held a belief that reinforcement of their actions were outside of their control—an external locus. Teachers who expressed confidence in their ability to teach difficult or unmotivated students, held a belief that reinforcement of teaching was related to the teachers’ control—an internal locus.

The Concept of Teacher Efficacy

More recently, Bandura (1997) identified teacher efficacy as a type of self-efficacy related to his social cognitive theory that has two expectations: efficacy expectation and outcome expectation. Efficacy expectancy is one’s perceived assessment of a performance. Outcome expectancy is one’s perceived assessment of the consequence of the performance. Perceived self-efficacy is typically a stronger predictor of behavior than outcome expectation (Tschanne-Moran, Woolfolk Hoy, & Hoy, 1998). Efficacy expectancy and outcome expectancy are both a futuristic orientation based on what a person expects, whereas, locus of control is a historic orientation based on a person’s interpretation of what happened. Locus of control is
one’s assessment of locating the cause of why the consequence happened. Figure 2.3 illustrates the relationship of efficacy expectancy, outcome expectancy, and locus of control.

Figure 2.4: Relationships of efficacy expectancy, outcome expectancy, and locus of control

The Measurement of Teacher Efficacy

The first measures of teacher efficacy were two items based on Rotter’s (1966) social learning theory placed in a RAND study (Armor et al, 1976). RAND item 1 stated, “When it comes right down to it, a teacher really can’t do much because most of a student’s motivation and performance depends on her or her home environment.” Item 1 represented an external locus of control. RAND item 2 stated, “If I try really hard, I can get through to even the most difficult or unmotivated students.” Item 2
represented an internal locus of control. Teachers were asked to indicate their level of agreement with the two items to measure efficacy. The sum of the two items was called teacher efficacy (Tschannen-Moran & Woolfolk Hoy, 2001).

Responsibility for Student Achievement instrument.

Shortly after the RAND studies, Guskey (1981) developed a 30-item instrument measuring Responsibility for Student Achievement (RSA). The RSA measured how much the teacher assumed responsibility for student outcomes in general, as well as two subscales indicating student success and student failure (Tschannen-Moran & Woolfolk Hoy, 2001). After analyzing the correlations between the RSA and teacher efficacy, Guskey (1987) asserted that positive and negative outcomes represent separate dimensions, not opposite ends of a continuum, and that these dimensions independently influence perceptions of efficacy.

Teacher Locus of Control instrument.

Concurrently, Rose and Medway (1981) created the Teacher Locus of Control (TLC), which measured how teachers assigned responsibility for successes or failures. Rose and Medway’s contribution to the development of measuring teacher efficacy was that the TLC was a better predictor of teacher behaviors than Rotter’s Internal-External Scale because it was more specific to a teaching context (Tschannen-Moran & Woolfolk Hoy, 2001).
The Webb Scale.

Another attempt to measure teacher efficacy was offered about the same time as the RSA and the TLC. The Webb Scale (Ashton, Olejnik, Crocker, & McAuliffe, 1982) used a forced-choice format with items matched for social desirability to increase reliability of the teacher efficacy measure.

Bandura’s conceptual clarification.

In 1977, Bandura suggested a second conceptual strand related to self-efficacy that influenced the measurement of teacher efficacy (Tschannen-Moran & Woolfolk Hoy, 2001). Bandura’s social cognitive (1986) theory and self-efficacy (1997) theory assert a futurist-oriented assessment of a person’s performance and consequences. “Perceived self-efficacy is a judgment of one’s ability to organize and execute given types of performances, whereas an outcome expectation is a judgment of the likely consequence such performances will produce” (Bandura, 1997, p. 21).

Ashton Vignettes.

In 1984, Ashton, Buhr, and Crocker developed a series of vignettes describing situations that teachers could encounter which required respondents to make judgments as to their effectiveness in handling the situations. The Ashton vignettes contributed to the measurement of teacher efficacy by identifying that the norm referenced vignettes were significantly correlated with the RAND items while self-referenced vignettes were not (Tschannen-Moran & Woolfolk Hoy, 2001).
Teacher Efficacy Scale–Long Form.

Teacher efficacy has been widely measured by researchers using Gibson and Dembo’s (1984) Teacher Efficacy Scale, which was created based upon Bandura’s (1977) social cognitive theory and the initial items from the RAND studies (Tschannen-Moran & Woolfolk Hoy, 2001). Gibson and Dembo created 30 items in the original Teacher Efficacy Scale based on Bandura’s (1997) social cognitive theory. The Teacher Efficacy Scale is a two-factor measurement of teacher efficacy was based on Bandura’s theoretical components of efficacy expectancy and outcome expectancy. Gibson and Dembo labeled the factor of efficacy expectancy, Personal Teaching Efficacy (PTE), and outcome expectancy, General Teaching Efficacy (GTE).

**PTE and GTE factors.**

Personal teaching efficacy (PTE), an internal orientation, reflects teachers’ evaluation of their abilities to bring about positive student change. General teaching efficacy (GTE), an external orientation, reflects the extent to which teachers believed that environment could be controlled. However, questions have been raised about the interpretation of Gibson and Dembo’s (1984) measure related to outcome expectancy (Tschannen-Moran, Woolfolk Hoy, & Hoy, 1998; Woolfolk & Hoy, 1990). In attempt to clarify the meaning of teacher efficacy, Guskey and Passaro (1994) suggested that the internal factor (“I can”) of teacher efficacy represented perceptions of personal influence, power, and impact in teaching and learning situations, and the external factor (“I can’t”) related to perceptions of the influence, power, and impact of elements that lie outside of the classroom and, hence, may be beyond the direct control of individual teachers. Table 2.1 illustrates the relationships between the two factors.
Table 2.1: Relationships between Gibson and Dembo’s (1984) two factors.

<table>
<thead>
<tr>
<th>Personal Teaching Efficacy</th>
<th>General Teaching Efficacy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Efficacy Expectancy</td>
<td>Outcome Expectancy</td>
</tr>
<tr>
<td>Internal Orientation</td>
<td>External Orientation</td>
</tr>
<tr>
<td>Belief in abilities to bring about positive student change</td>
<td>Belief that the environment could be controlled</td>
</tr>
<tr>
<td>Perceptions of personal influence on learning in the classroom</td>
<td>Perception of personal influence on elements that influence learning outside of the classroom</td>
</tr>
<tr>
<td>“I can”</td>
<td>“I can’t”</td>
</tr>
<tr>
<td>Teacher Efficacy</td>
<td>Outcome Expectancy</td>
</tr>
</tbody>
</table>

Teacher Efficacy Scale—Short Form.

Although Gibson and Dembo’s (1984) measure has been the most popular instrument to measure teacher efficacy, problems remain both conceptually and statistically (Tschannen-Moran & Woolfolk Hoy, 2001). Some researchers have found that some of Gibson and Dembo’s items did not load and sometimes the loadings were on one factor (Soodak & Podell, 1993; Woolfolk & Hoy, 1990). Therefore, Hoy and Woolfolk (1990) developed the Teacher Efficacy Scale—Short Form (TES-SF) using factor analysis to test the validity of the construct of teacher efficacy. The TES-SF contained 10 items based on Gibson and Dembo’s Teacher Efficacy Scale. The short form contained five items that measured personal teaching efficacy (PTE) and five items that measured general teaching efficacy (GTE). The reliability of the short version has acceptable reliability coefficients (PTE = .77, GTE = .72; Woolfolk & Hoy).
Furthermore, the optimal level of specificity is one of the unresolved issues in measuring teacher efficacy (Tschannen-Moran, 2000). Teacher efficacy is both context and subject matter specific (Tschannen-Moran). Some researchers have attempted to make Gibson and Dembo’s (1984) items more specific for areas of science (Riggs & Enochs, 1990), classroom management (Emmer & Hickman, 1990), and special education (Meijer & Foster, 1988).

Bandura’s Teacher Self-Efficacy Scale.

More recently, Bandura’s (2001) unpublished instrument that he used to measure teacher efficacy started to circulate in the midst of the confusion about how to best measure teacher efficacy (Tschannen-Moran, 2000). Bandura (1997) suggested that teachers’ sense of efficacy is not necessarily uniform across the many different types of teaching tasks, or across the many different subject areas.

Bandura’s (2001) Teacher Self-Efficacy Scale consisted of 30 items with seven subscales: efficacy to influence decision making, efficacy to influence school resources, instructional efficacy, disciplinary efficacy, efficacy to enlist parental involvement, efficacy to enlist community involvement, and efficacy to create a positive school climate. The items were measured on a 9-point scale anchored with five descriptors: “nothing, very little, some influence, quite a bit, a great deal.”

The degree of specificity and generalizability remains the critical issue in measuring teacher efficacy. Bandura (2001) purported that “there is no all-purpose measure of perceived self efficacy” (p. 1). Furthermore, “scales of perceived self-efficacy must be tailored to the particular domains of functioning that are the object of interest” (Bandura, p. 1). Pajares (1992) noted that “specificity and precision are often
purchased at the expense of external validity and practical relevance” (p. 561). In order for teacher efficacy scales to be useful and generalizable, they need to measure teachers’ assessments of their competence across the wide range of teaching activities and tasks (Tschannen-Moran, 2000).

Ohio State Teacher Efficacy Scale.

Tschannen-Moran, Woolfolk Hoy, and Hoy (1998) suggested that a valid measure of teacher efficacy must assess both personal competence and an analysis of the tasks related to the resources and constraints in particular teaching contexts. Therefore, responding to the need for a better measure of teacher efficacy and building on Bandura’s teacher self-efficacy scale, Tschannen-Moran and Woolfolk Hoy (2001) developed the Ohio State Teacher Efficacy Scale (OSTES).

The original 52 items in the OSTES have been tested, factor analyzed, and reduced to 24 current items. The OSTES has yielded three factors accounting for 51% of the variance: Efficacy in Student Engagement, Efficacy in Instructional Practices, and Efficacy in Classroom Management (Tschannen-Moran & Woolfolk Hoy, 2001). The reliability coefficients for the subscales were: Engagement = .82, Instruction = .81, and Management = .72. The subscales scores and the total score can be used to assess teacher efficacy using the OSTES (Tschannen-Moran, 2000). Tschannen-Moran and Woolfolk Hoy (2001) recommended that the total score is most appropriate for preservice teachers because subscale scores may have little meaning for prospective teachers who have not assumed real teaching responsibilities.

One, two, or three teacher efficacy factors.

Research has been mixed regarding the number of factors related to measuring
teacher efficacy. Researchers have confirmed the existence of the two factors—efficacy expectancy and outcome expectancy—using the Gibson and Dembo (1984) items (Anderson, Green, Lowen, 1988; Burley, Hall, Villeme, Brockmeier, 1991; Hoy & Woolfolk, 1993; Moore & Esselman, 1992b; Saklofske, Michaluk, & Randhawa, 1988; Sookdak & Podell, 1993). Studies of both preservice and inservice teachers have found that 18% to 30% of the variance of teacher efficacy was explained by these two factors. Further, the two factors have been only moderately related, with correlations ranging from -0.15 to -0.20 (Tschannen-Moran & Woolfolk Hoy, 2001). However, Tschannen-Moran and Woolfolk Hoy found that 51% of the variance could be explained with three factors of Engagement, Instruction, and Management. They also recommended that one factor, Teacher Efficacy, represented by the total score could be used to measure teacher efficacy, especially for preservice teachers who have not assumed real teaching responsibilities.

The Development of Teacher Efficacy

Tschannen-Moran, Woolfolk Hoy, and Hoy’s (1998) described the developmental process of teacher efficacy based on a substantial body of research with an integrated and cyclical model (Figure 2.4). The major influences on efficacy beliefs are assumed to be the attributional analysis and interpretation of the four sources of information about efficacy described by Bandura (1986, 1997)—mastery experience, physiological arousal, vicarious experience, and verbal persuasion (Tschannen-Moran, Woolfolk Hoy, & Hoy). However, teachers do not feel equally efficacious for all teaching situations because teacher efficacy is context specific. Teachers can feel efficacious for teaching particular subjects to certain students in specific settings, but
their efficacy can change in different circumstances. The central component of Tschannen-Moran, Woolfolk Hoy, and Hoy’s model is in analyzing the teaching task and its context, and in assessing self-perceptions of teaching competence.

The cyclical nature of teacher efficacy makes it a powerful construct (Tschannen-Moran, Woolfolk Hoy, & Hoy, 1998, p. 233). For example, the proficiency of performance creates mastery experience, which provides new information that will be processed to shape future efficacy beliefs. Greater efficacy beliefs lead to greater effort and persistence, which leads to better performance, and in turn, leads to greater efficacy. The reverse is also true of one who could experience failure and lower efficacy. Therefore, the cyclical route of one’s experience becomes the past and a
source of future efficacy beliefs. This process stabilizes over time into a relatively stable set of efficacy beliefs (Tschannen-Moran, Woolfolk Hoy, & Hoy). Bandura (1997) purported that beliefs about both the teaching task and personal competence of teaching were likely to remain unchanged unless compelling evidence intruded and caused them to be reevaluated. Although teacher efficacy may resist change, the development of teacher efficacy can be influenced by the four sources of efficacy throughout the teacher preparation and novice teacher stages.

Teacher preparation programs play a significant role in preparing teachers to be successful in the teaching profession (American Council on Education, 1999; Harper, Weiser, & Armstong, 1990; McGhee & Cheek, 1990). This section focuses on the development of preservice and novice teachers’ efficacy beliefs through learning experiences in teacher preparation programs and the beginning three years of the teaching career. Borko and Putnam (1996) suggested ways to create successful learning opportunities for teachers (p. 700): (a) addressing teachers’ existing knowledge and beliefs about teaching, learners, learning, and subject matter; (b) providing teachers with sustained opportunities to deepen and expand their knowledge of subject matter; (c) treating teachers as learners in a manner consistent with the program’s vision of how teachers should treat students as learners; (d) grounding teachers’ learning and reflection in classroom practice; and, (e) offering ample time and support for reflection, collaboration, and continued learning.

Some of the learning opportunities for developing teacher efficacy in a teacher preparation program can be grounded on Bandura’s (1997) four sources of self-efficacy: (1) mastery experiences; (2) vicarious experiences; (3) verbal persuasion; and (4)
physiological arousal. The sources of efficacy are interconnected to each other and are not commonly considered as single sources of efficacy (Bandura). “A sense of personal efficacy is constructed through a complex process of self-persuasion. Efficacy beliefs are the product of cognitive processing of diverse sources of efficacy information conveyed enactively, vicariously, socially, and physiologically. Once formed, efficacy beliefs contribute to the quality of human functioning in diverse ways and people realize accomplishments by enlisting cognitive, motivational, affective, and decisional processes (Bandura). Therefore, the four sources of teaching efficacy can be determinants of teacher efficacy while enrolled in a teacher preparation program.

Mastery experiences.

Bandura (1997) stated that “enactive mastery produces stronger more generalized efficacy beliefs than do modes of influence relying solely on vicarious experiences, cognitive simulations, or verbal instruction” (p. 80). Therefore, preservice and novice teachers need opportunities to teach successfully. Although preservice and novice teachers need structured assignments to control for some complexity, Bandura warned that building efficacy through mastery experiences does not occur by programming ready-made behavior. “It involves acquiring the cognitive, behavioral, and self-regulatory tools for creating and executing effective courses of action to manage ever-changing life circumstances (Bandura, p. 80).

Teachers need to learn the rules and strategies for constructing effective teaching. Therefore, teachers need to develop knowledge of student learning, subject matter, and pedagogy. “Development of the cognitive basis of human competencies is
facilitated by breaking down complex skills into easily mastered subskills and organizing them hierarchically” (Bandura, 1997, p. 80).

Teachers not only need to experience successful teaching, but they need to be persuaded that they can exercise better control by applying them consistently and persistently (Bandura, 1997). Clear instructional delivery with affirmative coaching needs to be coupled with multiple opportunities to teach so that they can develop better control of their teaching strategies. However, performance alone does not provide sufficient information to judge one’s level of capability, because many factors that have little to do with ability can affect performance.

Appraisal of teacher efficacy is an inferential process in which the relative contribution of ability and nonability factors to performance successes and failures must be weighted. The extent to which a person will alter their perceived efficacy through performance experiences depends on many factors including: their preconceptions of their capabilities; the perceived difficulty of the tasks; the amount of effort they expend; the amount of external aid they receive; the circumstances under which they perform; the temporal pattern of their successes and failures; and, the way these enactive experiences are cognitively organized and reconstructed in memory (Bandura, 1997).

Vicarious experiences.

Vicarious experiences can build efficacy through the observation of models: (a) actual modeling; (b) diversified modeling; (c) symbolic modeling; and, (d) self-modeling.

Actual modeling - People can more easily judge their own capabilities when activities allow people to objectively analyze their performances with little ambiguity.
People must appraise their capabilities in relation to the attainments of others when the performance of activities are more difficult to measure (Bandura, 1997). When adequate performance must be gauged largely in relation to the performance of others, social comparison operates as a primary factor in the self-appraisal of capabilities (Bandura).

Efficacy beliefs are heightened when people compare themselves to particular associates in similar situations. However, when teachers compare each other to their peers, some will increase their efficacy and some will decrease it because doing better than their peers will raise efficacy, but doing worse than their peers will lower it (Bandura, 1997). The more similar the person performing, the more persuasive are the models’ successes and failures (Bandura).

**Diversified modeling** - Competent models and exposure to multiple models influences efficacy (Bandura, 1997). The modeling is more powerful when the team of teacher educators have a common mission and vision, yet they model their own style of teaching.

**Symbolic modeling** - The use of instructional media can also help build teaching efficacy. Exposure to actual or symbolic teachers who exhibit useful skills and strategies in teaching could raise preservice and novice teachers’ beliefs in their own capabilities (Bandura, 1997). The impact of symbolic modeling on efficacy beliefs can be further enhanced by cognitive rehearsal (Bandura). Teachers who visualize themselves applying the modeled teaching strategies successfully strengthen their belief that they can perform the task (Bandura). Learning involves the development of cognitive skills to gain and use knowledge for various purposes (Bandura). Therefore,
teacher educators who verbalize their thought processes and strategies aloud as they solve problems while they teach would provide preservice teachers opportunities to develop cognitive skills and teaching efficacy (Bandura).

**Self-modeling** - Another vicarious experience that can develop teaching efficacy is self-modeling. When preservice teachers observe their own achievements under specially arranged conditions that bring out their best performance, this can increase their teaching efficacy because they can see what they are capable of doing (Bandura, 1997). Self-modeling by showing preservice and novice teachers edited videotapes of their own successful performances can build efficacy (Bandura). Cognitive self-modeling can also enhance teaching efficacy.

Preservice and novice teachers can build their teaching efficacy by visualizing themselves repeatedly confronting and mastering progressively more challenging or threatening situations through cognitive simulations (Bandura, 1997). Preservice and novice teachers are more influenced by vicarious experiences if they are uncertain about their own abilities, if they had little experience on which to self-evaluate their capabilities to teach, and if the teacher educator (model) conveys effective coping strategies or better ways to teach (Bandura). Further, people actively seek proficient models who possess the competencies to which they aspire. By their behavior and expressed ways of thinking, competent teacher educators transmit knowledge and teach preservice and novice teachers effective skills and strategies for managing environmental demands. Aspirational modeling not only raises teaching efficacy, it guides and motivates self-development (Bandura). Teacher educators should also express confidence in the face of difficulties (Zimmerman & Ringle, 1981).
Verbal persuasion.

The third source of teacher efficacy can be verbal persuasion. Although verbal persuasion has its limitations, it can motivate people to put forth more effort and persist in mastering a given task. Efficacy can be sustained if a significant other expresses faith in one’s capabilities (Bandura, 1997). Persuasions that build efficacy have the greatest impact on people who have some reason to believe that they really can be successful attaining the task (Bandura). Verbal persuasion that leads people to try hard enough to succeed, builds efficacy when their self-beliefs are affirmed (Bandura).

However, unrealistic beliefs in one’s abilities can lead to failure and discredit the persuader. Verbal persuasion can build teacher efficacy through evaluative feedback. Evaluative feedback highlighting teachers’ capabilities raises efficacy beliefs. Evaluative feedback should focus on the gain in achievement and not in what was not achieved. Further, constructive criticism can build efficacy, whereas disparaging criticism undermines it. The impact of persuasory opinions on efficacy beliefs are only as strong as the receiver’s confidence in the person who issues them (Bandura, 1997). The more believable the source of information, the more positive the impact on efficacy beliefs. Teachers would be more inclined to trust evaluations of their teaching if the evaluator is competent in teaching, uses an objective criteria of performance, and possess a wealth of knowledge gained from observing and comparing many different teachers and their later accomplishments.

Persuasion through several people in a social environment serves best as a multifaceted strategy of self-development. Therefore, teacher educators should build efficacy in preservice and novice teachers by focusing on acquirable skills, raising
performs’ beliefs in their abilities, modeling requisite skills, structuring activities in steps that can be mastered with success, and providing explicit feedback of continued progress (Bandura, 1997).

Skilled efficacy-builders do more than praise people and give motivational pep talks (Bandura, 1997). Efficacy-building teacher educators structure activities for preservice and novice teachers to experience success, thus, they avoid placing them prematurely in situations where they are likely to experience repeated failure (Bandura). Teacher educators need to be good instructional designers to recognize the strengths and weaknesses of activities and knowledgeable enough to design learning activities to turn potential performance into actual performance. Skilled-efficacy builders of teaching efficacy encourage people to measure their successes in terms of self-improvement rather than in terms of triumphs over others (Bandura).

Physiological and affective states.

Physiological indicators of efficacy are especially related to health and activities that require physical strength and stamina. Although this may not be an important factor in developing teacher efficacy, affective states can play an important role in developing teacher efficacy. Physiological and affective states such as hyperventilating, sweating, tensing, trembling, experiencing a pounding heart, upset stomach, and insomnia, are indicators of internal agitation (Bandura, 1997). Information conveyed by physiological and affective states affects perceived self-efficacy through cognitive processing (Bandura).

Environmental factors exert a strong influence on how a physiological or affective state is interpreted. Arousing experiences contain three significant events: (1)
environmental elicitors, (2) expressive reactions, and (3) social labeling. These events are interpreted differently depending on the situations in which they occur. It is not the sheer intensity of emotional and physical reactions that is important, but rather how they are perceived and interpreted (Bandura, 1997).

Past experiences influence how people perceive and interpret physiological arousal (Bandura, 1997). Teachers should be taught that moderate physiological arousal heightens attentiveness and helps them implement their teaching skills, whereas, high physiological arousal disrupts the quality of teaching. What constitutes an optimal level of activation depends not only on the nature of the activity but also on how the arousal is construed (Bandura). Physiological arousal is interpreted in the context of other diagnostic indicators of efficacy--mastery experiences, vicarious experience, and verbal persuasion, which are usually more powerful than arousal (Bandura). Teachers, who have multiple opportunities to experience success in their teacher preparation program and novice years, will likely experience less physiological arousal when they teach.

Mood is a component of affective states that can also impact self-efficacy (Bandura, 1997). Emotional arousal primes affective themes, thus, making congruent information more salient, learnable, and memorable. Appraisal of personal efficacy is enhanced by selective recall of past experiences and diminished by recall of failures (Bandura). Affective state can influence evaluative judgment directly through its perceived informative value as well as indirectly by activating selective recall of mood-congruent memories (Schwartz & Clore, 1988).
People use their perceived affective states rather than recalled information to make judgments of their efficacy (Bandura, 1997). For example, they make positive evaluations when they are in good moods and negative evaluations when they are in bad moods. The mood a preservice and novice teacher is in at the time they make judgments about their teaching efficacy can serve as a long-term memory (Bandura). Teacher educators who induce positive moods may enhance teacher efficacy.

**Research on Teacher Efficacy of Preservice and Novice Teachers**

Researchers are interested in studying teacher beliefs of prospective teachers because teaching efficacy beliefs are difficult to change once they are established (Woolfolk Hoy, 2000). Several studies reported salient conclusions regarding teacher efficacy in the development of preservice and novice teachers. First, there appears to be a difference in the development of teacher efficacy (personal teaching efficacy) and outcome expectancy (general teaching efficacy). Personal teaching efficacy increased throughout the teacher preparation program (Brown & Gibson, 1982; Woolfolk Hoy), after student teaching (Brown & Gibson, 1982; Hoy & Woolfolk, 1990) and through the first year of teaching (Woolfolk Hoy). Whereas, outcome expectancy rose during teacher preparation but then it declined after student teaching (Hoy & Woolkfolk, 1990; Spector, 1990; Woolfolk Hoy,). Personal teaching efficacy and general teaching efficacy are independent of each other (Hoy & Woolfolk, 1993).

Second, the support for beginning teachers influences teaching efficacy. Woolfolk Hoy (2000) suggested that teaching efficacy declined after support for the beginning teacher was withdrawn. Although teacher efficacy declined during the first year of teaching, it was mediated by two teacher characteristics—age and prior
experience—and three school practices—collaboration with other teachers, supervision, and available resources for instruction (Chester & Beaudin, 1996). Preservice teachers and college faculty had higher teacher efficacy than classroom teachers (Benz, Bradley, Alderman, & Flowers, 1992). Evans and Tribble (1986) found that preservice elementary and female teachers were more efficacious than their secondary and male counterparts. Further, Brown and Gibson (1982) found that teachers with five to 10 years of experience had the highest teacher efficacy.

Teacher educators have struggled for a long time over the issues of what teachers should know and what environments would create meaningful learning (Putnam & Borko, 2000). Preservice teachers typically learn how to teach in more controlled, structured classrooms on campus and in real, natural classrooms through field-based experiences (Putnam & Borko). Experience, both positive and negative, influenced the teaching efficacy beliefs of preservice science teachers (Watters & Ginns, 1995). Although field-based experiences are important in preparing teachers, on-campus laboratory-based programs are also important in developing teachers (Metcalf, Hammer, & Kahlich, 1996).

Hoy and Woolfolk (1993) suggested that novice teachers conduct fieldwork and do student teaching in environments that are warm, supportive, and stress academic achievement. Studies with inservice teachers found that principal influence and academic emphasis predicted teacher efficacy (Hoy & Woolfolk). Teachers were more efficacious in schools where teachers perceived their colleagues (a) set high but achievable goals, (b) created an orderly and serious environment, and (c) respected
academic excellence. In addition, principals who were perceived by teachers as having influence with their superiors were more likely to make teachers feel more efficacious.

Research in Agricultural Education Related to Teacher Efficacy

What research has been done related to teacher efficacy in agricultural education? If teacher efficacy has been studied in agricultural education, it has not been published (J. Robert Warmbrod, personal communications, May 29, 2001; M. Susie Whittington, personal communications, June 11, 2001). Few researchers have studied the interactions and relationships of teaching efficacy and the various components of teacher preparation in agricultural education. Among preservice teachers, student teachers, first-year teachers, and second-year teachers in agricultural education in Ohio, Rodriguez (1997) found that teaching efficacy of student teachers was higher than the teaching efficacy of preservice teachers. Although the groups were not significantly different, Rodriguez also found that first-year teachers had lower teaching efficacy than student teachers, and second year teachers had lower teaching efficacy than the first-year teachers. Further, preservice and novice teachers had higher personal teaching efficacy than outcome expectancy (Rodriguez).

Knobloch (2001) found that preservice teachers in agricultural education who experienced both peer-teaching and early field experience did increase in their teaching efficacy, but the activities alone did not significantly increase their teaching efficacy. Although beginning agriculture teachers in Minnesota felt moderately in control and self-confident, beginning agriculture teachers agreed that being in control and feeling self-confident had a major impact on their success as a beginning teacher (Joerger &
Boettcher, 2000). Further, Mundt (1991) found that beginning agriculture teachers lacked self-confidence and were stressed, frustrated, and isolated.

In his career mobility study in agricultural education, Grady (1990) concluded that people think, feel, and behave differently when they feel confident about their abilities was consistent with Bandura’s (1986) social cognitive theory. “Social learning theory appears to hold promise in helping us better understand the career mobility phenomena. Further research should be conducted that hypothesizes plausible causal relationships among the dimensions of social learning theory” (Grady, p. 79). Although the construct of teacher efficacy has born much fruit in the field of education, there remains a need for further research in building the body of knowledge for a more clearly defined and structured construct.

Teacher Characteristics

Researchers have long searched for characteristics that describe an effective teacher. Although much of this process-product research was done in the 1980s, the next sections review teacher characteristics in agricultural education that may be related to teacher efficacy and teacher characteristics of effective and motivated teachers in general.

Teacher Characteristics in Agricultural Education Related to Teacher Efficacy

Agricultural educators have described good teachers by using characteristics related to the affective domain. Good teachers are interested in teaching, have a passionate desire to become good teachers, get pleasure and satisfaction from teaching, and have a ceaseless desire to become a better teacher (Lancelot, 1944). Further, the three essential competencies of an effective teacher are: (1) with-it-ness, (2) in-charge
image, and (3) student-centered (Hedges, 1997). Agriculture teachers who were motivated and confident were more effective teachers (Miller, Kahler, & Rhealt, 1989).

Although few teacher efficacy studies (Knobloch, 2001; Rodriquez, 1997) have been conducted in agricultural education, many studies have been conducted related to the umbrella of teacher motivation. Hoy and Miskel (2001) synthesized that teacher motivation relates to teachers’ needs, goals, and beliefs. Teacher efficacy is one of the belief theories of motivation mentioned by Hoy and Miskel. Studies related to the broad construct of teacher motivation in agricultural education have been synthesized into four categories: (a) job satisfaction (e.g., Cano & Miller, 1992; Castillo, Conklin, & Cano, 1999); (b) teacher morale (e.g., Henderson & Nieto, 1991; Miller, 1977); (c) career mobility (e.g., Grady, 1985; Knight, 1978); and, (d) teacher burnout (e.g., Newcomb, Betts, & Cano, 1987).

After reviewing over 40 studies related to these four categories, eight salient teacher characteristics surfaced that may be related to teacher efficacy: (a) the quality of the teacher preparation program (Borne & Moss, 1990; Cole, 1984; Grady, 1990); (b) the length of the teacher certification program and years of education (Wardlow, Barrick, & Warmbrod, 1985; Moore, 1976); (c) teacher’s knowledge and competence (Bruening & Hoover, 1991; Cole, 1984; McCracken & Warmbrod, 1976); (d) teaching as a long-term career goal (Cole, 1984; Grady, 1990; Moore & Camp, 1979); (e) quality of first-year teaching experience (Henderson & Nieto, 1991; Knight, 1978); (f) leadership and professional involvement (Birkenholz, 1986); (g) enrollment in a high school agricultural education program (Claycomb & Stewart, 1980); and, (h) teaching
career matched personal needs (Cole, 1984; Grady, 1990; McCracken & Etuk, 1986; Moore & Camp, 1979).

Teacher Characteristics of Competent and Motivated Teachers

Darling-Hammond’s (1999) review of the literature identified variables presumed to be indicative of teachers’ competence: (a) general academic ability and intelligence; (b) subject matter knowledge; (c) teaching experience; (d) knowledge of teaching and learning; (e) certification status; and, (f) teacher behaviors and practices. Darling-Hammond reported that the following teacher characteristics related most with student achievement: (a) a major or minor in the subject field; (b) the continuity of teachers’ learning; (c) up to 5 years of teaching experience; (e) teacher education coursework and the quality of the teacher preparation program; (d) a five-year teacher education program; (f) fully certified teachers; (g) proficient verbal ability of teachers; (h) the flexibility, creativity, and adaptability of the teacher; (i) implementation of a range of teaching strategies and interaction styles; and, (j) teachers who create an environment of active, purposeful and diagnostic teaching.

Studies in agricultural education listed on page 63 identified or suggested the following demographic variables and teacher characteristics related to job satisfaction, career mobility, teacher morale and teacher burnout studies: (a) the teacher’s educational level or years of education; (b) perceived competence of university supervisor, cooperating educator, and mentor; (c) perceived support of university supervisor, cooperating educator, and mentor; (d) perceived trust of university supervisor, cooperating educator, and mentor; (e) teaching competence; (f) academic ability—CGPA; (g) years of teaching experience; (h) knowledge of subject matter; (i)
teaching knowledge; (j) type of teaching certificate; (k) teaching behaviors in the classroom; (l) perceived quality of teacher preparation; (m) enrollment in a high school agricultural education; (n) Supervised Agricultural Experience (SAE) involvement; (o) FFA involvement; (p) involvement in extracurricular activities in HS; (q) leadership involvement in college and professional association; (r) size of school; (s) number of students enrolled in the teacher’s agricultural education program; (t) the socioeconomic level of the school and community; (u) funding available for the agricultural education program; (v) socioeconomic level of school; and (w) the quality of teacher preparation.

Generally, teachers change and develop in their teaching performance and ability over time. Their ability to change and grow can contribute to their satisfaction, morale, and commitment to the teaching profession. The next section reviews how teachers change and develop in their careers.

Teacher Change and Development

The study of how teachers change and develop has become particularly significant in the current reform era (Richardson & Placier, 2001). Teacher change implies teacher improvement, however, this may not always be the case in reality. Richardson and Placier defined teacher change in terms of learning, development, socialization, growth, improvement, adoption of new practices, cognitive and affective change and/or self study. Teacher change can be viewed from individual change and organizational influences. First, individual change can be viewed as voluntary and naturalistic change, and stages of development. Second, organizational influences on teacher change can be viewed as teacher socialization, school effects on teachers, and planned efforts to change teachers.
Voluntary and Naturalistic Change

The evolution of teachers’ personal practical knowledge is affected by various forms of experiences including children, parent, teachers, cultural background, personal and professional experiences and peers (Richardson & Placier, 2001). “Studies of naturalistic change often take place within a planned change process; but the form of the change process is usually voluntary and collaborative, and the focus of the studies is teacher change” (Richardson & Placier, p. 908). Teacher change tends to be that teachers tend to maintain a dominant teaching style while developing ways to be flexible with their styles (Zahorik, 1990). Experience shapes the meaning that teachers read into research, theory and other recommendations for teacher improvement (Russell, 1988).

The concept of naturalistic change is not deterministic, rather, it assumes individual autonomy and choice. Research on naturalistic change also indicated that biography, experience, perhaps personality, and context played a role in the change choices that individuals made (Richardson & Placier, 2001). Teacher development is idiosyncratic and must be viewed in relationship with life history and the context in which the development takes place (Ball & Goodson, 1985). Furthermore, changes often occur in tacit knowledge, which are revealed through reflection and dialogue (Richardson & Placier).

Stages of Development

Over the last several years, there has been a shift away from relatively rigid, deterministic, hierarchical and traditional stage theories in teaching to more flexible accounts of the developmental process. A more flexible approach suggests that a
number of factors affect the movement from one stage to another. These factors include biography, experience, context, personality, and beliefs (Richardson & Placier, 2001). Stages of development provide teacher educators and researchers with valuable information about the process of change that teachers experience. Goldsmith and Schifter (1994) described an ‘orderliness’ in the transformation of pedagogical practice because teachers view the goals of self-improvement related to a set of ongoing efforts to achieve the goals.

Teacher Socialization

Richardson and Placier (2001) suggested that teacher socialization is locally variable. Beginning teachers develop in a work environment of isolation and individualism (Dreeben, 1973); incessant demands (Sarason, 1996), psychological dilemmas and frustration (Hargreaves, 1994); and, inadequate induction of beginning teachers (Gordon, 1991) including inadequate resources (Glickman et al., 2001), difficult work assignments (Kurtz, 1983; Romatqoski, Dorminey, & Van Vorhees, 1989), unclear expectations (Kurtz, 1983), a sink-or-swim mentality (Glickman et al.), reality shock (Veenman, 1985), and environmental problems that lead to physical and emotional stress (Glickman et al.). Further, teaching is an unstaged career with routine tasks and little professional autonomy (Sarason, 1996).

Teachers often work in an environment where there is lack of dialogue about instruction, lack of involvement in school-wide curriculum and instructional decisions, and a lack of a shared technical culture, which fosters conservatism and restricted, teacher-centered instructional methods (Goodlad, 1984). Hoy and Woolfolk (1990) found that student teaching influenced the orientation of prospective teachers by making
them more custodial in pupil-control orientation, more controlling in their social
problem-solving perspectives, and less confident in the power of schools to overcome
students’ background and ability deficits. Although Richardson and Placier (2001)
found that teacher socialization studies were highly variable in their findings, they were
disturbed that teacher socialization usually meant giving up power, ideals, or
expectations to adapt to occupational or organizational realities.

Although teachers may self-select a school where they think they will fit, and
even if they had teacher education courses, most of them have great difficulty adjusting
to their role (Waller, 1961). The school organization molds beginning teachers to
produce traits such as inflexibility, formality, inhibition, and patience because these
traits help them survive in school (Waller).

Students are the most important agents of socialization due to a fundamental
conflict between the moral code of adult society and the youth culture (Richardson &
Placier, 2001). Good teachers learn how to have control while they reveal that they are
also human to their students (Richardson & Placier). Lortie (1975) stated, “occupations
shape people” (p. 55), specifically, Lortie believed that schools shape teachers.

Lortie (1975) found that after an “apprenticeship of observation” in which
teachers internalized their own teaching practices, receiving a weak formal teacher
preparation, and a mini-apprenticeship that reinforces traditional ways of teaching,
beginning teachers were cast into classrooms to “sink or swim” with the same
responsibilities as the veteran teachers. Furthermore, the egg-crate school structure
isolated beginning teachers with students most of the day leading to high anxiety when
inevitable and unanticipated problems arise. Because of the norms of individualism,
lack of collegial and administrative support, teachers become motivated by intrinsic “psychic” rewards that develop from positive student responses rather than from external recognition or evaluation. Lortie described this process as follows, “socialization into teaching is largely self-socialization” (p. 79).

School Effects on Teachers

Changes in school structure and culture precede meaningful changes in teaching (Richardson & Placier, 2001). In their meta-analysis of several studies, learning opportunities, common goals, control, administrative support, and a shared, complex view of teaching emerged as significant organizational conditions related to teacher learning, commitment, collaboration, and empowerment (Richardson & Placier). Further, secondary schools in the U.S. with clearly defined missions had high goal consensus (Richardson & Placier).

Teachers are more likely to express positive goals for students when a school or department, as a professional community, are encouraged to respond to student differences, solve problems, and support teachers through collegiality and professional growth (Richardson & Placier, 2001). Teachers were more likely to continue ineffective traditional practices or lower their expectations when these conditions for a professional community were missing.

Planned Efforts to Change Teachers

Planned efforts to change teachers who become “stuck” in their teaching can be reviewed from changing organizational contexts and restructuring the school organization. Ashton (1985) suggested that long-term impact on teacher efficacy is not likely without organizational support that improves the conditions that threaten the
sense of efficacy of teachers. In their review, Richardson and Placier (2001) found that school and district contexts mediate the effects of planned efforts to change teachers with positive or negative results. Some initiatives, such as merit pay, may fail in effective schools because they conflict with the norms of teaching. Generally, external incentives do not motivate teachers because teachers tend to be intrinsically motivated and are attracted to intrinsic rewards (Mitchell, Ortiz & Mitchell, 1987).

Restructuring schools has played a part in teacher change. In a synthesis of findings of case studies from five states on school restructuring, Lieberman (1995) identified seven themes related to teacher change that appeared to be universal and included both process and content, structure and culture: (a) learning from experience and turning problems into possibilities for teachers rather than accepting the status quo; (b) shaping new relationships as partnerships with teachers in the foreground and administration in the background; (c) building shared meaning through joint action, reflection, and communication to break down teacher isolation; (d) tension and conflict exists between district and school control or among teachers because of different perspectives on teaching; (e) using and creating new structures, such as teacher development academies, teams, retreats, or planning groups; (f) student work and engagement is the agenda for teacher work and teacher change; and, (g) creating a professional community. Although changing the organizational contexts and structures of schools has seen positive results, it is an ambiguous, complex, multi-layered, and long-term process that requires patience to see positive teacher change (Richardson & Placier, 2001).
Summary

Teacher educators play a significant role in shaping the future of agricultural education (Anderson, 1977). Expertise and beliefs of teachers influence the success of an agricultural education program (Anderson). Developing and building teacher efficacy may motivate preservice teachers to choose teaching as a career and novice teachers to be more committed to teaching as a career. If teacher educators know and understand the effects of teacher stage of development and the socialization of the first 10 weeks of the school year on teacher efficacy, then they can help the National Commission on Teaching and America’s Future (1996) achieve its audacious goal by preparing teachers with the knowledge, skills, and dispositions so that students can study agriculture from qualified, competent, and caring agriculture teachers.

Operational Framework of the Study

The operational framework (Figure 2.5) of the study was selected from specific components of the conceptual framework. The focus of the study is on the dependent variable of teacher efficacy and teacher efficacy change, which will be measured before and after the first 10-weeks of the 2001-02 school year. There were two sets of independent variables of the causal comparative study: stage of development and environmental variables. The stages of development will be represented by four intact groups of student teachers, first year novice teachers, second year novice teachers, and third year novice teachers in Ohio agricultural education. The environmental variables will be represented by teacher trust in clients, collective efficacy, supportive principal behavior, and academic emphasis.
The non-manipulated, natural treatment will be the first 10 weeks of the 2001-02 school year. The constant of time (10 weeks) was selected because it is the required length of the student teaching experience, and because the first 10 weeks of the school year may be impressionable on novice teachers. The non-manipulated, natural treatment represents the initial experience in which the teachers engage when they interact and socialize with students, parents, colleagues, and principals in the first 10 weeks of the school year. Although the natural treatment can lend to more realistic and credible findings, it also limits the internal validity due to threats to its validity. Therefore, variables were built into the operational framework to describe potential threats of internal validity related to the natural treatment. The variables of teacher trust in clients, collective efficacy, supportive principal behavior, and academic emphasis were conceptualized to represent the interactions between the teachers and the various groups of people with whom they would interact such as students, parents, colleagues, principals, and the school as a whole. Therefore, these variables were represented by the teachers’ self-reported perception their interaction with students and parents, colleagues, the principal, and academic emphasis of the school. The operational framework operated on the premise that motivated teachers would exhibit higher teaching efficacy and, therefore, remain longer in the teaching profession. However, this premise was not tested in this study.
Teacher Efficacy
- Measured with pretest and post-test questionnaires during the first 10 weeks of the school year

Stages of Teacher Development
- Student Teacher
- First Year Novice Teacher
- Second Year Novice Teacher
- Third Year Novice Teacher

Environmental Interaction
- Trust in Clients
- Collective Efficacy
- Principal Support
- Academic Emphasis

Figure 2.6: Operational framework
CHAPTER 3

METHODS

Purpose of the Study

The purpose of the study was to measure the degree of change in teacher efficacy during the first 10 weeks of the student teaching, first-year, second-year, and third-year teaching experience in agricultural education in Ohio related to stage of development and environmental variables of teacher trust in clients, collective efficacy, supportive principal behavior, and academic emphasis of the schools. The following research objectives guided the researcher through the study.

Objectives of the Study

The objectives of the study were to:

1. Describe the differences in teacher efficacy between stages of development on the pretest and differences between stages of development on the posttest of student teachers, first-year teachers, second-year teachers, and third-year teachers in agricultural education in Ohio during the first 10 weeks of the 2001-02 school year;

2. Describe the degree of teacher efficacy change related to the stages of teacher development;
3. Explain the percent of variance in teacher efficacy change during the first 10 weeks of the school year related to stage of development and the environmental variables of teacher trust in clients, collective efficacy, supportive principal behavior, academic emphasis; and,

4. Describe the population of the study using selected teacher characteristics and perceptions.

Type of Research

This was an exploratory causal comparative study that used a non-equivalent control group design (Campbell & Stanley, 1963) with a natural treatment (Trochim, 2000).

Student Teachers (N = 23)  
First-Year Novice Teachers (N = 34)  
Second-Year Novice Teachers (N = 30)  
Third-Year Novice Teachers (N = 31)  

The pretest (O₁) was conducted in August prior to the beginning of the treatments. The posttest (O₂) was conducted after 10 weeks of the treatment of time. The design had two independent variables: (a) stage of development—student teacher (X₀), first-year novice teacher (X₁), second-year novice teacher (X₂), and third-year novice teacher (X₃); and, (b) the environmental variables—teacher trust in clients, collective efficacy, supportive principal behavior, and academic emphasis. The dependent variable of the study was teacher efficacy and teacher efficacy change.
Teacher efficacy was measured using Tschannen-Moran and Woolfolk Hoy’s (2001) Ohio State Teaching Efficacy Scale.

Population and Subject Selection

The target population that the researcher sought to generalize to consisted of a census of agricultural education student teachers and novice teachers in their first three years of teaching in Ohio public high schools. The Ohio State University Department of Human and Community Resource Development and the Ohio Department of Education Bureau of Career, Technical, and Adult Education’s Agricultural Education Service provided the frame of the accessible population. Teachers with previous teaching experience who left the profession, but then returned to teaching and were in their first three years were asked if they would like to participate in the study. There were eight returning teachers in the population and four teachers elected to participate in the study. The most current frame was used although some teachers may have not been included in the frame because some school administrators do not report newly hired teachers to the Ohio Department of Education.

Outcome Measures

The data were collected using a pretest instrument and a posttest instrument (Appendices B and C). The pretest and posttest instruments contained identical items designed to measure the dependent variable of teacher efficacy. Teacher characteristics and demographic items were different in the pretest and posttest.
Dependent Variable Measures

The dependent variable of teacher efficacy was measured using an existing instrument—Ohio State Teacher Efficacy Scale (OSTES). This instrument measured teacher efficacy based on 24 items using Bandura’s (1997) efficacy scale. Each item was measured using a 9-point scale, with anchors at: (1) Nothing; (3) Very Little; (5) Some Influence; (7) Quite A Bit; and (9) A Great Deal.

The reliability of the OSTES instrument has ranged from 0.92 to 0.95 (Tschannen-Moran & Woolfolk Hoy, 2001). Tschannen-Moran and Woolfolk Hoy (2001) tested construct validity using factor analysis procedures and found that the scale measured up to three factors: (a) efficacy for student engagement; (b) efficacy for instructional practices; and (c) efficacy for classroom management. However, they recommended that the researcher analyze each data set to see how many factors relate to the sample studied. Further, one factor (total score) should be used for preservice teachers who have not assumed real teaching responsibilities (Tschannen-Moran & Woolfolk Hoy, 2001). Therefore, because of the student teachers in the study, one factor was used to measure teacher efficacy. The dependent variable of teacher efficacy change was the difference in the posttest teacher efficacy score and the pretest teacher efficacy score (Posttest TE – Pretest TE = Teacher Efficacy Change).

Pretest Independent Variable Measures

The pretest instrument measured the following demographic variables and teacher characteristics of the student teachers and novice teachers: (a) gender; (b) age; (c) education; (d) college graduated from; (e) educational major; (f) educational minor;
(g) years of teaching experience; (h) the number of school districts taught in; (i) type of community the teacher grew up in; (j) years of enrollment in a high school agricultural education program; (k) years of involvement in the FFA; (l) level of leadership position held in the FFA; (m) years of involvement in a SAE project; (n) level of recognition received on SAE project; (o) leadership involvement in college and professional associations; (p) membership in the local teachers’ association; (q) leadership position related to the teaching profession; (r) attendance at Tech Update, (s) attended FFA Camp with students; (t) interacted with students at the county fair; and (u) participated in summer activities with students.

Posttest Teacher Characteristic and Environmental Variable Measures

The posttest instrument measured the following demographic variables and teacher characteristics of the student teachers and novice teachers: (a) student enrollment in agricultural education program; (b) number of agricultural education teachers in the department; (c) number of classroom preparations taught; (d) type of community the school is located in; (e) utilizing a mentor; (f) perceived teaching competence of mentor; (g) perceived support of mentor; (h) perception of first year teaching experience; (i) perception of student teaching experience; (j) perceived quality of teacher preparation; (k) teaching as a long-term career goal; (l) plans to teach for five years; (m) teaching career match with personal and family needs; (n) teaching plans for next year; (o) perception of adequate funding to run the agricultural education program; and (p) confidence about teaching in agricultural education.
Variables of teachers’ perceptions of several dimensions related to their initial teaching experience as a teacher in the first 10 weeks of the school year were collected to explain variance of teacher efficacy due to environmental differences in the natural treatments. Although natural treatments are more reflective of the experiences teachers face in the field, treatments can vary depending on localized variables. Four environmental variables were used to describe the potential variability of the natural treatment based on Bronfennbrenner’s (1979) ecological theory of microsystems and mesosystems. The posttest instrument measured teacher perceptions related to their initial teaching experience in the school year using sub-tests from four different existing instruments: (a) teacher trust in clients (students and parents); (b) collective efficacy scale--short form; (c) supportive principal behavior; and, (d) academic emphasis. Teacher trust in clients and parents would have primarily occurred in the microsystems, and mesosystems to a secondary degree, that the teachers experienced. Collective efficacy, supportive principal behavior, and academic emphasis would have primarily occurred in the mesosystems that the teachers experienced. No variables were collected to describe variability of treatment in the exosystems or macrosystems because of the lesser degree of impact they would have on the teachers in their initial 10 weeks of teaching experience in the school year.

**Teacher Trust in Clients**

The teacher trust in clients sub-test is one of the three dimensions of Hoy and Tschannen-Moran’s (1999) T-scale. Teacher trust in clients contained 15 items and measured a teacher’s willingness to be vulnerable to students and parents based on the
confidence that the clients are benevolent, reliable, competent, honest, and open. The reliability of the teacher trust scale typically falls within the range of 0.90 to 0.98 (Hoy, 2001). Content and construct validity of the T-scale was established by Hoy and Tschannen-Moran (1999).

**Collective Efficacy**

The collective efficacy scale—short form (Goddard, 2002) was based on Goddard, Hoy and Woolfolk’s (2000) collective efficacy scale—long form. The short form of the collective efficacy scale contained 12 items and measured a teacher’s perceived competence and task analysis that collectively teachers in the school can influence student achievement (Bandura, 1997). The reliability of the collective efficacy scale was 0.96 (Hoy, 2001). Criterion-related, construct, and predictive validity was tested by Goddard, Hoy, and Woolfolk (2000) and Goddard (2002).

**Supportive Principal Behavior**

The supportive principal behavior sub-test was one of five dimensions of Hoy, Tarter, and Kottkamp’s (2000) Organizational Climate Description Questionnaire for Secondary (OCDQ-RS). The supportive principal behavior sub-test contained seven items and measured a teacher’s perception of the principal’s efforts to motivate teachers by using constructive criticism and setting an example through working hard; at the same time, the principal is helpful and genuinely concerned with the personal and professional welfare of the teachers. Supportive principal behavior is directed toward both the social needs and task achievement of the teachers (Hoy, 2001). The reliability of the supportive principal behavior sub-test was 0.91 (Hoy, 2001). Factor analysis of
the instrument supported construct validity. Its predictive validity has been supported in other studies (Hoy, Tarter, & Kottkamp, 2000).

**Academic Emphasis**

The academic emphasis sub-test was one of seven dimensions of Hoy, Tarter, and Kottkamp’s (2000) Organizational Health Inventory. Academic emphasis contained 8 items and measured a teacher’s perception of the school’s press for achievement and an orderly and serious learning environment. Teachers set high but achievable goals for students and believe that students can achieve. Moreover, the students work hard and respect other students who do well academically (Hoy, 2001). The reliability of the academic emphasis sub-test was 0.93 (Hoy, 2001). Factor analysis of the instrument supported construct validity and its predictive validity has been supported in other studies (Hoy, Tarter, & Kottkamp, 2000).

**Instrument Validity and Reliability**

Validity and reliability were reviewed because quality, reflected by validity and reliability, was one of the most important issues in research (Trochim, 2000).

**Validity of the Teacher Efficacy Theory**

Although there has been some confusion over the validity of measuring teacher efficacy, Bandura (2001), Tschannen-Moran, Woolfolk Hoy, and Hoy (1998) and Tschannen-Moran and Woolfolk Hoy (2001) raised some important points for consideration when measuring teacher efficacy: (a) include items of various levels of task demands (Bandura, 1997); (b) ask participants to judge their operative capabilities as of now, not their potential capabilities or their expected future capabilities; (c) allow
respondents to indicate the strength of their efficacy beliefs in light of a variety of barriers and providing a broad range of response options; (d) provide the optimal level of specificity for measurement; (e) do not measure efficacy so specific that predicative power is lost; and, (f) measure the teachers’ assessments of their competence across the wide range of activities and tasks they are expected to perform.

**Teacher Efficacy Measurement**

The OSTES instrument was not modified. The Ohio State Teacher Efficacy Scale (Tschannen-Moran & Woolfolk Hoy, 2001) was pilot-tested and field-tested with undergraduate and graduate students in agricultural education courses in 2000 and 2001.

**Teacher Characteristics and Perceptions**

Teacher characteristics and perceptions were selected based on Darling-Hammond’s (1999) review of literature and a review of over 40 studies conducted in agricultural education related to job satisfaction, career mobility, and teacher morale. The teacher characteristics and perceptions were included in the pretest and posttest instruments. The panel of experts (Appendix A) reviewed the teacher characteristics and perceptions to establish face and content validity.

**Validity of the Instruments**

The pretest and posttest instruments used existing scales that tested content, construct, criterion-related and predictive validity (Tschannen-Moran & Woolfolk Hoy, 2001). A panel of experts in agricultural teacher education (Appendix A) reviewed these existing instruments to establish face and content validity of the instruments in
agricultural education. Field and pilot tests were also conducted to establish validity and reliability of the instruments in agricultural education.

Field Test

Furthermore, the teacher efficacy scales were field tested among preservice teachers enrolled in Agricultural Education courses at The Ohio State University during the 2000-01 academic year to determine if the items had face validity, and were suitable for the participants. Graduate students (see Acknowledgments) with student teaching or teaching experience in the Department of Human and Community Resource Development field-tested the pretest and posttest questionnaires to help establish face validity of the instruments. Although many of the suggestions were implemented, their comments regarding some of the items from existing instruments used to measure teacher efficacy were not changed.

Reliability of the Instruments

The pretest and posttest instruments used existing scales that were tested for internal reliability (Tschannen-Moran & Woolfolk Hoy, 2001). A pilot study was conducted among 42 preservice teachers enrolled in Agricultural Education at The Ohio State University during the 2000-01 academic year to test the teacher efficacy scale for internal consistency using Cronbach’s (1951) alpha. The estimate of reliability, using Cronbach’s alpha, was 0.87 for the 12 OSU Teacher Efficacy Scale items administered as the pilot test.
Pilot Test

Twelve of the OSTES items were pilot tested with 42 preservice teachers enrolled in and undergraduate agricultural education course at The Ohio State University. Construct validity was established using factor analysis statistics to analyze the data sample as recommended by Woolfolk & Hoy (1990). The twelve items loaded (.499 to .805) on the teaching efficacy factor using the principal components method, which explained 43% of the variance. The solution was not rotated because only one component was selected based on the dependent variable of teacher efficacy. The appropriateness of the data was determined using the Kaiser-Meyer-Oklin Measure of Sampling Adequacy (KMO = .75), Bartlett’s test of sphericity (Significance = .000), and an Eigenvalue of 5.19 (Stevens, 1996).

Internal Validity

A study with internal validity means that any observed relationship between two or more variables should be meaningful and unambiguous, rather than being due to “something else” (Fraenkel & Wallen, 2000). Threats to internal validity were considered and strategies were implemented to be able to explain potential threats or control. Threats of mortality, instrumentation, testing, history, maturation, attitudes of subjects, implementation, regression, and statistical conclusion validity were not considered threats. Threats of selection and location may have been threats of validity because they were not controlled.
External Validity

Although population and ecological validity are considered important to
generalize the findings, threats of external validity were not controlled because this
study did not seek to generalize beyond the accessible population.

Conditions of Testing

The subjects completed self-reported instruments at their discretion. The pretest
was administered within the first three weeks of the school year. The posttest was
administered within three weeks after the first 10 weeks of the school year.

Treatment

The treatment was a natural treatment of initial teaching experience in the first
10 weeks of the school year. The treatment was not manipulated or controlled by the
researcher. However, the researcher collected teachers’ perception of teacher trust with
clients, collective efficacy, supportive principal behavior, and academic emphasis of the
school to explain the differences of treatments between the four groups of teachers.

Data Collection Procedures

The data were collected using Dillman’s (2000) tailored design method. The
tailored design method consists of five elements: (a) a respondent-friendly
questionnaire; (b) up to five contacts with the questionnaire recipient; (c) inclusion of
stamped return envelopes; (d) personalized correspondence; and, (e) a token financial
incentive that is sent with the survey request (Dillman, 2000). The data was collected at
two points in time—a pretest and a posttest.
Pretest Procedures

On August 13, 2001, the student and novice agriculture teachers were sent a hand-written prenotice message (Appendix D) on a Successories® card informing them that they would receive a questionnaire within the next week, and a follow-up questionnaire in early November. On August 20, 2001, a complete packet including the cover letter (Appendix E), instrument, 12 ounce can insulator as an incentive, and pre-addressed, stamped envelope were sent to the accessible population of student teachers and notice teachers in agricultural education in Ohio. On August 28, 2001, eight days after the first mailing, a thank you postcard (Appendix F) was sent to all of the participants in the study. The postcard thanked those who had taken time to complete the instrument. Further, the postcard also served as a reminder and encouraged those who had not yet responded to complete and return the instrument. Between September 4 and September 14, non-respondents were contacted by telephone (Appendix G) to determine if they had received the questionnaire. On September 17, 2001, a replacement questionnaire and cover letter (Appendix H) was sent to non-respondents as the fifth contact.

Posttest Procedures

The prenotice message written on the card that was sent in August informed the participants that there would be a follow-up questionnaire in early November. On November 1, 2001, the complete packet containing a detailed cover letter, the posttest questionnaire, and a preaddressed, stamped envelope was sent to the participants. The frame had changed by five participants. One did not want to participate as indicated by
returning a blank pretest, one left teaching, and three additional teachers who taught in career centers were identified. Participants were informed that a 5” x 7” clear, acrylic, magnetic frame would be sent as a token of appreciation once their posttest questionnaire was received by the researcher. On November 9, 2001, a thank you postcard was sent to the teachers thanking those who responded and encouraging those who did not respond. On November 12, 2001 through November 21, non-respondents were contacted by phone. On November 23, 2001, a replacement questionnaire was sent to all non-respondents with a cover letter encouraging them to respond. Respondents were mailed a thank you inserted into the acrylic magnetic frame (Appendix I).

Data Analysis

The data were analyzed using the Statistical Package for the Social Sciences, Personal Computer version (SPSS/PC+). Reverse items were recoded and subscales were aggregated into composite scores before analyzing the data. Participants whose responses were incomplete were excluded automatically by SPSS in the data analyses procedures. Population means, population standard deviations, and effect sizes were rounded to the nearest 1/100th.

Descriptive statistics were used to analyze the data because the study was a census. Inferential statistics were not used because the assumption of normality was not met. However, a number of statistical tools were used to analyze and interpret the data. Differences in the pretest and posttest teacher efficacy scores and effect sizes were calculated to determine the relationship between time and teacher efficacy for each
stage of development. Effect sizes were calculated using Cohen’s (1988) d to determine
the degree of change in teacher efficacy between the stages of development. Cohen’s
(1988) descriptors were used to interpret the effect sizes: (a) small effect size: \( d = .20 \);
(b) medium effect size: \( d = .50 \); and, (c) large effect size: \( d = .80 \).

A two-step hierarchical multiple linear regression analysis was used to explain
the percent of variance in teacher efficacy change related to stage of development and
the four environmental variables. Relationships were described using the Pearson
product-moment coefficient. The alpha level was established \textit{a priori} at 0.05. The
assumptions of multiple regression were met: (a) residuals were independent; (b)
residuals had a mean of zero; (c) residuals were normally distributed; (d) residuals were
not correlated with the independent variables; and, (e) no multicollinearity existed.

Depending on the level of measurement of the variable, appropriate descriptive
statistics—frequencies, percentages, means, and standard deviations—were used to
describe the accessible population of student teachers and novice teachers in
agricultural education in Ohio. Table 3.1 identifies the level of measurement of
subscales used to measure the dependent and independent variables.
The table below summarizes the level of measurement of the scales related to the dependent and independent variables of teacher efficacy.

<table>
<thead>
<tr>
<th>Level of Measurement</th>
<th>Independent &amp; Dependent Variables</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominal</td>
<td><strong>Independent Variables:</strong> Stage of teacher development; gender; college graduated from; educational major; type of community grew up in; leadership involvement in college; membership in the local teachers’ association; leadership position related to the teaching profession; attendance at Tech Update; attendance at FFA camp; interaction with students at the county fair; participation in summer activities with students; type of community the school was located in; utilizing a mentor.</td>
</tr>
<tr>
<td>Ordinal</td>
<td><strong>Independent Variables:</strong> Level of education; level of leadership position in the FFA; level of recognition on SAE project; perceived teaching competence of mentor; perceived support of mentor; perception of first year teaching experience; perception of student teaching experience; perceived quality of teacher preparation program; teaching as a long-term career goal; plans to teach for five years; perception of adequate agricultural education program funding; confidence about teaching in agricultural education.</td>
</tr>
<tr>
<td>Interval</td>
<td><strong>Independent Variables:</strong> Teacher trust in clients; collective efficacy; supportive principal behavior; academic emphasis. <strong>Dependent Variable:</strong> Teacher efficacy.</td>
</tr>
<tr>
<td>Ratio</td>
<td><strong>Independent Variables:</strong> Age; years of teaching experience; number of districts taught in; years of enrollment in a high school agricultural education program; years of involvement in the FFA; years of involvement in a SAE project; student enrollment in program; number of agricultural education teachers in the department; number of class preparations taught.</td>
</tr>
</tbody>
</table>

Table 3.1: Level of measurement of the scales related to the dependent and independent variables of teacher efficacy.
CHAPTER 4

RESULTS

Purpose of the Study

The purpose of the study was to measure the degree of change in teacher efficacy during the first 10 weeks of the student teaching, first-year, second-year, and third-year teaching experience in agricultural education in Ohio related to stage of development and environmental variables of teacher trust in clients, collective efficacy, supportive principal behavior, and academic emphasis of the schools. The following research objectives guided the researcher through the study.

Objectives of the Study

The objectives of the study were to:

1. Describe the differences in teacher efficacy between stages of development on the pretest and differences between stages of development on the posttest of student teachers, first-year teachers, second-year teachers, and third-year teachers in agricultural education in Ohio during the first 10 weeks of the 2001-02 school year;

2. Describe the degree of teacher efficacy change related to the stages of teacher development;
3. Explain the percent of variance in teacher efficacy change during the first 10 weeks of the school year related to stage of development and the environmental variables of teacher trust in clients, collective efficacy, supportive principal behavior, academic emphasis; and,

4. Describe the population of the study using selected teacher characteristics and perceptions.

Response Rates

The response rates of the four stages of teacher development and post-hoc reliability coefficients are reported. One hundred five teachers out of 114 responded to the pretest questionnaire yielding a 92.1% response rate. One hundred six teachers out of 116 responded to the posttest questionnaire yielding a 91.4% response rate. Student teachers had the highest percent response rates (95.6%, 100.0%), followed by first-year novice teachers (96.7%, 90.9%), and followed closely by third-year novice teachers (93.5%, 93.3%). The second-year novice teachers had the lowest response rates of 83.3% for both pretest and posttest questionnaires (Table 4.1).

<table>
<thead>
<tr>
<th>Stage of Development</th>
<th>Pretest Respondents</th>
<th>Posttest Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student Teachers</td>
<td>22 of 23 = 95.6%</td>
<td>23 of 23 = 100.0%</td>
</tr>
<tr>
<td>First-Year Novice Teachers</td>
<td>29 of 30 = 96.7%</td>
<td>30 of 33 = 90.9%</td>
</tr>
<tr>
<td>Second-Year Novice Teachers</td>
<td>25 of 30 = 83.3%</td>
<td>25 of 30 = 83.3%</td>
</tr>
<tr>
<td>Third-Year Novice Teachers</td>
<td>29 of 31 = 93.5%</td>
<td>28 of 30 = 93.3%</td>
</tr>
<tr>
<td>Total</td>
<td>105 of 114 = 92.1%</td>
<td>106 of 116 = 91.4%</td>
</tr>
</tbody>
</table>

Table 4.1: Response rates by stage of development.
Reliability

The dependent variable and independent variables were checked for reliability using Cronbach’s alpha. The reliability coefficient for the initial teacher efficacy scale was 0.93 ($N = 102$). The reliability coefficient for the final teacher efficacy scale was 0.94 ($N = 101$). The reliability coefficients for the variables of teacher perceptions regarding their relationships with students and parent, colleagues, principal, and the school’s emphasis during the natural treatment were: (a) 0.87 ($N = 99$) for teacher trust in clients; (b) 0.85 ($N = 99$) for collective efficacy; (c) 0.89 ($N = 100$) for supportive principal behavior was 0.89 ($N = 100$); and (d) 0.82 ($N = 102$) for academic press. All variables were reliable (Nunnally, 1967).

<table>
<thead>
<tr>
<th>Variables</th>
<th>Cronbach’s alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial Teacher Efficacy ($N = 102$)</td>
<td>0.93</td>
</tr>
<tr>
<td>Final Teacher Efficacy ($N = 101$)</td>
<td>0.94</td>
</tr>
<tr>
<td>Teacher Trust in Clients ($N = 99$)</td>
<td>0.87</td>
</tr>
<tr>
<td>Collective Efficacy ($N = 99$)</td>
<td>0.85</td>
</tr>
<tr>
<td>Supportive Principal Behavior ($N = 100$)</td>
<td>0.89</td>
</tr>
<tr>
<td>Academic Press ($N = 102$)</td>
<td>0.82</td>
</tr>
</tbody>
</table>

Table 4.2: Post hoc reliability coefficients.
Results for Objective 1: Differences in Teacher Efficacy on Pretest and Posttest Measures

The teachers ranged from 6.81 to 6.92 on initial teacher efficacy at the beginning of the school year (Table 4.3). The population standard deviations (σ) are reported under each population mean (μ) in parentheses. The four stages of development had mean differences of 0.00 to 0.11 on teacher efficacy at the time of the pretest (Table 4.4). The effect sizes on these differences ranged from none (.00) to small (.15). Second-year teachers’ differences between first-year and third-year teachers on teacher efficacy at the time of the pretest had small effect sizes. The teachers ranged from 6.55 to 7.03 on final teacher efficacy after 10 weeks into the school year (Table 4.5). The student teachers had the highest final teacher efficacy (7.03) and the first-year teachers had the lowest final teacher efficacy (6.55). The four stages of development had means differences of 0.04 to 0.48 on teacher efficacy at the time of the posttest. The effect sizes on these differences ranged from small (.06) to medium (.56). Student teachers and first-year teachers had the greatest difference on teacher efficacy at the time of the posttest. The mean difference between student teachers’ and first-year teachers’ efficacy at the time of the posttest was medium.
<table>
<thead>
<tr>
<th>Stage of Development</th>
<th>Initial Teacher Efficacy</th>
<th>Final Teacher Efficacy</th>
<th>Stage of Development</th>
<th>Mean Difference (I-J)</th>
<th>Effect Size</th>
<th>Cohen’s Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student Teachers</td>
<td>6.92</td>
<td>7.03</td>
<td>First-Year Teachers</td>
<td>6.84</td>
<td>(.75)</td>
<td>None</td>
</tr>
<tr>
<td>(N = 22, 23)</td>
<td>(1.00)</td>
<td>(.83)</td>
<td></td>
<td></td>
<td></td>
<td>Small</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Second-Year Teachers</td>
<td>6.92</td>
<td>(.72)</td>
<td>None</td>
</tr>
<tr>
<td>(N = 26, 25)</td>
<td></td>
<td>(.77)</td>
<td></td>
<td></td>
<td></td>
<td>Small</td>
</tr>
<tr>
<td>Third-Year Teachers</td>
<td>6.81</td>
<td>6.75</td>
<td></td>
<td></td>
<td>(.97)</td>
<td>(.86)</td>
</tr>
<tr>
<td>(N = 29, 28)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Scale: 1 = Nothing, 3 = Very Little, 5 = Some Influence, 7 = Quite A Bit, 9 = A Great Deal.

Table 4.3: Descriptive data for teacher efficacy.

<table>
<thead>
<tr>
<th>Stage of Development</th>
<th>Stage of Development</th>
<th>Mean Difference (I-J)</th>
<th>Effect Size</th>
<th>Cohen’s Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student teacher</td>
<td>First-year</td>
<td>.08</td>
<td>.11</td>
<td>Small</td>
</tr>
<tr>
<td>(N = 22)</td>
<td>Second-year</td>
<td>.00</td>
<td>.00</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>Third-year</td>
<td>.11</td>
<td>.11</td>
<td>Small</td>
</tr>
<tr>
<td>First-year teacher</td>
<td>Second-year</td>
<td>.08</td>
<td>.15</td>
<td>Small</td>
</tr>
<tr>
<td>(N = 29)</td>
<td>Third-year</td>
<td>.03</td>
<td>.04</td>
<td>Small</td>
</tr>
<tr>
<td>Second-year teacher</td>
<td>Third-year</td>
<td>.11</td>
<td>.15</td>
<td>Small</td>
</tr>
<tr>
<td>(N = 26)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Scale: 1 = Nothing, 3 = Very Little, 5 = Some Influence, 7 = Quite A Bit, 9 = A Great Deal.

Table 4.4: Descriptive statistics of mean differences of teacher efficacy on the pretest by stages of development.
<table>
<thead>
<tr>
<th>Stage of Development (I)</th>
<th>Stage of Development (J)</th>
<th>Mean Difference (I-J)</th>
<th>Effect Size</th>
<th>Cohen’s Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student teacher (N = 23)</td>
<td>First-year</td>
<td>.48</td>
<td>.56</td>
<td>Medium</td>
</tr>
<tr>
<td></td>
<td>Second-year</td>
<td>.24</td>
<td>.38</td>
<td>Small</td>
</tr>
<tr>
<td></td>
<td>Third-year</td>
<td>.28</td>
<td>.39</td>
<td>Small</td>
</tr>
<tr>
<td>First-year teacher (N = 30)</td>
<td>Second-year</td>
<td>.24</td>
<td>.30</td>
<td>Small</td>
</tr>
<tr>
<td></td>
<td>Third-year</td>
<td>.20</td>
<td>.23</td>
<td>Small</td>
</tr>
<tr>
<td>Second-year teacher (N = 25)</td>
<td>Third-year</td>
<td>.04</td>
<td>.06</td>
<td>Small</td>
</tr>
</tbody>
</table>

Scale: 1 = Nothing, 3 = Very Little, 5 = Some Influence, 7 = Quite A Bit, 9 = A Great Deal.

Table 4.5: Descriptive statistics of mean differences of teacher efficacy on the posttest by stages of development.

Figure 4.1: Pretest and posttest teacher efficacy for each stage of development.
Results for Objective 2: Teacher Efficacy Change Related to Stage of Development

Table 4.6 reports the descriptive data for degree of teacher efficacy change for each stage of development. Student teachers had the largest range of teacher efficacy (-2.54 to 2.46), and were the only stage of development that showed an increase in teacher efficacy change with a population mean of 0.10 (σ = 1.15; d = .09). First-year teachers had the lowest maximum (0.67) and had the greatest decrease in teacher efficacy change with a population mean of -0.40 (σ = .82; d = .49). Second-year teachers ranged from -1.25 to 1.33 in teacher efficacy and declined 0.13 (σ = .58; d = .22) from week 1 to week 10. Third-year teachers had the lowest minimum of -0.92 and remained nearly the same in teacher efficacy with a mean of -0.004 (σ = .50; d = .01).

<table>
<thead>
<tr>
<th>Stage of Development</th>
<th>Min</th>
<th>Max</th>
<th>Group Mean</th>
<th>SD</th>
<th>Effect Size</th>
<th>Cohen’s Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student teacher (N = 22)</td>
<td>-2.54</td>
<td>2.46</td>
<td>.10</td>
<td>1.15</td>
<td>.09</td>
<td>Small</td>
</tr>
<tr>
<td>First-year teacher (N = 27)</td>
<td>-2.38</td>
<td>0.67</td>
<td>-.40</td>
<td>.82</td>
<td>.49</td>
<td>Medium</td>
</tr>
<tr>
<td>Second-year teacher (N = 25)</td>
<td>-1.25</td>
<td>1.33</td>
<td>-.13</td>
<td>.58</td>
<td>.22</td>
<td>Small</td>
</tr>
<tr>
<td>Third-year teacher (N = 28)</td>
<td>-.92</td>
<td>1.07</td>
<td>-.004</td>
<td>.50</td>
<td>.01</td>
<td>Small</td>
</tr>
</tbody>
</table>

Scale: 1 = Nothing, 3 = Very Little, 5 = Some Influence, 7 = Quite A Bit, 9 = A Great Deal.

Table 4.6: Teacher efficacy change by stage of development.
Table 4.7 lists the mean differences of teacher efficacy change between the four groups. The greatest difference of teacher efficacy change was between the student teachers and first-year teachers with a range of 0.50 and a medium effect size of 0.52. The student teachers’ change in efficacy was 0.23 different than second-year teachers with a small effect size of 0.29. The student teachers’ efficacy change was 0.11 different than third-year teachers with a small effect size of 0.15. The first-year teachers were 0.27 different than second-year teachers with a medium effect size of 0.53. The first-year teachers were 0.39 higher than third-year teachers on teacher efficacy change with a large effect size of 0.85. There was a 0.12 difference with a
small effect size of 0.40 between the second-year and third-year teachers’ efficacy change.

<table>
<thead>
<tr>
<th>Stage of Development (I)</th>
<th>Stage of Development (J)</th>
<th>Mean Difference (I-J)</th>
<th>Effect Size</th>
<th>Cohen’s Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student teacher (N = 22)</td>
<td>First-year</td>
<td>.50</td>
<td>.52</td>
<td>Medium</td>
</tr>
<tr>
<td></td>
<td>Second-year</td>
<td>.23</td>
<td>.29</td>
<td>Small</td>
</tr>
<tr>
<td></td>
<td>Third-year</td>
<td>.11</td>
<td>.15</td>
<td>Small</td>
</tr>
<tr>
<td>First-year teacher (N = 27)</td>
<td>Second-year</td>
<td>.27</td>
<td>.53</td>
<td>Medium</td>
</tr>
<tr>
<td></td>
<td>Third-year</td>
<td>.39</td>
<td>.85</td>
<td>Large</td>
</tr>
<tr>
<td>Second-year teacher (N = 25)</td>
<td>Third-year</td>
<td>.12</td>
<td>.40</td>
<td>Small</td>
</tr>
</tbody>
</table>

Scale: 1 = Nothing, 3 = Very Little, 5 = Some Influence, 7 = Quite A Bit, 9 = A Great Deal.

Table 4.7: Descriptive statistics of mean differences of teacher efficacy change between stages of development.

Results for Objective 3: Teacher Efficacy Change Related to Stage of Development and Environmental Variables

The teachers ranged from 3.96 to 4.38 on teacher trust in clients, 4.11 to 4.43 on collective efficacy, 2.82 to 3.02 on supportive principal behavior, and 2.64 to 2.84 on academic emphasis (Table 4.8). The population standard deviations (σ) are reported under each population mean (μ) in parentheses. Teacher trust with clients had the greatest range (Range: 4.38 – 3.96 = .42) between the student teacher and first-year
teacher groups with a large effect size (d = .81), followed by collective efficacy (Range: 4.43 – 4.11 = .32, d = .44), academic emphasis (Range: 2.84 – 2.64 = .20, d = .39), and supportive principal behavior (Range: 3.02 – 2.82 = .20, d = .28) having the least amount of dispersion among the four groups of teachers.

Table 4.8: Descriptive data of teachers’ perceptions of environmental interactions during the natural treatment.
Figure 4.3: A comparison of teacher efficacy, collective efficacy, teacher trust in clients, supportive principal behavior, and academic emphasis at week 10 for stage of development.

Table 4.9 contains population means, population standard deviations, and the Pearson product moment correlations of the three dummy variables for stage of development, teacher trust in clients, collective efficacy, supportive principal behavior, academic emphasis, and teacher efficacy change. One association was very strong, two associations were substantial, four associations were moderate, 12 associations were low, and nine associations were negligible (Davis, 1971).
The three dummy variables for stage of development and four environmental variables (teacher trust in clients, collective efficacy, supportive principal behavior, academic emphasis) were entered into a two-step hierarchical multiple linear regression model (Table 4.10). For the first step, the three dummy variables for stage of development had an $R^2$ change of 5.5% and the relationship was not significant ($p = .154$). For the second step, the four environmental variables had an $R^2$ change of 3.4%. The full model explained 8.8% of the variance in teacher efficacy change and was not significant ($p=.294$). The relationship had a medium effect size (Cohen, 1988).
Dummy 1 Stage for first-year teachers accounted for 3.5% unique variance.

Dummy 2 Stage for second-year teachers accounted for 0.5% unique variance. Dummy Stage 3 for third-year teachers accounted for 0.0001% unique variance. Teacher trust in clients accounted for 0.05% unique variance, collective efficacy accounted for 1.2% unique variance, supportive principal behavior accounted for 0.3% unique variance, and academic emphasis accounted for 0.4% unique variance. An examination of the residuals showed the assumptions were not violated and there was no concern of multicollinearity (Tolerance factors = .55, .59, .56, .43, .38, .87, .59; VIF = 1.81, 1.70, 1.79, 2.33, 2.61, 1.15, 1.69).

<table>
<thead>
<tr>
<th>Variables</th>
<th>Full Model</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>SE B</td>
<td>Beta</td>
<td>t</td>
<td>R² Change</td>
<td>p</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dummy 1 Stage</td>
<td>.449</td>
<td>.716</td>
<td>.254</td>
<td>1.862</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dummy 2 Stage</td>
<td>.173</td>
<td>.241</td>
<td>.097</td>
<td>.731</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dummy 3 Stage</td>
<td>-.001</td>
<td>.237</td>
<td>-.002</td>
<td>-.012</td>
<td>.234</td>
<td>.055</td>
<td>.154</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teacher Trust</td>
<td>-.005</td>
<td>.243</td>
<td>-.037</td>
<td>-.239</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Collective Efficacy</td>
<td>-.209</td>
<td>.204</td>
<td>-.175</td>
<td>-1.068</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Principal Support</td>
<td>-.008</td>
<td>.196</td>
<td>-.059</td>
<td>-.539</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Academic Emphasis (Constant)</td>
<td>.129</td>
<td>.139</td>
<td>.081</td>
<td>.618</td>
<td>297</td>
<td>.034</td>
<td>.294</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. Full Model: R = .297; R² = .088; F = 1.233; p = .294
      Dummy 1 Stage (First-Year) = 1, 0, 0; Dummy 2 Stage (Second-Year) = 0, 1, 0; Dummy 3 Stage (Third-Year) = 0, 0, 1

Table 4.10: Summary of exploratory hierarchical regression analysis for stage of development and environmental variables explaining teacher efficacy change (N = 97).
Results for Objective 4: Teacher Characteristics and Perceptions

The following selected teacher characteristics were the results for the fourth objective of this study. Based on the teachers who completed the posttest questionnaire, 22% (N = 23) were student teachers, 28% (N = 30) were first-year teachers, 24% (N = 25) were second-year teachers, and 26% (N = 28) were third-year teachers who participated in the study (Table 4.11). Three percent (N = 3) were returning teachers who had retired or left the teaching profession and had previous teaching experience. Sixty-one percent (N = 65) were male and 39% (N = 41) were female. The average age of the teachers in the study was 25.9 (N = 105, \(\sigma = 6.37\)), ranging from 21 to 58 years.

<table>
<thead>
<tr>
<th>Stage</th>
<th>f</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student Teachers (N = 23)</td>
<td>22%</td>
</tr>
<tr>
<td>First-Year Novice Teachers (N = 30)</td>
<td>28%</td>
</tr>
<tr>
<td>Second-Year Novice Teachers (N = 25)</td>
<td>24%</td>
</tr>
<tr>
<td>Third-Year Novice Teachers (N = 28)</td>
<td>26%</td>
</tr>
</tbody>
</table>

Table 4.11: Frequencies on stage of development for final teacher efficacy.

Twelve percent (N = 13) of the teachers had a high school diploma, 9% (N = 9) had an associates degree, 73% (N = 76) had (or were completing, e.g., student teachers) a bachelors degree, and 7% (N = 7) had a masters degree (Table 4.12).
Eighty-four percent (N = 81) of the teachers were earning a degree or had graduated from The Ohio State University, 6% (N = 6) had degrees from Wilmington College, and 10% (N = 10) had degrees from other institutions (Table 4.13).

### Table 4.13: Frequencies on degree granting institutions.

<table>
<thead>
<tr>
<th>Stage</th>
<th>f</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ohio State University (N = 81)</td>
<td>84%</td>
</tr>
<tr>
<td>Wilmington College (N = 6)</td>
<td>6%</td>
</tr>
<tr>
<td>Other Institutions (N = 10)</td>
<td>10%</td>
</tr>
</tbody>
</table>

Eighty-four percent (N = 86) had majored in agricultural education and 16% (N = 17) had majors other than agricultural education. Eighty-six percent (N = 80) had a minor in agricultural production and agriscience and 14% (N = 13) teachers had minors other than agricultural production and agriscience (Table 4.14).
Table 4.14: Frequencies on majors and minors.

<table>
<thead>
<tr>
<th>Stage</th>
<th>f</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agricultural Education Major ($N = 86$)</td>
<td>84%</td>
</tr>
<tr>
<td>Other Major ($N = 17$)</td>
<td>16%</td>
</tr>
<tr>
<td>Production Agriculture &amp; Agriscience Minor ($N = 80$)</td>
<td>86%</td>
</tr>
<tr>
<td>Other Minor ($N = 13$)</td>
<td>14%</td>
</tr>
</tbody>
</table>

Fifty-two percent ($N = 55$) of the teachers had taught in one school district, 13% ($N = 14$) had taught in two school districts, 2% ($N = 2$) had taught in three school districts, 3% ($N = 3$) had taught in more than three school districts, and 31% ($N = 32$) marked the item not applicable (Table 4.15).

Table 4.15: Frequencies on the number of school districts in which teachers had taught.

<table>
<thead>
<tr>
<th>Stage</th>
<th>f</th>
</tr>
</thead>
<tbody>
<tr>
<td>One District ($N = 55$)</td>
<td>52%</td>
</tr>
<tr>
<td>Two Districts ($N = 14$)</td>
<td>13%</td>
</tr>
<tr>
<td>Three ($N = 2$)</td>
<td>2%</td>
</tr>
<tr>
<td>More than three ($N = 3$)</td>
<td>3%</td>
</tr>
<tr>
<td>Not applicable ($N = 32$)</td>
<td>31%</td>
</tr>
</tbody>
</table>

Fifty-five percent ($N = 58$) of the teachers grew up in a farming community, 22% ($N = 24$) of the teachers grew up in rural community, 13% ($N = 14$) of the teachers...
grew up in a small town, 6% (N = 6) of the teachers grew up in a suburban community, and 4% (N = 4) of the teachers grew up in an urban community. Thirty-two percent (N = 32) of the teachers taught in a farming community, 20% (N = 20) of the teachers taught in rural community, 36% (N = 37) of the teachers taught in a small town, 9% (N = 9) of the teachers taught in a suburban community, and 3% (N = 3) of the teachers taught in an urban community (Table 4.16).

<table>
<thead>
<tr>
<th>Type of communities</th>
<th>Grew Up In</th>
<th>Taught In</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urban</td>
<td>4%</td>
<td>3%</td>
</tr>
<tr>
<td>Suburban</td>
<td>6%</td>
<td>9%</td>
</tr>
<tr>
<td>Small Town</td>
<td>13%</td>
<td>36%</td>
</tr>
<tr>
<td>Rural</td>
<td>22%</td>
<td>20%</td>
</tr>
<tr>
<td>Farm</td>
<td>55%</td>
<td>32%</td>
</tr>
</tbody>
</table>

Table 4.16: Type of communities in which teachers were raised and taught.

Sixteen percent (N = 17) of the teachers were not enrolled in an agricultural education program in high school, 5% (N = 5) were a student for one year in an agricultural education program in high school, 5% (N = 5) were a student for two years in an agricultural education program in high school, 7% (N = 7) were a student for three years in an agricultural education program in high school, and 69% (N = 72) were a student for four years in an agricultural education program in high school. Sixteen
percent (N = 17) of the teachers were members of the FFA, 5% (N = 5) were FFA members for one year, 5% (N = 5) were FFA members for two years, 5% (N = 5) were FFA members for three years, and 70% (N = 74) were FFA members for four years. Eighteen percent (N = 19) of the teachers did not have SAE projects, 3% (N = 3) had SAE projects for one year, 5% (N = 5) had SAE projects for two years, 4% (N = 4) had SAE projects for three years, and 71% (N = 74) had SAE projects for four years (Table. 4.17).

<table>
<thead>
<tr>
<th>Years</th>
<th>HS Ag. Ed. Program</th>
<th>FFA</th>
<th>SAE</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>16%</td>
<td>16%</td>
<td>18%</td>
</tr>
<tr>
<td>One</td>
<td>5%</td>
<td>5%</td>
<td>3%</td>
</tr>
<tr>
<td>Two</td>
<td>5%</td>
<td>5%</td>
<td>5%</td>
</tr>
<tr>
<td>Three</td>
<td>7%</td>
<td>5%</td>
<td>4%</td>
</tr>
<tr>
<td>Four</td>
<td>69%</td>
<td>70%</td>
<td>71%</td>
</tr>
</tbody>
</table>

Table 4.17: Teachers’ years of involvement in a high school agricultural education program, FFA, and SAE projects.

Of those teachers who were FFA members, 62% (N = 65) were chapter officers, 13% (N = 14) were state officers, 3% (N = 3) were national officers, and 22% (N = 23) were not an officer or the item was not applicable (Table 4.18).
Table 4.18: Levels of leadership positions in the FFA.

Of those who had an SAE project, 41% (\(N = 43\)) of the teachers were recognized at the chapter level, 19% (\(N = 20\)) were recognized at the state level, 19% (\(N = 20\)) were recognized at the national level, and 21% (\(N = 22\)) were not recognized or the item was not applicable (Table 4.19).

Table 4.19: Levels of recognition for SAE project.
Fifty-six percent (N = 58) of the teachers held a leadership position in a college organization and 44% (N = 45) did not hold a leadership position in a college organization (Table 4.20).

<table>
<thead>
<tr>
<th>Position</th>
<th>f</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes (N = 58)</td>
<td>56%</td>
</tr>
<tr>
<td>No (N = 45)</td>
<td>44%</td>
</tr>
</tbody>
</table>

Table 4.20: Leadership positions in a college organization.

Sixty-four percent (N = 68) were members of the local teachers’ association, 20% (N = 21) were not members of the local teachers’ association, and 16% (N = 17) marked the item not applicable. Eighteen percent (N = 19) currently held a leadership position related to the teaching profession, whereas 66% (N = 70) did not currently hold a leadership position related to the teaching profession and 16% (N = 17) said the item was not applicable (Table 4.21).
<table>
<thead>
<tr>
<th>Professional Involvement</th>
<th>Yes</th>
<th>No</th>
<th>NA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Membership of local teachers’ association</td>
<td>64%</td>
<td>20%</td>
<td>16%</td>
</tr>
<tr>
<td>Leadership position in the teaching profession</td>
<td>18%</td>
<td>66%</td>
<td>16%</td>
</tr>
</tbody>
</table>

Table 4.21: Membership of local teachers’ association and leadership in the teaching profession.

Fifty-six percent ($N = 59$) of the teachers attended the technical agriculture update conference in 2001 and 44% ($N = 46$) of the teachers did not attend the technical agriculture update conference in 2001. Thirty-one percent ($N = 33$) of the teachers attended FFA camp with their students in 2001 and 69% ($N = 72$) of the teachers did not attend FFA camp with their students in 2001. Seventy-nine percent ($N = 84$) of the teachers interacted with their students at the county fair and 21% ($N = 22$) did not interact with their students at the county fair. Seventy-six percent ($N = 78$) of the teachers participated in summer activities with their students and 24% ($N = 25$) of the teachers did not participate in summer activities with their students (Table 4.22).
<table>
<thead>
<tr>
<th>Events</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technical Update</td>
<td>56%</td>
<td>44%</td>
</tr>
<tr>
<td>FFA Camp</td>
<td>31%</td>
<td>69%</td>
</tr>
<tr>
<td>County Fair</td>
<td>79%</td>
<td>21%</td>
</tr>
<tr>
<td>Summer Activities</td>
<td>76%</td>
<td>24%</td>
</tr>
</tbody>
</table>

Table 4.22: Attendance at technical update, FFA camp, county fair, and summer activities.

The average number of students per agricultural education program was 82 students ($N = 101, \sigma = 49$). The average number of class preparations reported by the teachers was 3.4 ($N = 99, \sigma = 1.61$). Fifty eight percent of the teachers taught in a single teacher department, 29% taught in a 2-teacher department, 9% taught in a 3-teacher department, and 4% taught in a department with four or more teachers (Table 4.23). The teachers in the study had 3.39 ($N = 99, \sigma = 1.61$) class preparations ranging from 0 to 7 (Table 4.24).
<table>
<thead>
<tr>
<th>No. of Teachers</th>
<th>f</th>
</tr>
</thead>
<tbody>
<tr>
<td>One teacher (N = 59)</td>
<td>58%</td>
</tr>
<tr>
<td>Two teachers (N = 30)</td>
<td>29%</td>
</tr>
<tr>
<td>Three teachers (N = 9)</td>
<td>9%</td>
</tr>
<tr>
<td>Four or more teachers (N = 4)</td>
<td>4%</td>
</tr>
</tbody>
</table>

Table 4.23: Frequencies on the number of agricultural education teachers per department.

<table>
<thead>
<tr>
<th>No. of Class Preparations</th>
<th>f</th>
</tr>
</thead>
<tbody>
<tr>
<td>None (N = 4)</td>
<td>4%</td>
</tr>
<tr>
<td>One (N = 8)</td>
<td>8%</td>
</tr>
<tr>
<td>Two (N = 18)</td>
<td>18%</td>
</tr>
<tr>
<td>Three (N = 20)</td>
<td>20%</td>
</tr>
<tr>
<td>Four (N = 23)</td>
<td>23%</td>
</tr>
<tr>
<td>Five (N = 18)</td>
<td>18%</td>
</tr>
<tr>
<td>Six (N = 6)</td>
<td>6%</td>
</tr>
<tr>
<td>Seven (N = 2)</td>
<td>2%</td>
</tr>
</tbody>
</table>

Table 4.24: Frequencies on the number of class preparations.

Sixty-one percent (N = 63) of the teachers had a mentor and 39% (N = 40) did not have a mentor. Of those teachers (N = 64) who had a mentor, 44% (N = 28) strongly agreed that their mentor was competent, 25% (N = 16) moderately agreed that their mentor was competent, 25% (N = 16) slightly agreed that their mentor was competent, 5% (N = 3) slightly disagreed that their mentor was competent, and 1% (N =
1) moderately disagreed that their mentor was competent. Furthermore, of those teachers (N = 64) who had a mentor, 42% (N = 27) strongly agreed that their mentor was supportive, 36% (N = 23) moderately agreed that their mentor was supportive, 12% (N = 8) slightly agreed that their mentor was supportive, 5% (N = 3) slightly disagreed that their mentor was supportive, and 5% (N = 3) moderately disagreed that their mentor was supportive (Table 4.25).

<table>
<thead>
<tr>
<th>Variable</th>
<th>Strongly Disagree</th>
<th>Mod. Disagree</th>
<th>Slightly Disagree</th>
<th>Slightly Agree</th>
<th>Mod. Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Competence</td>
<td>0%</td>
<td>1%</td>
<td>5%</td>
<td>25%</td>
<td>25%</td>
<td>44%</td>
</tr>
<tr>
<td>Support</td>
<td>0%</td>
<td>5%</td>
<td>5%</td>
<td>12%</td>
<td>36%</td>
<td>42%</td>
</tr>
</tbody>
</table>

Table 4.25: Frequencies on teachers’ perception of mentor competence and support.

Nineteen percent (N = 17) of the teachers strongly agreed that their first year of teaching was an excellent experience. Thirty-one percent (N = 28) of the teachers moderately agreed that their first year of teaching was an excellent experience. Twenty-three percent (N = 21) of the teachers slightly agreed that their first year of teaching was an excellent experience. Seventeen percent (N = 15) of the teachers slightly disagreed that their first year of teaching was an excellent experience. Seven percent (N = 6) of the teachers moderately disagreed that their first year of teaching was an excellent experience. Three percent (N = 3) of the teachers strongly disagreed that their first year
of teaching was an excellent experience. Related to the student teaching experience (N = 94), 39% (N = 37) of the teachers strongly agreed that their student teaching was an excellent experience. Thirty-eight percent (N = 36) of the teachers moderately agreed that their student teaching experience was an excellent experience. Eleven percent (N = 10) of the teachers slightly agreed that their student teaching experience was an excellent experience. Seven percent (N = 7) of the teachers slightly disagreed that their student teaching experience was an excellent experience. Two percent (N = 2) of the teachers moderately disagreed and two percent (N = 2) strongly disagreed that their student teaching experience was an excellent experience (Table 4.26).

<table>
<thead>
<tr>
<th>Variable</th>
<th>Strongly Disagree</th>
<th>Mod. Disagree</th>
<th>Slightly Disagree</th>
<th>Slightly Agree</th>
<th>Mod. Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Year</td>
<td>3%</td>
<td>7%</td>
<td>17%</td>
<td>23%</td>
<td>31%</td>
<td>19%</td>
</tr>
<tr>
<td>Student Teaching</td>
<td>2%</td>
<td>2%</td>
<td>7%</td>
<td>11%</td>
<td>38%</td>
<td>39%</td>
</tr>
</tbody>
</table>

Table 4.26: Frequencies on teachers’ perception of first-year and student teaching experience (N = 90).

Of the 103 teachers who responded, 18% (N = 19) strongly agreed, 36% (N = 37) moderately agreed, 30% (N = 31) slightly agreed, 10% (N = 10) slightly disagreed, 6% (N = 6) moderately disagreed, and none strongly disagreed that their teacher education program was a high quality program (Table 4.27). Of the 104 teachers who
responded, 15% (N = 15) strongly agreed, 33% (N = 34) moderately agreed, 28% (N = 27) slightly agreed, 13% (N = 14) slightly disagreed, 7% (N = 7) moderately disagreed, and 5% (N = 5) strongly disagreed that their teacher education program prepared them to teach (Table 4.27). Of the 104 teachers who responded, 30% (N = 29) strongly agreed, 22% (N = 23) moderately agreed, 24% (N = 25) slightly agreed, 14% (N = 15) slightly disagreed, 9% (N = 9) moderately disagreed, and 2% (N = 2) strongly disagreed that being a high school agriculture teacher has been their long-term career goal (Table 4.27). Of the 104 teachers who responded, 56% (N = 58) strongly agreed, 20% (N = 22) moderately agreed, 14% (N = 13) slightly agreed, 5% (N = 5) slightly disagreed, 1% (N = 1) moderately disagreed, and 5% (N = 5) strongly disagreed that they plan to teach for at least 5 years (Table 4.27). Of the 103 teachers who responded, 23% (N = 24) strongly agreed, 41% (N = 42) moderately agreed, 18% (N = 18) slightly agreed, 9% (N = 10) slightly disagreed, 4% (N = 4) moderately disagreed, and 5% (N = 5) strongly disagreed that teaching as a career matches their personal and family needs (Table 4.27). Of the 102 teachers who responded, 5% (N = 5) strongly agreed, 3% (N = 3) moderately agreed, 4% (N = 4) slightly agreed, 6% (N = 6) slightly disagreed, 11% (N = 11) moderately disagreed, and 73% (N = 73) strongly disagreed that they do not plan to be teaching next year (Table 4.27). Of the 99 teachers who responded, 5% (N = 5) strongly agreed, 8% (N = 8) moderately agreed, 9% (N = 9) slightly agreed, 24% (N = 24) slightly disagreed, 35% (N = 35) moderately disagreed, and 18% (N = 18) strongly disagreed that adequate funding is available to effectively run their agricultural education program (Table 4.27). Of the 103 teachers who responded, 37% (N = 38)
strongly agreed, 39% (N = 40) moderately agreed, 14% (N = 15) slightly agreed, 5% (N = 5) slightly disagreed, 3% (N = 3) moderately disagreed, and 2% (N = 2) strongly disagreed that they feel confident about teaching in agricultural education (Table 4.27).

<table>
<thead>
<tr>
<th>Variable</th>
<th>Strongly Disagree</th>
<th>Mod. Disagree</th>
<th>Slightly Disagree</th>
<th>Slightly Agree</th>
<th>Mod. Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teacher education (TE) quality</td>
<td>0%</td>
<td>6%</td>
<td>10%</td>
<td>30%</td>
<td>36%</td>
<td>18%</td>
</tr>
<tr>
<td>TE prepared me to teach</td>
<td>5%</td>
<td>7%</td>
<td>14%</td>
<td>27%</td>
<td>33%</td>
<td>15%</td>
</tr>
<tr>
<td>Long-term career goal</td>
<td>2%</td>
<td>9%</td>
<td>14%</td>
<td>24%</td>
<td>22%</td>
<td>29%</td>
</tr>
<tr>
<td>Plans to teach for 5 years</td>
<td>5%</td>
<td>1%</td>
<td>5%</td>
<td>13%</td>
<td>20%</td>
<td>56%</td>
</tr>
<tr>
<td>Matched personal &amp; family needs</td>
<td>5%</td>
<td>4%</td>
<td>9%</td>
<td>18%</td>
<td>41%</td>
<td>23%</td>
</tr>
<tr>
<td>Plans to teach next year</td>
<td>71%</td>
<td>11%</td>
<td>6%</td>
<td>4%</td>
<td>3%</td>
<td>5%</td>
</tr>
<tr>
<td>Perception of adequate funding</td>
<td>5%</td>
<td>8%</td>
<td>9%</td>
<td>24%</td>
<td>35%</td>
<td>18%</td>
</tr>
<tr>
<td>Confidence about teaching</td>
<td>2%</td>
<td>3%</td>
<td>5%</td>
<td>14%</td>
<td>39%</td>
<td>37%</td>
</tr>
</tbody>
</table>

Table 4.27: Frequencies of teachers’ perceptions.
CHAPTER 5

CONCLUSIONS/IMPLICATIONS/RECOMMENDATIONS

Purpose of the Study

The purpose of the study was to measure the degree of change in teacher efficacy during the first 10 weeks of the student teaching, first-year, second-year, and third-year teaching experience in agricultural education in Ohio related to stage of development and environmental variables of teacher trust in clients, collective efficacy, supportive principal behavior, and academic emphasis of the schools. The following research objectives guided the researcher through the study.

Objectives of the Study

The objectives of the study were to:

1. Describe the differences in teacher efficacy between stages of development on the pretest and differences between stages of development on the posttest of student teachers, first-year teachers, second-year teachers, and third-year teachers in agricultural education in Ohio during the first 10 weeks of the 2001-02 school year;

2. Describe the degree of teacher efficacy change related to the stages of teacher development;
3. Explain the percent of variance in teacher efficacy change during the first 10 weeks of the school year related to stage of development and the environmental variables of teacher trust in clients, collective efficacy, supportive principal behavior, academic emphasis; and,

4. Describe the population of the study using selected teacher characteristics and perceptions.

Type of Research

This was an exploratory causal comparative study that used a non-equivalent control group design (Campbell & Stanley, 1963) with a natural treatment (Trochim, 2000). The four comparison groups were student teachers, first-year teachers, second-year teachers, and third-year teachers in agricultural education in an Ohio public high school at the beginning of the 2001-02 school year. The two independent variables were: (a) stage of development; and, (b) environmental variables of teacher trust in clients, collective efficacy, supportive principal behavior, and academic emphasis. The dependent variable was teacher efficacy and teacher efficacy change. The naturally occurring, non-manipulated treatment was 10 weeks of teaching experience in a public school in Ohio. The natural treatment was not controlled, but data on the teachers’ perceptions of four environmental variables were collected to describe differences that may have occurred in the treatments and to explain the percent of variance in teacher efficacy change.

Three types of data were collected for the study. First, data on teacher efficacy were collected to determine differences between stages of development in teacher
efficacy on the pretest and posttest measures and, thus, teacher efficacy change from week 1 to week 10. Second, data were collected to determine differences in teachers’ perceptions of environmental variables between the four stages of development related to the natural treatment they experienced during the first 10 weeks of the school year. Third, data on teacher characteristics were collected to describe the population.

Population and Subject Selection

The population for the study was a census of agricultural education student teachers and novice teachers in their first three years of teaching in public high schools in Ohio. The Ohio State University Department of Human and Community Resource Development and the Ohio Department of Education, Bureau of Career, Technical, and Adult Education’s Agricultural Education Service provided the frame of the accessible population. The most current frame was used although some teachers may have not been included in the frame because some school administrators do not report newly hired teachers to the Ohio Department of Education. There were 114 teachers in the accessible population at the beginning of the school year. There were eight teachers in the accessible population who had previous teaching experience, left teaching, and were in their first three years after returning to the teaching profession. All eight returning teachers were asked if they wanted to participate in the study. Four returning teachers elected to participate in the study. There were 116 teachers in the accessible population at the 10th week of the school year. Four new teachers were reported to the Department of Education since the beginning of the school year, one teacher left teaching, and one teacher elected not to participate by returning a blank pretest questionnaire.
Instrumentation

The data were collected through pretest and posttest questionnaires (Appendices B and C). The pretest questionnaire consisted of three parts: (a) 34 items on teacher efficacy; (b) 2 open-ended questions of the teachers’ opinions about their teaching confidence; and, (c) 21 items of the teachers’ background information. The posttest questionnaire consisted of five parts: (a) 34 items on teacher efficacy; (b) 42 items of teacher perceptions on trust in clients, collective efficacy, supportive principal behavior, and academic emphasis; (c) 12 items of teacher perceptions about teacher education, teaching experiences, resources, and career goals and plans; (d) 3 open-ended questions of the teachers’ opinions about their student teaching experience and teaching confidence related to the last 10 weeks; and, (e) 5 items of the teachers’ background information.

Data Collection Procedures

The data were collected using mailed questionnaires and following Dillman’s (2000) tailored design procedures of conducting surveys. On August 13, 2001, the student and novice agriculture teachers were sent a hand-written prenotice message on a Successories® card informing them of a questionnaire that they would receive a questionnaire within the next week and a follow-up questionnaire in early November. On August 20, 2001, a complete packet including the cover letter (Appendix D), instrument, 12 ounce can insulator as an incentive, and pre-addressed, stamped envelope were sent to the accessible population of student teachers and notice teachers in agricultural education in Ohio. On August 28, 2001, eight days after the first
mailing, a thank you postcard reminder (Appendix E) was sent to all of the participants in the study. The postcard thanked those who had taken time to complete the instrument. Further, the postcard also served as a reminder and encouraged those who had not yet responded to complete and return the instrument. Between September 4 and September 14, non-respondents were contacted by telephone to determine if they had received the questionnaire. On September 17, 2001, a replacement questionnaire was sent to non-respondents as the fifth contact. Data collection was ceased on October 1, 2001 with a 93.0% response rate. One questionnaire was returned blank resulting in a 92.1% usable response rate.

Regarding the posttest questionnaire, the prenotice message written on the card that was sent in August informed the participants that there would be a follow-up questionnaire in early November. On November 1, 2001, the complete packet containing a detailed cover letter, the posttest questionnaire, and a preaddressed, stamped envelope was sent to the participants. The frame had changed by five participants because one did not want participate by returning the pretest blank, one teacher left teaching, and three additional teachers who taught in career centers were identified. Participants were informed that a 5” x 7” clear, acrylic, magnetic frame would be sent as a token of appreciation once the researcher received their posttest questionnaire. On November 9, 2001, a thank you postcard was sent to the teachers thanking those who responded and encouraging those who did not respond. On November 12, 2001 through November 21, non-respondents were contacted by phone. On November 23, 2001, a replacement questionnaire was sent to all non-respondents.
with a cover letter encouraging them to respond. Data collection was ceased on December 10, 2001 with a 91.4% usable response rate.

Data Analysis

The data were analyzed using the Statistical Package for the Social Sciences, Personal Computer version (SPSS/PC+). Reverse items were recoded and subscales were aggregated into composite scores before analyzing the data. Participants whose responses were incomplete were excluded automatically by SPSS in the data analyses procedures. Domains for teacher efficacy, teacher trust in clients, collective efficacy, supportive principal behavior, and academic emphasis were summed.

Descriptive statistics were used to analyze the data because the study was a census. Therefore, inferential statistics were not used because the assumption of normality was not met. Post hoc reliability was calculated using Cronbach’s (1951) alpha. Population means and population standard deviations were calculated. Effect sizes were computed using Cohen’s (1988) d coefficients. Population means, population standard deviations, and effect sizes were rounded to the nearest 1/100th.

A two-step hierarchical multiple linear regression analysis was used to explain the percent of variance in teacher efficacy change related to stage of development and the four environmental variables. Relationships were described using the Pearson product-moment coefficient. The alpha level was established a priori at 0.05.

Depending on the level of measurement of the variable, appropriate descriptive statistics—frequencies, percentages, means, and standard deviations—were used to describe the accessible population of student teachers and novice teachers in
agricultural education in Ohio. The following teacher characteristics were assumed to be nominal data: stage of teacher development; gender; college graduated from; educational major; type of community grew up in; leadership involvement in college; membership in the local teachers’ association; leadership position related to the teaching profession; attendance at Tech Update; attendance at FFA camp; interacted with students at the county fair; participated in summer activities with students; type of community the school was located in; and, utilizing a mentor.

The following teacher characteristics were assumed to be ordinal data: level of education; level of leadership position in the FFA; level of recognition on SAE project; perceived teaching competence of mentor; perceived support of mentor; perception of first year teaching experience; perception of student teaching experience; perceived quality of teacher preparation program; teaching as a long-term career goal; plans to teach for five years; perception of adequate agricultural education program funding; and, confidence about teaching in agricultural education. Teacher efficacy and teacher perceptions on the following environmental variables were assumed to be interval data: teacher trust in clients; collective efficacy; supportive principal behavior; and, academic emphasis. The following teacher characteristics were assumed to be ratio data: age; years of teaching experience; number of districts taught in; years of enrollment in a high school agricultural education program; years of involvement in the FFA; years of involvement in a SAE project; student enrollment in program; number of agricultural education teachers in the department; and, the number of class preparations taught.

The findings of the study are summarized in the next section. The summary is
organized based on the order of the research objectives for the study. Conclusions and implications were drawn based on the findings. Recommendations were offered in the last section.

Summary of Findings

The summary of findings are divided into four sections: (a) differences in teacher efficacy on pretest and posttest measures; (b) teacher efficacy change related to stage of development; (c) teacher efficacy change related to stage of development and environmental variables; and, (d) teacher characteristics and perceptions.

Differences in Teacher Efficacy on Pretest and Posttest Measures

The student teachers and novice teachers measured between 6.81 and 6.92 on Bandura’s 9-point teacher efficacy scale on the pretest. The student teachers and novice teachers measured between 6.55 and 7.03 on Bandura’s 9-point scale on teacher efficacy. The teachers identified most with the efficacy scale descriptor of “quite-a-bit.”

The pretest differences between stages of development were none (.00) to small (.15) in effect size. The posttest differences between stages of development were small (.06) to medium (.56) in effect size. Student teachers and first-year teachers had the greatest difference on posttest teacher efficacy. Second-year and third-year teachers had the least difference on posttest teacher efficacy.

Teacher Efficacy Change Related to Stage of Development

Student teachers were the only stage of development that experienced a small increase (.10) in teacher efficacy. First-year teachers experienced the largest decline
(-.40) in teacher efficacy. Second-year teachers experienced a decline (-.13) in teacher efficacy at about the same amount of change as student teachers experienced an increase in teacher efficacy. Third-year teachers appeared to nearly remain the same (-.004) in teacher efficacy during the first 10 weeks of the school year.

Teacher efficacy appears to be most malleable during the first 10 weeks of the first-year of teaching experience, followed with more modest changes during the first 10 weeks of the second-year of teaching experience and student teaching experience. Student teachers had the largest variation of teacher efficacy change with the highest minimum and maximum values. Of the four stages of development, first-year teachers had the lowest maximum of teacher efficacy change. The range of teacher efficacy change among second-year and third-year teachers narrowed with teaching experience and teacher efficacy appeared to have little change during the first 10 weeks of the third-year of teaching experience. Third-year teachers had the lowest minimum value for teacher efficacy change.

In comparison between stages of development, student teacher group differences in teacher efficacy change had small (.15, .29) to medium (.52) effect sizes. First-year teacher group differences in teacher efficacy change had medium (.52) to large (.85) effect sizes. Second-year teacher group differences in teacher efficacy change had a small (.40) effect size.
Teacher Efficacy Change Related to Stage of Development and Environmental Variables

Regarding the environmental variables, the teachers were in slight agreement with teacher trust in their clients (students and parents). However, the student teachers had more trust than novice teachers. For example, the student teachers were 0.42 higher than first-year teachers with a large effect size (1.31), 0.22 higher than second-year teachers with a large effect size (.75), and 0.29 higher than third-year teachers with a large effect size (1.24). Therefore, the student teachers appeared to have higher trust in the students and parents than novice teachers. Second-year teachers were higher than first-year and third-year teachers with medium effect sizes of 0.63 and 0.58, respectively.

The teachers were in slight agreement with the collective efficacy factor. The student teachers were 0.32 higher than third year teachers with a large effect size of 0.78. The differences between the other stages of development had small effect sizes (.11 to .42). The teachers were in close agreement that supportive principal behavior occur often. Although the third-year teachers were 0.20 lower than their counterparts, this difference had a small effect size of 0.40. The teachers indicated that their schools’ have an academic emphasis most of the time. Although the student teachers and second-year teachers were in agreement, the first-year teachers were lower by 0.20. The first-year teacher group difference in academic emphasis had large effect sizes with the student teachers (.83) and second year teachers (.87).
Except for supportive principal behavior, the student teachers had the highest ratings for teacher trust in clients, collective efficacy, and academic emphasis. The second-year teachers were in agreement on academic emphasis and followed closely behind the student teachers on teacher trust in clients and collective efficacy. In contrast, the first-year and third-year teachers appear to be more similar in how they perceived their trust with clients, collective efficacy, and academic emphasis.

Regarding the two-step hierarchical multiple regression analysis, the three dummy variables for stage of development had an $R^2$ change of 5.5% when regressed on teacher efficacy change. This relationship was not significant ($p = .154$). The four environmental variables of teacher trust in clients, collective efficacy, supportive principal behavior, and academic emphasis had an $R^2$ change of 3.4% when regressed on teacher efficacy change. The full regression model explained approximately 9% of the variance in teacher efficacy change during the first 10 weeks of the school year. Although the full model was not significant ($p = .294$), it had a medium effect size (Cohen, 1988).

In relative comparison of importance, dummy variable one (first-year teachers) explained 3.5% of the unique variance, dummy variable two (second-year teachers) explained 0.5% of the unique variance, dummy variable three (third-year teachers) explained 0.0001% of the unique variance, teacher trust explained 0.05% of the unique variance, collective efficacy explained 1.2% unique variance, supportive principal behavior explained 0.3% unique variance, and academic emphasis explained 0.4% unique variance.
Teacher Characteristics and Perceptions

Student teachers represented 22%, first-year teachers represented 28%, second-year teachers represented 24%, and third-year teachers represented 26% of the teachers who completed the follow-up questionnaire. Sixty-one percent of the teachers were male and 39% of the teachers were female. The average age of the teachers was 25.9 years. Regarding educational degrees, 73% of the teachers held a bachelor’s degree, 12% held a high school diploma, 9% held an associates degree, and 7% held a master’s degree. Eighty-four percent of the teachers graduated or were earning a degree from The Ohio State University. Ten percent of the teachers graduated from other institutions and 6% graduated from Wilmington College. Eighty-four percent of the teachers majored in agricultural education and 16% had majored in other areas. Eighty-six percent of the teachers had a minor in production agriculture and agriscience and 14% had minors in other areas of study.

Over half of the teachers had taught in one school district and nearly 20% had taught in two or more school districts. More than half of the teachers grew up in farm communities. Twenty-two percent grew up in rural communities, 13% grew up in small town communities, and 10% grew up in suburban-urban communities. However, one-third of the teachers taught in farm communities, while one-fifth taught in rural communities, one-third taught in small town communities, and 12% taught in suburban-urban communities.

Seven out of 10 teachers participated in agricultural education, FFA, and SAE projects during their four years of high school. One out of 6 teachers did not experience
agricultural education, FFA, and SAE projects in high school. Of those teachers who were FFA members, 62% were chapter officers, 13% were state officers, and 3% were national officers. Of those teachers who had SAE projects, 41% were recognized at the chapter level, 19% were recognized at the state level, and 19% were recognized at the national level.

More than half of the teachers held leadership positions in college. Nearly two out of three teachers were members of the local teachers’ associations. Eighteen percent of the teachers held leadership positions in the teaching profession. Slightly over half of the teachers attended the technical agriculture update and nearly one-third attended state FFA camp with their students. Nearly eight out of 10 teachers interacted with their students at county fairs and three-fourths of the teachers participated in summer activities with their students.

The teachers had 84 students enrolled in their agricultural education programs with 3.4 class preparations. Eight out of 10 teachers had two to five class preparations. Nearly 6 out of 10 teachers taught in single-teacher departments and 4 out of 10 taught in multi-teacher departments. Because of the multiple teacher departments, a student-teacher ratio was calculated. Each teacher averaged 56 students. Six out of 10 teachers had a mentor and 94% of the teachers agreed that their mentor was competent. Moreover, 90% of the teachers agreed that their mentor was supportive.

Nearly 9 out of 10 teachers agreed that their student teaching experience was an excellent experience, whereas, 7 out of 10 teachers agreed that their first-year teaching experience was an excellent experience. Eighty-four percent of the teachers agreed that
their teacher education program was a high quality program, but 75% of the teacher agreed that their teacher education program prepared them to teach.

Seventy-five percent of the teachers agreed that being a high school agriculture teacher was their long-term career goal. Nearly 9 out of 10 teachers agreed that they plan to teach for five years, and 1 out of 10 teachers agreed that they did not plan to teach next year. Eight out of 10 teachers agreed that teaching as a career matched their personal and family needs. Three out of four teachers agreed that they had adequate funding to effectively run their agricultural education program. Nine out of 10 teachers agreed that they felt confident about teaching in agricultural education.

Conclusions, Discussions, and Implications

Conclusion 1

Student teachers, first-year teachers, second-year teachers, and third-year teachers were similarly efficacious at week 1 of the school year, but varied in their level of teacher efficacy at the 10th week of the school year.

Discussion and Implications

The first 10 weeks of the school year influenced student teachers’ and novice teachers’ efficacy in agricultural education. This conclusion was consistent with Bandura’s (1997) assertion that environmental factors and experiences have influential power over people’s personal factors, behaviors, and development. The first 10 weeks of the school year may have been a catalyst of new and compelling knowledge and experience for student teachers and novice teachers to modify their teacher efficacy beliefs (Alexander & Dochy, 1995).
Because first-year teachers had the lowest teacher efficacy and student teachers had the highest teacher efficacy at the end of 10 weeks of teaching experience, student teachers and first-year teachers may have different teaching experiences that influence the development of their teacher efficacy. This conclusion implies that student teachers and novice teacher interprets the first 10 weeks of the school year differently when assessing their competence related to teacher efficacy. Teacher educators should understand these differences and how they impact the development of teachers at each stage. For example, self-reflection may need to be developed during the primal years of teaching because teachers can provide selective influence on the development of their teaching beliefs if they question and reflect on how they teach (Bandura, 1986).

Conclusion 2

There was essentially no change in teacher efficacy across the first 10 weeks of the school year for student teachers, second-year teachers, and third-year teachers, but teacher efficacy decreased for first-year teachers during the first 10 weeks of the school year.

Discussion and Implications

Although there were measurable changes in teacher efficacy for all stages of development, Fraenkel and Wallen’s (2000) recommendation that effect sizes of .50 or larger was used as the criterion of importance. Therefore, first-year teachers experienced the most teacher efficacy change because their beliefs were modified and changed by new and compelling knowledge, education, and experience (Alexander & Dochy, 1995). First-year teachers in the first 10 weeks of their teaching career may
experience fortuitous encounters that also influence their teaching beliefs (Bandura, 1986).

The erosive nature of teacher efficacy during the first 10 weeks of teaching for beginning teachers implies that first-year teachers may feel less efficacious than they did at the end of their student teaching experience. Likewise, Rodriguez (1997) found that first-year teachers were less efficacious than student teachers in agricultural education in Ohio, and Benz, Bradley, Alderman, and Flowers (1992) found that preservice teachers had higher teacher efficacy than classroom teachers. Although teachers may self-select schools where they think that they will fit, most teachers have great difficulty adjusting to their role as a teacher (Waller, 1961).

Teacher efficacy appears to decline the most for the first-year teachers compared to their colleagues with one and two more years of teaching experience. The work environment of isolation and individualism (Dreeben, 1973), incessant demands (Sarason, 1996), psychological dilemmas and frustration (Hargreaves, 1994), and inadequate induction (Gordon, 1991) could have contributed to the decline of teacher efficacy for first-year teachers. Therefore, first-year teachers should be guided toward mastering tools of personal agency and decision-making to provide support and direction for their action, capitalize on planned and fortuitous opportunities, resist social traps that can be detrimental, and disengage from predicaments that beginning teachers typically face (Bandura, 1986).

Although first-year teachers experienced a decline in teacher efficacy in their first 10 weeks of teaching, Woolfolk Hoy (2000) found that teacher efficacy increased
through the first year of teaching. This could suggest that first-year teachers may dip in
efficacy during the first 10 weeks and then increase by the end of the school year due to
mastery experiences, physical and affective coping, and establishing a social support
system (Bandura, 1997).

In addition to effective tools of personal agency (Bandura, 1986), beginning
teachers in their first and second years of teaching need support (Bandura, 1986) during
the first 10 weeks of the school year. Woolfolk Hoy (2000) suggested that teacher
efficacy declined after support for the beginning teacher was withdrawn. Furthermore,
noting that the greatest decline in efficacy among first-year teachers implies that first-
year teachers need support and assistance almost immediately in their teaching careers.

Although it may not be realistic to try to increase teacher efficacy during the
first 10 weeks of the school year, the focus may need to be on maintaining it, or
minimizing its decline by trouble-shooting for the greatest challenges and obstacles
facing the novice teachers. The greatest decline of teacher efficacy at the entry phase
may be congruent with Lortie’s (1975) assertion that eased entry into the teaching
profession exacerbates feelings of uncertainty. Beginning teachers may soon realize
that they were not prepared well enough to be a teacher and also feel less efficacious if
they see themselves doing worse than their teaching peers (Bandura, 1997).

The lack of change among student teachers, second-year teachers, and third-year
teachers was probably due to the brevity of repeated measures. Reciprocal
deterministic relationships and self-efficacy develop over time (Bandura, 1986).
Pajares (1992) asserted that beliefs tend to self-perpetuate and persevere even against
contradictions caused by time or experience. Moreover, if student teachers and novice teachers experienced favorable interactions with students, parents, colleagues, principals and school personnel, then their efficacy may not have been tested by obstacles and challenges that are experienced in more negative teaching environments. Student teachers, second-year, and third-year teachers may have experienced little efficacy change because they perceived the environment more positively and could see that they could have a positive influence on the environment over time (Bandura).

Student teachers’ efficacy did not decline as first-year teachers did because perhaps they learned vicariously and compared themselves to cooperating teachers in teaching situations that they self-selected (Bandura, 1997). Furthermore, student teachers were able to exercise control of their own behaviors because of specially arranged conditions that brought out their best performance (Bandura, 1997), verbal persuasion of a cooperating teacher (Bandura, 1997), and the social support created by the established cooperating teacher (Bandura, 1986). Because student teachers may get an artificial sense of what being an agriculture teacher is really like, teacher educators and cooperating teachers should model effective teaching and implement strategies that help student teachers know and understand how to increase their efficacy as they begin their teaching career in their first year.

Second and third-year teachers appeared to experience no practical change in teacher efficacy during the first 10 weeks of the school year because the process of teacher efficacy development stabilizes over time into a relatively stable set of efficacy beliefs (Tschannen-Moran, Woolfolk Hoy, & Hoy, 1998). The stability of the second-
year and third-year teachers’ efficacy during the first 10 weeks of the school year implies that second-year and third-year teachers may have developed a greater sense of personal agency and social support (Bandura, 1986), especially through mastery experiences. Tenably, mastery experiences probably sustain and build teacher efficacy during the second and third year of teaching. Furthermore, second-year and third-year teachers’ efficacy beliefs may have been instilled and strengthened by creating networks with other teachers who hold the same ideological commitments (Bandura).

Teacher educators, educational consultants, and school administrators should consider the resistant nature of teacher efficacy beliefs as they work with preservice and novice teachers (McDiarmid, 1990; Moore & Esselman, 1992a; Nisbett & Ross, 1980; Pajares, 1992; Woolfolk Hoy, 2000). Teacher educators should consider the important role that teacher efficacy plays in the performance of developing teachers, but they should also remember that teacher efficacy changes slowly through the influence of many sources. Self-efficacy beliefs develop overtime (Bandura, 1986; Martin, 1989) through a complex combination of sources of self-reflection based on beliefs, values, culture and experiences (Buriak, McNurlen, & Harper, 1996). Although Cole (1995) recommended that teacher efficacy be studied using experimental designs, these research designs could limit the generalizability of significant changes in teacher efficacy due to its nature of being multi-authored through a gradual change process (Bandura). Stages of development provide teacher educators and researchers with valuable information about the process of change that teachers’ experience (Richardson & Placier, 2001).
Conclusion 3

Stage of development and the environmental variables of teacher trust, collective efficacy, supportive principal behavior, and academic emphasis did not significantly influence teacher efficacy change during the first 10 weeks of the school year for student and novice teachers in agricultural education, however, student teachers had the highest level of trust in students and parents when compared to the other stages of development.

Discussion and Implications

Although theory and practice support that stage of development, teacher trust in clients, collective efficacy, principal support, and school academic emphasis would be important variables influencing teacher efficacy (Hoy & Woolfolk, 1993; Richardson & Placier, 2001), it is plausible to conclude that the brevity of the first 10 weeks yielded little variance in teacher efficacy among and between the four stages of development. Furthermore, the homogeneity of the teachers in the population limited the variance explained in teacher efficacy change.

Bandura (1986) discussed that reciprocal determinism relationships were established over longer periods of time and teacher beliefs were resistant to change and changed slowly if attention was given to them (Pajares, 1992). Because teachers are agents proactively engaged in their development and can make things happen by their actions by exercising control over their thoughts, feelings, and actions (Bandura), student teachers and novice teachers should be nurtured to be proactively engaged in
understanding their development and how they can exercise control in acting on the environment.

Further, teacher educators should be cognizant that values and attitudes are connected to beliefs and can influence teacher efficacy (Pajares, 1992). Because perceptions influence beliefs (Pajares), teacher efficacy and positive perceptions of teacher trust, collective efficacy, and academic emphasis may be positively correlated.

Specifically, the student teachers had higher trust in the students and parents than the novice teachers, although the difference was less between second-year teachers. Purportedly, student teachers appeared to have an inflated perception on trust related to their interactions with students and parents in the teaching environment. This positive perception of trust was probably supported by the social interactions and relationships that existed between the cooperating teachers and students. Further, a student teacher’s perception of their interactions with students and parents in the environment may be influenced by a more open, friendly, and eager attitude to establish positive relationships.

**Conclusion 4**

Student teachers and novice teachers in agricultural education in Ohio were efficacious during the first 10 weeks of the school year.

**Discussion and Implications**

Although this conclusion was incongruent with Mundt’s (1991) finding that beginning agriculture teachers lacked confidences, preservice agriculture teachers in their first professional studies course in Ohio mild-to-moderate agreement that they
were efficacious about teaching in agricultural education (Knobloch, 2001).
Furthermore, Rodríguez (1997) found that student teachers and first-year teachers were
moderately efficacious, and second-year teachers in agricultural education in Ohio were
mildly-to-moderately efficacious. In comparison to The Ohio State University Master’s
of Education student teachers and first-year teachers in various urban elementary and
secondary schools in Ohio (Woolfolk Hoy, 2000), the student teachers were 0.43 lower
(medium effect size = .58) in teacher efficacy on Bandura’s 9-point scale than the
student teachers in this study. Further, the first-year teachers in the Woolfolk Hoy
(2000) study were 0.64 lower (medium effect size = .73) in teacher efficacy at the end
of the school year than the first-year teachers in this study after 10 weeks. The first-
year teachers are not a paralleled comparison because the elementary and secondary
education group was assessed at the end of the school year, whereas the agriculture
teachers were assessed at the end of the 10th week of the school year.

The moderately high efficacy of the student teachers and novice teachers in
agricultural education in Ohio could be due to a combination of several contributing
factors (Bandura, 1997) related to the teaching environments and load, apprenticeship
of observation, and a community of learners in teacher education.

Teaching Environments and Teaching Loads

The agricultural education system in Ohio may also have some structures and
mechanisms in place that helps maintain beginning teachers’ efficacy. In general, the
teachers had positive perceptions of their interactions with students, parents, colleagues,
principal, and the school as reflected by the variables of teacher trust in clients, collective efficacy, supportive principal behavior, and academic emphasis.

In addition, teachers also appeared to have a manageable teaching load. Most of the teachers had three to four class preparations, which could help maintain their sense of efficacy. However, teachers who teach six to seven class preparations would probably feel less efficacious due to the extra work and additional interactions with more students. Furthermore, the teachers also appeared to have a manageable number of students. The student-teacher ratio was 56:1. Therefore, a manageable teaching load of three to four class preparations with a manageable student load of 56 students could help maintain teacher efficacy.

Furthermore, nearly four out of 10 teachers taught in multi-teacher departments. Although multi-teacher departments can present challenges that could lower teacher efficacy if there would be conflict between teachers, beginning teachers probably find that they can share the teaching and advising load with their colleagues. Therefore, beginning teachers who teach three to four class preparations in multi-teacher departments with an average number of 56 students are more likely to experience few challenges and frustrations than if they taught more classroom preparations as the only teacher with 80 or more students.

Apprenticeship of Observation

Teachers’ efficacy to teach high school agriculture may be established long before the prospective teachers enroll in a teacher education program because beliefs are formed early (Pajares, 1992). Another influence that could have contributed to their
teacher efficacy could have been related to socialization into the agricultural education profession as apprentices of observation (Lortie, 1975) during their four years as students and FFA members in a high school agricultural education program. Students who enroll in agricultural education in Ohio may be fairly efficacious about teaching agriculture because they gained practical teaching knowledge through what Dewey called “lived experience” (Fenstermacher, 1994) as products of the agricultural education system (Claycomb & Stewart, 1980). Efficacy can be enhanced by selected recall of past experiences (Bandura, 1997). Furthermore, Bandura (1986) purported that people will be more successful when social systems, such as a high school agricultural education program, cultivate generalizable competencies, provide enabling resources, and allow for ample room for self-directedness.

To this end, the agricultural education program focuses on developing leadership and interpersonal qualities. Their personal and leadership development through agricultural education and the FFA may have contributed to their teaching efficacy. Engagement in leadership opportunities may also maintain and strengthen teacher efficacy because leadership skills are often used in teaching. Bandura (1986) suggested that personal agency requires the development of competencies, self-percepts of efficacy, and self-regulatory capabilities for exercising oneself. Therefore, the teachers were active in leadership opportunities during high school and college, which could have contributed to the myriad of influences on their teacher efficacy.

The agricultural education system in Ohio may be the foundation of teacher efficacy. Many of the beginning agriculture teachers were enrolled in the high school
agricultural education program, including leadership development in the FFA and career development in SAE projects for four years. This high school experience may be a major factor in preparing agriculture teachers because people develop beliefs through the process of cultural transmission (Pajares, 1992). If high school enrollment is an important variable in preparing agriculture teachers, beginning teachers who did not experience four years of high school agricultural education may not have as high of teacher efficacy as their counterparts. Therefore, field experiences with high school students and teachers in agricultural education may become more important if there is a greater influx of preservice teachers who did not experience high school agricultural education.

Community of Learners in Teacher Education

Many of the teachers may have developed a sense of community and collective efficacy because they attended The Ohio State University in the same major and participated in some of the same college-level activities. The beginning teachers’ leadership qualities through their college experiences are likely to contribute to a greater sense of teaching efficacy. Therefore, leadership experiences may be an important consideration in the selection and development of preservice teachers in agriculture. Furthermore, if OSU agricultural education is preparing effective agriculture teachers, its predominance in preparing teachers in agricultural education in Ohio could be building and maintaining the teachers’ sense of efficacy because a teacher education program plays a significant role in developing successful teachers (Harper, Weiser, & Armstrong, 1990; McGhee & Cheek, 1990). Another factor that may be contributing to
teacher efficacy is that many of the teachers were teaching in the technical area of their educational training (Darling-Hammond, 1999). A large majority of the teachers had majored in agricultural education and had minored in agricultural production and science. This could contribute to their efficacy of knowledge in teaching agriculture.

**Conclusion 5**

Teachers in this study were confident in their ability to teach agricultural education.

**Discussion and Implications**

This conclusion supported Joerger and Boettcher’s (2000) findings and Hedges’ (1997) essential competencies of an effective teacher. This conclusion did not support Mundt’s (1991) findings. Teacher educators, mentors, and supervisors should understand the sources of teacher confidence in agricultural education and provide assistance and programs related to the needs of novice teachers (Talbert, Camp, & Heath-Camp, 1994).

**Conclusion 6**

Teachers in this study who had mentors felt that their mentors were competent and supportive.

**Discussion and Implications**

Mentoring may have supported the teachers’ sense of efficacy because a majority of the teachers had mentors, and many of teachers perceived their mentors as competent and supportive. This conclusion was congruent with Conroy and Kelsey’s (2000) finding that mentoring is an important need in agricultural education. Moreover,
novice teachers should, in part, be part of the process of selecting mentors based on their perceived competence and support of the potential teacher-mentor.

**Conclusion 7**

Teachers in this study had chosen teaching as a long-term career and felt that the job matched their personal and family needs.

**Discussion and Implications**

The selection of teaching as a long-term career goal (Cole, 1984; Grady, 1990; Moore & Camp, 1979) and being compatible with personal and family needs (Cole, 1984; Grady, 1990; McCracken & Etuk, 1986; Moore & Camp, 1979) may have also helped teachers feel more efficacious. Therefore, prospective teachers should be coached and selected based on their interest in teaching as a long-term career goal and being compatible with personal and family needs.

**Recommendations**

1. Teacher efficacy change should be studied over longer periods of time. Teacher efficacy should be measured as a follow-up between 18 weeks to 36 weeks.

2. Teacher perceptions of environmental variables should be measured at the end of the first semester or beyond to maximize the variance among the participants.

3. Longitudinal studies should be conducted to determine the changes in teacher efficacy throughout the preservice and novice years.

4. Teacher perceptions and characteristics should be investigated using multivariate statistics to determine which variables and characteristics are most salient in explaining and predicting teacher efficacy.
5. Qualitative research methods should be used to understand the sources of teacher efficacy changes and coping strategies used by beginning teachers. Variables that made the teachers feel moderately efficacious should be studied, as well as uncovering differences in variables that support or undermine teacher efficacy at each stage of development.

6. Investigate the four environmental variables using multivariate statistics to determine if a model exists to explain and predict teacher efficacy at the 10th week of the school year.

7. Determine the relationship between teacher trust and teacher efficacy, especially for the student teachers to see why it was higher than the novice teachers’ trust.

8. Investigate the environmental variables using qualitative methods to determine why student teachers had higher levels of trust in clients compared to novice teachers.

9. Teacher efficacy and perceptions of teacher trust in clients, collective efficacy, principal support, and academic emphasis should be studied with 4th year and 5th year teachers to determine if there are changes in teacher efficacy and perceptions of the environmental variables.

10. The teacher efficacy and environmental variables should be investigated to see if the relationships are reciprocally determined over several years.

11. Exploratory factor analysis should be conducted to determine construct validity of the instrument in agricultural education. Based on the one factor solution in the field test, new items should be developed task- and context-specific to agricultural education to try to explain a greater percent of variance in teacher efficacy.
12. A comparison of reliability, construct validity, and relationships of Gibson and Dembo’s Teacher Efficacy Scale and Ohio State’s Teacher Efficacy Scale should be conducted.

13. Beginning teachers should be studied to determine their summer programming needs, especially as it relates to attending the summer technical update for professional development and state FFA camp with their students.

14. Study the decision-making processes that guide student teachers and novice teachers through “beginning teaching experiences” that would make them feel more efficacious as an educator.

15. Investigate the relationships between teacher efficacy and teaching performance, teacher efficacy and student success, and teacher efficacy and teacher commitment and retention.

16. Investigate the relationships between novice teacher characteristics and perceptions and stage of development and environmental variables.

17. Additional research methods such as focus group interviews and participatory action research should be conducted with beginning teachers in the quest for grounded theory that explains the interactions of philosophical, psychological, social-cultural factors that affect the teaching and learning processes in formal and non-formal educational settings.
LIST OF REFERENCES


APPENDIX A

PANEL OF EXPERTS
PANEL OF EXPERTS

1. Dr. Jamie M. Cano, Agricultural Education, Teacher Education
2. Dr. James J. Connors, Agricultural Education, Teacher Education
3. Dr. Wayne K. Hoy, Educational Policy and Leadership, Educational Administration and Research
4. Dr. Larry E. Miller, Agricultural Education, Teacher Education
5. Dr. J. Robert Warmbrod, Agricultural Education, Research
6. Dr. M. Susie Whittington, Agricultural Education, Teacher Education
7. Dr. Anita Woolfolk Hoy, Educational Policy and Leadership, Teacher Efficacy and Teacher Education
APPENDIX B

PRETEST QUESTIONNAIRE
Beginning Agriculture Teacher

Pre-Test Appraisal Inventory

Please return by Tuesday, August 28, 2001

The Ohio State University
Department of Human and Community Resource Development
The Beginning Agriculture Teachers Study

The purpose of this study is to learn how beginning teachers respond to teaching during the first 10 weeks of the school year. There are two questionnaires in this study. The first questionnaire should be completed at the beginning of the school year, preferably before you start the school year or by August 28, 2001. The follow-up questionnaire will be sent to you in early November regarding your teaching experience during the first 10 weeks of the school year.

The purpose of the 2 questionnaires is to gather information regarding actual attitudes of teachers and the difficulties that teachers face in their school activities. Please read each statement and immediately respond with your initial reaction. Do not read into the statements. We are only interested in your frank opinions. There are no correct or incorrect answers. Your answers will be kept strictly confidential and will not be identified by name.

This questionnaire should take you about 15 minutes. There are 3 parts to this questionnaire. Please complete Section I and II using the following scales:

SECTION I
Instructions: Please indicate your personal opinion about each statement by circling the appropriate response at the

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Moderately disagree</th>
<th>Slightly disagree</th>
<th>Slightly Agree</th>
<th>Moderately agree</th>
<th>Strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
</tbody>
</table>

0. The amount a student can learn is primarily related to the number of years they were in a youth leadership club

SECTION II
Instructions: Please indicate your opinion about each of the statements below by circling the appropriate number.

<table>
<thead>
<tr>
<th>Nothing</th>
<th>Very Little</th>
<th>Some Influence</th>
<th>Quite A Bit</th>
<th>A Great Deal</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

0. How much can you do to get students to participate in FFA meetings?

Section III asks you to share your thoughts about teaching and some information about yourself. Please feel free to email Neil Knobloch at knobloch.4@osu.edu or call 614-688-8662 if you have any questions. We thank you for your time and consideration!
Appraisal Inventory: Part I*

A number of statements about educational organizations, people, and teaching are presented below.

Instructions: Please indicate your personal opinion about each statement by circling the appropriate response at the right of each statement.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly disagree</th>
<th>Moderately disagree</th>
<th>Slightly disagree</th>
<th>Slightly agree</th>
<th>Moderately agree</th>
<th>Strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The amount a student can learn is primarily related to family background</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>2. If students aren’t disciplined at home, they aren’t likely to accept any discipline</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>3. When I really try, I can get through to most difficult students.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>4. A teacher is very limited in what he/she can achieve because a student’s home environment is a large influence on his or her achievement</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>5. If parents would do more with their children, I could do more</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>6. If a student did not remember information I gave in a previous lesson, I would know how to increase his or her retention in the next lesson</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>7. If a student in my class becomes disruptive and noisy, I feel assured that I know some techniques to redirect him or her quickly</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>8. If one of my students couldn’t do a class assignment, I would be able to accurately assess whether the assignment was at the correct level of difficulty</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>9. If I really try hard, I can get through to even the most difficult or unmotivated students</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>10. When it comes right down to it, a teacher really can’t do much because most of a student’s motivation and performance depends on his or her home environment</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
</tbody>
</table>

* Gibson & Dembo, 1984; Hoy & Woolfolk, 1993
Appraisal Inventory: Part II*

This section is designed to help us gain a better understanding of the kinds of things that create difficulties for teachers in their school activities.

**Instructions:** Please indicate your opinion about each of the statements below by circling the appropriate number.

<table>
<thead>
<tr>
<th></th>
<th>Nothing</th>
<th>Very Little</th>
<th>Some Influence</th>
<th>Quite A Bit</th>
<th>A Great Deal</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>1 2 3 4 5 6 7 8 9</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>1 2 3 4 5 6 7 8 9</td>
<td></td>
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<tr>
<td>3.</td>
<td>1 2 3 4 5 6 7 8 9</td>
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<td>4.</td>
<td>1 2 3 4 5 6 7 8 9</td>
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<tr>
<td>5.</td>
<td>1 2 3 4 5 6 7 8 9</td>
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<td></td>
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<tr>
<td>6.</td>
<td>1 2 3 4 5 6 7 8 9</td>
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<tr>
<td>7.</td>
<td>1 2 3 4 5 6 7 8 9</td>
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<tr>
<td>8.</td>
<td>1 2 3 4 5 6 7 8 9</td>
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<tr>
<td>9.</td>
<td>1 2 3 4 5 6 7 8 9</td>
<td></td>
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<tr>
<td>10.</td>
<td>1 2 3 4 5 6 7 8 9</td>
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<td></td>
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<tr>
<td>11.</td>
<td>1 2 3 4 5 6 7 8 9</td>
<td></td>
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<tr>
<td>12.</td>
<td>1 2 3 4 5 6 7 8 9</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13.</td>
<td>1 2 3 4 5 6 7 8 9</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Please continue on the next page
### PART II, continued

<table>
<thead>
<tr>
<th>Question</th>
<th>No.</th>
<th>Very Little</th>
<th>Some Influence</th>
<th>Quite A Bit</th>
<th>A Great Deal</th>
</tr>
</thead>
<tbody>
<tr>
<td>14. How much can you do to improve the understanding of a student who is failing?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>15. How much can you do to calm a student who is disruptive or noisy?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>16. How well can you establish a classroom management system with each group of students?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>17. How much can you do to adjust your lessons to the proper level for individual students?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>18. How much can you use a variety of assessment strategies?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>19. How much can you keep a few problem students from ruining an entire lesson?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>20. To what extent can you provide an alternative explanation or example when students are confused?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>21. How well can you respond to defiant students?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>22. How much can you assist families in helping their children do well in school?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>23. How well can you implement alternative strategies in your classroom?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>24. How well can you provide appropriate challenges for very capable students?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

* Tschannen-Moran & Woolfolk Hoy, 2001
Appraisal Inventory: Part III

This last section asks you to share your opinions about your confidence as a teacher and some background information about yourself. In the space provided, please feel free to express your opinions on the following questions.

1. What has made you feel more confident toward teaching in agricultural education?

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Please continue on the next page
2. What has made you feel *less* confident toward teaching in agricultural education?
<table>
<thead>
<tr>
<th>Question</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>3. What is your <strong>age</strong>? (optional)</td>
<td>_______YEARS</td>
</tr>
<tr>
<td>4. What is your highest level of <strong>education</strong>? (4 one)</td>
<td></td>
</tr>
<tr>
<td>- HS DIPLOMA</td>
<td></td>
</tr>
<tr>
<td>- ASSOCIATES</td>
<td></td>
</tr>
<tr>
<td>- BACHELORS</td>
<td></td>
</tr>
<tr>
<td>- MASTERS</td>
<td></td>
</tr>
<tr>
<td>5. What <strong>college</strong> did you graduate from? (4 one)</td>
<td></td>
</tr>
<tr>
<td>- OSU</td>
<td></td>
</tr>
<tr>
<td>- Wilmington</td>
<td></td>
</tr>
<tr>
<td>- Other: ________</td>
<td></td>
</tr>
<tr>
<td>6. What was your <strong>major</strong> in college? (4 one)</td>
<td></td>
</tr>
<tr>
<td>- AGR EDUC</td>
<td></td>
</tr>
<tr>
<td>- Other: ________</td>
<td></td>
</tr>
<tr>
<td>7. What was your <strong>minor(s)</strong> in college? (List)</td>
<td>List:</td>
</tr>
<tr>
<td>8. What <strong>year of teaching</strong> are you in? (4 one)</td>
<td></td>
</tr>
<tr>
<td>- Student Teacher</td>
<td></td>
</tr>
<tr>
<td>- 1st YEAR</td>
<td></td>
</tr>
<tr>
<td>- 2nd YEAR</td>
<td></td>
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<tr>
<td>- 3rd YEAR</td>
<td></td>
</tr>
<tr>
<td>- Other: ________</td>
<td></td>
</tr>
<tr>
<td>9. How many <strong>total years of teaching experience</strong> do you have NOT</td>
<td>_______TOTAL YRS</td>
</tr>
<tr>
<td>including this year?</td>
<td></td>
</tr>
<tr>
<td>10. In how many different <strong>school districts</strong> have you been employed?</td>
<td></td>
</tr>
<tr>
<td>(4 one)</td>
<td></td>
</tr>
<tr>
<td>- NA</td>
<td></td>
</tr>
<tr>
<td>- 1 SCHOOL DIST</td>
<td></td>
</tr>
<tr>
<td>- 2 SCHOOL DISTS</td>
<td></td>
</tr>
<tr>
<td>- 3 SCHOOLS DISTS</td>
<td></td>
</tr>
<tr>
<td>- Other: ________</td>
<td></td>
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<tr>
<td>11. Which <strong>type of community</strong> best describes the setting in which</td>
<td></td>
</tr>
<tr>
<td>you grew up?</td>
<td></td>
</tr>
<tr>
<td>- A large city</td>
<td></td>
</tr>
<tr>
<td>- A community adjacent to a large city</td>
<td></td>
</tr>
<tr>
<td>- A town located in a rural area</td>
<td></td>
</tr>
<tr>
<td>- Outside of a town in the countryside; little to no farming</td>
<td></td>
</tr>
<tr>
<td>- Mostly part-time or full-time farming</td>
<td></td>
</tr>
</tbody>
</table>
12. How many years were you a **student in an agricultural education** program while you were in high school? (4 one)……

13. How many years were you an **FFA member**? (4 one)…………

14. At what level did you hold a **leadership position** in the FFA?……

15. How many years did you have an **SAE project**? (4 one)……

16. What **level of recognition** did you receive on your SAE project?

17. Did you hold a leadership position in a **college organization**?……

18. Are you a member of the **local teacher’s association**? (4 one)…

19. Do you currently hold a leadership position related to the **teaching profession**? (4 one)………………………………………

20. Did you attend the **Tech Update Conference** this year? (4 one)…

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<table>
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<tr>
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</thead>
<tbody>
<tr>
<td>NONE</td>
<td>1 YEAR</td>
<td>2 YEARS</td>
<td>3 YEARS</td>
<td>4 YEARS</td>
</tr>
</tbody>
</table>

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</thead>
<tbody>
<tr>
<td>NONE</td>
<td>1 YEAR</td>
<td>2 YEARS</td>
<td>3 YEARS</td>
<td>4 YEARS</td>
</tr>
</tbody>
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</thead>
<tbody>
<tr>
<td>CHAPTER</td>
<td>STATE</td>
<td>NATIONAL</td>
<td>NA</td>
<td></td>
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</tbody>
</table>

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<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>NONE</td>
<td>1 YEAR</td>
<td>2 YEARS</td>
<td>3 YEARS</td>
<td>4 YEARS</td>
</tr>
</tbody>
</table>

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<tbody>
<tr>
<td>CHAPTER</td>
<td>STATE</td>
<td>NATIONAL</td>
<td>NA</td>
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<tbody>
<tr>
<td>YES</td>
<td>NO</td>
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</thead>
<tbody>
<tr>
<td>YES</td>
<td>NO</td>
<td>NA</td>
<td></td>
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</tbody>
</table>

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<th></th>
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</thead>
<tbody>
<tr>
<td>YES</td>
<td>NO</td>
<td>NA</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
21. Did you attend **FFA Camp** with your students this past summer? (4 one)
   □ YES  □ NO

22. Did you interact with your students at the **county fair**? (4 one)
   □ YES  □ NO

23. Did you participate in any **summer activities** with your students? (4 one)
   □ YES  □ NO

24. What **other comments** would you like to share related to this topic?

_____________________________________________________________________
_____________________________________________________________________
_____________________________________________________________________
_____________________________________________________________________
_____________________________________________________________________
_____________________________________________________________________
_____________________________________________________________________
_____________________________________________________________________
_____________________________________________________________________
_____________________________________________________________________
_____________________________________________________________________
_____________________________________________________________________
_____________________________________________________________________

Thank you for completing this questionnaire. You are done. 😊
A+ G

Teachers make a difference
Thank you!

Please return by Tuesday, August 28, 2001

to
Beginning Agriculture Teacher Study
Department of Human and Community Resource Development
The Ohio State University

209 Agricultural Administration, 2120 Fyffe Road
Columbus, OH 43210
APPENDIX C

POSTTEST QUESTIONNAIRE
Beginning Agriculture Teacher

Follow-Up

Appraisal Inventory

Please return by Friday, November 9, 2001

The Ohio State University
Department of Human and Community Resource Development
As you may recall, the purpose of this study is to learn how beginning teachers respond to teaching during the first 10 weeks of the school year. Therefore, this is the follow-up questionnaire that you should complete by November 9, 2001 regarding your teaching experience during the first 10 weeks of the school year. If for some reason the deadline passed, please complete the questionnaire. It is important that we hear from every teacher in the study.

This questionnaire collects information regarding actual attitudes of teachers, the difficulties that teachers face in their school activities, and their interactions with the principal, other teachers, students and parents. Please read each statement and immediately respond with your initial reaction. Do not read into the statements. We are only interested in your frank opinions. There are no correct or incorrect answers. Your answers will be kept strictly confidential and will not be identified by name. The questionnaire should take you about 20 minutes. There are 4 parts to this questionnaire. Please complete Section I, II and III using the following scales:

**SECTION I**

**Instructions:** Please indicate the extent to which each statement characterizes your school by circling the appropriate response.

0. The principal dresses appropriately for the teachers in this school

**SECTION II**

**Instructions:** Please indicate your opinion about each of the statements below by circling the appropriate number.

3. How much can you do to get students to act mature?

**SECTION III**

**Instructions:** Please indicate your personal opinion about each statement by circling the appropriate response at the

1. The amount a student can learn is primarily related to effort...

Section III asks you to share your thoughts about teaching and some information about yourself. Please feel free to email Neil Knobloch at knobloch.4@osu.edu or call 614-688-8662 if you have any questions. We thank you for your time and consideration!
**Appraisal Inventory: Part I**

The following statements are about students, teachers, and the principal in your school.

**Instructions**: Please indicate the extent to which each statement characterizes your school by circling the appropriate response.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Rarely Occurs</th>
<th>Sometimes Occurs</th>
<th>Often Occurs</th>
<th>Very Frequently Occurs</th>
</tr>
</thead>
<tbody>
<tr>
<td>The principal sets an example by working hard himself/herself.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The principal compliments teachers.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The principal goes out of his/her way to help teachers.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The principal explains his/her reason for criticism to teachers.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The principal is available after school to help teachers when assistance is needed.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The principal uses constructive criticism.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The principal looks out for the personal welfare of the faculty.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Students in this school can achieve the goals that have been set for them.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The school sets high standards for academic performance.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Students respect others who get good grades.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Students seek extra work so they can get good grades.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teachers in this school believe that their students have the ability to achieve academically.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Academic achievement is recognized and acknowledged by the school.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Students try hard to improve on previous work.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The learning environment is orderly and serious.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Hoy, Tarter, & Kottkamp, 1991
**Appraisal Inventory: Part II**

This section is designed to help gain a better understanding of the kinds of things that may create difficulties for teachers in their school activities.

**Instructions:** Please indicate your opinion about each of the statements below by circling the appropriate number.

<table>
<thead>
<tr>
<th></th>
<th>Nothing</th>
<th>Very Little</th>
<th>Some Influence</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. How much 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 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 students 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>
</tbody>
</table>
14. How much can you do to improve the understanding of a student who is failing? ................................................................. 1 2 3 4 5 6 7 8 9

15. How much can you do to calm a student who is disruptive or noisy?........................................................................... 1 2 3 4 5 6 7 8 9

16. How well can you establish a classroom management system with each group of students? .................................................. 1 2 3 4 5 6 7 8 9

17. How much can you do to adjust your lessons to the proper level for individual students? ..................................................... 1 2 3 4 5 6 7 8 9

18. How much can you use a variety of assessment strategies? ........ 1 2 3 4 5 6 7 8 9

19. How much can you keep a few problem students from ruining an entire lesson? ................................................................. 1 2 3 4 5 6 7 8 9

20. To what extent can you provide an alternative explanation or example when students are confused? ........................................ 1 2 3 4 5 6 7 8 9

21. How well can you respond to defiant students? ...................... 1 2 3 4 5 6 7 8 9

22. How much can you assist families in helping their children do well in school? ................................................................. 1 2 3 4 5 6 7 8 9

23. How well can you implement alternative strategies in your classroom? ........................................................................... 1 2 3 4 5 6 7 8 9

24. How well can you provide appropriate challenges for very capable students? ................................................................. 1 2 3 4 5 6 7 8 9

* Tschannen-Moran & Woolfolk Hoy, 2001
**Appraisal Inventory: Part III**

A number of statements about school organizations, parents, students, and teaching are presented below.

**Instructions:** Please indicate your personal opinion about each statement by circling the appropriate response at the right of each statement.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Disagree</th>
<th>Moderately Disagree</th>
<th>Slightly Disagree</th>
<th>Slightly Agree</th>
<th>Moderately Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The amount a student can learn is primarily related to family background...</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>2. If students aren’t disciplined at home, they aren’t likely to accept any discipline...</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>3. When I really try, I can get through to most difficult students...</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>4. A teacher is very limited in what he/she can achieve because a student’s home environment is a large influence on his or her achievement...</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>5. If parents would do more with their children, I could do more...</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>6. If a student did not remember information I gave in a previous lesson, I would know how to increase his or her retention in the next lesson...</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>7. If a student in my class becomes disruptive and noisy, I feel assured that I know some techniques to redirect him or her quickly...</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>8. If one of my students couldn’t do a class assignment, I would be able to accurately assess whether the assignment was at the correct level of difficulty...</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>9. If I really try hard, I can get through to even the most difficult or unmotivated students...</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>10. When it comes right down to it, a teacher really can’t do much because most of a student’s motivation and performance depends on his or her home environment...</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
</tbody>
</table>

Page 5 Please continue on the next page
PART III, continued

↓

11. Teachers in this school trust their students

12. Teachers in this school trust the parents

13. The students in this school have to be closely supervised

14. Students in this school care about each other

15. Students in this school are reliable

16. Parents in this school are reliable in their commitments

17. Students in this school can be counted on to do their work

18. Teachers can count on parental support

19. Teachers here believe students are competent learners

20. Teachers think most of the parents do a good job

21. Teachers in this school believe what students say

22. Students in this school cheat if they have the chance

23. Teachers can believe what parents tell them

24. Students here are secretive

25. The students in this school talk freely about their lives outside of school

26. Teachers in this school are able to get through to the most difficult students

27. Teachers here are confident they will be able to motivate their students

Please continue on the next page
PART III, continued

↓

28. If a child doesn’t want to learn, teachers here give up. 

29. Teachers here don’t have the skills needed to produce meaningful learning. 

30. Teachers in this school believe that every child can learn. 

31. These students come to school ready to learn. 

32. Home life provides so many advantages that students here are bound to learn. 

33. Students here just aren’t motivated to learn. 

34. Teachers in this school do not have the skills to deal with student disciplinary problems. 

35. The opportunities in this community help ensure that these students will learn. 

36. Learning is more difficult at this school because students are worried about their safety. 

37. Drug and alcohol abuse in the community make learning difficult for students here. 

38. My teacher education program was a high quality program. 

39. My teacher education program prepared me to teach. 

44. Being a high school agriculture teacher has been my long-term career goal. 

45. I plan teach for at least 5 years. 

46. My student teaching experience was an excellent experience.
PART III, continued

↓

47. Teaching as a career matches my personal and family needs.. 1 2 3 4 5 6

48. I do not plan to be teaching next year. ......................... 1 2 3 4 5 6

49. Adequate funding is available to effectively run my agricultural education program. ............................... 1 2 3 4 5 6

50. I feel confident about teaching in agricultural education…… 1 2 3 4 5 6

* Gibson & Dembo, 1984; Goddard, in press; Hoy & Woolfolk, 1993; Hoy & Tschannen-Moran, 1999

Appraisal Inventory: Part IV

This last section asks you to share some background information about yourself and your opinions about your confidence as a teacher. Now, please complete the next section of information about yourself.

Personal Background Questions

↓

1. How many students are currently enrolled in your agricultural education program? ...................................................... ____ AG STUDENTS

2. How many agriculture teachers are in the Ag. Ed. Department? .......................... ____ AG TEACHERS

3. How many class preparations do you teach? ............................. ____ CLASS PREPS

4. Which type of community best describes the setting you teach in?
   A large city........................................................................
   A community adjacent to a large city........................................
   A town located in a rural area...............................................
   Outside of a town in the countryside; little to no farming............
   Mostly part-time or full-time farming..................................

(4 one)

□ URBAN
□ SUBURBAN
□ SMALL TOWN
□ RURAL
□ FARMING

Page 8

Please continue on the next page
5. Are you utilizing a teaching **mentor**? (4 one)..............
- YES ⇒ Go to #6
- NO ⇒ Go to #8

6. My mentor is a very **competent teacher** (4 one).........
- STRONGLY AGREE
- MODERATELY AGREE
- SLIGHTLY AGREE
- SLIGHTLY DISAGREE
- MODERATELY DISAGREE
- STRONGLY DISAGREE

7. My mentor is very **supportive** (4 one)...................
- STRONGLY AGREE
- MODERATELY AGREE
- SLIGHTLY AGREE
- SLIGHTLY DISAGREE
- MODERATELY DISAGREE
- STRONGLY DISAGREE

8. My **first year of teaching** has been/was an excellent experience........................................ (4 one)
- STRONGLY AGREE
- MODERATELY AGREE
- SLIGHTLY AGREE
- SLIGHTLY DISAGREE
- MODERATELY DISAGREE
- STRONGLY DISAGREE
- NOT APPLICABLE (Student Teacher)

9. My **student teaching experience** has been/was an excellent experience...................................... (4 one)
- STRONGLY AGREE
- MODERATELY AGREE
- SLIGHTLY AGREE
- SLIGHTLY DISAGREE
- MODERATELY DISAGREE
- STRONGLY DISAGREE
- NOT APPLICABLE

10. Related to your student teaching experience in the previous question, “Why or why not?”

_____________________________________________________________________________
_____________________________________________________________________________
_____________________________________________________________________________
11. Within the last 10 weeks, what has made you feel more confident toward teaching in agricultural education?

_____________________________________________________________________
_____________________________________________________________________
_____________________________________________________________________
_____________________________________________________________________
_____________________________________________________________________
_____________________________________________________________________
_____________________________________________________________________
_____________________________________________________________________

12. Within the last 10 weeks, what has made you feel less confident toward teaching in agricultural education?

_____________________________________________________________________
_____________________________________________________________________
_____________________________________________________________________
_____________________________________________________________________
_____________________________________________________________________
_____________________________________________________________________
_____________________________________________________________________
_____________________________________________________________________
_____________________________________________________________________

_________
13. What other comments would you like to share related to this topic?

_____________________________________________________________________
_____________________________________________________________________
_____________________________________________________________________
_____________________________________________________________________
_____________________________________________________________________
_____________________________________________________________________
_____________________________________________________________________
_____________________________________________________________________

Thank you!

Please return by Friday, November 9, 2001
to
Beginning Agriculture Teachers Study
Department of Human and Community Resource Development
The Ohio State University
209 Agricultural Administration, 2120 Fyffe Road
Columbus, OH 43210
Dear <First Name>,

I am writing you because I am conducting a dissertation study of beginning agriculture teachers in Ohio. Next week, you will receive a questionnaire that will ask you to share your opinions about teaching. A follow-up questionnaire will also be sent in early November asking you to share your opinions about your teaching experience during the first 10 weeks of the school year. The questionnaires will take about 15 minutes to complete. Thank you for your time and consideration. I wish you the very best on a successful year of teaching!

Sincerely,

<signature>

P.S. I will be enclosing a small token of appreciation with the questionnaire as a way of saying thanks. Also, please keep this card and you will be able to frame it upon completion of the follow-up questionnaire in November.
APPENDIX E

QUESTIONNAIRE COVER LETTERS
Pretest Questionnaire Cover Letter
Posttest Questionnaire Cover Letter
Respondents
New Participants
Non-Respondents
August 17, 2001

Dear «FirstName»:

Recently, you were notified about the Beginning Agriculture Teachers Study. We are writing to ask for your help in a study of student teachers, 1st year teachers, 2nd year teachers, and 3rd year teachers in Ohio Agricultural Education. This study is part of an effort to learn how beginning agriculture teachers respond to teaching during the first 10 weeks of the school year. Therefore, we are contacting you to ask how you perceive yourself as a teacher when working with students.

The results from the study will be used by teacher educators and state consultants in agricultural education to deliver programs that will assist teachers in becoming successful. By understanding the needs of beginning teachers, teacher educators and consultants can do a better job of providing programs and improving the teaching profession for beginning agriculture teachers. Furthermore, the results of this study will help revitalize teacher preparation in agricultural education in Ohio.

Your answers are completely confidential and will be released only as summaries in which no individual’s answers can be identified. A questionnaire identification number is printed on the back of the questionnaire so that we can check your name off of the mailing list when it is returned. This survey is voluntary. However, you can help us very much by taking a few minutes to share your opinions about your perceptions as a teacher. If for some reason you prefer not to respond, please let us know by returning the blank questionnaire in the enclosed stamped envelope.

We have enclosed a small token of appreciation as a way of saying thanks for your help. If you have any questions about this study, we would be happy to talk with you. You may email us at knobloch.4@osu.edu or phone 614.688.8662.

Thank you very much for helping with this important study.

Sincerely,

Neil Knobloch     Susie Whittington
Lecturer & Ph.D. Candidate   Associate Professor & Adviser

P.S. If by some chance you are not a student teacher, 1st year teacher, 2nd year teacher, or 3rd year teacher in Agricultural Education, please indicate so on the questionnaire and return it blank. Many thanks.
November 1, 2001

 FirstName LastName
 School
 Address1
 City, OH PostalCode

Dear FirstName:

About 10 weeks ago, you completed the first of two questionnaires entitled the Beginning Agriculture Teachers Study. We want to thank you for completing the first questionnaire at the beginning of the school year. Now, we are writing to ask for your help by responding to a follow-up questionnaire to learn how beginning agriculture teachers respond to teaching during the first 10 weeks of the school year. This questionnaire will ask how you perceive yourself as a teacher when working with students, parents, other teachers, the principal, and the school.

The results from the study will be used by teacher educators and state consultants in agricultural education to deliver programs that will assist teachers in becoming successful. By understanding the needs of beginning teachers, teacher educators and consultants can do a better job of providing programs and improving the teaching profession for beginning agriculture teachers. As you may already know, the results of this study will help revitalize teacher preparation in agricultural education in Ohio.

Your answers are completely confidential and will be released only as summaries in which no individual’s answers can be identified. A questionnaire identification number is printed on the back of the questionnaire so that we can check your name off of the mailing list when it is returned. This survey is voluntary. However, you can help us very much by taking a few minutes to share your opinions about your perceptions as a teacher. If for some reason you prefer not to respond, please let us know by returning the blank questionnaire in the enclosed stamped envelope.

Last August, you received a Successories™ card informing you of this study. We would like to send you a 5 x 7 acrylic, magnetic frame so that you can display the card as an inspirational mini-poster in your office or classroom. Once we receive your questionnaire, we will send you the acrylic, magnetic frame as a small token of appreciation as a way of saying thanks for your help. If you have any questions about this study, we would be happy to talk with you. You may email us at knobloch.4@osu.edu or phone 614.688.8662.

Thank you very much for helping with this important study.

Sincerely,

Neil Knobloch Lecturer & Ph.D. Candidate
Susie Whittington Associate Professor & Adviser

P.S. We look forward to hearing from you! We would like to hear from every student teacher and beginning teacher in his/her first, second, and third year in agricultural education in Ohio.
November 1, 2001

Dear «FirstName»:

Recently, you were notified about the **Beginning Agriculture Teachers Study**. We are writing to ask for your help in a study of student teachers, first year teachers, second year teachers, and third year teachers in Ohio Agricultural Education. This study is part of an effort to learn how beginning agriculture teachers respond to teaching during the first 10 weeks of the school year. This questionnaire will ask how you perceive yourself as a teacher when working with students, parents, other teachers, the principal, and the school. Although you were hired after the first week of the school year, we would still like you to complete the follow-up questionnaire because we would like to hear from every student teacher and beginning teacher in their first, second, and third year in agricultural education in Ohio.

The results from the study will be used by teacher educators and state consultants in agricultural education to deliver programs that will assist teachers in becoming successful. By understanding the needs of beginning teachers, teacher educators and consultants can do a better job of providing programs and improving the teaching profession for beginning agriculture teachers. As you may already know, the results of this study will help revitalize teacher preparation in agricultural education in Ohio.

Your answers are completely confidential and will be released only as summaries in which no individual’s answers can be identified. A questionnaire identification number is printed on the back of the questionnaire so that we can check your name off of the mailing list when it is returned. This survey is voluntary. However, you can help us very much by taking a few minutes to share your opinions about your perceptions as a teacher. If for some reason you prefer not to respond, please let us know by returning the blank questionnaire in the enclosed stamped envelope.

A few days ago, you received a Successories™ card informing you of this study. We would like to send you a 5 x 7 acrylic, magnetic frame so that you can display the card as an inspirational mini-poster in your office or classroom. Once we receive your questionnaire, we will send you the acrylic, magnetic frame as a small token of appreciation as a way of saying thanks for your help. If you have any questions about this study, we would be happy to talk with you. You may email us at knobloch.4@osu.edu or phone 614.688.8662.

Thank you very much for helping with this important study.

Sincerely,

Neil Knobloch
Lecturer & Ph.D. Candidate

Susie Whittington
Associate Professor & Adviser

P.S. We look forward to hearing from you!
November 1, 2001

Dear FirstName:

About 10 weeks ago, you were notified about the Beginning Agriculture Teachers Study. Now, we are writing to ask for your help by responding to a follow-up questionnaire to learn how beginning agriculture teachers respond to teaching during the first 10 weeks of the school year. If for some reason you were not able to complete the first questionnaire, we would still like you to complete the follow-up questionnaire because we would like to hear from every student teacher and beginning teacher in their first, second, and third year in agricultural education in Ohio. This questionnaire will ask how you perceive yourself as a teacher when working with students, parents, other teachers, the principal, and the school.

The results from the study will be used by teacher educators and state consultants in agricultural education to deliver programs that will assist teachers in becoming successful. By understanding the needs of beginning teachers, teacher educators and consultants can do a better job of providing programs and improving the teaching profession for beginning agriculture teachers. As you may already know, the results of this study will help revitalize teacher preparation in agricultural education in Ohio.

Your answers are completely confidential and will be released only as summaries in which no individual’s answers can be identified. A questionnaire identification number is printed on the back of the questionnaire so that we can check your name off of the mailing list when it is returned. This survey is voluntary. However, you can help us very much by taking a few minutes to share your opinions about your perceptions as a teacher. If for some reason you prefer not to respond, please let us know by returning the blank questionnaire in the enclosed stamped envelope.

Last August, you received a Successories™ card informing you of this study. We would like to send you a 5 x 7 acrylic, magnetic frame so that you can display the card as an inspirational mini-poster in your office or classroom. Once we receive your questionnaire, we will send you the acrylic, magnetic frame as a small token of appreciation as a way of saying thanks for your help. If you have any questions about this study, we would be happy to talk with you. You may email us at knobloch.4@osu.edu or phone 614.688.8662.

Thank you very much for helping with this important study.

Sincerely,

Neil Knobloch     Susie Whittington
Lecturer & Ph.D. Candidate   Associate Professor & Adviser

P.S. We look forward to hearing from you!
APPENDIX F

REMINDER POSTCARDS
PRETEST POSTCARD REMINDER

August 28, 2001

Last week, a questionnaire seeking your opinions about yourself as a beginning teacher in Agricultural Education was mailed to you. If you have already completed and returned the questionnaire to us, please accept our sincere thanks. If not, even though the suggested completion date was August 28, we need your input and encourage you to mail it to us as close as possible to the 1st week of school.

We are especially grateful for your help because only you can share experiences that can help us understand how beginning teachers respond to the events that take place during the first 10 weeks of the school year.

If you did not receive a questionnaire, or if it was misplaced, please call us at 614.688.8662 or email us at knobloch.4@osu.edu and we will get another one in the mail to you today.

Neil Knobloch & Susie Whittington
207 Agricultural Administration, 2120 Fyffe Road
The Ohio State University
Columbus, OH 43210
November 9, 2001

Last week, a follow-up questionnaire (blue paper) seeking your opinions about yourself as a beginning teacher in Agricultural Education was mailed to you. If you have already completed and returned the questionnaire to us, please accept our sincere thanks. If not, even though the suggested completion date was November 9, we need your input and encourage you to mail it to us as close as possible to the 10th week of school (by mid-November).

We are especially grateful for your help because only you can share experiences that can help us understand how beginning teachers respond to the events that take place during the first 10 weeks of the school year and we need to hear from every student teacher and beginning teacher (1st, 2nd and 3rd year) in agricultural education in Ohio.

If you did not receive a questionnaire, or if it was misplaced, please call us at 614.688.8662 or email us at knobloch.4@osu.edu and we will get another one in the mail to you today.

Neil Knobloch & Susie Whittington
207 Agricultural Administration, 2120 Fyffe Road
The Ohio State University
APPENDIX G

FOLLOW-UP PHONE CONTACT
FOLLOW-UP PHONE CONTACT TEXT

Hello, <teacher’s name>. This is Neil Knobloch from Ohio State. How are you doing today? I was calling to see if you received a beginning teacher questionnaire from me within the last two weeks.

(Wait for response.)

(If the response was “NO”). I would be glad to send you another one.

(If the response was “YES”). Wonderful. I would appreciate if you could complete it and return it to me.

Thanks again for your help. I hope that you have a good week!
APPENDIX H

FINAL MAILING COVER LETTERS

Pretest Replacement Questionnaire Cover Letter

Posttest Replacement Questionnaire Cover Letter
September 17, 2001

Dear «FirstName»:

About three weeks ago, we sent a questionnaire that asked about your perceptions of being a teacher in Agricultural Education. To the best of our knowledge, we have not yet received your questionnaire.

The comments of people who have already responded include a wide variety of opinions about teaching. Many have described their experiences, both good and bad, in trying to cope with the challenges of being a beginning teacher. We think the results are going to be very useful to teacher educators and state consultants in Agricultural Education in Ohio.

We are writing because of the importance that your questionnaire has for helping to get accurate results. Although we sent questionnaires to all beginning agriculture teachers in Ohio, it’s only by hearing from nearly everyone in the sample that we can be sure the results are truly representative.

Your answers are completely confidential and will be released only as summaries in which no individual’s answers can be identified. A questionnaire identification number is printed on the back of the questionnaire so that we can check your name off of the mailing list when it is returned. Your participation is voluntary.

Even though the suggested completion date has passed, you can help us very much by taking a few minutes to share your opinions about your perceptions as a teacher. We hope that you will fill out and return the questionnaire soon, but if for any reason you prefer not to answer it, please let us know by returning a note or blank questionnaire in the enclosed stamped envelope. Thanks again for your help!

Sincerely,

Neil Knobloch     Susie Whittington
Lecturer & Ph.D. Candidate   Associate Professor & Adviser

P.S. If you have any questions, please feel free to contact me at knobloch.4@osu.edu. I can also be reached in Columbus at 614-688-8662.
November 23, 2001

Dear «FirstName»:

About three weeks ago, we sent you the Beginning Agriculture Teacher Follow-Up Appraisal Inventory (blue booklet) that asked about how you perceive yourself as a teacher when working with students, parents, other teachers, the principal, and the school. To the best of our knowledge, we have not yet received your questionnaire.

The comments from teachers who have already responded include a wide variety of opinions about their experiences in the first 10 weeks of the school year. Many have described their experiences, both good and bad, in trying to cope with the challenges of being a beginning agriculture teacher. We think the results are going to be very useful to teacher educators and state consultants in Agricultural Education in Ohio.

We are writing because of the importance that your questionnaire has for helping to get accurate results. Although we sent questionnaires to all beginning agriculture teachers in Ohio, it’s only by hearing from nearly everyone in the sample that we can be sure the results are truly representative.

Your answers are completely confidential and will be released only as summaries in which no individual’s answers can be identified. A questionnaire identification number is printed on the back of the questionnaire so that we can check your name off of the mailing list when it is returned. Your participation is voluntary.

Even though the previous suggested completion date has passed, you can help us very much by taking a few minutes to share your opinions about your perceptions as a teacher. We hope that you will fill out and return the questionnaire soon, but if for any reason you prefer not to answer it, please let us know by returning a note or blank questionnaire in the enclosed stamped envelope. Thanks again for your help!

Sincerely,

Neil Knobloch     Susie Whittington
Lecturer & Ph.D. Candidate   Associate Professor & Adviser

P.S. We look forward to your response. Once we receive your questionnaire, we will send you the acrylic, magnetic frame as a small token of appreciation as a way of saying thanks for your help. If you have any questions, please feel free to contact me at knobloch.4@osu.edu. I can also be reached in Columbus at 614-688-8662.
APPENDIX I

THANK YOU MESSAGE IN ACRYLIC FRAME
We would like to thank you for your participation in the beginning agriculture teachers study. Your contribution will help us focus our efforts in better serving you as you establish your career in agricultural education.

We hope that this small token of appreciation will serve as a reminder that A*G Teacher Make a Difference! Feel free to frame the Successories card that we mailed you at the beginning of the study for a motivational mini-poster, or feel free to frame a picture of your choice (e.g., the student-of-the-week).

Keep up the great work and please call us if you can assist you in achieving your goals.

Sincerely,

Neil Knobloch & Susie Whittington